3R - 203

REPORTS

DATE:
1997

EL PASO ENERGY

Certified Mail: #Z 295 387 297; #Z 295 387 296

February 27, 1998

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for 57 groundwater impacted locations that were identified during our pit closure project of 1994/1995.

Of the 57 reports, EPFS hereby requests your approval for closure of 11 of these locations. The 11 reports for which EPFS requests closure, are in 2 separate binders entitled "Request for Closure".

After you have had an opportunity to review these updates, EPFS would like to schedule a meeting with you to discuss issues related to closure criteria for some of the more complex locations that are currently being addressed.

If you have any questions regarding this information, please call me at 505/599-2141. I will contact you within the next quarter to schedule a meeting.

Sincerely,

Sandra D. Miller
Environmental Manager

xc: Mr. Bill Liesse, BLM w/o enclosures
Mr. Denny Foust, NMOCD - Aztec w/enclosures; **Certified Mail #Z 295 387 298; #Z 295 387 299**
Ms. Charmaine Tso, Navajo EPA w/enclosures; **Certified Mail #Z 295 387 292**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project
Pit Closure Report

March 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520

PHILIP ENVIRONMENTAL

K-17 LINE DRIP
Meter/Line ID - LD094

SITE DETAILS

Legals - Twn: 27N **Rng:** 8W **Sec:** 26 **Unit:** C
NMOCD Hazard Ranking: 40 **Land Type:** FEDERAL
Operator: EL PASO FIELD SERVICES

PREVIOUS ACTIVITIES

Site Assessment: Jun-94 **Excavation:** Jul-94 (80cy) **Re-Excavation:** Aug-95 (568 cy)
Soil Boring: Mar-97 **Monitor Well:** Mar-97

The former pit was excavated to 12 feet beneath ground surface (bgs) and a soil sample was collected. The soil headspace reading from the pit bottom was 450 ppm. Soil analytical were as follows; benzene - <0.25 mg/kg, total BTEX - 118 mg/kg, TPH – 2,720 mg/kg.

One soil boring was drilled in the center of the pit and a soil sample was collected from 23 – 24.25 feet bgs. Due to encountering groundwater at less than 20 feet bgs, no well was installed, and the pit would be re-excavated. Soil analytical were as follows; benzene - <1.3 mg/kg, total BTEX – 116 mg/kg, TPH – 4,820 mg/kg.

The pit was re-excavated to 20 feet bgs were groundwater was encountered. The soil headspace from the pit bottom was 336 ppm. Soil analytical from the pit bottom were as follows; benzene - <0.5 mg/kg, total BTEX - <3 mg/kg, TPH - 317 mg/kg.

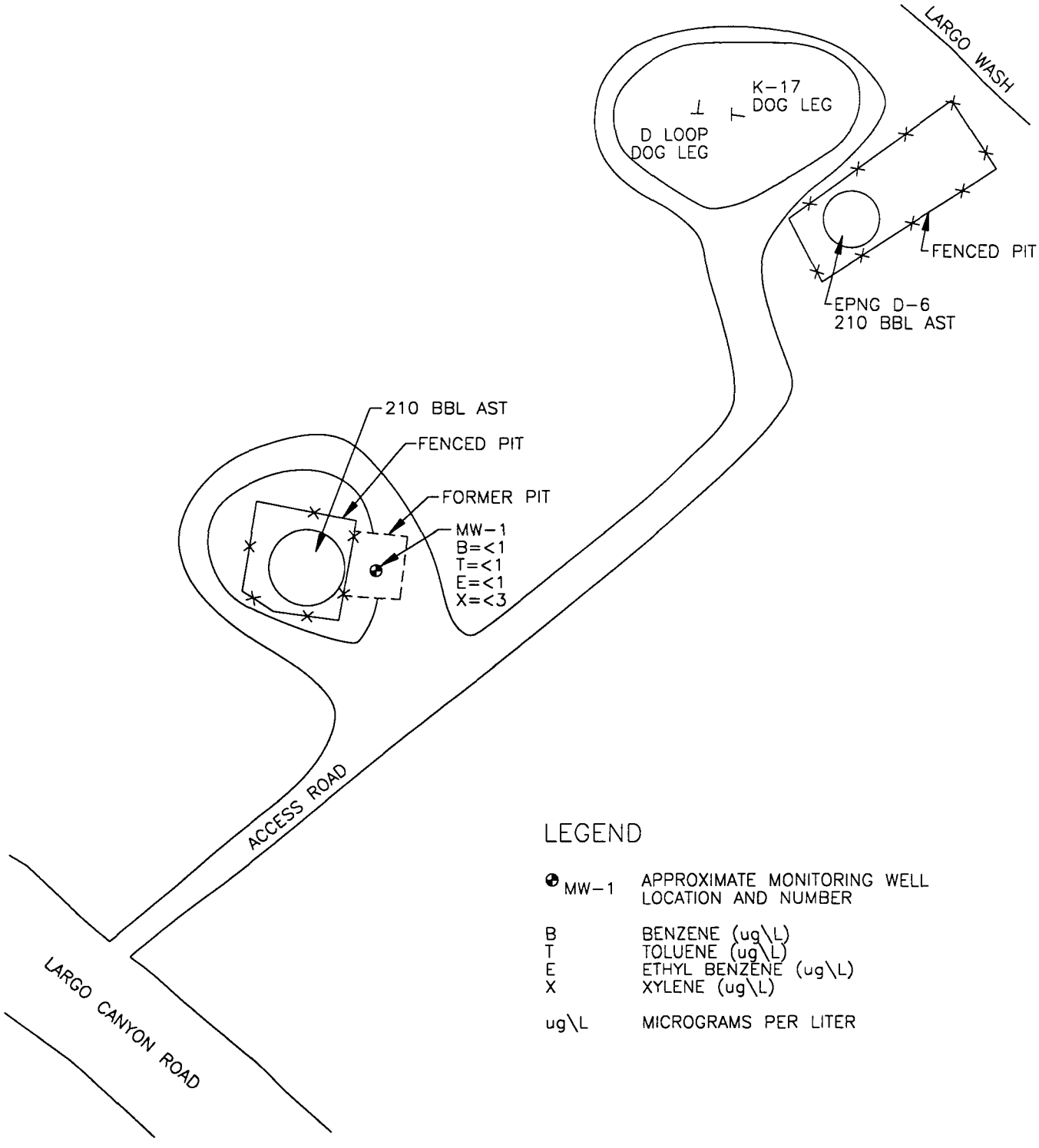
One groundwater monitoring well was installed in the center of the former pit and groundwater samples collected on a quarterly basis. Groundwater analytical data are presented in Table 1 and a site map is presented in Figure 1.

CONCLUSIONS

Groundwater analytical data has been below standards for four consecutive quarters. Minimal impact to groundwater has occurred at this site.

