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REPORTS

DATE:

11-9-1998

SUBSURFACE INVESTIGATION REPORT
MONITORING WELLS MW18-7 AND MW18-8

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
UNIT D, SECTION 7, TOWNSHIP 20 SOUTH
RANGE 37 EAST
LEA COUNTY, NEW MEXICO

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SUBSURFACE INVESTIGATION REPORT
MONITORING WELLS MW18-7 AND MW18-8

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
UNIT D, SECTION 7, TOWNSHIP 20 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO

PREPARED FOR:

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Mr. Tony Savoie

PREPARED BY:
KEI

Theresa Nix
Theresa Nix
Project Manager

P. Bullinger
Pat Bullinger, P.E.

KEI Job No. 610057-2-18

October 29, 1998

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PURPOSE AND SCOPE

The purpose of the subsurface investigation was to delineate the vertical and horizontal extent of hydrocarbon impact by installing 2 additional monitoring wells at the site. Previous activities at the site consisted of advancing soil borings B18-1 through B18-4, B18-A through B18-C, and installing monitoring wells MW18-1 through MW18-6. The reports for those investigations were dated September 9, 1997 and March 26, 1998. Locations of monitoring wells are shown on FIG. 1.

SOIL INVESTIGATION

The subsurface investigation consisted of drilling 2 monitoring wells designated MW18-7 and MW18-8. The wells were drilled to an approximate depth of 40 to 41 feet below the ground surface (bgs). Soil samples were collected at selected intervals from the ground surface to the bottom of the boring. The soils were classified in the field, soil samples were field screened, and selected samples were prepared and shipped to the laboratory for analysis.

Upon advancement to total depth and collection of soil samples, a monitoring well consisting of 4-inch perforated PVC and blank riser was placed in the open hole of monitoring well MW18-7 and MW18-8.

SOIL DESCRIPTION

The subsurface soil profile was classified in general accordance with the Unified Soil Classification System by visually observing the soil samples obtained during the assessment. In general, 3 soil types were encountered. A general description, approximate thickness, and head-space sample results for each soil type are as follows:

Soil Type I
This soil type consisted of tan to brown sand encountered at the surface of each monitoring well. The observed thickness of this soil type was 4 feet. The sand was silty, fine-grained, contained some caliche gravel and was dry. Head-space readings from samples of this soil type varied from below instrument detection limits (ND) to 2 ppm.

Soil Type II
This soil type consisted of tan to gray sand and was encountered below Soil Type I at both well locations. The sand was clayey, contained calcareous nodules, and was dry. The observed thickness of this soil type was 11 feet. Head-space readings from samples of this soil type ranged from ND to 5 ppm.

Soil Type III
This soil type consisted of tan to gray sand and was encountered below Soil Type II at both well locations. The sand contained calcareous nodules and was slightly moist to moist. The observed thickness of this soil type ranged from approximately 25 to 26 feet. Head-space readings from samples of this soil type ranged from ND to 62 ppm.

Logs indicating the subsurface soil profile, depths at which soil samples were obtained, head-space results, and laboratory results are presented on FIGs. 2 and 3.

ANALYTICAL RESULTS

Three soil samples were selected from both monitoring wells based on the following criteria:

- the sample collected at the ground surface
- the sample collected with the highest PID reading
- the sample collected at ground water level measured during drilling

Soil samples were selected for the following analytical testing:

- Six samples from the soil borings were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH).
- One soil sample from monitoring well MW18-7 (exhibiting the highest concentration of TPH by EPA Method 8015 DRO) was also tested for SPLP TPH, SPLP Volatile Organic Compounds (VOC) and SPLP Semi-Volatile Organic Compounds (SVOC).
- Analytical results for the selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATION RANGE (mg/kg)
BENZENE	ND
BTEX	ND to 0.210
TPH	7.0 to 369
SPLP TPH	0.8
SPLP VOC	ND to 0.013
SPLP SVOC	ND

Soil analytical results are summarized in TABLES I and II. Soil analytical reports and chain-of-custody documentation are presented in APPENDIX A. Quality Assurance/Quality Control Procedures are presented in APPENDIX B.

GROUND WATER SAMPLING AND ANALYTICAL RESULTS

Upon completion of drilling, each well was gauged to determine the depth to ground water and checked for the presence of phase-separate hydrocarbons (PSH). The depth to ground water measured in the monitoring wells on September 1, 1998, ranged from 28.18 to 31.31 feet below ground surface. PSH was observed in monitoring wells MW18-1, MW18-3 and MW18-4. PSH thickness ranged from a sheen to 2.23 feet. Ground water measurements are summarized in TABLE III. A ground water contours map is presented as FIG. 1.

Monitoring wells without PSH were sampled on August 18, 1998. Each monitoring well was purged of 3 well volumes of water and ground water samples were collected from the monitoring well. Purged water collected during the event was stored in steel drums pending disposal.

Water samples selected for analytical testing consisted of the following:

- Ground water samples collected from MW18-2 and MW18-5 through MW18-8 were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX).

- Ground water samples collected from MW18-7 and MW18-8 were tested for polycyclic aromatic hydrocarbons (PAH), metals, cations and anions, and TDS.
- Analytical results for the selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATION RANGE (mg/L)
BENZENE	ND
BTEX	ND to 0.014
PAH	ND
Barium	0.05 and 0.08
Calcium	1,140 and 1,190
Magnesium	531 and 562
Manganese	0.28 and 0.36
Potassium	20.3 and 24.8
Silicon	22.4 and 25.3
Sodium	2,610 and 2,810
Strontium	13.5 and 15.8
Mercury	ND
TDS	19,200 and 19,900

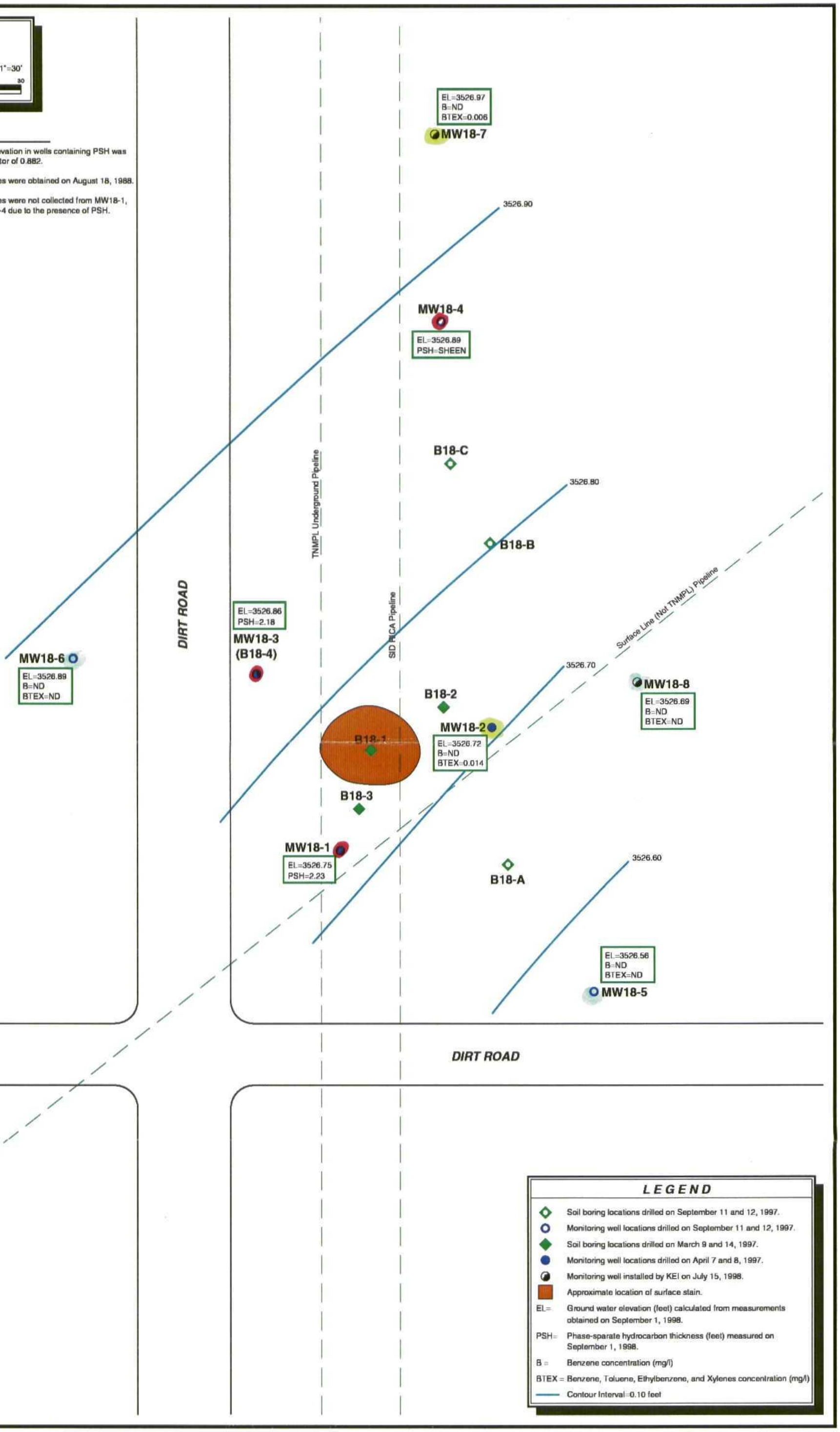
Those constituents not listed were ND. Ground water analytical results are summarized in TABLES IV through VI. Water analytical laboratory reports and chain-of-custody documentation are presented in APPENDIX B. Quality Assurance/Quality Control Procedures are presented in APPENDIX C.

Approximate Scale: 1"=30'

0 15 30

NOTES:

1. The ground water elevation in wells containing PSH was corrected using a factor of 0.882.
2. Ground water samples were obtained on August 18, 1988.
3. Ground water samples were not collected from MW18-1, MW18-3, and MW18-4 due to the presence of PSH.



LEGEND

- Soil boring locations drilled on September 11 and 12, 1997.
- Monitoring well locations drilled on September 11 and 12, 1997.
- Soil boring locations drilled on March 9 and 14, 1997.
- Monitoring well locations drilled on April 7 and 8, 1997.
- Monitoring well installed by KEI on July 15, 1998.
- Approximate location of surface stain.
- EL= Ground water elevation (feet) calculated from measurements obtained on September 1, 1998.
- PSH= Phase-sparate hydrocarbon thickness (feet) measured on September 1, 1998.
- B = Benzene concentration (mg/l)
- BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes concentration (mg/l)
- Contour Interval=0.10 feet

10/05/98-RM G:\SADFT\PROJECTS\TNMPL\610057\SITE18\MONTHLY\(GC-SEP98)

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GROUND WATER CONTOURS / CONCENTRATIONS MAP - SEPTEMBER 1998

TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 18 LEA COUNTY, NEW MEXICO

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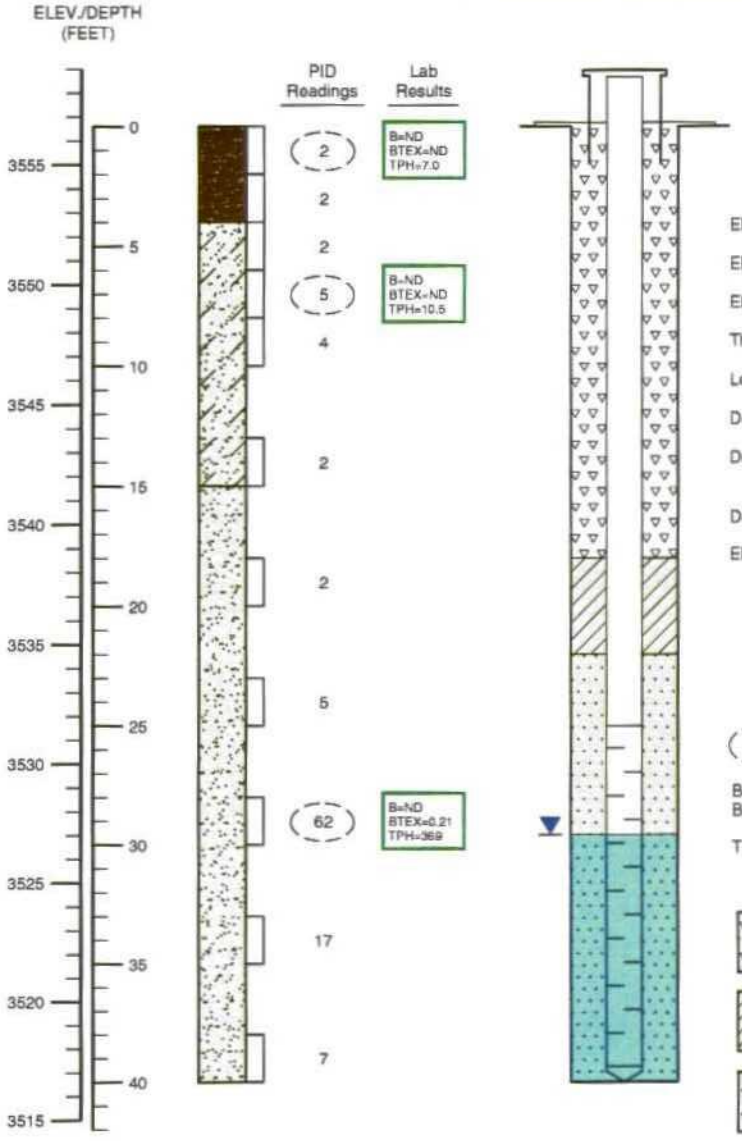
FIG 1

MONITORING WELL MW18-7



Monitoring Well Details (MW18-7)

Elev of Concrete Pad	3556.75 ft
Elev of Ground Surface	3556.61 ft
Elev Top of PVC Well	3558.65 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well	40.00 ft
Depth of Exploratory Hole	40.0 ft
Depth to Ground Water	29.64 ft
Elev of Ground Water	3526.97 ft.

Indicates sample selected for laboratory analysis.

B= Benzene Concentration (mg/kg)
BTEX= Total Benzene, Toluene, Ethylbenzene, Xylene Concentration (mg/kg)
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)

Concrete Seal

Bentonite Pellet Seal

Sand Pack

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, dry.

Sand (SC), clayey, calcareous nodules, tan to grey, dry.

Sand (SM), calcareous nodules, tan to grey, slightly moist to moist.

Indicates depth interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured on September 1, 1998.

PID Head-space readings in ppm obtained with a photoionization detector.

ND Indicates the concentration was below laboratory detection limits.

NOTES

1. The monitoring well was installed on July 15, 1998 using an air rotary rig.
2. The well was constructed with 4 inch ID, 0.010 inch factory slotted, threaded joint, Schedule 40 PVC pipe.
3. The well is protected with a stick-up steel cover and a locked compression cap.
4. The depths indicated are referenced from the ground surface.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

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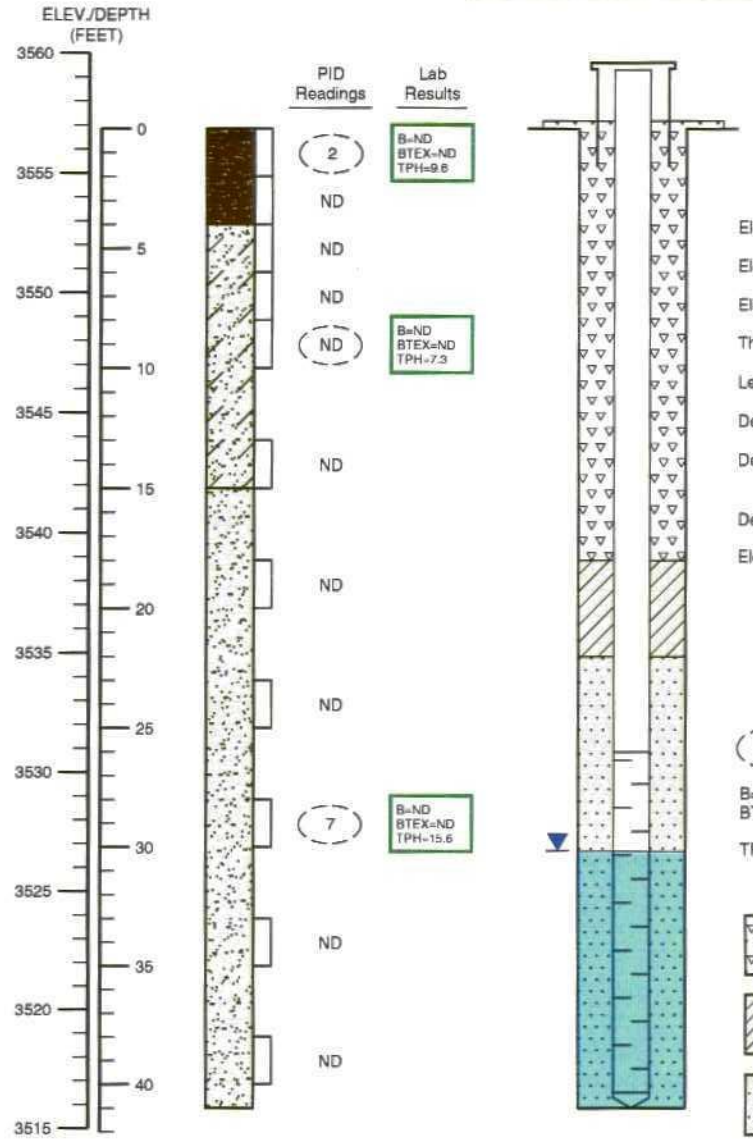
LOG AND DETAILS OF MONITORING WELL MW18-7

TEXAS-NEW MEXICO PIPE LINE CO. | MONUMENT SITE NO. 18 | LEA COUNTY, NEW MEXICO

610057

FIG 2

MONITORING WELL MW18-8



Monitoring Well Details (MW18-8)

Elev of Concrete Pad	3557.17 ft
Elev of Ground Surface	3556.86 ft
Elev Top of PVC Well	3559.30 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well	41.00 ft
Depth of Exploratory Hole	41.0 ft
Depth to Ground Water	30.17 ft
Elev of Ground Water	3526.69 ft

Indicates sample selected for laboratory analysis.

B= Benzene Concentration (mg/kg)
BTEX= Total Benzene, Toluene, Ethylbenzene, Xylene Concentration (mg/kg)
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)

Concrete Seal

Bentonite Pellet Seal

Sand Pack

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, dry.

Sand (SC), clayey, calcareous nodules, tan to grey, dry.

Sand (SM), calcareous nodules, tan to grey, slightly moist to moist.

Indicates depth interval from which a soil sample was selected and prepared for field head-space and/or laboratory analysis.

Indicates the ground water level measured on September 1, 1998.

PID Head-space readings in ppm obtained with a photoionization detector.

ND Indicates the concentration was below laboratory detection limits.

NOTES

1. The monitoring well was installed on July 15, 1998 using an air rotary rig.
2. The well was constructed with 4 inch ID, 0.010 inch factory slotted, threaded joint, Schedule 40 PVC pipe.
3. The well is protected with a stick-up steel cover and a locked compression cap.
4. The depths indicated are referenced from the ground surface unless otherwise noted.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

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LOG AND DETAILS OF MONITORING WELL MW18-8		610057
TEXAS-NEW MEXICO PIPE LINE CO.	MONUMENT SITE NO. 18	LEA COUNTY, NEW MEXICO	FIG 3

GENERAL NOTES

ND - Indicates constituent was not detected above the method detection/reporting limit.
--- - Indicates no PSH was detected (TABLE III).

Method detection or reporting limits:

Soils:

BTEX	-	0.020 to 0.20 mg/kg
TPH	-	5.0 mg/kg
SPLP TPH	-	0.7 mg/kg
SPLP VOC	-	0.005 to 0.020 mg/kg
SPLP SVOC	-	0.005 to 0.013 mg/kg

Water:

BTEX	-	0.001 to 0.008 mg/L
PAH	-	0.002 mg/L
Metals	-	0.01 to 6.3 mg/L
Bicarbonate	-	4.0 mg/L
Carbonate	-	4.0 mg/L
TDS	-	5.0 mg/L
Anions	-	100 to 400 mg/L

Laboratory test methods:

Soils:

BTEX	-	EPA Method SW846-8021B
TPH	-	Modified EPA Method 8015DRO
SPLP TPH	-	EPA Method 1312/418.1
SPLP VOC	-	EPA Method 1312/8260
SPLP SVOC	-	EPA Method 1312/8270

Water:

BTEX	-	EPA Method SW846-8021B
Metals	-	EPA ICP Method 6010
PAH	-	EPA Method 8270
Bicarbonate	-	SM4500CO2D
Carbonate	-	SM4500CO2D
TDS	-	EPA Method 160.1
Anions	-	EPA Method 300.0
Total Mercury	-	EPA Method 7470

TABLE I

SUMMARY OF SOIL RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	TPH (mg/kg)
MW18-7	07/15/98	0 - 2	ND	ND	ND	ND	ND	7.0
MW18-7	07/15/98	6 - 8	ND	ND	ND	ND	ND	10.5
MW18-7	07/15/98	28 - 30	ND	0.10	ND	0.11	0.21	369
MW18-8	07/15/98	0 - 2	ND	ND	ND	ND	ND	9.6
MW18-8	07/15/98	8 - 10	ND	ND	ND	ND	ND	7.3
MW18-8	07/15/98	28 - 30	ND	ND	ND	ND	ND	15.6

TABLE II

SUMMARY OF SOIL RESULTS - SPLP
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

CONSTITUENT	CONCENTRATION (mg/l)
Naphthalene	0.012
Toluene	0.006
1,2,4-Trimethylbenzene	0.010
1,3,5-Trimethylbenzene	0.005
m,p-Xylenes	0.013
o-Xylene	0.006
SPLP TPH	0.8

NOTES:

1. Sample MW18-7 (28 to 30 feet) was obtained on 07/15/98 and analyzed for SPLP volatiles, semi-volatiles and TPH concentrations.
2. Those constituents not listed were ND.

TABLE III

SUMMARY OF GROUND WATER MONITORING
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE MEASURED	GROUND ELEVATION (feet)	DEPTH TO WATER (feet bgs)	GROUND WATER ELEVATION (feet)		DEPTH TO PSH (feet bgs)	PSH ELEVATION (feet)	PSH THICKNESS (feet)
				MEASURED	CORRECTED			
MW18-1	08/28/98	3,556.09	31.50	3524.59	3526.78	29.02	3527.07	2.48
	09/01/98	3,556.09	31.31	3524.78	3526.75	29.08	3527.01	2.23
MW18-2	08/18/98	3,557.29	30.50	3526.79	---	---	---	---
	09/01/98	3,557.29	30.57	3526.72	---	---	---	---
MW18-3	08/18/98	3,555.94	31.08	3524.86	3526.91	28.75	3527.19	2.33
	08/28/98	3,555.94	31.20	3524.74	3526.87	28.78	3527.16	2.42
	09/01/98	3,555.94	31.00	3524.94	3526.86	28.82	3527.12	2.18
MW18-4	08/18/98	3,555.35	28.42	3526.93	---	28.42	3526.93	sheen
	08/28/98	3,555.35	28.43	3526.92	---	28.43	3526.92	sheen
	09/01/98	3,555.35	28.46	3526.89	---	28.46	3526.89	sheen
MW18-5	08/18/98	3,557.62	30.95	3526.67	---	---	---	---
	09/01/98	3,557.62	31.06	3526.56	---	---	---	---
MW18-6	08/18/98	3,555.07	28.12	3526.95	---	---	---	---
	09/01/98	3,555.07	28.18	3526.89	---	---	---	---
MW18-7	08/18/98	3,556.61	29.59	3527.02	---	---	---	---
	09/01/98	3,556.61	29.64	3526.97	---	---	---	---
MW18-8	08/18/98	3,556.86	30.04	3526.82	---	---	---	---
	09/01/98	3,556.86	30.17	3526.69	---	---	---	---

TABLE IV

SUMMARY OF GROUND WATER RESULTS - BTEX
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYL-BENZENE (mg/l)	XYLENES (mg/l)	BTEX (mg/l)
MW18-2	08/18/98	ND	ND	0.006	0.008	0.014
MW18-5	08/18/98	ND	ND	ND	ND	ND
MW18-6	08/18/98	ND	ND	ND	ND	ND
MW18-7	08/18/98	ND	ND	0.001	0.005	0.006
MW18-8	08/18/98	ND	ND	ND	ND	ND

TABLE V

SUMMARY OF GROUND WATER RESULTS - METALS AND PAH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	MW18-7	MW18-8
DATE SAMPLED	08/18/98	08/18/98
PARAMETER	CONCENTRATION (mg/l)	
Barium	0.05	0.08
Boron	0.66	0.70
Calcium	1,140	1,490
Magnesium	531	562
Manganese	0.28	0.36
Potassium	20.3	24.8
Silicon	22.4	25.3
Sodium	2,610	2,810
Strontium	13.5	15.8

NOTE:
Those constituents not listed were ND.

TABLE VI

SUMMARY OF GROUND WATER RESULTS - MISCELLANEOUS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

MONITORING WELL NO.	DATE SAMPLED	BICARBONATE (mg/l)	CARBONATE (mg/l)	TDS (mg/l)	SULFATE (mg/l)	CHLORIDE (mg/l)
MW18-7	08/18/98	248	ND	19,200	1160	11,100
MW18-8	08/18/98	235	ND	19,900	1930	22,600

ANALYTICAL REPORT 1-82683

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: Monument Site #18

Project Id: 610057-2-18

August 17, 1998

HOUSTON - DALLAS - SAN ANTONIO

11381 Meadowglen Lane Suite L * Houston, Texas 77082-2647
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Houston - Dallas - San Antonio - Latin America

August 17, 1998

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

Reference: **XENCO Report No.: 1-82683**
Project Name: Monument Site #18
Project ID: 610057-2-18
Project Address: Monument, NM

Dear Theresa Nix:

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 1-82683. 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, completeness or properly flagged.

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. 1-82683 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 operates under the A2LA guidelines. Our Quality System meets ISO/IEC Guide 25 requirements which 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 L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site #18

Date Received in Lab : Jul 16, 1998 09:15
Date Report Faxed: Aug 17, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	182683 001	182683 002	182683 003	182683 004	182683 005	182683 006
	Field ID:	MW18-8	MW18-8	MW18-8	MW18-7	MW18-7	MW18-7
	Depth:	0'-2'	8'-10'	28'-30'	0'-2'	6'-8'	28'-30'
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	07/15/98 08:30	07/15/98 09:45	07/15/98 11:00	07/15/98 12:30	07/15/98 13:30	07/15/98 15:00
TPH-DRO (Diesel) EPA 8015 M	*Analyzed:*	07/28/98	07/28/98	07/28/98	07/28/98	07/28/98	07/28/98
	Units:	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.	mg/kg R.L.
Total Petroleum Hydrocarbons		9.6 (5.0)	7.3 (5.0)	15.6 (5.0)	7.0 (5.0)	10.5 (5.0)	369 (5.0)
BTEX EPA 8021B	*Analyzed:*	07/17/98	07/17/98	07/17/98	07/17/98	07/17/98	07/17/98
	Units:	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.	ppm R.L.
Benzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.10 (0.10)
Toluene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	0.10 (0.10)
Ethylbenzene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.10 (0.10)
m,p-Xylenes		< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.040 (0.040)	< 0.20 (0.20)
o-Xylene		< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	< 0.020 (0.020)	0.11 (0.10)
Total BTEX		N.D.	N.D.	N.D.	N.D.	N.D.	0.210
SPLP-Semivolatiles EPA1312/8270	*Analyzed:*						07/31/98
	Units:						mg/L R.L.
Acenaphthene							< 0.005 (0.005)
Acenaphthylene							< 0.005 (0.005)
Anthracene							< 0.005 (0.005)
Benzo(a)anthracene							< 0.005 (0.005)
Benzo(a)pyrene							< 0.005 (0.005)
Benzo(b)fluoranthene							< 0.005 (0.005)
Benzo(g,h,i)perylene							< 0.005 (0.005)
Benzo(k)fluoranthene							< 0.005 (0.005)
4-Bromophenyl-phenylether							< 0.005 (0.005)
Butyl benzyl phthalate							< 0.005 (0.005)
Carbazole							< 0.005 (0.005)
4-Chloro-3-methylphenol							< 0.005 (0.005)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Name: Monument Site #18
Date Received in Lab : Jul 16, 1998 09:15

Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998

Project Location: Monument, NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	182683 001	182683 002	182683 003	182683 004	182683 005	182683 006
	Field ID:	MW18-8	MW18-8	MW18-8	MW18-7	MW18-7	MW18-7
	Depth:	0'-2'	8'-10'	28'-30'	0'-2'	6'-8'	28'-30'
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	07/15/98 08:30	07/15/98 09:45	07/15/98 11:00	07/15/98 12:30	07/15/98 13:30	07/15/98 15:00
EPA1312/8270	*Analyzed:*						07/31/98
	Units:						mg/L R.L.
4-Chloroaniline							< 0.005 (0.005)
2-Chloronaphthalene							< 0.005 (0.005)
2-Chlorophenol							< 0.005 (0.005)
4-Chlorophenyl-phenyl ether							< 0.005 (0.005)
Chrysene							< 0.005 (0.005)
Di-n-butyl phthalate							< 0.005 (0.005)
Di-n-octyl phthalate							< 0.005 (0.005)
Dibenzo(a,h)anthracene							< 0.005 (0.005)
Dibenzofuran							< 0.005 (0.005)
1,2-Dichlorobenzene							< 0.005 (0.005)
1,3-Dichlorobenzene							< 0.005 (0.005)
1,4-Dichlorobenzene							< 0.005 (0.005)
3,3'-Dichlorobenzidine							< 0.005 (0.005)
2,4-Dichlorophenol							< 0.005 (0.005)
Diethyl phthalate							< 0.005 (0.005)
2,4-Dimethylphenol							< 0.005 (0.005)
Dimethyl phthalate							< 0.005 (0.005)
4,6-Dinitro-2-methylphenol							< 0.013 (0.013)
2,4-Dinitrophenol							< 0.013 (0.013)
2,4-Dinitrotoluene							< 0.005 (0.005)
2,6-Dinitrotoluene							< 0.005 (0.005)
Fluoranthene							< 0.005 (0.005)
Fluorene							< 0.005 (0.005)
Hexachlorobenzene							< 0.005 (0.005)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18 | *Project Name: Monument Site #18* | **Date Received in Lab :** Jul 16, 1998 09:15

Project Manager: Theresa Nix | **Date Report Faxed:** Aug 17, 1998

Project Location: Monument, NM | **XENCO contact :** Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:*	182683 001	182683 002	182683 003	182683 004	182683 005	182683 006
	Field ID:	MW18-8	MW18-8	MW18-8	MW18-7	MW18-7	MW18-7
	Depth:	0'-2'	8'-10'	28'-30'	0'-2'	6'-8'	28'-30'
	Matrix:	Solid	Solid	Solid	Solid	Solid	Solid
	Sampled:	07/15/98 08:30	07/15/98 09:45	07/15/98 11:00	07/15/98 12:30	07/15/98 13:30	07/15/98 15:00
EPA1312/8270	*Analyzed:*						07/31/98
	Units:						mg/L R.L.
Hexachlorobutadiene							< 0.005 (0.005)
Hexachlorocyclopentadiene							< 0.005 (0.005)
Hexachloroethane							< 0.005 (0.005)
Indeno(1,2,3-cd)pyrene							< 0.005 (0.005)
Isophorone							< 0.005 (0.005)
2-Methylnaphthalene							< 0.005 (0.005)
2-Methylphenol							< 0.005 (0.005)
4-Methylphenol							< 0.005 (0.005)
N-Nitroso-di-n-propylamine							< 0.005 (0.005)
N-Nitrosodiphenylamine							< 0.005 (0.005)
Naphthalene							< 0.005 (0.005)
2-Nitroaniline							< 0.013 (0.013)
3-Nitroaniline							< 0.013 (0.013)
4-Nitroaniline							< 0.013 (0.013)
Nitrobenzene							< 0.005 (0.005)
2-Nitrophenol							< 0.005 (0.005)
4-Nitrophenol							< 0.005 (0.005)
Pentachlorophenol							< 0.013 (0.013)
Phenanthrene							< 0.005 (0.005)
Phenol							< 0.005 (0.005)
Pyrene							< 0.005 (0.005)
1,2,4-Trichlorobenzene							< 0.005 (0.005)
2,4,5-Trichlorophenol							< 0.013 (0.013)
2,4,6-Trichlorophenol							< 0.005 (0.005)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Name: Monument Site #18
Date Received in Lab : Jul 16, 1998 09:15
Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998
Project Location: Monument, NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	Lab ID: / Field ID: / Depth: / Matrix: / Sampled:	182683 001 MW18-8 0'-2' Solid 07/15/98 08:30	182683 002 MW18-8 8'-10' Solid 07/15/98 09:45	182683 003 MW18-8 28'-30' Solid 07/15/98 11:00	182683 004 MW18-7 0'-2' Solid 07/15/98 12:30	182683 005 MW18-7 6'-8' Solid 07/15/98 13:30	182683 006 MW18-7 28'-30' Solid 07/15/98 15:00
EPA1312/8270	Analyzed: / Units:						07/31/98 mg/L R.L.
bis(2-Chloroethoxy) methane							< 0.005 (0.005)
bis(2-Chloroethyl) ether							< 0.005 (0.005)
bis(2-Chloroisopropyl) ether							< 0.005 (0.005)
bis(2-Ethylhexyl) phthalate							< 0.005 (0.005)
SPLP Volatiles EPA 8260	Analyzed: / Units:						08/04/98 mg/L R.L.
Benzene							< 0.005 (0.005)
Bromobenzene							< 0.005 (0.005)
Bromochloromethane							< 0.005 (0.005)
Bromodichloromethane							< 0.005 (0.005)
Bromoform							< 0.005 (0.005)
Bromomethane							< 0.005 (0.005)
Carbon Tetrachloride							< 0.005 (0.005)
Chlorobenzene							< 0.005 (0.005)
Chloroethane							< 0.010 (0.010)
Chloroform							< 0.005 (0.005)
Chloromethane							< 0.010 (0.010)
2-Chlorotoluene							< 0.005 (0.005)
4-Chlorotoluene							< 0.005 (0.005)
1,2-Dibromo-3-chloropropane							< 0.005 (0.005)
Dibromochloromethane							< 0.005 (0.005)
1,2-Dibromoethane							< 0.005 (0.005)
Dibromomethane							< 0.005 (0.005)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site #18