RECOMMENDATIONS

- EPFS requests closure at this site.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER

NOT TO SCALE

N

PHILIP SERVICES CORP

TITLE:

K-17 LINE DRIP

LD094

DWN: TMM	DES.: CC	PROJECT NO.: 17520	
CHKD: CC	APPD:	EPFS GW PITS	
DATE: 12/8/97	REV.: 0	FIGURE 1	

COL. 17520R-001

FIELD PIT SITE ASSESSMENT FORM

GENERAL

C262708

Meter: — Location: K-17 Line Drip

Operator #: NA Operator Name: EPNG P/L District: Ballard

Coordinates: Letter: C Section 26 Township: 27 Range: 8

Or Latitude _____ Longitude _____

Pit Type: Dehydrator ___ Location Drip: ___ Line Drip: ✓ Other: _____

Site Assessment Date: 6/11/94 Area: 07 Run: 32

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps) Inside ☒ (1) Outside ☐ (2)

Land Type: BLM ☒ (1) State ☐ (2) Fee ☐ (3) Indian _____

Depth to Groundwater

Less Than 50 Feet (20 points) ☒ (1)
50 Ft to 99 Ft (10 points) ☐ (2)
Greater Than 100 Ft (0 points) ☐ (3)

Wellhead Protection Area :

Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☒ (2) NO (0 points)

Horizontal Distance to Surface Water Body

Less Than 200 Ft (20 points) ☒ (1)
200 Ft to 1000 Ft (10 points) ☐ (2)
Greater Than 1000 Ft (0 points) ☐ (3)

Name of Surface Water Body Largo Canyon

(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)

Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)
☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 40 **POINTS**

REMARKS

Remarks : Redline Book + Vunerable Zone Topo = Inside
1 pit Will close. Pit Dry
Pit letter is approximated using Redline Book + Topo

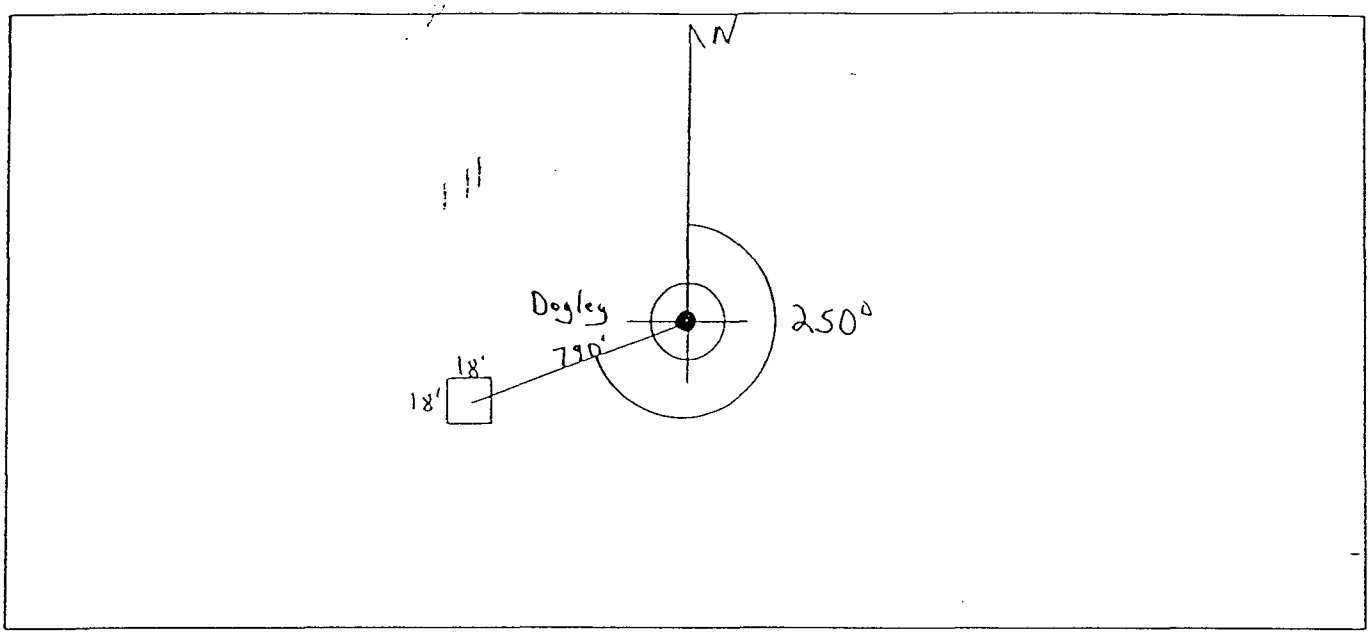
LD094

ORIGINAL PIT LOCATION

ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 250° Footage from Wellhead 790'

b) Length : 18' Width : 18' Depth : 4'



REMARKS

Remarks :

Pictures @ 1456 (1-3) roll 4

Dump Truck

Since dogley could not be seen From pit, bearing is approximate.

Completed By:

Cindy Chase 6/11/94

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970227	LD094	K-17 Line Drip	3/31/97	1	Phase II Drilling - Initial	< 1	1	3.4	31.5	37
970546	LD094	K-17 Line Drip	6/10/97	1	Sample 4 - 1st Qtr	< 1	< 1	< 1	< 3	< 6
971052	LD094	K-17 Line Drip	9/25/97	1	Sample 4 - 2nd Qtr	< 1	< 1	= 2.08	< 3	= 2
971290	LD094	K-17 Line Drip	12/9/97	1	Sample 4 - 3rd Qtr	< 1	< 1	< 1	< 3	= 6

PHASE I EXCAVATION

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: N/A Location: K-17 Line Drip

Coordinates: Letter: C Section 26 Township: 27 Range: 8

Or Latitude _____ Longitude _____

Date Started : 7/29/94 Run: 07 32

SOIL OBSERVATIONS

Sample Number(s): KD 173 _____ _____ _____

Sample Depth: 12' Feet

Final PID Reading 450 ppm PID Reading Depth 12' Feet

	Yes	No
Groundwater Encountered	☐	☒

Approximate Depth _____ Feet

CLOSURE

Remediation Method :

Excavation ☒ Approx. Cubic Yards 80

Onsite Bioremediation ☐

Backfill Pit Without Excavation ☐

Soil Disposition:

Envirotech ☒ ☐ Tierra

Other Facility ☐ Name: _____

Pit Closure Date: 7/29/94 Pit Closed By: BEI

REMARKS

Remarks : Excavated pit to 12' took PID sample, closed pit

Signature of Specialist: Kevin Dean

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER	PROJECT NAME	SAMPLERS: (Signature)	DATE
	Pit Closure Project # 24324	Kenny Dean	7/29/94

	LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020				# QA	REMARKS
74	5791	7/29/94	1200	soil	KD 173	1	VC	X	X				157	
74	5792	7/29/94	1400	soil	KD 174	1	VC	X	X				158	

CONTRACT LABORATORY P. O. NUMBER

REQUESTED ANALYSIS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Kenny Dean	7/29/94 1630	Brenda Liess	Brenda Liess	8/1/94 0953	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH _____

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499

505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

FM-08-0565A (Rev. 03-94)

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	KD 173	945791
MTR CODE | SITE NAME:	K-17 Line Drip LD094	N/A
SAMPLE DATE | TIME (Hrs):	7-29-94	1200
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	8-2-94	8/2/94
DATE OF BTEX EXT. | ANAL.:	8/4/94	8/6/94
TYPE | DESCRIPTION:	VC	Brown Grey Sand Clay

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	20.25	MG/KG	10			
TOLUENE	13	MG/KG	10			
ETHYL BENZENE	6.5	MG/KG	10			
TOTAL XYLENES	98	MG/KG	10			
TOTAL BTEX	118	MG/KG				
TPH (418.1)	2720	MG/KG			2.08	28
HEADSPACE PID	450	PPM				
PERCENT SOLIDS	92.4	%				

– TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 –

The Surrogate Recovery was at 176 % for this sample All QA/QC was acceptable.

Narrative: ATI results attached. Surrogate recovery was outside ATI QC limits due to matrix interference.