Date Received in Lab : Jul 16, 1998 09:15
Date Report Faxed: Aug 17, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	182683 001 MW18-8 0'-2' Solid 07/15/98 08:30	182683 002 MW18-8 8'-10' Solid 07/15/98 09:45	182683 003 MW18-8 28'-30' Solid 07/15/98 11:00	182683 004 MW18-7 0'-2' Solid 07/15/98 12:30	182683 005 MW18-7 6'-8' Solid 07/15/98 13:30	182683 006 MW18-7 28'-30' Solid 07/15/98 15:00
EPA 8260	*Analyzed:* / *Units:*						08/04/98 mg/L R.L.
1,2-Dichlorobenzene							< 0.005 (0.005)
1,3-Dichlorobenzene							< 0.005 (0.005)
1,4-Dichlorobenzene							< 0.005 (0.005)
Dichlorodifluoromethane							< 0.005 (0.005)
1,1-Dichloroethane							< 0.005 (0.005)
1,2-Dichloroethane							< 0.005 (0.005)
1,1-Dichloroethene							< 0.005 (0.005)
1,2-Dichloropropane							< 0.005 (0.005)
1,3-Dichloropropane							< 0.005 (0.005)
2,2-Dichloropropane							< 0.005 (0.005)
1,1-Dichloropropene							< 0.005 (0.005)
Ethylbenzene							< 0.005 (0.005)
Hexachlorobutadiene							< 0.005 (0.005)
Isopropylbenzene							< 0.005 (0.005)
MTBE							< 0.005 (0.005)
Methylene chloride							< 0.010 (0.010)
Naphthalene							< 0.020 (0.020)
Styrene							0.012 (0.005)
1,1,1,2-Tetrachloroethane							< 0.005 (0.005)
1,1,2,2-Tetrachloroethane							< 0.005 (0.005)
Tetrachloroethene							< 0.005 (0.005)
Toluene							< 0.005 (0.005)
1,2,3-Trichlorobenzene							0.006 (0.005)
1,2,4-Trichlorobenzene							< 0.005 (0.005)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-82683

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Name: Monument Site #18
Date Received in Lab : Jul 16, 1998 09:15
Project Manager: Theresa Nix
Date Report Faxed: Aug 17, 1998
Project Location: Monument, NM
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	Lab ID: / Field ID: / Depth: / Matrix: / Sampled:	182683 001 MW18-8 0'-2' Solid 07/15/98 08:30	182683 002 MW18-8 8'-10' Solid 07/15/98 09:45	182683 003 MW18-8 28'-30' Solid 07/15/98 11:00	182683 004 MW18-7 0'-2' Solid 07/15/98 12:30	182683 005 MW18-7 6'-8' Solid 07/15/98 13:30	182683 006 MW18-7 28'-30' Solid 07/15/98 15:00
EPA 8260	Analyzed: / Units:						08/04/98 mg/L R.L.
1,1,1-Trichloroethane							< 0.005 (0.005)
1,1,2-Trichloroethane							< 0.005 (0.005)
Trichloroethene							< 0.005 (0.005)
Trichlorofluoromethane							< 0.005 (0.005)
1,2,3-Trichloropropane							< 0.005 (0.005)
1,2,4-Trimethylbenzene							0.010 (0.005)
1,3,5-Trimethylbenzene							0.005 (0.005)
Vinyl chloride							< 0.005 (0.005)
cis-1,2-Dichloroethene							< 0.005 (0.005)
cis-1,3-Dichloropropene							< 0.005 (0.005)
m,p-Xylenes							0.013 (0.005)
n-Butylbenzene							< 0.005 (0.005)
n-Propylbenzene							< 0.005 (0.005)
o-Xylene							0.006 (0.005)
p-Isopropyltoluene							< 0.005 (0.005)
sec-Butylbenzene							< 0.005 (0.005)
tert-Butylbenzene							< 0.005 (0.005)
trans-1,2-Dichloroethene							< 0.005 (0.005)
trans-1,3-Dichloropropene							< 0.005 (0.005)
SPLP TPH 1312/418.1	Analyzed: / Units:						07/31/98 ppm R.L.
Total Petroleum Hydrocarbons							0.8 (0.7)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C32

SW- 846 5030/8020 BTEX

Date Validated: Jul 20, 1998 09:00
Date Analyzed: Jul 17, 1998 09:31

Analyst: HL
Matrix: Solid

Q.C. Sample ID 182691- 001	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Parameter	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Detection Limit	Matrix Limit Relative Difference	[F] QC Spike Relative Difference	[G] QC Matrix Spike Recovery	[H] QC M.S.D. Recovery	[I] Matrix Spike Recovery Range	[J] Qualifier
	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	
Benzene	0.040	2.240	2.220	2.000	0.020	25.0	0.9	110.0	109.0	65-135	
Toluene	0.026	1.880	1.854	2.000	0.020	25.0	1.4	92.7	91.4	65-135	
Ethylbenzene	< 0.020	1.910	1.880	2.000	0.020	25.0	1.6	95.5	94.0	65-135	
m,p-Xylenes	< 0.040	4.020	3.980	4.000	0.040	25.0	1.0	100.5	99.5	65-135	
o-Xylene	< 0.020	1.846	1.836	2.000	0.020	25.0	0.5	92.3	91.8	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(C-A)/[D]
N.D. = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C32

SW- 846 5030/8020 BTEX

Date Validated: Jul 20, 1998 09:00
Date Analyzed: Jul 17, 1998 08:43

Analyst: HL
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Detection Limit ppm	[E] QC LIMITS Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.1000	0.1000	0.0010	100.0	65-135	
Toluene	< 0.0010	0.0995	0.1000	0.0010	99.5	65-135	
Ethylbenzene	< 0.0010	0.0995	0.1000	0.0010	99.5	65-135	
m,p-Xylenes	< 0.0020	0.2070	0.2000	0.0020	103.5	65-135	
o-Xylene	< 0.0010	0.1020	0.1000	0.0010	102.0	65-135	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A34D34

EPA 1311/8270 TCLP Semi- volatiles

Date Validated: Aug 3, 1998 16:00
Date Analyzed: Jul 31, 1998 16:51

Analyst: LC
Matrix: Liquid

	BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY										
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Duplicate Result mg/L	[D] Blank Spike Amount mg/L	[E] Detection Limit mg/L	Blank Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Acenaphthene	< 0.0020	0.0710	0.0756	0.1000	0.0020	31.0	6.3	71.0	75.6	46-118	
4-Chloro-3-methylphenol	< 0.0006	0.0678	0.0592	0.1000	0.0006	42.0	13.5	67.8	59.2	23-97	
2-Chlorophenol	< 0.0040	0.0674	0.0592	0.1000	0.0040	40.0	13.0	67.4	59.2	27-123	
1,4-Dichlorobenzene	< 0.0040	0.0618	0.0622	0.1000	0.0040	28.0	0.6	61.8	62.2	36-97	
2,4-Dinitrotoluene	< 0.0008	0.0678	0.0692	0.1000	0.0008	38.0	2.0	67.8	69.2	24-96	
N-Nitroso-di-n-propylamine	< 0.0080	0.0672	0.0656	0.1000	0.0080	38.0	2.4	67.2	65.6	41-116	
4-Nitrophenol	< 0.0080	0.0364	0.0306	0.1000	0.0080	50.0	17.3	36.4	30.6	10-80	
Pentachlorophenol	< 0.0012	0.0686	0.0380	0.1000	0.0012	50.0	57.4	68.6	38.0	9-103	
Phenol	< 0.0040	0.0326	0.0286	0.1000	0.0040	42.0	13.1	32.6	28.6	12-89	
Pyrene	< 0.0040	0.0866	0.0888	0.1000	0.0040	31.0	2.5	86.6	88.8	26-127	
1,2,4-Trichlorobenzene	< 0.0040	0.0636	0.0642	0.1000	0.0040	28.0	0.9	63.6	64.2	39-98	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(C-A)/[D]
BDL = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A23D00

EPA1312/8260 SPLP Volatiles

Date Validated: Aug 17, 1998 13:00
Date Analyzed: Aug 4, 1998 20:08

Analyst: CE
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 182683- 006 / Parameter	[A] Sample Result mg/L	[B] Matrix Spike Result mg/L	[C] Matrix Spike Duplicate Result mg/L	[D] Matrix Spike Amount mg/L	[E] Detection Limit mg/L	Matrix Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.0010	0.0590	0.0545	0.0500	0.0010	20.0	7.9	118.0	109.0	66-142	
Chlorobenzene	< 0.0010	0.0524	0.0529	0.0500	0.0010	20.0	0.9	104.8	105.8	60-133	
1,1-Dichloroethene	< 0.0040	0.0612	0.0585	0.0500	0.0040	25.0	4.5	122.4	117.0	59-172	
Toluene	0.0060	0.0584	0.0589	0.0500	0.0010	20.0	0.9	104.8	105.8	59-139	
Trichloroethene	< 0.0030	0.0563	0.0537	0.0500	0.0030	20.0	4.7	112.6	107.4	62-137	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(C-A)/[D]
N.D. = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A23D00

EPA1312/8260 SPLP Volatiles

Date Validated: Aug 17, 1998 13:00
Date Analyzed: Aug 4, 1998 18:52

Analyst: CE
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Detection Limit mg/L	[E] QC LIMITS Blank Spike Recovery %	[F] QC LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0573	0.0500	0.0010	114.6	66-142	
Chlorobenzene	< 0.0010	0.0542	0.0500	0.0010	108.4	60-133	
1,1-Dichloroethene	< 0.0040	0.0614	0.0500	0.0040	122.8	59-172	
Toluene	< 0.0010	0.0575	0.0500	0.0010	115.0	59-139	
Trichloroethene	< 0.0030	0.0538	0.0500	0.0030	107.6	62-137	

Blank Spike Recovery [E] = 100*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A07D44

EPA 1312/418.1 SPLP TPH

Date Validated: Jul 31, 1998 16:45
Date Analyzed: Jul 31, 1998 14:35

Analyst: EZ
Matrix: Solid

	BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY										
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Duplicate Result ppm	[D] Blank Spike Amount ppm	[E] Detection Limit ppm	Blank Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Total Petroleum Hydrocarbons	< 0.50	4.23	4.27	4.01	0.50	20.0	0.9	105.5	106.5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(C-A)/[D]
N.D. = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-2-18
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site #18

XENCO COC#: 1-82683
Date Received in Lab: Jul 16, 1998 09:15 by CC
XENCO **contact :** Carlos Castro/Eddie Clemons

							Date and Time			
	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1	MW18-8 (0-2')	182683-001	BTEX	SW-846	ppm	10 days	Jul 15, 1998 08:30		Jul 17, 1998 by HL	Jul 17, 1998 13:44 by HL
2			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 08:30		Jul 27, 1998 by OG	Jul 28, 1998 00:34 by AM
3	MW18-8 (8-10')	182683-002	BTEX	SW-846	ppm	10 days	Jul 15, 1998 09:45		Jul 17, 1998 by HL	Jul 17, 1998 14:00 by HL
4			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 09:45		Jul 27, 1998 by OG	Jul 28, 1998 01:07 by AM
5	MW18-8 (28-30')	182683-003	BTEX	SW-846	ppm	10 days	Jul 15, 1998 11:00		Jul 17, 1998 by HL	Jul 17, 1998 14:16 by HL
6			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 11:00		Jul 27, 1998 by OG	Jul 28, 1998 01:40 by AM
7	MW18-7(0-2')	182683-004	BTEX	SW-846	ppm	10 days	Jul 15, 1998 12:30		Jul 17, 1998 by HL	Jul 17, 1998 14:32 by HL
8			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 12:30		Jul 27, 1998 by OG	Jul 28, 1998 02:13 by AM
9	MW18-7 (6-8')	182683-005	BTEX	SW-846	ppm	10 days	Jul 15, 1998 13:30		Jul 17, 1998 by HL	Jul 17, 1998 14:48 by HL
10			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 13:30		Jul 25, 1998 by OG	Jul 28, 1998 02:45 by AM
11	MW18-7 (28-30')	182683-006	BTEX	SW-846	ppm	10 days	Jul 15, 1998 15:00		Jul 17, 1998 by HL	Jul 17, 1998 15:04 by HL
12			TPH8015M-D	SW-846 8015 M	mg/kg	10 days	Jul 15, 1998 15:00		Jul 27, 1998 by OG	Jul 28, 1998 03:18 by AM
13			SPLP TPH	EPA	ppm	10 days	Jul 15, 1998 15:00	Jul29,1998 15:45	Jul 31, 1998 by EZ	Jul 31, 1998 15:40 by EZ
14			VOA (8260)	EPA1312/8260	mg/kg	10 days	Jul 15, 1998 15:00	Jul29,1998 15:45	Aug 4, 1998 by CE	Aug 4, 1998 20:08 by CE
15			SPLP-SV(TCL)	SW846-1312/82	ug/L	10 days	Jul 15, 1998 15:00	Jul29,1998 15:45	Jul 31, 1998 by SS	Jul 31, 1998 20:45 by LC

XENCO Laboratories
11381 Meadowglen Suite L Houston, Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Lab Batch # 182683-SA

Contractor: KEI Consultants | Phone: (210) 680-3767
Address: 5309 Wurzbach Rd, Ste #100, San Antonio, TX 78238
Project Name: Monument Site # 18 | Project Director: Teresa Nix
Project Location: Monument, NM | Project Manager: Teresa Nix
Sampler Signature: [signature] | Project No.: 610057-2-18

No. coolers this shipment: | Contractor COC #: 160
Carrier: | Quote #:
Airbill No. | P.O. No.:

SAMPLE CHARACTERIZATION

	Field ID	Date	Time	Depth	Soil	Water	Comp	Grab	Container Size	Container Type P, G	Preservative Ice	Preservative Other	No of Containers Total	BTEX (5030/8020-602)	TPH (418.1)	BTEX (SW846-8020)	TPH (8015 mod - DRO)	TPH (1312/418.1)	VOCs (SW846-1312/8260)	SVOAs (SW846-1312/8270)	Please Hold	LAB ONLY ID #
1	MW18-8 (0'-2')	7/15/98	08:30	(0'-2')	X		X		9oz.	G	X		2			X	X	(Run on the highest TPH)				1
2	MW18-8 (8'-10')		09:45	(8'-10')	X		X		9oz.	G	X		2			X	X	(Run on the highest TPH)				2
3	MW18-8 (28'-30')		11:00	(28'-30')	X		X		9oz.	G	X		2			X	X	(Run on the highest TPH)				3
4	MW18-7 (0'-2')		12:30	(0'-2')	X		X		9oz.	G	X		2			X	X					4
5	MW18-7 (6'-8')		13:30	(6'-8')	X		X		9oz.	G	X		2			X	X					5
6	MW18-7 (28'-30')		15:00	(28'-30')	X		X		9oz.	G	X		2			X	X					6
7																						7
8																						8
9																						9
10																						10

Preservative: Ice, Other
Unl Dies Ker Unknown
Waste Oil
PIT No.: Tank No.:
Sample Description

Turn-around: ASAP; 24 hrs; 48 hrs; Standard (10 days)

Remarks: Run 50 % to not exceed holding time.

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
[signature]	7/15/98	16:00			
			Received For Laboratory by: [signature]	7/16/98	09:15

Remarks: Fax results to Teresa Nix at (512) 364-3556. (Via UPS)

N235 4125 76 9

Contractor), Yellow & White (Lab)

* Pre-scheduling is recommended

Precision Analytical Services

DELIVERY 1

ANALYTICAL REPORT 1-83193

for

K.E.I. Consultants, Inc.

Project Manager: Theresa Nix

Project Name: Monument Site 18

Project Id: 610057-6-18-0

September 4, 1998

HOUSTON - DALLAS - SAN ANTONIO

11381 Meadowglen Lane Suite L * Houston, Texas 77082-2647
Phone (281) 589-0692 Fax (281) 589-0695

XENCO Laboratories

11381 Meadowglen Suite L
Houston, Texas 77082-2647
(281) 589-0692 Fax: (281) 589-0695
Houston - Dallas - San Antonio - Latin America

September 4, 1998

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

Reference: **XENCO Report No.: 1-83193**
Project Name: Monument Site 18
Project ID: 610057-6-18-0
Project Address: Monument, NM

Dear Theresa Nix:

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 1-83193. 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, completeness or properly flagged.

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. 1-83193 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 operates under the A2LA guidelines. Our Quality System meets ISO/IEC Guide 25 requirements which 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 L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83193

K.E.I. Consultants, Inc.

Project ID: 610057-6-18-0
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site 18

Date Received in Lab : Aug 19, 1998 09:35
Date Report Faxed: Sep 4, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* *Field ID:* *Depth:* *Matrix:* *Sampled:*	183193 001 MW-2 Liquid 08/18/98 11:20	183193 002 MW-5 Liquid 08/18/98 10:30	183193 003 MW-6 Liquid 08/18/98 11:35	183193 004 MW-7 Liquid 08/18/98 11:05		183193 005 MW-8 Liquid 08/18/98 10:46		
Metals by ICP **EPA 6010**	*Analyzed:* *Units:*				08/24/98 mg/L	R.L.	08/24/98 mg/L	R.L.	
Aluminum					< 0.20	(0.20)	< 0.20	(0.20)	
Arsenic					< 0.10	(0.10)	< 0.10	(0.10)	
Barium					0.05	(0.02)	0.08	(0.02)	
Beryllium					< 0.01	(0.01)	< 0.01	(0.01)	
Boron					0.66	(0.20)	0.70	(0.20)	
Cadmium					< 0.01	(0.01)	< 0.01	(0.01)	
Calcium					1140	(25.0)	1490	(25.0)	
Chromium					< 0.05	(0.05)	< 0.05	(0.05)	
Cobalt					< 0.05	(0.05)	< 0.05	(0.05)	
Copper					< 0.10	(0.10)	< 0.10	(0.10)	
Iron					< 0.10	(0.10)	< 0.10	(0.10)	
Lead					< 0.05	(0.05)	< 0.05	(0.05)	
Magnesium					531	(6.3)	562	(6.3)	
Manganese					0.28	(0.10)	0.36	(0.10)	
Molybdenum					< 0.20	(0.20)	< 0.20	(0.20)	
Nickel					< 0.10	(0.10)	< 0.10	(0.10)	
Potassium					20.3	(2.5)	24.8	(2.5)	
Selenium					< 0.05	(0.05)	< 0.05	(0.05)	
Silicon					22.4	(0.5)	25.3	(0.5)	
Silver					< 0.05	(0.05)	< 0.05	(0.05)	
Sodium					2610	(2.500)	2810	(2.500)	
Strontium					13.5	(0.1)	15.8	(0.1)	
Tin					< 0.10	(0.10)	< 0.10	(0.10)	
Vanadium					< 0.05	(0.05)	< 0.05	(0.05)	

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83193

K.E.I. Consultants, Inc.

Project ID: 610057-6-18-0
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site 18

Date Received in Lab : Aug 19, 1998 09:35
Date Report Faxed: Sep 4, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* / *Field ID:* / *Depth:* / *Matrix:* / *Sampled:*	183193 001 MW-2 Liquid 08/18/98 11:20	183193 002 MW-5 Liquid 08/18/98 10:30	183193 003 MW-6 Liquid 08/18/98 11:35	183193 004 MW-7 Liquid 08/18/98 11:05	183193 005 MW-8 Liquid 08/18/98 10:46
Metals by ICP **EPA 6010**	*Analyzed:* / *Units:*				08/24/98 mg/L R.L.	08/24/98 mg/L R.L.
Zinc					< 0.10 (0.10)	< 0.10 (0.10)
Total Mercury **EPA 7470**	*Analyzed:* / *Units:*				08/27/98 mg/L R.L.	08/27/98 mg/L R.L.
Mercury					< 0.0011 (0.0011)	< 0.0011 (0.0011)
BTEX **EPA 8021B**	*Analyzed:* / *Units:*	08/19/98 ppm R.L.	08/19/98 ppm R.L.	08/19/98 ppm R.L.	08/19/98 ppm R.L.	08/19/98 ppm R.L.
Benzene		< 0.004 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)
Toluene		< 0.004 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)	< 0.001 (0.001)	< 0.001 (0.001)
Ethylbenzene		0.006 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)	0.001 (0.001)	< 0.001 (0.001)
m,p-Xylenes		0.008 (0.008)	< 0.002 (0.002)	< 0.008 (0.008)	0.003 (0.002)	< 0.002 (0.002)
o-Xylene		< 0.004 (0.004)	< 0.001 (0.001)	< 0.004 (0.004)	0.002 (0.001)	< 0.001 (0.001)
Total BTEX		0.014	N.D.	N.D.	0.006	N.D.
PAHs by GC-MS (610 List) **EPA 8270**	*Analyzed:* / *Units:*				08/27/98 mg/L R.L.	08/27/98 mg/L R.L.
Acenaphthene					< 0.002 (0.002)	< 0.002 (0.002)
Acenaphthylene					< 0.002 (0.002)	< 0.002 (0.002)
Anthracene					< 0.002 (0.002)	< 0.002 (0.002)
Benz(a)anthracene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(a)pyrene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(b)fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(g,h,i)perylene					< 0.002 (0.002)	< 0.002 (0.002)
Benzo(k)fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-83193

K.E.I. Consultants, Inc.

Project ID: 610057-6-18-0
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site 18

Date Received in Lab : Aug 19, 1998 09:35
Date Report Faxed: Sep 4, 1998
XENCO contact : Carlos Castro/Eddie Clemons

Analysis Requested	*Lab ID:* *Field ID:* *Depth:* *Matrix:* *Sampled:*	183193 001 MW-2 Liquid 08/18/98 11:20	183193 002 MW-5 Liquid 08/18/98 10:30	183193 003 MW-6 Liquid 08/18/98 11:35	183193 004 MW-7 Liquid 08/18/98 11:05	183193 005 MW-8 Liquid 08/18/98 10:46	
PAHs by GC-MS (610 List) **EPA 8270**	*Analyzed:* *Units:*				08/27/98 mg/L R.L.	08/27/98 mg/L R.L.	
Chrysene					< 0.002 (0.002)	< 0.002 (0.002)	
Dibenz(a,h)anthracene					< 0.002 (0.002)	< 0.002 (0.002)	
Fluoranthene					< 0.002 (0.002)	< 0.002 (0.002)	
Fluorene					< 0.002 (0.002)	< 0.002 (0.002)	
Indeno(1,2,3-cd)pyrene					< 0.002 (0.002)	< 0.002 (0.002)	
Naphthalene					< 0.002 (0.002)	< 0.002 (0.002)	
Phenanthrene					< 0.002 (0.002)	< 0.002 (0.002)	
Pyrene					< 0.002 (0.002)	< 0.002 (0.002)	
Bicarbonate **SM 4500CO2D**	*Analyzed:* *Units:*				08/25/98 mg/L R.L.	08/25/98 mg/L R.L.	
Bicarbonate					248 (4.0)	235 (4.0)	
Carbonate **SM4500CO2D**	*Analyzed:* *Units:*				08/25/98 mg/L R.L.	08/25/98 mg/L R.L.	
Carbonate					< 4.0 (4.0)	< 4.0 (4.0)	
Total Dissolved Solids **EPA 160.1**	*Analyzed:* *Units:*				08/24/98 mg/L R.L.	08/24/98 mg/L R.L.	
Total Dissolved Solids					19200 (5.0)	19900 (5.0)	
Anions by Ion Chromatography **EPA 300.0**	*Analyzed:* *Units:*				08/27/98 mg/L R.L.	08/27/98 mg/L R.L.	
Chloride					11100 (100)	22600 (400)	
Sulfate					1160 (100)	1930 (400)	

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A18G52

EPA 6010 Metals by ICP

Date Validated: Sep 2, 1998 13:36
Date Analyzed: Aug 24, 1998 15:29

Analyst: CG
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Detection Limit mg/L	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Aluminum	< 0.05	0.54	0.50	0.05	108.0	70-125	
Arsenic	< 0.050	0.511	0.500	0.050	102.2	70-125	
Barium	< 0.005	0.258	0.250	0.005	103.2	70-125	
Beryllium	< 0.005	0.103	0.100	0.005	103.0	70-125	
Cadmium	< 0.010	0.111	0.100	0.010	111.0	70-125	
Calcium	< 0.13	1.06	1.00	0.13	106.0	70-125	
Chromium	< 0.025	0.253	0.250	0.025	101.2	70-125	
Cobalt	< 0.005	0.259	0.250	0.005	103.6	70-125	
Copper	< 0.008	0.266	0.250	0.008	106.4	70-125	
Iron	< 0.025	0.540	0.500	0.025	108.0	70-125	
Lead	< 0.025	0.508	0.500	0.025	101.6	70-125	
Magnesium	< 0.125	1.084	1.000	0.125	108.4	70-125	
Manganese	< 0.006	0.561	0.500	0.006	112.2	70-125	
Nickel	< 0.025	0.270	0.250	0.025	108.0	70-125	
Potassium	< 0.125	1.015	1.000	0.125	101.5	70-125	
Selenium	< 0.050	0.486	0.500	0.050	97.2	70-125	
Silicon	< 0.050	0.557	0.500	0.050	111.4	70-125	
Silver	< 0.010	0.263	0.250	0.010	105.2	70-125	
Sodium	< 0.250	3.144	4.000	0.250	78.6	70-125	
Strontium	< 0.025	0.539	0.500	0.025	107.8	70-125	
Vanadium	< 0.008	0.248	0.250	0.008	99.2	70-125	
Zinc	< 0.008	0.259	0.250	0.008	103.6	70-125	

Blank Spike Recovery [E] = 100*(B-A)/(C)
N.C. = Not calculated. data below detection limit
B.D. = Below detection limit
All results are based on MDL and validated for QC purposes only

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A18G52

EPA 6010 Metals by ICP

Date Validated: Sep 2, 1998 13:36
Date Analyzed: Aug 24, 1998 15:56

Analyst: CG
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183193- 004	[A] Sample Result	[B] Duplicate Result	[C] Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Qualifier
Parameter	mg/L	mg/L	mg/L	%	%	
Aluminum	< 0.050	< 0.050	0.050	N.C	25.0	
Arsenic	< 0.050	< 0.050	0.050	N.C	25.0	
Barium	0.052	0.059	0.005	12.6	25.0	
Beryllium	< 0.005	< 0.005	0.005	N.C	25.0	
Boron	0.665	0.682	0.025	2.5	25.0	
Cadmium	< 0.010	< 0.010	0.010	N.C	25.0	
Calcium	1140	1170	0.13	2.6	25.0	
Chromium	< 0.025	< 0.025	0.025	N.C	25.0	
Cobalt	< 0.005	< 0.005	0.005	N.C	25.0	
Copper	< 0.008	< 0.008	0.008	N.C	25.0	
Iron	0.025	< 0.025	0.025	N.C	25.0	
Lead	< 0.025	< 0.025	0.025	N.C	25.0	
Magnesium	531	519	0.13	2.3	25.0	
Manganese	0.275	0.288	0.006	4.6	25.0	
Molybdenum	< 0.025	< 0.025	0.025	N.C	25.0	
Nickel	< 0.025	< 0.025	0.025	N.C	25.0	
Potassium	20.31	20.54	0.13	1.1	25.0	
Selenium	< 0.050	< 0.050	0.050	N.C	25.0	
Silicon	22.40	25.22	0.05	11.8	25.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A18G52

EPA 6010 Metals by ICP

Date Validated: Sep 2, 1998 13:36
Date Analyzed: Aug 24, 1998 15:56

Analyst: CG
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183193- 004	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC LIMITS	[E]	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Silver	< 0.010	< 0.010	0.010	N.C	25.0	
Sodium	2610	2560	0.2500	1.9	25.0	
Strontium	13.45	13.97	0.03	3.8	25.0	
Tin	< 0.025	< 0.025	0.025	N.C	25.0	
Vanadium	0.014	0.016	0.008	13.3	25.0	
Zinc	<0.100	<0.100	0.100	N.C	25.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch :: 18A05D12

SW846- 7470 Total Mercury

Date Validated: Aug 28, 1998 00:11
Date Analyzed: Aug 27, 1998 18:02

Analyst: CG
Matrix: Liquid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Amount mg/L	[D] Detection Limit mg/L	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Mercury	< 0.0011	0.0026	0.0028	0.0011	92.9	70-120	

Blank Spike Recovery [E] = 100*(B-A)/(C)
N.C. = Not calculated, data below detection limit
[illegible]. = Below detection limit
All results are based on MDL and validated for QC purposes only

Eddie L. Clemens, II
Lab/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A05D12

SW846- 7470 Total Mercury

Date Validated: Aug 28, 1998 00:11
Date Analyzed: Aug 27, 1998 18:10

Analyst: CG
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					MATRIX SPIKE ANALYSIS				
Q.C. Sample ID 183193- 004	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F] Matrix Spike Result	[G] Matrix Spike Amount	[H] QC	[I] LIMITS	[G]
Parameter			Detection Limit	Relative Difference	Relative Difference			Matrix Spike Recovery	Recovery Range	Qualifier
	mg/L	mg/L	mg/L	%	%	mg/L	mg/L	%	%	
Mercury	< 0.0011	< 0.0011	0.0011	N.C	25.0	0.0030	0.0028	107.1	70-120	

Relative Difference [D] = 200*(B-A)/(B+A)
Matrix Spike Recovery [H] = 100*(F-A)/[G]
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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A25C84

SW- 846 5030/8021B BTEX

Date Validated: Aug 20, 1998 11:45
Date Analyzed: Aug 19, 1998 15:29

Analyst: HL
Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Duplicate Result ppm	[D] Blank Spike Amount ppm	[E] Detection Limit ppm	Blank Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Benzene	< 0.0010	0.0974	0.0940	0.1000	0.0010	20.0	3.6	97.4	94.0	65-135	
Toluene	< 0.0010	0.0856	0.0998	0.1000	0.0010	20.0	15.3	85.6	99.8	65-135	
Ethylbenzene	< 0.0010	0.0914	0.1090	0.1000	0.0010	20.0	17.6	91.4	109.0	65-135	
m,p-Xylenes	< 0.0020	0.1830	0.2140	0.2000	0.0020	20.0	15.6	91.5	107.0	65-135	
o-Xylene	< 0.0010	0.0863	0.1010	0.1000	0.0010	20.0	15.7	86.3	101.0	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(C-A)/[D]
N.D. = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A20B50

SM4500CO2D Carbonate

Date Validated: Aug 26, 1998 09:55
Date Analyzed: Aug 25, 1998 14:20

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183193- 004	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Carbonate	< 4.00	< 4.00	4.00	N.C	25.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A20B49

SM 4500CO2D Bicarbonate

Date Validated: Aug 26, 1998 09:55
Date Analyzed: Aug 25, 1998 14:20

Analyst: IF
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183193- 004	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Bicarbonate	248	252	4.00	1.6	25.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A10C00

EPA 300.0 Anions by Ion Chromatography

Date Validated: Aug 28, 1998 08:31
Date Analyzed: Aug 26, 1998 22:51

Analyst: OR
Matrix: Liquid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A] Blank Result mg/L	[B] Blank Spike Result mg/L	[C] Blank Spike Duplicate Result mg/L	[D] Blank Spike Amount mg/L	[E] Detection Limit mg/L	Blank Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Chloride	< 0.20	5.36	5.23	5.00	0.20	20.0	2.5	107.2	104.6	70-125	
Nitrate	< 0.20	4.16	4.17	5.00	0.20	20.0	0.2	83.2	83.4	70-125	
Sulfate	< 0.20	4.62	4.43	5.00	0.20	20.0	4.2	92.4	88.6	70-125	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(C-A)/[D]
N.D. = Below detection limit or not detected
All results are based on MDL and validated for QC purposes

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A10C00

EPA 300.0 Anions by Ion Chromatography

Date Validated: Aug 28, 1998 08:31
Date Analyzed: Aug 27, 1998 03:11

Analyst: OR
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183237- 002	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Nitrate	58.3	58.1	2.0	0.3	20.0	
Sulfate	196	195	2.0	0.5	20.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

Certificate Of Quality Control for Batch : 18A19C50

EPA 160.1 Total Dissolved Solids

Date Validated: Aug 24, 1998 10:13
Date Analyzed: Aug 24, 1998 08:25

Analyst: EZ
Matrix: Liquid

	MATRIX DUPLICATE ANALYSIS					
Q.C. Sample ID 183175- 003	[A] Sample Result	[B] Duplicate Result	[C]	[D] QC	[E] LIMITS	[F]
Parameter			Detection Limit	Relative Difference	Relative Difference	Qualifier
	mg/L	mg/L	mg/L	%	%	
Total Dissolved Solids	332	326	5.00	1.8	25.0	

Relative Difference [D] = 200*(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

Eddie L. Clemons, II
QA/QC Manager

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-6-18-0
Project Manager: Theresa Nix
Project Location: Monument, NM

Project Name: Monument Site 18

XENCO COC#: **1-83193**
Date Received in Lab: Aug 19, 1998 09:35 by JO
XENCO contact : Carlos Castro/Eddie Clemons