DF = Dilution Factor Used

Approved By: _____ Date: 9/2/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 408313

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	945790	NON-AQ	07/29/94	08/04/94	08/05/94	10
08	945791	NON-AQ	07/29/94	08/04/94	08/06/94	10
09	945792	NON-AQ	07/29/94	08/04/94	08/06/94	10

PARAMETER	UNITS	07	08	09
BENZENE	MG/KG	2.1	<0.25	<0.25
TOLUENE	MG/KG	75	13	<0.25
ETHYLBENZENE	MG/KG	14	6.5	3.5
TOTAL XYLENES	MG/KG	160	98	79
SURROGATE:				
BROMOFLUOROBENZENE (%)		131*	176*	144*

*OUTSIDE ATI QUALITY CONTROL LIMITS DUE TO MATRIX INTERFERENCE

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **408313**

August 12, 1994

El Paso Natural Gas Co.
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: PIT CLOSURE 24324

Attention: John Lambdin

On **08/03/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

8015 analysis was added on 08/08/94 for sample 945789 per John Lambdin.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT : EL PASO NATURAL GAS CO. DATE RECEIVED : 08/03/94

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE REPORT DATE : 08/12/94

ATI ID: 408313

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	945781	NON-AQ	07/28/94
02	945782	NON-AQ	07/28/94
03	945783	NON-AQ	07/28/94
04	945784	NON-AQ	07/28/94
05	945785	NON-AQ	07/28/94
06	945789	NON-AQ	07/29/94
07	945790	NON-AQ	07/29/94
08	945791	NON-AQ	07/29/94
09	945792	NON-AQ	07/29/94
10	945797	NON-AQ	08/01/94
11	945798	NON-AQ	08/01/94
12	945799	NON-AQ	08/01/94
13	945800	NON-AQ	08/01/94
14	945801	NON-AQ	08/01/94
15	945802	NON-AQ	08/01/94
16	945803	NON-AQ	08/01/94

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	16

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: EL PASO NATURAL GAS CO.	ATI I.D.	: 408313
PROJECT #	: 24324	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: PIT CLOSURE	UNITS	: MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	080594	<20	<20	NA	180	150	120

Acceptable.
JR
8/15/94

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: EPA 8015 MODIFIED	ATI I.D.	: 408313
BLANK I.D.	: 080994	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/09/94
PROJECT #	: 24324	DATE ANALYZED	: 08/10/94
PROJECT NAME	: PIT CLOSURE	DILUTION FACTOR	: 1

PARAMETER	UNITS	
FUEL HYDROCARBONS	MG/KG	<5
HYDROCARBON RANGE		-
HYDROCARBONS QUANTITATED USING		-
SURROGATE:		
O-TERPHENYL (%)		116

Acceptable JB 8/15/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: EPA 8015 MODIFIED		
MSMSD #	: 40830801	ATI I.D.	: 408313
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/09/94
PROJECT #	: 24324	DATE ANALYZED	: 08/10/94
PROJECT NAME	: PIT CLOSURE	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 40830801	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
FUEL HYDROCARBONS	<5	130	140	108	130	100	7

Acceptable
JP
8/15/94

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 408313
BLANK I.D.	: 080494A	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/04/94
PROJECT #	: 24324	DATE ANALYZED	: 08/05/94
PROJECT NAME	: PIT CLOSURE	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025

SURROGATE:

BROMOFLUOROBENZENE (%)	89

Acceptable
8/15/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 408313
BLANK I.D.	: 080494B	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/04/94
PROJECT #	: 24324	DATE ANALYZED	: 08/07/94
PROJECT NAME	: PIT CLOSURE	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025

SURROGATE:

BROMOFLUOROBENZENE (%)	94

Acceptable
8/15/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 40831103	ATI I.D.	: 408313
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/04/94
PROJECT #	: 24324	DATE ANALYZED	: 08/05/94
PROJECT NAME	: PIT CLOSURE	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 40831103	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	0.99	99	1.0	100	1
TOLUENE	<0.025	1.0	1.0	100	1.0	100	0
ETHYLBENZENE	<0.025	1.0	1.0	100	1.0	100	0
TOTAL XYLENES	<0.025	3.0	3.1	103	3.1	103	0

Acceptable.
8/15/94

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 40831314	ATI I.D.	: 408313
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 08/04/94
PROJECT #	: 24324	DATE ANALYZED	: 08/06/94
PROJECT NAME	: PIT CLOSURE	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 40831314	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	0.90	90	0.92	92	2
TOLUENE	<0.025	1.0	0.92	92	0.93	93	1
ETHYLBENZENE	<0.025	1.0	0.92	92	0.94	94	2
TOTAL XYLENES	0.042	3.0	2.9	97	2.9	97	0

Acceptable
DS
8/16/94

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 8/2/94 PAGE 1 OF 2

ATI LAB I.D. 408313

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: JOHN LAMBDIN

COMPANY: EL PASO NATURAL GAS
ADDRESS: P.O. BOX 4990
FARMINGTON, NM 87499
PHONE: (505) 599-2144
FAX: (505) 599-2261

BILL TO: SAME AS ABOVE
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BETX (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
945781	7/28/94	0915	soil	01	X				X																1
945782	↑	1045	↑	02					X																1
945783		1500		03					X																1
945784	↓	0840		04					X																1
945785	7/28/94	1534		05					X																1
945789	7/29/94	1120		06					X																1
945790	↑	1300		07					X																1
945791	↓	1300	↓	08					X																1
945792	7/29/94	1400	soil	09					X																1

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.: 24324		NO. CONTAINERS	9
PROJ. NAME: PIT CLOSURE		CUSTODY SEALS	(Y) / N / NA
P.O. NO.: 38822		RECEIVED INTACT	Y
SHIPPED VIA: FEDERAL EXPRESS		RECEIVED COLD	Y 2°C

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☒ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments:
CHARGE CODE: 50% 108-51570-24-0001-0012-31-~~2010~~ 7210
50% 108-52452-24-0001-0012-31-~~2010~~ 7210
QA/QC ON PROJECT SAMPLES

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time:	Signature: Kim Kirby Time: 1635	Signature: Time:
Printed Name: Date:	Printed Name: Kim Kirby Date: 8/2/94	Printed Name: Date:
Company: Phone:	Company: EL PASO NATURAL GAS	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 13:30
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 8/3/94
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 8/1/94 PAGE 2 OF 2

ATI LAB I.D. 408303

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: JOHN LAMBDIN

COMPANY: EL PASO NATURAL GAS
ADDRESS: P.O. BOX 4990
FARMINGTON, NM 87499
PHONE: (505) 599-2144
FAX: (505) 599-2261

BILL TO: SAME AS ABOVE
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BETX (8020)		Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.		Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)		SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal		The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
945797	8/1/94	1215	Soil	10					X																				1
945798	↑	1215	↑	11					X																				1
945799		1220		12					X																				1
945800		1320		13	X				X																				1
945801		1420		14					X																				1
945802		1610	↓	15					X																				1
945803	8/1/94	1140	Soil	16					X																				1

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.: 24324		NO. CONTAINERS	16
PROJ. NAME: PIT CLOSURE		CUSTODY SEALS	(Y) N / NA
P.O. NO.: 38822		RECEIVED INTACT	Y
SHIPPED VIA: FEDERAL EXPRESS		RECEIVED COLD	Y 2°C

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☒ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments:
CHARGE CODE: 50% 108-51570-24-0001-0012-31-~~2010~~ 7210
50% 108-52452-24-0001-0012-31-~~2010~~ 7210

QA/QC ON PROJECT SAMPLES

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time:	Signature: Kim Kirby Time: 1635	Signature: Time:
Printed Name: Date:	Printed Name: Kim Kirby Date: 8/2/94	Printed Name: Date:
Company: Phone:	Company: EL PASO NATURAL GAS	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: (LAB) 3.**
Signature: Time:	Signature: Time:	Signature: Time: 15:30
Printed Name: Date:	Printed Name: Date:	Printed Name: Diana Cortez Date: 8/3/94
Company:	Company:	Analytical Technologies, Inc.