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time			
							Sample Collected	Addition Requested	Extraction	Analysis
1	MW-2	183193-001	BTEX	SW-846	ppm	10 days	Aug 18, 1998 11:20		Aug 19, 1998 by HL	Aug 19, 1998 20:01 by HL
2	MW-5	183193-002	BTEX	SW-846	ppm	10 days	Aug 18, 1998 10:30		Aug 19, 1998 by HL	Aug 19, 1998 21:09 by HL
3	MW-6	183193-003	BTEX	SW-846	ppm	10 days	Aug 18, 1998 11:35		Aug 19, 1998 by HL	Aug 19, 1998 20:17 by HL
4	MW-7	183193-004	BTEX	SW-846	ppm	10 days	Aug 18, 1998 11:05		Aug 19, 1998 by HL	Aug 19, 1998 19:29 by HL
5			PAHs	SW846-8270	mg/L	10 days	Aug 18, 1998 11:05		Aug 21, 1998 by SS	Aug 27, 1998 20:40 by LC
6			Anions	EPA 300.0	mg/L	10 days	Aug 18, 1998 11:05		Aug 27, 1998 by OR	Aug 27, 1998 00:41 by OR
7			TDS	EPA 160.1	mg/L	10 days	Aug 18, 1998 11:05		Aug 21, 1998 by EZ	Aug 24, 1998 08:35 by EZ
8			Metals (ICP)	EPA 6010	mg/L	10 days	Aug 18, 1998 11:05		Aug 24, 1998 by AO	Aug 24, 1998 15:47 by CG
9			Mercury, Tot	SW846-7470	mg/L	10 days	Aug 18, 1998 11:05		Aug 24, 1998 by AO	Aug 27, 1998 18:10 by CG
10			Carbonate	SM4500CO2D	mg/L	10 days	Aug 18, 1998 11:05		Aug 25, 1998 by IF	Aug 25, 1998 14:10 by IF
11			Bicarbonate	SM 4500CO2D	mg/L	10 days	Aug 18, 1998 11:05		Aug 25, 1998 by IF	Aug 25, 1998 14:10 by IF
12	MW-8	183193-005	BTEX	SW-846	ppm	10 days	Aug 18, 1998 10:46		Aug 19, 1998 by HL	Aug 19, 1998 19:45 by HL
13			PAHs	SW846-8270	mg/L	10 days	Aug 18, 1998 10:46		Aug 21, 1998 by SS	Aug 27, 1998 21:27 by LC
14			Metals (ICP)	EPA 6010	mg/L	10 days	Aug 18, 1998 10:46		Aug 24, 1998 by AO	Aug 24, 1998 16:14 by CG
15			Anions	EPA 300.0	mg/L	10 days	Aug 18, 1998 10:46		Aug 27, 1998 by OR	Aug 27, 1998 00:49 by OR
16			TDS	EPA 160.1	mg/L	10 days	Aug 18, 1998 10:46		Aug 21, 1998 by EZ	Aug 24, 1998 08:40 by EZ
17			Mercury, Tot	SW846-7470	mg/L	10 days	Aug 18, 1998 10:46		Aug 24, 1998 by AO	Aug 27, 1998 18:17 by CG
18			Carbonate	SM4500CO2D	mg/L	10 days	Aug 18, 1998 10:46		Aug 25, 1998 by IF	Aug 25, 1998 14:30 by IF
19			Bicarbonate	SM 4500CO2D	mg/L	10 days	Aug 18, 1998 10:46		Aug 25, 1998 by IF	Aug 25, 1998 14:30 by IF

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☒ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Road, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at XENCO.com

Company COC No: 172 **Work Order No:** 10304

Page 1 of 1

Company	KEI CONSULTANTS
Phone	(210) 680-3767
Project Name	☒ Previously done at XENCO — MONUMENT SITE 18
Project ID	610057-6-18-Ø
Location	MONUMENT NM
Project Manager (PM)	T. NIX
Project Director (PD)	M. HAWTHORNE
Fax Results to	☒ PM and / or
Fax	(512) 364-3556
Invoice to	☐ Accounting ☐ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:
Quote No.	**P.O No** 610057-6-18 Call for a P.O.
Special DLs	(RR I RR II DW QAPP See Lab PM Call Proj. PM)
Specifications	
Sampler Name	Ken Dutton
Signature	Ken Dutton

Lab Only: 183193 – SA

Lab Only Additions

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives
1	MW-2							2	✓	GC	C4 H
2	MW-5							2	✓	GC	C4 H
3	MW-6							2	✓	GC	C4 H
4	MW-7							7	V3(1)	GC P GA	C4,H N
5	MW-8							7	V3(1)	GC P GA	C4,H N
6											
7											
8											
9											
10											

BTEX by 8020	8021	8260	602	624	Other
BTEX-MTBE by 8020	8021	8260	602	624	Other
TPH by TX1005	418.1	8015GRO	8015DRO	8015JetF	
PAHs by 8270	8100	8310			
METALS by 6010	8RCRA	Tot Pb	TCLP8	13PP	23TAL See List
VOAs by 8260	624	BTEX MTBE	PPs TCL	See List	Call PM
SVOAs by 8270	625	PAHs	BN&A	TCL PPs	See List Call PM

CATIONS – 6010
ANIONS – 300.0
TDS – 160.1

TAT 5h 12h 20h 24h 48h 3d 5d 7d (10d) 14d 21d
Addn: PAH above mg/L W. mg/Kg S Highest Hit
Hold Analysis

Remarks

CALL T. NIX @ (210) 680-3767 FOR QUESTIONS

Rcv by: Date From:
Rcv by: Date From:
Rcv by: Date From:

N235 4304 27 1

EXPORT 2

Relinquished by (Initials and Signature)	Relinquished to (Initials and Signature)	Date & Time
1 KMD Ken Dutton		18 Aug 98 / 1445
2		
3	Lab: Johnny Orona	8/19/98 9:35

Total Containers per COC: 20

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO4 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

QA/QC PROCEDURES

DECONTAMINATION OF EQUIPMENT

Cleaning of drilling equipment was the responsibility of the drilling company. In general, the cleaning procedures consisted of using high pressure steam to wash the drilling and sampling equipment prior to drilling and prior to starting each hole. Prior to use, the sampling equipment was cleaned with Liqui-Nox detergent and rinsed with distilled water.

SOIL SAMPLING

Samples of the subsurface soils were obtained through the collection of auger cuttings at discrete intervals during drilling utilizing an air rotary rig. Representative soil samples were divided into 2 separate portions using clean, disposable gloves and clean sampling tools. One portion of the soil sample was placed in a disposable sample bag. The bag was labeled and sealed for head-space analysis using a photoionization detector (PID) calibrated to a 100 ppm isobutylene standard. Each sample was allowed to volatilize for approximately 30 minutes at ambient temperature prior to conducting the analysis.

The other portion of the soil sample was placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container was filled to capacity to limit the amount of head-space present. Each container was labeled and placed on ice in an insulated cooler. Upon selection of samples for analysis, the cooler was sealed for shipment to the laboratory. Proper chain-of-custody documentation was maintained throughout the sampling process.

Soil samples were express mailed to Xenco Laboratories of San Antonio, Texas for BTEX, TPH-DRO, SPLP TPH, SPLP VOC, and SPLP SVOC analysis. Soil samples were analyzed for BTEX and TPH concentrations within 14 days following the collection date.

The soil samples were analyzed in accordance with the following methods:

- BTEX concentrations by EPA Method SW846-8021B
- TPH concentrations by modified EPA Method 8015DRO
- SPLP TPH concentrations in accordance with EPA Method SW846-1312/418.1
- SPLP VOC concentrations in accordance with EPA Method SW846-1312/8260
- SPLP SVOC concentration in accordance with EPA Method SW846-1312/8270

GROUND WATER SAMPLING

Monitoring wells were developed and purged with a clean PVC sampler. The sampler was cleaned prior to each use with Liqui-Nox detergent and rinsed with distilled water. Monitoring wells with sufficient recharge were purged by removing a minimum of 3 well volumes. Monitoring wells that did not recharge sufficiently were purged until no additional ground water could be obtained.

After purging the wells, ground water samples were collected with a disposable Teflon sampler and polyethylene line by personnel wearing clean, disposable gloves. Ground water sample containers were filled in the order of decreasing volatilization sensitivity (i.e., BTEX containers were filled first and PAH containers second).

Ground water samples collected for BTEX analysis were placed in 40 ml glass VOA vials equipped with Teflon-lined caps. The containers provided were pre-preserved with HCl by

the analytical laboratory. The vials were filled to a positive meniscus, sealed, and visually checked to ensure the absence of air bubbles.

Ground water samples collected for PAH, cations and anions, TDS and metals analysis were filled to capacity in sterile, 1 liter glass containers equipped with Teflon-lined caps. Ground water samples collected for metals analysis were filled to capacity in sterile, 1 liter plastic containers equipped with Teflon-lined caps. The containers were provided by the analytical laboratory.

The filled containers were labeled and placed on ice in an insulated cooler. The cooler was sealed for transportation to the analytical laboratory. Proper chain-of-custody documentation was maintained throughout the sampling process.

The ground water samples were analyzed in accordance with the methods as follows:

- BTEX concentrations in accordance with EPA Method SW846-8021B
- Metals concentrations in accordance with EPA ICP Method 6010
- PAH concentrations in accordance with EPA Method 8270
- Anions concentrations in accordance with EPA Method 300.0
- Metals concentrations in accordance with EPA ICP Method 6010
- Total mercury concentrations in accordance with EPA Method 7470
- Bicarbonate concentrations in accordance with SM4500CO2D
- Carbonate concentrations in accordance with SM4500CO2D
- TDS concentrations in accordance with EPA Method 160.1

LABORATORY PROTOCOL

The laboratory was responsible for proper QA/QC procedures. These procedures are either transmitted with the laboratory reports or are on file at the laboratory.

SUBSURFACE INVESTIGATION REPORT

MONITORING WELLS MW18-4, MW18-5, MW18-6
SOIL BORINGS B18-A, B18-B, B18-C

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

5309 Wurzbach, Suite 100
San Antonio, Texas 78238
(210) 680-3767
(210) 680-3763 FAX

SUBSURFACE INVESTIGATION REPORT

MONITORING WELLS MW18-4, MW18-5, MW18-6
SOIL BORINGS B18-A, B18-B, B18-C

TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

PREPARED FOR:

TEXAS - NEW MEXICO PIPE LINE COMPANY
P. O. Box 1030
Jal, New Mexico 88252

Mr. Tony Savoie

PREPARED BY:

KEI

Theresa Nix
Project Manager

Pat Bullinger, P.E.

KEI Job No. 610057-2-18

March 26, 1998

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PURPOSE AND SCOPE

The purpose of the subsurface investigation was to install additional monitoring wells and soil borings to delineate hydrocarbon impact across the site. Previous activities at the site consisted of the advancement of soil borings B18-1 through B18-4 and installation of monitoring wells MW18-1 through MW18-3. The report for that investigation was dated September 9, 1997.

FIELD INVESTIGATION

SOIL INVESTIGATION

During the subsurface investigation, three monitoring wells (designated MW18-4 through MW18-6) and three soil borings (designated B18-A, B18-B, and B18-C) were installed utilizing air rotary technology. Soil samples were collected at selected intervals from the ground surface to the bottom of the boring. The soils were classified in the field, soil samples were field screened, and selected samples were prepared and shipped to the laboratory for analysis.

Upon advancement to total depth and collection of soil samples, a permanent well consisting of two-inch perforated PVC and blank riser was placed in the open hole of each boring designated as a permanent monitoring well. Upon completion of sampling activities, each soil boring not completed as a monitoring well was backfilled to the ground surface with a cement/bentonite grout.

The depth to ground water measured in the monitoring wells on March 4, 1997 ranged from 30.43 to 33.36 feet below the top of PVC casing. Phase-separate hydrocarbon (PSH) thickness ranged from ND to 2.21 feet. Additional ground water information will be presented with the monthly and quarterly monitoring conducted at the site.

The monitoring well locations were surveyed by a Professional Land Surveyor registered in the State of New Mexico. The locations of the monitoring wells and soil borings installed are presented on FIG. 1.

SOIL DESCRIPTION

The subsurface soil profile was classified in general accordance with the Unified Soil Classification System by visually observing the soil samples obtained during the assessment. In general, three soil types were encountered. A general description of the soil, approximate thickness, and head-space sample results for each soil type are as follows:

Soil Type I

This soil type consisted of tan to brown sand encountered at the surface of all soil boring and monitoring well locations. The sand was silty, fine-grained with caliche gravel, and was moist. The observed thickness of this soil type varied from 4 to 26 feet. Head-space readings from samples of this soil type ranged from below instrument detection limits (ND) to 499 ppm.

Soil Type II

This soil type consisted of brown to reddish-brown sand and was encountered beneath Soil Type I at soil boring B18-A and monitoring wells MW18-4 and MW18-5. The sand was silty, fine-grained, and moist. The observed thicknesses of this soil type varied from approximately 6 to 24 feet. Head-space readings from samples of this soil type ranged from ND to 518 ppm.

Soil Type III

This soil type consisted of a tan sand and was encountered at borings B18-B, B18-C, and wells MW18-4 and MW18-6. The sand contained calcareous nodules and was slightly moist to moist. This soil type varied in thickness from approximately 2.5 feet in B18-C to 14 feet in MW18-6. Head-space readings from samples of this soil type varied from ND to 709 ppm.

Logs indicating the typical subsurface soil profile, depths at which soil samples were obtained, head-space results, laboratory results, and generalized geologic profiles are presented on FIGs. 2 through 6.

ANALYTICAL RESULTS

Two to four soil samples were selected from each soil boring based on the following criteria:

- The sample collected from 5 to 7 feet below ground surface
- The sample with the highest head-space reading
- The sample directly above the ground water level measured at the time of drilling
- The sample at the bottom of each boring.

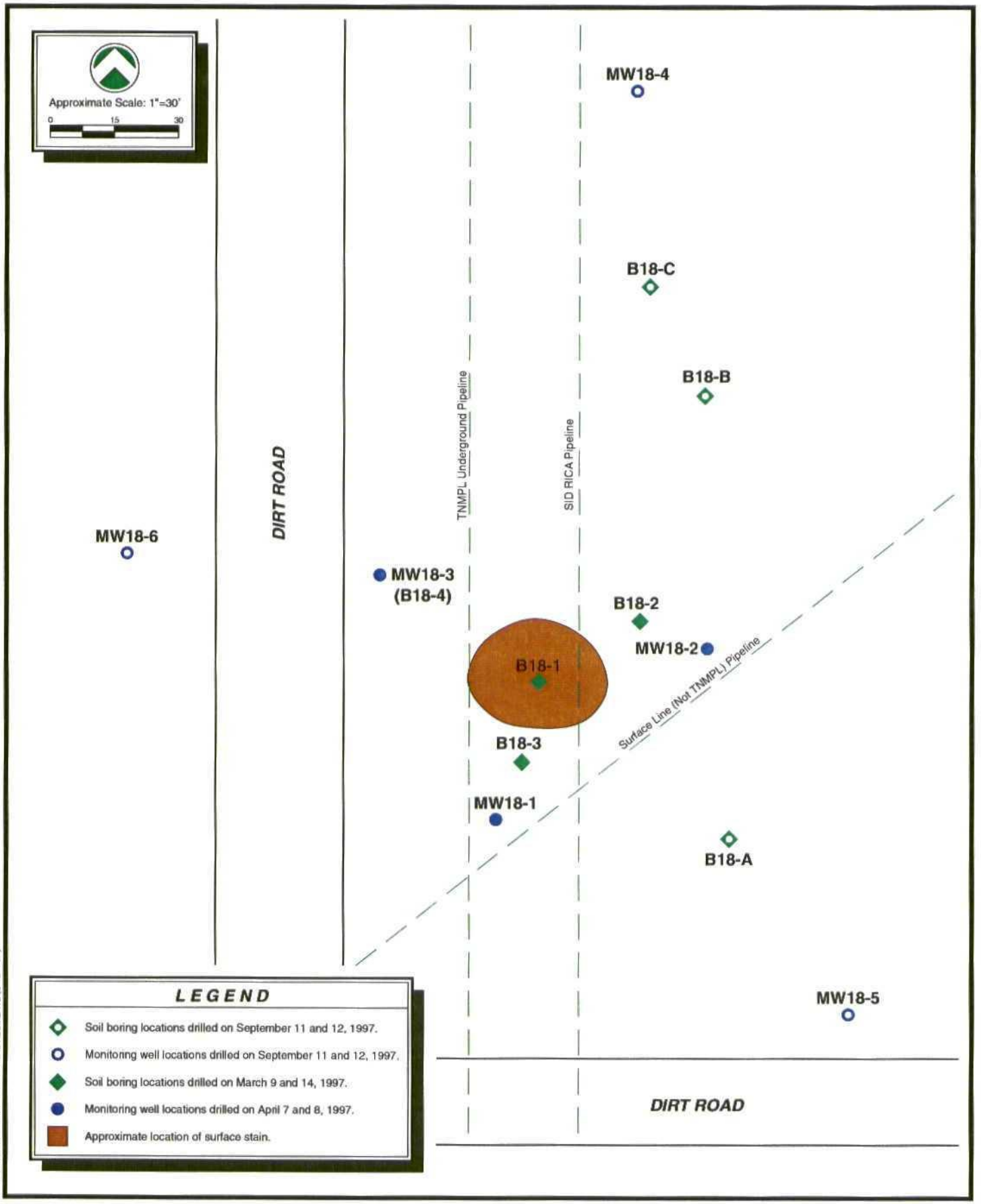
Soil samples selected for analytical testing consisted of the following:

- Eight soil samples from the monitoring wells and six samples from the soil borings were tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons diesel range organics (TPH-DRO).
- One soil sample from soil boring B18-C (exhibiting the highest concentration of TPH by EPA Method 8015 DRO) was tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and SPLP TPH.
- Laboratory results for the selected samples indicated the following concentration ranges:

CONSTITUENT	CONCENTRATIONS (mg/kg)
BENZENE	ND to 1.18
BTEX	ND to 75.24
TPH	ND to 11,400
n-BUTYLBENZENE	3.8
sec-BUTYLBENZENE	5.8
ETHYLBENZENE	20.0
ISOPROPYLBENZENE	8.0
p-ISOPROPYLTOLUENE	4.3

CONSTITUENT	CONCENTRATIONS (mg/kg)
NAPHTHALENE	5.8
n-PROPYLBENZENE	10.8
1,2,4-TRIMETHYLBENZENE	25.5
1,3,5-TRIMETHYLBENZENE	10.8
m,p-XYLENES	25.1
SPLP TPH	4.6

VOC and SVOC constituents not listed above were ND. Soil laboratory results are summarized in TABLES I and II. Soil analytical laboratory reports and chain-of-custody documentation are presented in APPENDIX A.