LITY CONTROL REPORT

PH by Modified 418.1 by Infrared

Date of Analysis: August 2, 1994 — **32 Samples**

BORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot MOR9480)	HORIBA	300	306	102	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES	NO
945782	2nd Extract	596	553	7.48	X	
945787	2nd Extract	574	418	31.5	X	
945804	2nd Extract	812	631	25.1	X	

Narrative : Acceptable.

LABORATORY SPIKES:

NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
945782	3070	596	3590	98	X	
945787	2550	574	3340	108	X	
945804	2960	812	3900	104	X	

Narrative: Acceptable.

REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES	NO
ERA TPH STANDARD #1 LOT # 91026	ENVIRONMENTA RESOURCE ASS.	1340	1620	804 - 1680	X	
ERA TPH STANDARD #2 w/int LOT # 91026	ENVIRONMENTA RESOURCE ASS.	2590	3160	1550 - 3240	X	

Narrative: Acceptable.

LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	Aqua Solns., Inc	<10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	<10.0	ACCEPTABLE

Narrative: Acceptable.

Extracted: 8/02/94

Approved By: John Sanders Date: 6-Aug-94

PHASE II SOIL BORING

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH 1
Well # LD094
Page 1 of 1

Burlington Environmental Inc.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPNG PITS
Project Number 14509 Phase 6000.77
Project Location K 17 Line Drip

Elevation
Borehole Location Letter C-S26-T27-R8
GWL Depth
Logged By John LaBarbera
Drilled By Mike Donahue
Date/Time Started 7/19/95 - 1102
Date/Time Completed - 1145

Well Logged By John LaBarbera
Personnel On-Site M Donahue, D Gatta, D Shade
Contractors On-Site
Client Personnel On-Site

Drilling Method 4.25" ID HSA
Air Monitoring Method PID / CGF

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: ppm BZ	Air Monitoring Units: ppm BH	Air Monitoring Units: ppm S	Drilling Conditions & Blow Counts
0				Fill						
5										
10										
15										
20	1	18-18.25	3	Dk Gray, very loose, fn SAND, odor, tr silt, wet	SP		21	7	NVHS 609	1108
25	2	23-24.25	12	23-23.25 - Brown, loose, silty, fn to med SAND, saturated	SM		14	23	4333	H2O @ 11.85' 1113 BGS & rising
				23.25-24 - Brown, soft, silty CLAY, med. plasticity	CL					
				23-24.25 - Brown, fn to med. SANDSTONE, poorly cemented All saturated	X					
30				TD @ 24.25'						
35										
40										

Comments: Samples JFL 25 sent to lab for BTEX/TPH analysis. Water above 20' BGS - grouted to surface - no water sample taken.

Geologist Signature John LaBarbera

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) John L. Boyden DATE: 7/19/95

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID		H2S PID	SEQUENCE #	REMARKS
947036	7/19/95	0933	Soil	JFL ~~11~~ 12	1	VG	X	X			10967	10	70470 Florance D 251 (38-38.33')
947037	"	1102	Soil	JFL ~~12~~ 13	1	VG	X	X			35	11	87041 Morrin WN Fed #7 (28-29.33')
947038	"	1247	Soil	JFL 14	1	VG	X	X			7	12	89142 Hammond #55 (23-24')
947039	"	1408	Soil	JFL 15	1	VG	X	X			10648	13	K 17 Line Drip (23-24.25')

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
John L. Boyden	7/19/95 1405	Kelly Stovall	Kelly Stovall	7/20/95 11:15	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144
FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

El Paso Natural Gas Company

Phase II Drilling
K 17 Line Drip
(23-24.25')

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

LD094

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JFL 15	947039
MTR CODE | SITE NAME:	K 17 Line Drip LD094	N/A
SAMPLE DATE | TIME (Hrs):	07-19-95	14:08
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	7-20-95	7-20-95
DATE OF BTEX EXT. | ANAL.:	7-21-95	7-22-95
TYPE | DESCRIPTION:	VG	Dark gray clay w/sand

REMARKS:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<1.3	MG/KG	50			
TOLUENE	28	MG/KG	50			
ETHYL BENZENE	9.0	MG/KG	50			
TOTAL XYLENES	79	MG/KG	50			
TOTAL BTEX	116	MG/KG				
TPH (418.1)	4820	MG/KG			2.00	28
HEADSPACE PID	10648	PPM				
PERCENT SOLIDS	79.7	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at N/A % for this sample All QA/QC was acceptable.

Narrative:

ATI Results for BTEX and modified 8015 attached. Surrogate recovery not obtainable due to sample dilution.

DF = Dilution Factor Used

Approved By: JP Date: 8/18/95

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 507388

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE/PHII DRILL I

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	947037	NON-AQ	07/19/95	07/21/95	07/22/95	1
05	947038	NON-AQ	07/19/95	07/21/95	07/23/95	1
06	947039	NON-AQ	07/19/95	07/21/95	07/22/95	50

PARAMETER	UNITS	04	05	06
BENZENE	MG/KG	<0.025	<0.025	<1.3
TOLUENE	MG/KG	<0.025	<0.025	28
ETHYLBENZENE	MG/KG	<0.025	<0.025	9.0
TOTAL XYLENES	MG/KG	<0.025	<0.025	79
SURROGATE:				
BROMOFLUOROBENZENE (%)		106	98	NA*

*SURROGATE RECOVERY NOT OBTAINABLE DUE TO SAMPLE DILUTION

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. 507388

EPNG #'s: 947020
947028
947036 - 947039

August 2, 1995

El Paso Natural Gas Company
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/PHII DRILL I 24324

Attention: John Lambdin

On **07/21/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

This report is being reissued to include footnotes previously omitted.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:gsm

Enclosure

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED

CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 507388

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE/PHII DRILL I

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	947020	NON-AQ	07/18/95	07/21/95	07/23/95	1
03	947036	NON-AQ	07/19/95	07/21/95	07/24/95	10
06	947039	NON-AQ	07/19/95	07/21/95	07/24/95	10

PARAMETER	UNITS	01	03	06
FUEL HYDROCARBONS	MG/KG	56	1600	2700
HYDROCARBON RANGE		C6-C28	C6-C14	C6-C14
HYDROCARBONS QUANTITATED USING		DIESEL	GASOLINE	GASOLINE
SURROGATE:				
O-TERPHENYL (%)		105	107	105

Analytical Technologies, Inc.

CLIENT	: EL PASO NATURAL GAS CO.	DATE RECEIVED	: 07/21/95
PROJECT #	: 24324		
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	REPORT DATE	: 07/26/95

ATI ID: 507388

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	947020	NON-AQ	07/18/95
02	947028	NON-AQ	07/18/95
03	947036	NON-AQ	07/19/95
04	947037	NON-AQ	07/19/95
05	947038	NON-AQ	07/19/95
06	947039	NON-AQ	07/19/95

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	6

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: EPA 8015 MODIFIED	ATI I.D.	: 507388
BLANK I.D.	: 072195	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/21/95
PROJECT #	: 24324	DATE ANALYZED	: 07/23/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	DILUTION FACTOR	: 1

PARAMETER	UNITS	
FUEL HYDROCARBONS	MG/KG	<5
HYDROCARBON RANGE		-
HYDROCARBONS QUANTITATED USING		-
SURROGATE:		
O-TERPHENYL (%)		128

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: EPA 8015 MODIFIED		
MSMSD #	: 50738610	ATI I.D.	: 507388
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/21/95
PROJECT #	: 24324	DATE ANALYZED	: 07/23/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 50738610	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
FUEL HYDROCARBONS	<5	100	100	100	110	110	10

7/21/95

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 507388
BLANK I.D.	: 072195	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/21/95
PROJECT #	: 24324	DATE ANALYZED	: 07/21/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025
SURROGATE:		
BROMOFLUOROBENZENE (%)		112