03/28/98 RM G:\TNMPL\610057\SITE1\8\ASSMENT2\SITE18SP1

k·e·i	SITE DETAILS	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 18 LEA COUNTY, NEW MEXICO	FIG 1

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, moist.

Sand (SM), silty, fine-grained, brown to reddish-brown, moist.

Sand (SM), calcareous nodules, tan, slightly moist to moist.

Indicates sample interval. Sample was obtained by hydraulically pushing a split-spoon sampler.

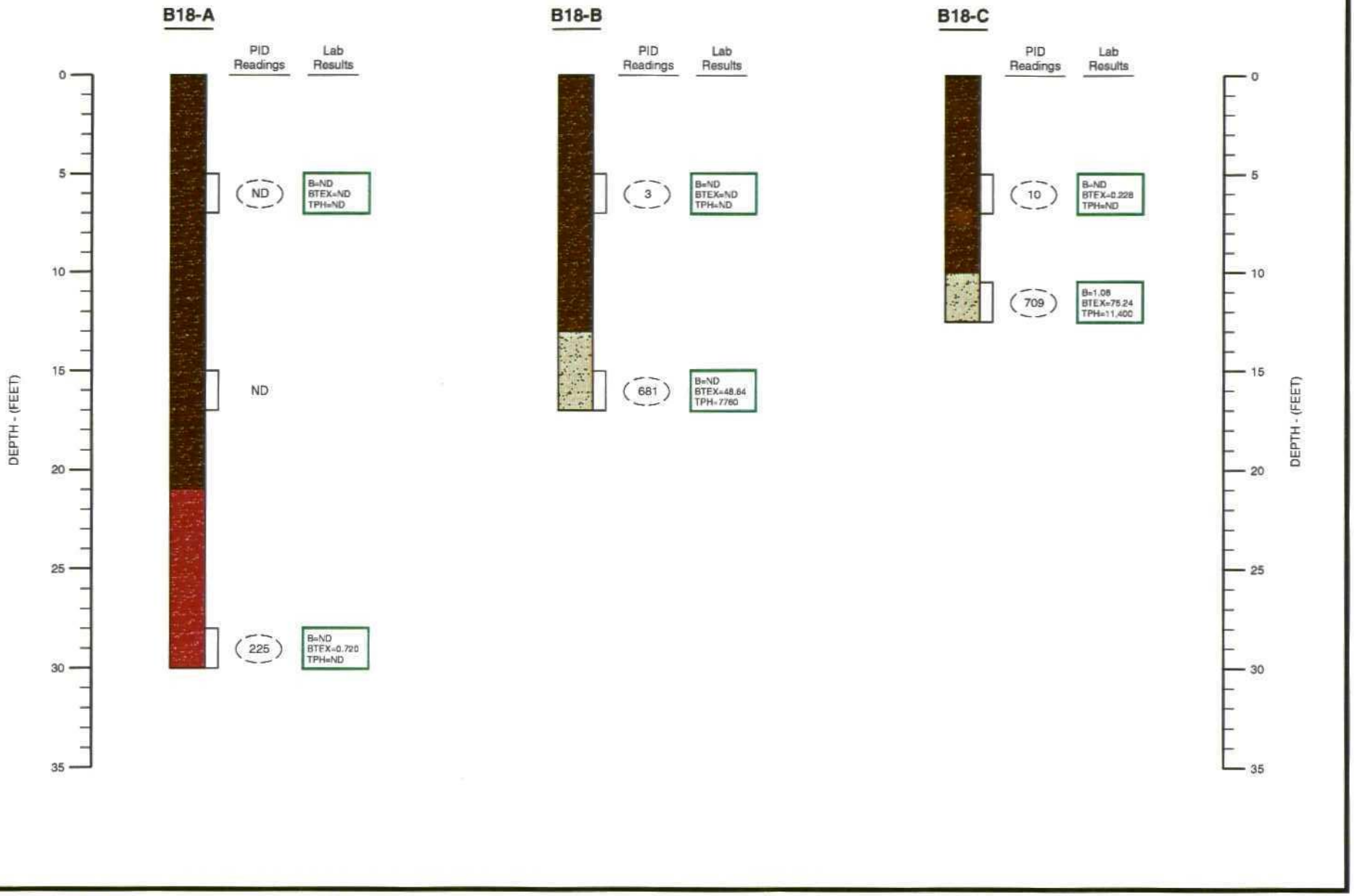
Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)
PID = Head-space readings in ppm obtained with a photoionization detector.
ND = Indicates the concentration was below laboratory detection limits.

NOTES:

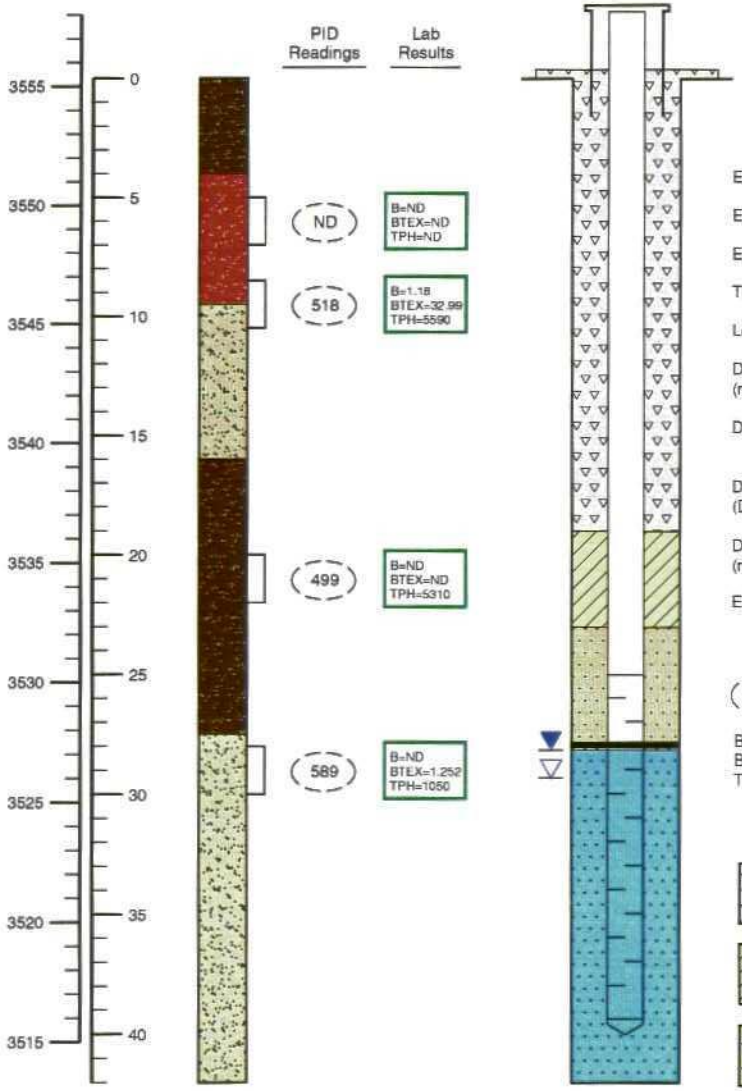
1. The soil borings were drilled utilizing an air rotary rig on September 11 and 12, 1997.
2. Ground water was not encountered during the field investigation.
3. The depths indicated are referenced from the ground surface.
4. The soil borings were backfilled with a cement/bentonite grout and capped at the surface with concrete.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

k·e·i	*LEGEND AND NOTES FOR BORINGS AND WELLS*	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 18 LEA COUNTY, NEW MEXICO	FIG 2



k·e·i	*LOGS AND DETAILS OF SOIL BORINGS*	610057
	TEXAS - NEW MEXICO PIPE LINE CO. MONUMENT SITE NO. 18 LEA COUNTY, NEW MEXICO	FIG 3

MONITORING WELL MW18-4



Monitoring Well Details (MW18-4)

Elev of Concrete Pad	3555.72 ft
Elev of Ground Surface	3555.35 ft
Elev Top of PVC Well	3558.14 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well (measured from top of PVC)	44.21 ft
Depth of Exploratory Hole	40.0 ft
Depth to Ground Water (During drilling measured from top of PVC)	32.11 ft
Depth to Ground Water (measured from top of PVC)	30.94 ft
Elev of Ground Water	3527.20 ft

Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

Concrete Seal

Bentonite Pellet Seal

Sand Pack

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, moist.

Sand (SM), silty, fine-grained, brown to reddish-brown moist.

Sand (SM), calcareous nodules, tan, slightly moist to moist.

Indicates sample interval. Sample was obtained by hydraulically pushing a split-spoon sampler.

Indicates the ground water level measured during drilling.

Indicates the ground water level measured on March 4, 1998.

PID — Head-space readings in ppm obtained with a photoionization detector.

ND — Indicates the concentration was below laboratory detection limits.

NOTES

1. The monitoring well was installed on September 12, 1997 using an air rotary rig.
2. The well was constructed with 2 inch ID, 0.010 inch factory slotted, threaded joint, Schedule 40 PVC pipe.
3. The well is protected with a stick-up steel cover and a locked compression cap.
4. The depths indicated are referenced from the ground surface unless otherwise noted.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

k·e·i

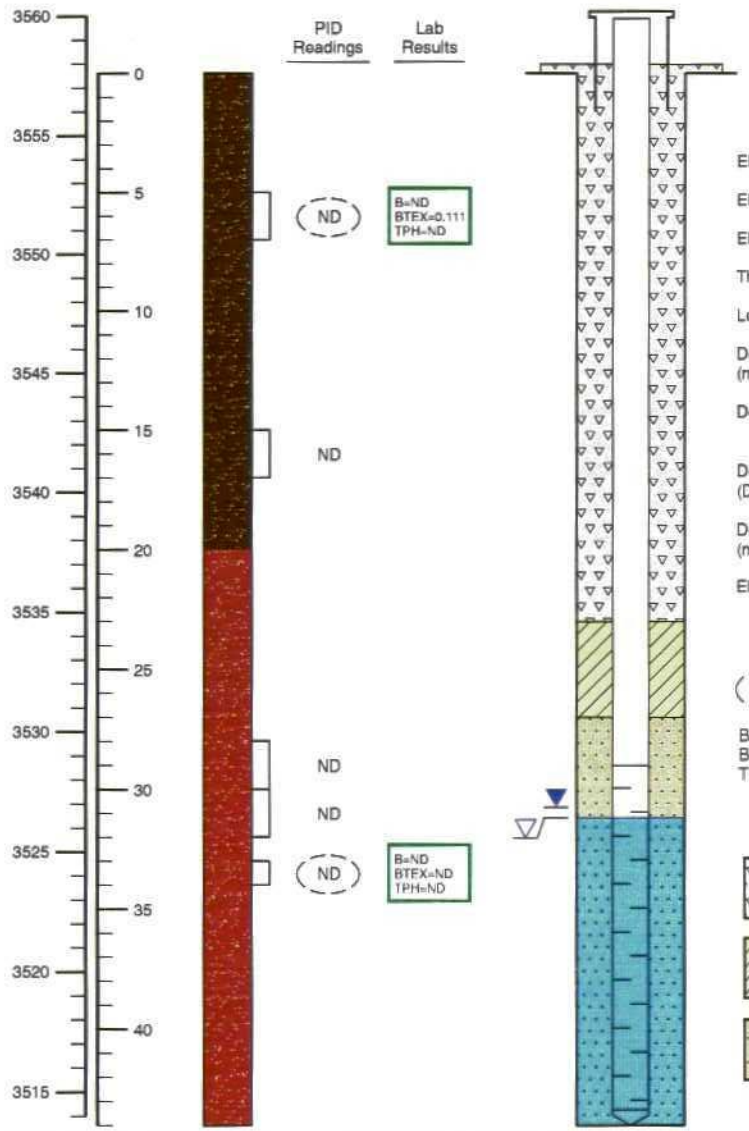
LOG AND DETAILS OF MONITORING WELL MW18-4

TEXAS-NEW MEXICO PIPELINE CO. | MONUMENT SITE NO. 18 | LEA COUNTY, NEW MEXI

610057

FIG 4

MONITORING WELL MW18-5



Monitoring Well Details (MW18-5)

Elev of Concrete Pad	3557.96 ft
Elev of Ground Surface	3557.62 ft
Elev Top of PVC Well	3560.07 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well (measured from top of PVC)	46.57 ft
Depth of Exploratory Hole	44.0 ft
Depth to Ground Water (During drilling measured from top of PVC)	33.64 ft
Depth to Ground Water (measured from top of PVC)	33.20 ft
Elev of Ground Water	3526.87 ft

(ND) Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

Concrete Seal

Bentonite Pellet Seal

Sand Pack

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, moist.

Sand (SM), silty, fine-grained, brown to reddish-brown, moist.

Indicates sample interval. Sample was obtained by hydraulically pushing a split-spoon sampler.

Indicates the ground water level measured during drilling.

Indicates the ground water level measured on March 4, 1998.

PID Head-space readings in ppm obtained with a photoionization detector.

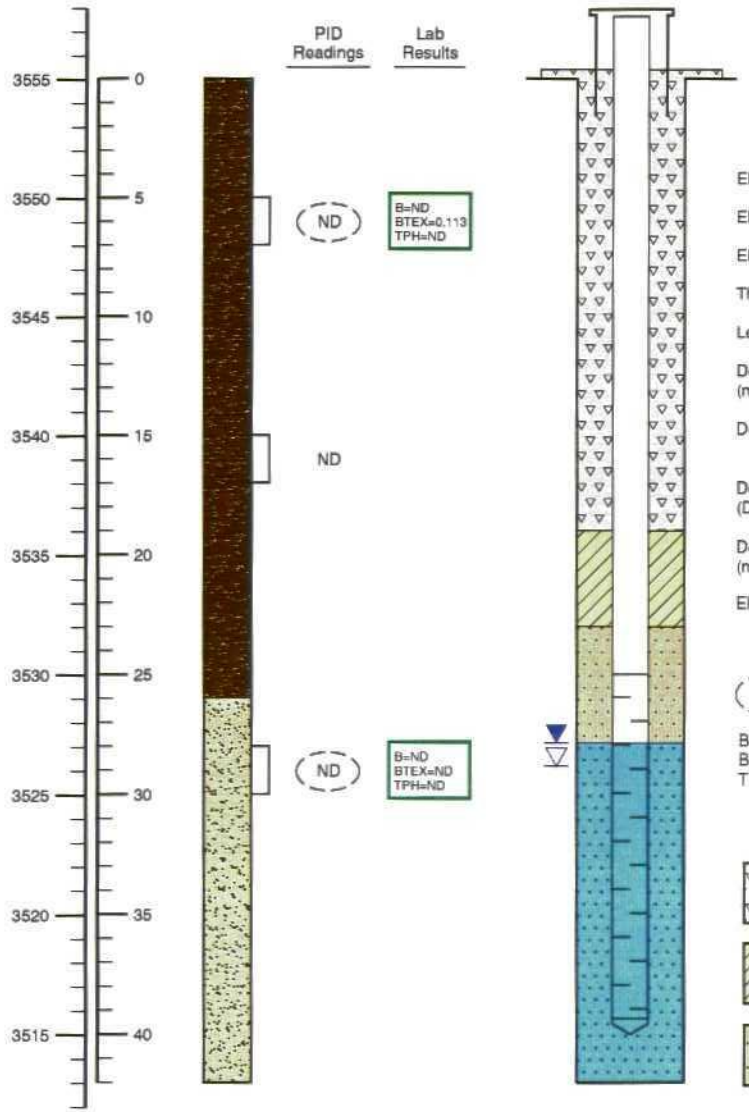
ND Indicates the concentration was below laboratory detection limits.

NOTES

1. The monitoring well was installed on September 11, 1997 using an air rotary rig.
2. The well was constructed with 2 inch ID, 0.010 inch factory slotted, threaded joint, Schedule 40 PVC pipe.
3. The well is protected with a stick-up steel cover and a locked compression cap.
4. The depths indicated are referenced from the ground surface unless otherwise noted.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

k·e·i	*LOG AND DETAILS OF MONITORING WELL MW18-5*	610057
	TEXAS-NEW MEXICO PIPELINE CO. — MONUMENT SITE NO. 18 — LEA COUNTY, NEW MEXICO	FIG 5

MONITORING WELL MW18-6



Monitoring Well Details (MW18-6)

Elev of Concrete Pad	3555.42 ft
Elev of Ground Surface	3555.07 ft
Elev Top of PVC Well	3557.64 ft
Thickness of Bentonite Seal	4.0 ft
Length of PVC Well Screen	15.0 ft
Depth of PVC Well (measured from top of PVC)	44.41 ft
Depth of Exploratory Hole	40.0 ft
Depth to Ground Water (During drilling measured from top of PVC)	31.41 ft
Depth to Ground Water (measured from top of PVC)	30.43 ft
Elev of Ground Water	3527.21 ft

Indicates sample selected for laboratory analysis.

B = Benzene Concentration (mg/kg)
BTEX = Total BTEX Concentration (mg/kg)
TPH = Total Petroleum Hydrocarbon Concentration (mg/kg)

Concrete Seal

Bentonite Pellet Seal

Sand Pack

LEGEND

Sand (SM), silty, fine-grained with caliche gravel, tan to brown, moist.

Sand (SM), calcareous nodules, tan, slightly moist to moist.