7/31/95

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 507388
BLANK I.D.	: 072495	MATRIX	: NON-AQ
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/24/95
PROJECT #	: 24324	DATE ANALYZED	: 07/24/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.025

SURROGATE:

BROMOFLUOROBENZENE (%)	101

7/31/95

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 5073860	ATI I.D.	: 507388
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/21/95
PROJECT #	: 24324	DATE ANALYZED	: 07/21/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 50738604	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	1.1	100	1.1	110	0
TOLUENE	0.11	1.0	1.2	109	1.2	109	0
ETHYLBENZENE	<0.025	1.0	1.2	120	1.1	110	9
TOTAL XYLENES	<0.025	3.0	3.7	123	3.5	117	6

7/31/95

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 072495	ATI I.D.	: 507388
CLIENT	: EL PASO NATURAL GAS CO.	DATE EXTRACTED	: 07/24/95
PROJECT #	: 24324	DATE ANALYZED	: 07/24/95
PROJECT NAME	: PIT CLOSURE/PHII DRILL I	SAMPLE MATRIX	: NON-AQ
REF. I.D.	: 072495	UNITS	: MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.025	1.0	1.1	110	1.0	100	10
TOLUENE	<0.025	1.0	1.1	110	1.1	110	0
ETHYLBENZENE	<0.025	1.0	1.1	110	1.1	110	0
TOTAL XYLENES	<0.025	3.0	3.4	113	3.3	110	3

7/31/95

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

AnalyticalTechnologies, Inc., Albuquerque, NM

San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 7/20/95 PAGE 1 OF 1

ATI LAB I.D. 507388

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: JOHN LAMBDIN

COMPANY: EL PASO NATURAL GAS
ADDRESS: P.O. BOX 4990
FARMINGTON, NM 87499
PHONE: (505) 599-2144
FAX: (505) 599-2261

BILL TO: SAME AS ABOVE
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BETX (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
947020	7/18/95	09:59	soil	-01		X			X																1
947028	7/18/95	12:25	↑	-02					X																1
947036	7/19/95	08:33		-03		X			X																1
947037	↑	11:02		-04					X																1
947038	↓	12:47	↓	-05					X																1
947039	7/19/95	14:08	soil	-06		X			X																1

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.: 24324		NO. CONTAINERS	6
PROJ. NAME: PIT CLOSURE Phase II Drilling		CUSTODY SEALS	Y / N / NA
P.O. NO.: 38822		RECEIVED INTACT	Y
SHIPPED VIA: FEDERAL EXPRESS		RECEIVED COLD	3.4°F

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☒ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments:

CHARGE CODE: 50% 108-51570-24-0001-0012-31 ~~2010~~ 7210
50% 108-52452-24-0001-0012-31 ~~2010~~ 7210

QA/QC ON PROJECT SAMPLES

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time:	Signature: Time: 15:30	Signature: Time:
Printed Name: Date:	Printed Name: Rhea Bays Date: 07/20/95	Printed Name: Date:
Company: Phone:	Company: EL PASO NATURAL GAS	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: (LAB) 3.**
Signature: Time:	Signature: Time:	Signature: Time: 945
Printed Name: Date:	Printed Name: Date:	Printed Name: Andrew Parker Date: 7/24
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-[illegible] • Portland (503) 684-0447 • Albuquerque (505) 344-3777

DISTRIBUTION: White, Canary - ATI [illegible] - ORIGINATOR

QUALITY CONTROL REPORT
TPH by Modified 418.1 by Infrared

1 Aztec Sump Invest.
9 Pit Samples
2 O - 21 LD

Date of Analysis: July 20, 1995

LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot M3G9616)	HORIBA	100	99	99	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES	NO
947033	2nd Extract	112	81	32.49	X	

Narrative : Acceptable.

LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
947033	3220	112	4090	124	X	

Narrative: Acceptable.

REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES	NO
ERA TPH STANDARD #1 LOT # 91026	ENVIRONMENTA RESOURCE ASS.	1340	1660	804 - 1680	X	
ERA TPH STANDARD #2 w/int LOT # 91026	ENVIRONMENTA RESOURCE ASS.	2590	3220	1550 - 3240	X	

Narrative: Acceptable.

LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	<10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	<10.0	ACCEPTABLE

Narrative: Acceptable.

Approved By: John Farber

Date: 27-Jul-95

Extracted: 07/20/95

PHASE III EXCAVATION

FIELD PIT REMEDIATION/CLOSURE FORM/PHASE II

GENERAL

Meter: N/A Location: K-17 Line Drip

Coordinates: Letter: C Section 26 Township: 27 Range: 08

Or Latitude _____ Longitude _____

Date Started : 8-23-95 Area: 07 Run: 32

CONFIRMATION SAMPLING

Sample Number(s): 4P52 4P53 _____ _____

Sample Depth: 20 Feet

Final PID Reading 336 PID Reading Depth 20 Feet

Yes No

Groundwater Encountered ☒ (1) ☐ (2) Approximate Depth 20 Feet

Final Dimensions: Length 23 Width 22 Depth 20

EXCAVATION

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 568 @ 9/14/95

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Overburden Cubic Yards 48 @ 9/14/95

Soil Disposition:

Envirotech ☒ (1) ☐ (3) Tierra

Other Facility ☐ (2) Name: _____

Pit Closure Date: 8-24-95 Pit Closed By: Philip Env.

Phase III

Remarks : Dug down to 20' and encountered water, Took ~~East~~ PID 105ppm, South wall PID 265 could not dig more due to placement of new Storage Tank, East wall PID 30 could not dig more due to line drip Riser, North wall ~~403~~ 339ppm West wall was 12 ppm. Comp. Sample 336ppm

Signature of Specialist: James F. Lemon

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Phase III

Page _____ of _____

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) James F Townsend DATE: 8-24-95

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	REQUESTED ANALYSIS: TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
947324	8-24-95	1030	Soil	4P53	1	VC	X	X				47	K-17 Line Drip LD094

CONTRACT LABORATORY P. O. NUMBER

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
James F Townsend	8-24-95 1430	Julie Diddle	Julie Diddle	8-25-95 10:33	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH _____

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID Rec'd 8/24/95	Lab ID
SAMPLE NUMBER:	~~947324~~ JP53	947324
MTR CODE | SITE NAME:	LD094	K-17 Line Drip
SAMPLE DATE | TIME (Hrs):	08-24-95	1030
PROJECT:	Phase III Excavation	
DATE OF TPH EXT. | ANAL.:	8/28/95	8/30/95 Redo 7-18-96
DATE OF BTEX EXT. | ANAL.:	8/28/95	8/30/95
TYPE | DESCRIPTION:	VC	Brown Sand

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS DF	Q	M(g)	V(ml)
BENZENE	< .5	MG/KG				
TOLUENE	< .5	MG/KG				
ETHYL BENZENE	< .5	MG/KG				
TOTAL XYLENES	< 1.5 mh ~~0.62~~	MG/KG				
TOTAL BTEX	< 3 mh ~~0.62~~	MG/KG				
TPH (418.1)	317	MG/KG			2.06	28
HEADSPACE PID	336	PPM				
PERCENT SOLIDS	95.1	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 88 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

EL PASO NATURAL GAS - FIELD SERVICES LAB

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 947324 thru 947332

QA/QC for 8/30/95 Sample Set

LABORATORY CALIBRATION CHECKS, LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-41626 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	ACCEPTABLE YES	ACCEPTABLE NO
Benzene	Standard	50.0	43.6	87.2	75 - 125 %	X	
Toluene	Standard	50.0	43.6	87.2	75 - 125 %	X	
Ethyl benzene	Standard	50.0	44.0	88.0	75 - 125 %	X	
m & p - Xylene	Standard	100	91	90.5	75 - 125 %	X	
o - Xylene	Standard	50.0	43.1	86.2	75 - 125 %	X	