Indicates sample interval. Sample was obtained by hydraulically pushing a split-spoon sampler.

Indicates the ground water level measured during drilling.

Indicates the ground water level measured on March 4, 1998.

PID Head-space readings in ppm obtained with a photoionization detector.

ND Indicates the concentration was below laboratory detection limits.

NOTES

1. The monitoring well was installed on September 12, 1997 using an air rotary rig.
2. The well was constructed with 2 inch ID, 0.010 inch factory slotted, threaded joint, Schedule 40 PVC pipe.
3. The well is protected with a stick-up steel cover and a locked compression cap.
4. The depths indicated are referenced from the ground surface unless otherwise noted.
5. The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

k·e·i	*LOG AND DETAILS OF MONITORING WELL MW18-6*	610057
	TEXAS-NEW MEXICO PIPELINE CO. — MONUMENT SITE NO. 18 — LEA COUNTY, NEW MEXICO	FIG 6

GENERAL NOTES

ND - Indicates constituent was not detected above the method detection limit.
--- - Indicates constituent was not analyzed (TABLE I).

Method detection or reporting limits:

BTEX	- 0.050 to 0.300 mg/kg
TPH	- 9.6 to 206 mg/kg
VOCs	- 0.5 to 1.0 mg/kg
SVOCs	- 167 to 417 mg/kg

Laboratory test methods:

BTEX	- EPA Method SW846-8020
TPH	- Modified EPA Method 8015 Diesel Range Organics
VOCs	- EPA Method 8260
SVOC	- EPA Method 8270
SPLP TPH	- EPA Method 1312/418.1

TABLE I

SUMMARY OF SOIL RESULTS - BTEX AND TPH
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	DEPTH (feet)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	TPH (mg/kg)	SPLP TPH (mg/kg)
MW18-4	09/12/97	5 - 7	ND	ND	ND	ND	ND	ND	---
MW18-4	09/12/97	8.5 - 10.5	1.18	2.48	12.95	16.38	32.99	5,590	---
MW18-4	09/12/97	20 - 22	ND	ND	ND	ND	ND	5,310	---
MW18-4	09/12/97	28 - 30	ND	ND	0.376	0.876	1.252	1,050	---
MW18-5	09/11/97	5 - 7	ND	ND	ND	0.111	0.111	ND	---
MW18-5	09/11/97	33 - 34	ND	ND	ND	ND	ND	ND	---
MW18-6	09/12/97	5 - 7	ND	ND	ND	0.113	0.113	ND	---
MW18-6	09/12/97	28 - 30	ND	ND	ND	ND	ND	ND	---
B18-A	09/11/97	5 - 7	ND	ND	ND	ND	ND	ND	---
B18-A	09/11/97	28 - 30	ND	ND	0.134	0.586	0.720	ND	---
B18-B	09/12/97	5 - 7	ND	ND	ND	ND	ND	ND	---
B18-B	09/12/97	15 - 17	ND	1.96	14.35	32.33	48.64	7,760	---
B18-C	09/12/97	5 - 7	ND	ND	ND	0.228	0.228	ND	---
B18-C	09/12/97	10.5 - 12.5	1.08	3.86	24.95	45.35	75.24	11,400	4.6

TABLE II

SUMMARY OF SOIL RESULTS - VOCS
TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITE NO. 18
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	B18-C
DATE SAMPLED	09/12/97
DEPTH	10.5 - 12.5
PARAMETER	CONCENTRATION (mg/kg)
Benzene	0.8
n-Butylbenzene	3.8
sec-Butylbenzene	5.8
Ethylbenzene	20.0*
Isopropylbenzene	8.0
p-Isopropyltoluene	4.3
Naphthalene	5.8
n-Propylbenzene	10.8
1,2,4-Trimethylbenzene	25.5*
1,3,5-Trimethylbenzene	10.8
m,p-Xylenes	25.1

NOTES:

1. * Indicates the result was beyond calibration limits.
2. Those constituents not listed were ND.

XENCO Laboratories

CERTIFICATE OF ANALYSIS SUMMARY 1-72149

K.E.I. Consultants, Inc.

Project ID: 610057 Site #18
Project Manager: Mike Chapa
Project Location: Monument Site #18

Project Name: 610057 Site #18

Date Received in Lab : Sep 16, 1997 10:40 by AS
Date Report Faxed: Sep 30, 1997
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	172149-001	172149-002	172149-003	172149-004	172149-005	172149-006	172149-007	172149-008	172149-009
	Field ID:	MW18-5	MW18-5	MW18-6	MW18-6	MW18-4	MW18-4	MW18-4	MW18-4	B18-A
	Depth:	5-7	33-34	5-7	28-30	5-7	8.5-10.5	20-22	28-30	5-7
TPH-DRO (Diesel) by EPA 8015 M		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
		Sep 21, 1997	Sep 21, 1997	Sep 21, 1997	Sep 21, 1997	Sep 21, 1997	Sep 22, 1997	Sep 22, 1997	Sep 22, 1997	Sep 22, 1997
Total Petroleum Hydrocarbons		< 9.6	< 9.6	< 10.1	< 10.1	< 206	5590	5310	1050	< 10.2
BTEX by EPA 8020		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
		Sep 18, 1997	Sep 18, 1997	Sep 18, 1997	Sep 18, 1997	Sep 18, 1997	Sep 19, 1997	Sep 18, 1997	Sep 18, 1997	Sep 22, 1997
Benzene		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1.18	< 0.050	< 0.050	< 0.050
Toluene		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	2.48	< 0.050	< 0.050	< 0.050
Ethylbenzene		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	12.95	< 0.050	0.376	< 0.050
m,p-Xylenes		0.111	< 0.100	0.113	< 0.100	< 0.100	13.35	< 0.100	0.715	< 0.100
o-Xylene		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	3.03	< 0.050	0.161	< 0.050
Total BTEX		0.111	< 0.300	0.113	< 0.300	< 0.300	32.99	< 0.300	1.252	< 0.300

Edward H. Yonemoto, Ph.D.
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XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
TPH-DRO (Diesel) by EPA 8015 M		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
		Sep 22, 1997	Sep 22, 1997	Sep 22, 1997	Sep 22, 1997	Sep 22, 1997				
Total Petroleum Hydrocarbons		< 9.8	< 143	7760	< 99.6	11400				
BTEX by EPA 8020		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
		Sep 19, 1997	Sep 18, 1997	Sep 19, 1997	Sep 19, 1997	Sep 19, 1997				
Benzene		< 0.050	< 0.050	< 0.50	< 0.050	1.08				
Toluene		< 0.050	< 0.050	1.96	< 0.050	3.86				
Ethylbenzene		0.134	< 0.050	14.35	< 0.050	24.95				
m,p-Xylenes		0.232	< 0.100	27.45	0.228	39.90				
o-Xylene		0.354	< 0.050	4.88	< 0.050	5.45				
Total BTEX		0.720	< 0.300	48.64	0.228	75.24				
Volatile Organic Analysis by EPA 8260		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
Benzene						0.8				
Bromobenzene						< 0.5				
Bromodichloromethane						< 0.5				
Bromoform						< 0.5				
Bromomethane						< 0.5				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results					ppm (mg/L - mg/Kg)			
						Sep 26, 1997				
n-Butylbenzene						3.8				
sec-Butylbenzene						5.8				
tert-Butylbenzene						< 0.5				
Carbon Tetrachloride						< 0.5				
Chloroethane						< 1.0				
Chloroform						< 0.5				
Chloromethane						< 1.0				
2-Chlorotoluene						< 0.5				
4-Chlorotoluene						< 0.5				
1,2-Dibromo-3-chloropropane						< 0.5				
Dibromochloromethane						< 0.5				
1,2-Dibromoethane						< 0.5				
Dibromomethane						< 0.5				
1,2-Dichlorobenzene						< 0.5				
1,3-Dichlorobenzene						< 0.5				
1,4-Dichlorobenzene						< 0.5				
Dichlorodifluoromethane						< 0.5				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results							ppm (mg/L - mg/Kg)	
						Sep 26, 1997				
1,1-Dichloroethane						< 0.5				
1,2-Dichloroethane						< 0.5				
1,1-Dichloroethene						< 0.5				
cis-1,2-Dichloroethene						< 0.5				
trans-1,2-Dichloroethene						< 0.5				
1,2-Dichloropropane						< 0.5				
1,3-Dichloropropane						< 0.5				
2,2-Dichloropropane						< 0.5				
1,1-Dichloropropene						< 0.5				
cis-1,3-Dichloropropene						< 0.5				
trans-1,3-Dichloropropene						< 0.5				
Ethylbenzene						** 20.0				
Hexachlorobutadiene						< 0.5				
Isopropylbenzene						8.0				
p-Isopropyltoluene						4.3				
Methylene chloride						< 1.0				
Naphthalene						5.8				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results						ppm (mg/L - mg/Kg)		
						Sep 26, 1997				
n-Propylbenzene						10.8				
Styrene						< 0.5				
1,1,1,2-Tetrachloroethane						< 0.5				
1,1,2,2-Tetrachloroethane						< 0.5				
Tetrachloroethene						< 0.5				
Toluene						< 0.5				
1,2,3-Trichlorobenzene						< 0.5				
1,2,4-Trichlorobenzene						< 0.5				
1,1,1-Trichloroethane						< 0.5				
1,1,2-Trichloroethane						< 0.5				
Trichloroethene						< 0.5				
Trichlorofluoromethane						< 0.5				
1,2,3-Trichloropropane						< 0.5				
1,2,4-Trimethylbenzene						** 25.5				
1,3,5-Trimethylbenzene						10.8				
Vinyl chloride						< 0.5				
o-Xylene						< 0.5				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
m,p-Xylenes						25.1				
Bromochloromethane						< 0.5				
Chlorobenzene						< 0.5				
MTBE						< 1.0				
** Result beyond calibration limits										
Semivolatiles (SVOCs TCL) by EPA 8270		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
Acenaphthene						< 167				
Acenaphthylene						< 167				
Anthracene						< 167				
Benzo(a)anthracene						< 167				
Benzo(a)pyrene						< 167				
Benzo(b)fluoranthene						< 167				
Benzo(g,h,i)perylene						< 167				
Benzo(k)fluoranthene						< 167				
Butyl benzyl phthalate						< 167				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results					ppm (mg/L - mg/Kg)			
						Sep 26, 1997				
Carbazole						< 167				
4-Chloroaniline						< 167				
bis [2-Chloroethoxy] methane						< 167				
bis [2-Chloroethyl] ether						< 167				
bis [2-Chloroisopropyl] ether						< 167				
2-Chloronaphthalene						< 167				
2-Chlorophenol						< 167				
4-Chlorophenyl-phenyl ether						< 167				
Chrysene						< 167				
Dibenzofuran						< 167				
Dibenzo(a,h)anthracene						< 167				
1,2-Dichlorobenzene						< 167				
1,3-Dichlorobenzene						< 167				
1,4-Dichlorobenzene						< 167				
3,3'-Dichlorobenzidine						< 167				
2,4-Dichlorophenol						< 167				
Diethyl phthalate						< 167				

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Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results					ppm (mg/L - mg/Kg)			
						Sep 26, 1997				
2,4-Dimethylphenol						< 167				
Dimethyl phthalate						< 167				
4,6-Dinitro-2-methylphenol						< 417				
2,4-Dinitrophenol						< 417				
2,4-Dinitrotoluene						< 167				
2,6-Dinitrotoluene						< 167				
Di-n-octyl phthalate						< 167				
bis [2-Ethylhexyl] phthalate						< 167				
Fluoranthene						< 167				
Fluorene						< 167				
Hexachlorobenzene						< 167				
Hexachlorobutadiene						< 167				
Hexachlorocyclopentadiene						< 167				
Hexachloroethane						< 167				
Indeno(1,2,3-cd)pyrene						< 167				
Isophorone						< 167				
2-Methylnaphthalene						< 167				

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

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CERTIFICATE OF ANALYSIS SUMMARY 1-72149

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Date Received in Lab : Sep 16, 1997 10:40 by AS
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XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
2-Methylphenol						< 167				
4-Methylphenol						< 167				
Naphthalene						< 167				
2-Nitroaniline						< 417				
3-Nitroaniline						< 417				
4-Nitroaniline						< 417				
Nitrobenzene						< 167				
2-Nitrophenol						< 167				
4-Nitrophenol						< 167				
N-Nitroso-di-n-propylamine						< 167				
N-Nitrosodiphenylamine						< 167				
Pentachlorophenol						< 417				
Phenanthrene						< 167				
Phenol						< 167				
Pyrene						< 167				
Pyridine						< 167				
1,2,4-Trichlorobenzene						< 167				

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

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Date Received in Lab : Sep 16, 1997 10:40 by AS
Date Report Faxed: Sep 30, 1997
XENCO contact : Carlos Castro/Edward Yonemoto

Analysis Requested	*Lab ID:*	172149-010	172149-011	172149-012	172149-013	172149-014				
	Field ID:	B18-A	B18-B	B18-B	B18-C	B18-C				
	Depth:	28-30	5-7	15-17	5-7	10.5-12.5				
		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
2,4,5-Trichlorophenol						< 417				
2,4,6-Trichlorophenol						< 167				
4-Bromophenyl-phenylether						< 167				
4-Chloro-3-Methylphenol						< 167				
Di-n-butyl phthalate						< 167				
SPLP TPH by 1312/418.1		Date Analyzed - Analytical Results								**ppm (mg/L - mg/Kg)**
						Sep 26, 1997				
Total Petroleum Hydrocarbons						4.6				

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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A02C28

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Sep 23, 1997 17:05
Date Analyzed: Sep 21, 1997 18:29
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

	MATRIX DUPLICATE ANALYSIS					MATRIX SPIKE ANALYSIS				
Q.C. Sample ID 172147- 003	[A] Sample Result	[B] Duplicate Result	[C] Method Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Matrix Spike Result	[G] Matrix Spike Amount	[H] QC Matrix Spike Recovery	[I] LIMITS Recovery Range	[G] Qualifier
Parameter	mg/kg	mg/kg	mg/kg	%	%	mg/kg	mg/kg	%	%	
Total Petroleum Hydrocarbons	< 10.00	< 10.00	10.00	N.C	30.0	330	400	82.5	65-135	

Relative Difference [D] = 200*(B-A)/(B+A)
Matrix Spike Recovery [H] = 100*(F-A)/[G]
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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A02C28

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Sep 23, 1997 17:05
Date Analyzed: Sep 21, 1997 15:12
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

BLANK SPIKE ANALYSIS

Parameter	[A] Blank Result mg/kg	[B] Blank Spike Result mg/kg	[C] Blank Spike Amount mg/kg	[D] Method Detection Limit mg/kg	[E] QC LIMITS Blank Spike Recovery %	[F] QC LIMITS Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 10.00	87.65	100	10.00	87.7	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A02C29

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Sep 23, 1997 17:10
Date Analyzed: Sep 22, 1997 09:41
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

	MATRIX DUPLICATE ANALYSIS					MATRIX SPIKE ANALYSIS				
Q.C. Sample ID 172148- 003	[A] Sample Result	[B] Duplicate Result	[C] Method Detection Limit	[D] QC Relative Difference	[E] LIMITS Relative Difference	[F] Matrix Spike Result	[G] Matrix Spike Amount	[H] QC Matrix Spike Recovery	[I] LIMITS Recovery Range	[G] Qualifier
Parameter	mg/kg	mg/kg	mg/kg	%	%	mg/kg	mg/kg	%	%	
Total Petroleum Hydrocarbons	< 10.00	< 10.00	10.00	N.C	30.0	213	200	106.5	65-135	

Relative Difference [D] = 200*(B-A)/(B+A)
Matrix Spike Recovery [H] = 100*(F-A)/[G]
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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A02C29

SW- 846 8015 M TPH- DRO (Diesel)

Date Validated: Sep 23, 1997 17:10
Date Analyzed: Sep 20, 1997 15:12
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

BLANK SPIKE ANALYSIS

Parameter	[A] Blank Result mg/kg	[B] Blank Spike Result mg/kg	[C] Blank Spike Amount mg/kg	[D] Method Detection Limit mg/kg	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Total Petroleum Hydrocarbons	< 10.00	87.65	100	10.00	87.7	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C79

SW- 846 5030/8020 BTEX

Date Validated: Sep 23, 1997 14:30
Date Analyzed: Sep 22, 1997 13:48
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 172220- 006 / 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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.050	1.915	1.905	2.000	0.050	20.0	0.5	95.8	95.3	65-135	
Toluene	< 0.050	1.875	1.885	2.000	0.050	20.0	0.5	93.8	94.3	65-135	
Ethylbenzene	< 0.050	1.980	2.010	2.000	0.050	20.0	1.5	99.0	100.5	65-135	
m,p-Xylenes	< 0.100	4.085	4.180	4.000	0.100	20.0	2.3	102.1	104.5	65-135	
o-Xylene	< 0.050	1.865	1.910	2.000	0.050	20.0	2.4	93.3	95.5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C79

SW- 846 5030/8020 BTEX

Date Validated: Sep 23, 1997 14:30
Date Analyzed: Sep 22, 1997 10:36
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

BLANK SPIKE ANALYSIS

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Method Detection Limit ppm	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0902	0.1000	0.0010	90.2	65-135	
Toluene	< 0.0010	0.0877	0.1000	0.0010	87.7	65-135	
Ethylbenzene	< 0.0010	0.0927	0.1000	0.0010	92.7	65-135	
m,p-Xylenes	< 0.0020	0.1900	0.2000	0.0020	95.0	65-135	
o-Xylene	< 0.0010	0.0878	0.1000	0.0010	87.8	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C77

SW- 846 5030/8020 BTEX

Date Validated: Sep 22, 1997 10:05
Date Analyzed: Sep 19, 1997 10:04
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

	BLANK SPIKE ANALYSIS						
Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Method Detection Limit ppm	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0857	0.1000	0.0010	85.7	65-135	
Toluene	< 0.0010	0.0855	0.1000	0.0010	85.5	65-135	
Ethylbenzene	< 0.0010	0.0924	0.1000	0.0010	92.4	65-135	
m,p-Xylenes	< 0.0020	0.1880	0.2000	0.0020	94.0	65-135	
o-Xylene	< 0.0010	0.0876	0.1000	0.0010	87.6	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C77

SW- 846 5030/8020 BTEX

Date Validated: Sep 22, 1997 10:05
Date Analyzed: Sep 19, 1997 13:22
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 172152- 002 / 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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.050	1.690	1.785	2.000	0.050	20.0	5.5	84.5	89.3	65-135	
Toluene	< 0.050	1.780	1.880	2.000	0.050	20.0	5.5	89.0	94.0	65-135	
Ethylbenzene	< 0.050	2.045	2.170	2.000	0.050	20.0	5.9	102.3	108.5	65-135	
m,p-Xylenes	< 0.100	4.165	4.410	4.000	0.100	20.0	5.7	104.1	110.3	65-135	
o-Xylene	< 0.050	2.005	2.125	2.000	0.050	20.0	5.8	100.3	106.3	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C76

SW- 846 5030/8020 BTEX

Date Validated: Sep 19, 1997 17:15
Date Analyzed: Sep 18, 1997 12:41
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

BLANK SPIKE ANALYSIS

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Amount ppm	[D] Method Detection Limit ppm	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Benzene	< 0.0010	0.0896	0.1000	0.0010	89.6	65-135	
Toluene	< 0.0010	0.0887	0.1000	0.0010	88.7	65-135	
Ethylbenzene	< 0.0010	0.0952	0.1000	0.0010	95.2	65-135	
m,p-Xylenes	< 0.0020	0.1930	0.2000	0.0020	96.5	65-135	
o-Xylene	< 0.0010	0.0901	0.1000	0.0010	90.1	65-135	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A29C76

SW- 846 5030/8020 BTEX

Date Validated: Sep 19, 1997 17:15
Date Analyzed: Sep 18, 1997 15:46
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OR
Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 172147- 004 / 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] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Benzene	< 0.050	1.420	1.560	2.000	0.050	20.0	9.4	71.0	78.0	65-135	
Toluene	< 0.050	1.520	1.615	2.000	0.050	20.0	6.1	76.0	80.8	65-135	
Ethylbenzene	< 0.050	1.855	1.845	2.000	0.050	20.0	0.5	92.8	92.3	65-135	
m,p-Xylenes	< 0.100	3.705	3.710	4.000	0.100	20.0	0.1	92.6	92.8	65-135	
o-Xylene	< 0.050	1.680	1.825	2.000	0.050	20.0	8.3	84.0	91.3	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A01D61

SW846- 8260 Volatile Organic Analysis

Date Validated: Sep 29, 1997 16:45
Date Analyzed: Sep 26, 1997 14:30
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: CE
Matrix: Solid

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 172149- 014	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Duplicate Result	[D] Matrix Spike Amount	[E] Method Detection Limit	Matrix Limit Relative Difference	[F] QC Spike Relative Difference	[G] QC Matrix Spike Recovery	[H] QC M.S.D. Recovery	[I] Matrix Spike Recovery Range	[J] Qualifier
Parameter	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	%	%	%	%	%	
Benzene	0.84	5.97	6.05	5.00	0.10	20.0	1.3	102.6	104.2	66-142	
Chlorobenzene	< 0.10	4.89	5.09	5.00	0.10	20.0	4.0	97.8	101.8	60-133	
1,1-Dichloroethene	< 0.40	4.46	4.54	5.00	0.40	25.0	1.8	89.2	90.8	59-172	
Toluene	< 0.10	4.93	4.98	5.00	0.10	20.0	1.0	98.6	99.6	59-139	
Trichloroethene	< 0.30	4.92	5.03	5.00	0.30	20.0	2.2	98.4	100.6	62-137	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A34E65

SW846-8270 PAHs by GC-MS (610 List)

Date Validated: Sep 27, 1997 11:46
Date Analyzed: Sep 26, 1997 03:48
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 172201-001 / Parameter	[A] Sample Result mg/Kg	[B] Matrix Spike Result mg/Kg	[C] Matrix Spike Duplicate Result mg/Kg	[D] Matrix Spike Amount mg/Kg	[E] Method Detection Limit mg/Kg	Matrix Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Matrix Spike Recovery %	[H] QC M.S.D. Recovery %	[I] Matrix Spike Recovery Range %	[J] Qualifier
Acenaphthene	< 0.133	2.687	2.807	3.333	0.133	19.0	4.4	80.6	84.2	31-137	
4-Chloro-3-Methylphenol	< 0.253	2.227	2.353	3.333	0.253	33.0	5.5	66.8	70.6	26-103	
2-Chlorophenol	< 0.333	2.227	2.433	3.333	0.333	28.7	8.8	66.8	73.0	25-102	
1,4-Dichlorobenzene	< 0.280	2.693	2.880	3.333	0.280	32.1	6.7	80.8	86.4	28-104	
2,4-Dinitrotoluene	< 0.333	2.713	2.833	3.333	0.333	21.8	4.3	81.4	85.0	28-89	
N-Nitroso-di-n-propylamine	< 0.267	2.967	3.093	3.333	0.267	55.4	4.2	89.0	92.8	41-126	
4-Nitrophenol	< 0.267	0.640	0.787	3.333	0.267	47.2	20.6	19.2	23.6	11-114	
Pentachlorophenol	< 0.573	1.393	1.507	3.333	0.573	48.9	7.9	41.8	45.2	17-109	
Phenol	< 0.247	2.513	2.680	3.333	0.247	22.6	6.4	75.4	80.4	26-90	
Pyrene	< 0.133	2.040	2.107	3.333	0.133	25.2	3.2	61.2	63.2	35-142	
1,2,4-Trichlorobenzene	< 0.360	2.573	2.687	3.333	0.360	23.0	4.3	77.2	80.6	38-107	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Matrix Spike Recovery [G] = 100*(B-A)/[D]
M.S.D. = Matrix Spike Duplicate
M.S.D. Recovery [H] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A34E65

SW846-8270 PAHs by GC-MS (610 List)

Date Validated: Sep 27, 1997 11:46
Date Analyzed: Sep 25, 1997 19:26
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: LC
Matrix: Solid

BLANK SPIKE ANALYSIS

Parameter	[A] Blank Result mg/Kg	[B] Blank Spike Result mg/Kg	[C] Blank Spike Amount mg/Kg	[D] Method Detection Limit mg/Kg	[E] QC Blank Spike Recovery %	[F] LIMITS Recovery Range %	[G] Qualifier
Acenaphthene	< 0.133	2.373	3.333	0.133	71.2	31-137	
4-Chloro-3-Methylphenol	< 0.253	2.060	3.333	0.253	61.8	26-103	
2-Chlorophenol	< 0.333	2.247	3.333	0.333	67.4	25-102	
1,4-Dichlorobenzene	< 0.280	2.380	3.333	0.280	71.4	28-104	
2,4-Dinitrotoluene	< 0.333	2.387	3.333	0.333	71.6	28-89	
N-Nitroso-di-n-propylamine	< 0.267	2.620	3.333	0.267	78.6	41-126	
4-Nitrophenol	< 0.267	1.447	3.333	0.267	43.4	11-114	
Pentachlorophenol	< 0.573	2.207	3.333	0.573	66.2	17-109	
Phenol	< 0.247	2.433	3.333	0.247	73.0	26-90	
Pyrene	< 0.133	1.860	3.333	0.133	55.8	35-142	
1,2,4-Trichlorobenzene	< 0.360	2.380	3.333	0.360	71.4	38-107	

Blank Spike Recovery [E] = 100*(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

XENCO Laboratories

Certificate Of Quality Control for Batch : 17A07G47

EPA 1312/418.1 SPLP TPH

Date Validated: Sep 27, 1997 08:00
Date Analyzed: Sep 26, 1997 14:26
QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: OG
Matrix: Solid

BLANK SPIKE / BLANK SPIKE DUPLICATE AND RECOVERY

Parameter	[A] Blank Result ppm	[B] Blank Spike Result ppm	[C] Blank Spike Duplicate Result ppm	[D] Blank Spike Amount ppm	[E] Method Detection Limit ppm	Blank Limit Relative Difference %	[F] QC Spike Relative Difference %	[G] QC Blank Spike Recovery %	[H] QC B.S.D. Recovery %	[I] Blank Spike Recovery Range %	[J] Qualifier
Total Petroleum Hydrocarbons	< 0.50	3.88	3.85	4.03	0.50	20.0	0.8	96.3	95.5	65-135	

Spike Relative Difference [F] = 200*(B-C)/(B+C)
Blank Spike Recovery [G] = 100*(B-A)/[D]
B.S.D. = Blank Spike Duplicate
B.S.D. Recovery [H] = 100*(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

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057 Site #18
Project Manager: Mike Chapa
Project Location: Monument Site #18

Project Name: 610057 Site #18

XENCO COC#: 1-72149
Date Received in Lab: Sep 16, 1997 10:40 by AS
XENCO contact : Carlos Castro/Edward Yonemoto

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time: Sample Collected	Date and Time: Addition Requested	Date and Time: Extraction	Date and Time: Analysis
1	MW18-5 (5-7)	172149-001	BTEX	SW-846	ppm	Standard	Sep 11, 1997		Sep 18, 1997 by OR	Sep 18, 1997 17:16 by OR
2			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 11, 1997		Sep 20, 1997 by CY	Sep 21, 1997 20:47 by LC
3	MW18-5(33-34)	172149-002	BTEX	SW-846	ppm	Standard	Sep 11, 1997		Sep 18, 1997 by OR	Sep 18, 1997 17:34 by OR
4			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 11, 1997		Sep 20, 1997 by CY	Sep 21, 1997 21:33 by LC
5	MW18-6 (5-7)	172149-003	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 18:11 by OR
6			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 21, 1997 22:18 by LC
7	MW18-6 (28-30)	172149-004	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 19:02 by OR
8			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 21, 1997 23:04 by LC
9	MW18-4 (5-7)	172149-005	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 19:20 by OR
10			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 21, 1997 23:50 by LC
11	MW18-4 (8.5-10.5)	172149-006	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 19, 1997 by OR	Sep 19, 1997 10:40 by OR
12			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 00:36 by LC
13	MW18-4 (20-22)	172149-007	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 19:56 by OR
14			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 01:22 by LC
15	MW18-4 (28-30)	172149-008	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 20:14 by OR
16			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 02:07 by LC
17	B18-A (5-7)	172149-009	BTEX	SW-846	ppm	Standard	Sep 11, 1997		Sep 22, 1997 by OR	Sep 22, 1997 11:11 by OR
18			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 11, 1997		Sep 20, 1997 by CY	Sep 22, 1997 02:53 by LC
19	B18-A (28-30)	172149-010	BTEX	SW-846	ppm	Standard	Sep 11, 1997		Sep 19, 1997 by OR	Sep 19, 1997 11:16 by OR
20			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 11, 1997		Sep 20, 1997 by CY	Sep 22, 1997 03:39 by LC
21	B18-B (5-7)	172149-011	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 18, 1997 by OR	Sep 18, 1997 21:08 by OR
22			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 04:25 by LC
23	B18-B (15-17)	172149-012	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 19, 1997 by OR	Sep 19, 1997 11:34 by OR
24			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 05:10 by LC
25	B18-C (5-7)	172149-013	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 19, 1997 by OR	Sep 19, 1997 12:28 by OR
26			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 05:56 by LC
27	B18-C (10.5-12.5)	172149-014	BTEX	SW-846	ppm	Standard	Sep 12, 1997		Sep 19, 1997 by OR	Sep 19, 1997 12:46 by OR
28			TPH8015M-D	SW-846 8015 M	mg/kg	Standard	Sep 12, 1997		Sep 20, 1997 by CY	Sep 22, 1997 06:41 by LC

XENCO Laboratories

ANALYTICAL CHAIN OF CUSTODY REPORT
CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057 Site #18
Project Manager: Mike Chapa
Project Location: Monument Site #18

Project Name: 610057 Site #18

XENCO COC#: 1-72149
Date Received in Lab: Sep 16, 1997 10:40 by AS
XENCO contact : Carlos Castro/Edward Yonemoto

	Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Date and Time: Sample Collected	Date and Time: Addition Requested	Date and Time: Extraction	Date and Time: Analysis
29			SPLP TPH	EPA	ppm	Standard	Sep 12, 1997	Sep25,1997 16:30	Sep 26, 1997 by OG	Sep 26, 1997 19:35 by OG
30			VOA (8260)	SW846-8260	mg/kg	Standard	Sep 12, 1997	Sep25,1997 16:30	Sep 26, 1997 by CE	Sep 26, 1997 14:30 by CE
31			SV-TCL	SW846-8270	mg/kg	Standard	Sep 12, 1997	Sep25,1997 16:30	Sep 25, 1997 by CY	Sep 26, 1997 01:32 by LC

XENCO Laboratories
11381 Meadowglen Suite L Houston, Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Lab. Batch # 172149-H

Contractor: KET Consultants | Phone: (210) 680-3767

Address: 5309 Wurzbach Suite 100 SA, TX 78238

Project Name: | Project Director: Mike Hawthorne

Project Location: Monument site #18 | Project Manager: Mike Chapa

Sampler Signature: | Project No.: 610057 site 18

No. coolers this shipment: | Contractor COC #

Carrier: UPS | Quote #:

Airbill No. | P.O. No.:

Turn-around: ASAP / 24 hrs / 48 hrs / Standard

	Field ID	Date	Time	Depth	Soil	Water	Comp	Grab	Container Size	Container Type P, G	Preservative Ice	Preservative Other	Sample Description	No of Containers Total	BTEX (8030/8020-602)	TPH (DRO 8015)	SVOC (8270)	VOC (8260)	SPLP TPH (1312)	Please Hold	Remarks	LAB ONLY ID #
1	MW18-5	9-11-97		5-7										1								1
2	MW18-5	9-11-97		33-34										1								2
3	MW18-6	9-12-97		5-7										1								3
4	MW18-6	9-12-97		28-30										1								4
5	MW18-4	9-12-97		5-7										1								5
6	MW18-4	9-12-97		8.5-10.5										1								6
7	MW18-4	9-12-97		20-22										1								7
8	MW18-4	9-12-97		26-30										1								8
9	B18-A	9-11-97		5-7										1								9
10	B18-A	9-11-97		28-30										1								10

SAMPLE CHARACTERIZATION: Unl Dies Ker Unknown; Waste Oil; PIT No: Tank No:

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
	9-15-97	1130			
			Received For Laboratory by: Glen R. Smith	9/16/97	10:40

Remarks: Sample w/ highest TPH (8015) please run SPLP TPH, SVOC, VOC

Pink (Contractor), Yellow & White (Lab)

* Pre-scheduling is recommended

Precision Analytical Services

XENCO Laboratories
11381 Meadowglen Suite L Houston, Texas 77082
(713) 589-0692 Fax (713) 589-0695

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Lab. Batch # 172149-H

Contractor: KEI Consultants | Phone (210) 680-3767

Address: 5309 Wurzbach Suite 100 SA, TX 78238

Project Name | Project Director: Mike Hawthorne

Project Location: Monument site #18 | Project Manager: Mike Chapa

Sampler Signature | Project No.: 610057 site #18

No. coolers this shipment: | Contractor COC #

Carrier: UPS | Quote #:

Airbill No. | P.O. No.:

SAMPLE CHARACTERIZATION

	Field ID	Date	Time	DEPTH	SOIL	WATER	COMP	GRAB	Container Size	Container Type P, G	Preservative Ice	Preservative Other	Sample Description	No of CONTAINERS Total	BTEX (8020/8020-602)	TPH (8015) (DRO 8015)	SVOC (8270)	VOC (8260)	SPLP TPH (1312)	Please Hold	LAB ONLY ID #
1	B18-B	9-12-97		5-7	/		/		9oz		/			1	/	/	/	/	/		1
2	B18-B	9-12-97		15-17	/		/		9oz		/			1	/	/	/	/	.		2
3	B18-C	9-12-97		5-7	/		/		9oz		/			1	/	/	/	/	/		3
4	B18-C	9-12-97		10.5-12.5	/		/		9oz		/			1	/	/	/	/	/		4
5																					5
6																					6
7																					7
8																					8
9																					9
10																					10

Turn-around: * ASAP * 24 hrs 48 hrs (Standard)

Remarks

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
	9-15-97	1130			
			Received For Laboratory by: Jean R. Smedley	9/16/97	10:40

Remarks: Sample w/ highest TPH (8015) pls run SPLP TPH SVOC VOC

Pink (Contractor), Yellow & White (Lab).

* Pre-scheduling is recommended

Precision Analytical Services