SAMPLE NUMBER LCS DB-00050 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	ACCEPTABLE YES	ACCEPTABLE NO
Benzene	Standard	25.0	23.2	92.8	39 - 150	X	
Toluene	Standard	25.0	23.4	93.6	46 - 148	X	
Ethyl benzene	Standard	25.0	23.1	92.4	32 - 160	X	
m & p - Xylene	Standard	50.0	47.8	95.6	Not Given	X	
o - Xylene	Standard	25.0	23.0	92.0	Not Given	X	

SAMPLE NUMBER CCV1 LA-41626 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	ACCEPTABLE YES	ACCEPTABLE NO
Benzene	Standard	50.0	37.4	74.8	75 - 125 %	X	
Toluene	Standard	50.0	40.6	81.2	75 - 125 %	X	
Ethyl benzene	Standard	50.0	41.3	82.6	75 - 125 %	X	
m & p - Xylene	Standard	100	85	84.7	75 - 125 %	X	
o - Xylene	Standard	50.0	41.3	82.6	75 - 125 %	X	

SAMPLE NUMBER CCV2 LA-41626 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	ACCEPTABLE YES	ACCEPTABLE NO
Benzene	Standard	50.0	0.0	0.0	75 - 125 %		NA
Toluene	Standard	50.0	0.0	0.0	75 - 125 %		NA
Ethyl benzene	Standard	50.0	0.0	0.0	75 - 125 %		NA
m & p - Xylene	Standard	100	0	0.0	75 - 125 %		NA
o - Xylene	Standard	50.0	0.0	0.0	75 - 125 %		NA

SAMPLE NUMBER CCV3 LA-41626 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	ACCEPTABLE YES	ACCEPTABLE NO
Benzene	Standard	50.0	0.0	0.0	75 - 125 %		NA
Toluene	Standard	50.0	0.0	0.0	75 - 125 %		NA
Ethyl benzene	Standard	50.0	0.0	0.0	75 - 125 %		NA
m & p - Xylene	Standard	100	0	0.0	75 - 125 %		NA
o - Xylene	Standard	50.0	0.0	0.0	75 - 125 %		NA

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER 947324	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X	
Toluene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X	
Ethyl benzene	Extraction Dup	<2.5	<2.5	0	+/- 35 %	X	
m & p - Xylene	Extraction Dup	<5	<5	0	+/- 35 %	X	
o - Xylene	Extraction Dup	2.9	1.4	74	+/- 35 %		NA

Narrative: Sample results <5X detection level.

LABORATORY DUPLICATES:

SAMPLE NUMBER 947309	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Extraction Dup	0.00	0.00	0	+/- 35 %	X	
Toluene	Extraction Dup	0.0	0.0	0	+/- 35 %	X	
Ethyl benzene	Extraction Dup	0.00	0.00	0	+/- 35 %	X	
m & p - Xylene	Extraction Dup	0.00	0.00	0	+/- 35 %	X	
o - Xylene	Extraction Dup	0.0	0.0	0	+/- 35 %	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER 947324	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X	
Toluene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X	
Ethyl benzene	Matrix Duplicate	<2.5	<2.5	0	+/- 35 %	X	
m & p - Xylene	Matrix Duplicate	<5	<5	0	+/- 35 %	X	
o - Xylene	Matrix Duplicate	2.9	1.9	41	+/- 35 %		NA

Narrative: Sample results <5X detection level.

LABORATORY DUPLICATES:

SAMPLE NUMBER 947309	TYPE (Analysis, Portion, or Sample)	SAMPLE RESULT PPM (mg/Kg)	DUPLICATE RESULT PPM (mg/Kg)	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Matrix Duplicate	0.00	0.00	0	+/- 35 %	X	
Toluene	Matrix Duplicate	0.0	0.0	0	+/- 35 %	X	
Ethyl benzene	Matrix Duplicate	0.00	0.00	0	+/- 35 %	X	
m & p - Xylene	Matrix Duplicate	0.00	0.00	0	+/- 35 %	X	
o - Xylene	Matrix Duplicate	0.0	0.0	0	+/- 35 %	X	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE NUMBER 947324	SPIKE ADDED PPB 50.00	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	50.0	0.0	41.2	82	75 - 125 %	X	
Toluene	50.0	0.0	43.5	87	75 - 125 %	X	
Ethyl benzene	50.0	0.0	44.2	88	75 - 125 %	X	
m & p - Xylene	100.0	0.0	92.6	93	75 - 125 %	X	
o - Xylene	50.0	2.9	48.2	91	75 - 125 %	X	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE NUMBER NA	SPIKE ADDED PPB 50.00	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	RANGE	ACCEPTABLE YES NO
Benzene	50.0		0.0	0	75 - 125 %	NA
Toluene	50.0		0.0	0	75 - 125 %	NA
Ethyl benzene	50.0		0.0	0	75 - 125 %	NA
m & p - Xylene	100.0		0.0	0	75 - 125 %	NA
o - Xylene	50.0		0.0	0	75 - 125 %	NA

Narrative: Acceptable.

ADDITIONAL ANALYTICAL BLANKS:

SAMPLE ID AUTO BLANK/BOILED WATER	SOURCE	PPB	STATUS
Benzene	Boiled Water	<2.5	ACCEPTABLE
Toluene	Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

SAMPLE ID SOIL VIAL BLANK	SOURCE	PPB	STATUS
Benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Toluene	Vial + Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	Vial + Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID EXTRACTION BLANK	SOURCE Lot # H18318	PPB (In 100 uL shot)	STATUS
Benzene	Methanol	<2.5	ACCEPTABLE
Toluene	Methanol	<2.5	ACCEPTABLE
Ethyl benzene	Methanol	<2.5	ACCEPTABLE
Total Xylenes	Methanol	<7.5	ACCEPTABLE

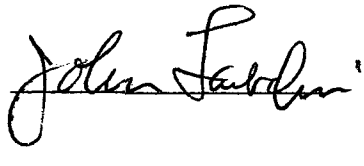
Narrative: Acceptable.

SAMPLE ID Carryover contamination checks	SOURCE	NARRATIVE (No Checks Performed)	STATUS
0/0	Vial + Boiled Water	NA	ACCEPTABLE
0/0	Vial + Boiled Water	NA	ACCEPTABLE
0/0	Vial + Boiled Water	NA	ACCEPTABLE
0/0	Vial + Boiled Water	NA	ACCEPTABLE

Narrative: Acceptable.

SAMPLE ID METHANOL CHECK	SOURCE Lot # H18318	PPB	STATUS
Benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Toluene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Ethyl benzene	MeOH/Boiled Water	<2.5	ACCEPTABLE
Total Xylenes	MeOH/Boiled Water	<7.5	ACCEPTABLE

Narrative: Acceptable

Approved By: 

Date: 31-Aug-95

QUALITY CONTROL REPORT
TPH by Modified 418.1 by Infrared

Date of Analysis: August 28, 1995 — **15 Pit Samples**

LABORATORY CONTROL SAMPLES: CALIBRATION CHECKS

SAMPLE ID	SOURCE	TRUE VALUE (PPM)	FOUND (MG/KG)	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
INITIAL CALIBRATION VERIF. "B" Heavy Oil (Lot M3G9616)	HORIBA	100	97	97	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE NUMBER	TYPE	SAMPLE RESULT (S)MG/KG	DUPLICATE RESULT (D)MG/KG	RPD	ACCEPTABLE RANGE + / - 35% YES	NO
947324	2nd Extract	317	294	7.5	X	
947331	2nd Extract	1060	881	18.4	X	

Narrative : Acceptable.

LABORATORY SPIKES:

SAMPLE NUMBER	SPIKE ADDED (SA)MG/KG	SAMPLE RESULT (S)MG/KG	SPIKE SAMPLE RESULT (SR)MG/KG	%R	ACCEPTABLE RANGE 75-125 %R YES	NO
947324	2910	317	3650	115	X	
947331	2820	1060	4130	109	X	

Narrative: Acceptable.

REFERENCE SOIL (Laboratory Control Sample):

SAMPLE ID	SOURCE	KNOWN VALUE (MG/KG)	SAMPLE RESULT FOUND (MG/KG)	MFG SPECIFIED RANGE	ACCEPTABLE YES	NO
ERA TPH STANDARD #1 LOT # 91030	ENVIRONMENTA RESOURCE ASS.	2920	3260	1900 - 3360	X	
ERA TPH STANDARD #2 w/int LOT # 91030	ENVIRONMENTA RESOURCE ASS.	1150	1230	750 - 1320	X	

Narrative: Acceptable.

LABORATORY REAGENT BLANK:

SAMPLE ID	SOURCE	TPH LEVEL (MG/KG)	STATUS
Freon Solvent	EPNG Lab	<10.0	ACCEPTABLE
Reagent Blank	EPNG Lab	<10.0	ACCEPTABLE

Narrative: Acceptable.

Extracted: 08/28/95

Approved By: John Labde

Date: 30-Aug-95

1997 GROUNDWATER ANALYTICAL

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-2
Well # 1
Page 1 of 1

PHILIP ENVIRONMENTAL SERVICES INC.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 600277
Project Location K-17 LINE DRIP - LD094

Elevation
Borehole Location T27R8 - S26 Ltr C
GWL Depth 19' BGS
Logged By D CESARK
Drilled By K PADILLA
Date/Time Started 3/14/97 — 0900
Date/Time Completed " — 0930

Well Logged By D CESARK
Personnel On-Site ~~D CHARLEY~~, C MAIZ
Contractors On-Site S ARCHULETA
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
0				BACKFILL TO 20'						
5										
10										
15										
▽ 20				GWC 19' BGS						
				(HIGHLY CONTAM. SOIL)						
25										
30				TD = 31'						
35										
40										

Comments: GW ENCOUNTERED @ 19' BGS. OVER-DRILLED TO 31' BGS + COMPLETED GW(MW-1). NO SAMPLES COLLECTED. PLEASE REFER TO MW INSTALLATION RECORD.

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Borehole # 2
Well # 1
Page 1 of 1

Philip Environmental Services, Inc.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 6005.77
Site Location K-17 LINE DRIP - LD094

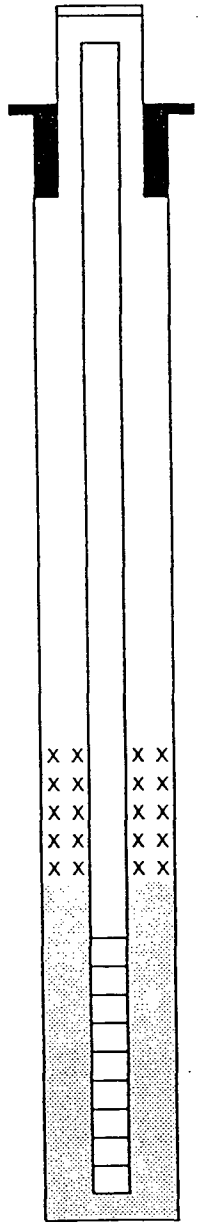
Elevation
Well Location T27N-R8W-S26-L'C'
GWL Depth 19' BGS
Installed By K PADILLA

On-Site Geologist D CESARK
Personnel On-Site ~~D RAMSEY~~, C MAIZ
Contractors On-Site S ARCHULETA
Client Personnel On-Site

Date/Time Started 3/14/97 — 0930
Date/Time Completed " — 1130

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout	CEMENT	2'
Bottom of Grout	"	9'
Top of Well Riser	SCH 40 PVC	+3'
Bottom of Well Riser	"	14'
Top of Well Screen	.010 SLOT	14'
Bottom of Well Screen	"	29'
Top of Peltonite Seal	ENVIROPLUG	9'
Bottom of Peltonite Seal	"	11
Top of Gravel Pack	10-20 S. SND.	11'
Bottom of Gravel Pack	"	31'
Top of Natural Cave-In		N/A
Bottom of Natural Cave-In		N/A
Top of Groundwater		19'
Total Depth of Borehole		31'



Top of Protective Casing
Top of Riser +3'
Ground Surface -0-
Top of Seal -9'
Top of Gravel Pack -11'
Top of Screen -14'
Bottom of Screen -29'
Bottom of Borehole -31'

Comments:

Geologist Signature

MWINSTAL.wk1

PHILIP ENVIRONMENTAL

Chain of Custody Record — Nonchemical Samples

210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230

(618) 281-7173 Phone
(618) 281-5120 FAX

COC Serial No. G 3467

Project Name EPFS GW PITS
Project Number 17520 Phase . Task 6003 . 77
Samplers D CESARK

Lab Name EPNG
Location FM, NM

SEQ	Sample Number	Date	Time	Matrix	Analysis Type: BTEX					Comments
0225	17 DRC 21	3/31	1155	WTR	X					BLANK
10226	17 DRC 22	"	1205	"	X			LD015		TRUNK D LINE DRIP
10227	18 DRC 23	"	1445	"	X			LD094		K-17 LINE DRIP

Relinquished by: **Received By:** 32°

Signature	Date	Time	Signature	Date	Time
	3/31/97	1645	Charlie Clemente	4-1-97	1155

Carrier: Airbill No.

Shipping and Lab Notes:

EL PASO FIELD SERVICES

5-22-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC23	970227
MTR CODE | SITE NAME:	LD094	K-17 Line Drip
SAMPLE DATE | TIME (Hrs):	3/31/97	1445
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. | ANAL.:	4/3/97	4/3/97
TYPE | DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	3.40	PPB				
TOTAL XYLENES	31.5	PPB				
TOTAL BTEX	34.9	PPB				

The Surrogate Recovery was at 107 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Turbeville Date: 4/8/97

970227,4/8/97

PHILIP ENVIRONMENTAL Well Development and Purging Data

☒ Development ☒ Purging Well Number MW-1

Serial No. WDPD-

Project Name GW PITS Project Manager C CHANCE Project No. 17520

Client Company EPFS Phase.Task No. 6003.77

Site Name K-17 LINE DRIP - LD094 Site Address

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
- ☒ Stabilization of Indicator Parameters
- ☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29' BGS

Initial Depth to Water (feet) 18' BGS

Height of Water Column in Well (feet) 11'

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		7	
Gravel Pack			
Drilling Fluids			
Total			35

Instruments

Serial No. (If applicable)

- ☒ pH Meter
- ☐ DO Monitor
- ☒ Conductivity Meter
- ☒ Temperature Meter
- ☐ Other

Water Disposal

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3/31	1335		X	15			10	10			13.7	7.54	517		
"	1355		X	"			10	20			13.7	7.57	568		
"	1425		X	"			15	35			13.6	7.79	725		

Circle the date and time that the development criteria are met.

Comments Water muddy except for 1st 2-3 bailers

Developer's Signature(s) [signature] Date 3/31/97 Reviewer Date

Water Sampling Data

PHILIP ENVIRONMENTAL

Location No. MW-1

Serial No. WSD-

Group List Number

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 3/31/97

Project Name EPFS GW PITS Project No. 17520

Project Manager C CHANCE Phase.Task No. 6003.77

Site Name K-17 LINE DRIP - LD094

Sampling Specifications

Requested Sampling Depth Interval (feet)

Requested Wait Following Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging (hours)

Initial Water Depth (feet)

Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	
*												

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	DRC 23	VV	40		✓	Y	✓		

Filter Type

Chain-of-Custody Form Number

Comments * PLEASE SEE WELL DEVP. + PURGING DATA FORM.

Signature Date 3/31/97 Reviewer Date

Form A0202 Rev. 02/24/94

El Paso Natural Gas Company

A 2003

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis				Remarks
	HUERFANO PIPELINE			BTXE	GENERAL CHEMISTRY	RCRA METALS		
Samplers: (Signature) Dennis Bird	Date: 6-10-97							

MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	6-10-97	1146		X	970546	2	4°C	X	X	X		K-17 LINE DRIP MW-1 MC LOC 94
WATER	6-10-97			X		2	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	6-10-97 1712				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marlon Hoppen	6/11/97 0900		
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)	
Air Bill No.:					

EL PASO FIELD SERVICES

6-18-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970546
MTR CODE | SITE NAME:	LD094	K-17 Line Drip MW-1
SAMPLE DATE | TIME (Hrs):	6/10/97	1146
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. | ANAL.:	6/12/97	6/12/97
TYPE | DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

The Surrogate Recovery was at 94.7 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Labbini Date: 6/17/97

970546,6/16/97

EL PASO FIELD SERVICES

6-18-97

Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970546
DATE SAMPLED:	06/10/97
TIME SAMPLED (Hrs):	1146
SAMPLED BY:	N/A
MATRIX:	Water
METER CODE:	LD094
SAMPLE SITE NAME:	K-17 Line Drip
SAMPLE POINT:	MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.0	Units	06/11/97
Alkalinity as $C0_3$	0.0	PPM	06/11/97
Alkalinity as $HC0_3$	578	PPM	06/11/97
Calcium as Ca	205	PPM	06/11/97
Magnesium as Mg	84	PPM	06/11/97
Total Hardness as $CaC0_3$	857	PPM	06/11/97
Chloride as Cl	28	PPM	06/11/97
Sulfate as $S0_4$	4,870	PPM	06/11/97
Fluoride as F	4.5	PPM	06/11/97
Nitrate as $N0_3$-N	<1.1	PPM	06/11/97
Nitrite as $N0_2$-N	<1.1	PPM	06/11/97
Ammonium as NH_4^+	<0.6	PPM	06/11/97
Phosphate as PO_4	<1.1	PPM	06/11/97
Potassium as K	1	PPM	06/11/97
Sodium as Na	2220	PPM	06/11/97
Total Dissolved Solids	7,570	PPM	06/11/97
Conductivity	8,370	umhos/cm	06/11/97
Anion/Cation %	0.8%	%, <5.0 Accepted	06/16/97

Lab Remarks:

Reported By: _____ Approved By: _____ Date: 6/17/97

EL PASO FIELD SERVICES

7-21-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970546
SAMPLE DATE:	06/10/97
SAMPLE TIME (Hrs):	1146
SAMPLED BY:	N/A
MATRIX:	Water
METER CODE:	LD094
SAMPLE SITE NAME:	K-17 Line Drip
SAMPLE POINT:	MW-1

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.029	0.100
BARIUM	0.14	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.014	0.050
LEAD	0.003	0.050
MERCURY	<0.0002	0.002
SELENIUM	<0.005	0.050
SILVER	0.0016	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.

Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7081, Barium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.

Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.

Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.

Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: Linda Approved By: _____ Date: 7/17/97

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

Sample ID: 970546
Date Reported: 07/16/97

LABORATORY CONTROL SAMPLE

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	96.6%
Barium	0.062	0.065	95.7%
Cadmium	0.0025	0.0024	104%
Chromium	0.0049	0.0048	103%
Lead	0.033	0.030	111%
Mercury	0.0043	0.0046	93.2%
Selenium	0.038	0.041	94.3%
Silver	0.0051	0.0043	118%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.181	0.183	1.1%
Cadmium	ND	ND	NA
Chromium	0.0166	0.0153	8.2%
Lead	0.0065	0.0069	6.2%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	0.0003	0.0004	8.7%

SPIKE ANALYSIS (mg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.001	0.126	0.100	118%
Barium	0.183	1.253	1.00	107%
Cadmium	ND	0.0103	0.010	103%
Chromium	0.017	0.065	0.050	97.0%
Lead	0.007	0.054	0.050	94.4%
Mercury	ND	0.0018	0.0020	90.0%
Selenium	ND	0.053	0.050	101%
Silver	0.0003	0.0539	0.050	107%

METHOD BLANK

Analyte	Found Result (mg/L)	Detection Level (mg/L)
Arsenic	ND	0.027
Barium	ND	0.019
Cadmium	ND	0.0002
Chromium	ND	0.004
Lead	ND	0.002
Mercury	ND	0.0002
Selenium	ND	0.011
Silver	ND	0.0005

ND: Not Detected at stated detection level. NA: Not Applicable.

Reported By: mh Approved By: [signature] Date: 7/17/97

EPFS
EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name K-17 LINE DRIP

Meter Code 20094

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removed
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 33.15
Initial Depth to Water (feet) 21.38
Height of Water Column in Well (feet) 11.77
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.8	23.3
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulativ	Increment	Cumulative					
6-10-97	1027										17.7	7.06	4630		
6-10-97	1037						5.0	5.0			16.4	7.13	4780		
6-10-97	1047						5.0	10.0			15.8	7.21	5820		
6-10-97	1057						5.0	15.0			16.0	7.33	7110		
6-10-97	1106						5.0	20.0			16.0	7.34	7880		
6-10-97	1116						5.0	25.0			16.5	7.35	8540	1.5	

Comments

Developer's Signature Dennis Bird Date 6-10-97 Reviewer Date 6/17/97

SAMPLE 4 2ND QTR

El Paso Natural Gas Company

A 2096

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis			Remarks
	MC # L0094			BTXE			

Samplers: (Signature) Dennis Bird Date: 9-25-97

MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	9-25-97	1035		X	971053	G-1	4°C	X				K-17 LINE DRIP MW-1
WATER	9-25-97	—		X	—	G-1	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	9-25-97 1646				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marion Hoppen	9/26/97 0900		

Carrier Co: Carrier Phone No. Date Results Reported / by: (Signature)

Air Bill No.:

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EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971052
MTR CODE | SITE NAME:	LD094	K-17 Line Drip
SAMPLE DATE | TIME (Hrs):	9/25/97	1025
PROJECT:	Sample 4 2nd Quarter	
DATE OF BTEX EXT. | ANAL.:	9/30/97	9/30/97
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	2.08	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	2	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 96.0 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fowler Date: 10-6-97

971052BTEXMW,10/3/97

EPFS
EL PASO FIELD SERVICES

Well Development and Purging Data

[ ] Development
[X] Purging

Well Number MW-1

Site Name K-17 LINE DRIP

Meter Code 20094

Development Criteria

[X] 3 to 5 Casing Volumes of Water Removed
[ ] Stabilization of Indicator Parameters
[ ] Other

Water Volume Calculation

Initial Depth of Well (feet) 33.15
Initial Depth to Water (feet) 21.45
Height of Water Column in Well (feet) 11.70
Diameter (inches) Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.7	23.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

[X] pH Meter
[ ] DO Monitor
[X] Conductivity Meter
[X] Temperature Meter
[X] Other O.O. CHEMETS KIT

Methods of Development

Pump	Bailer
[ ] Centrifugal	[X] Bottom Valve
[ ] Submersible	[ ] Double Check Valve
[ ] Peristaltic	[ ] Stainless-steel Kemmerer

[ ] Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
9-25-97	0936										16.5	6.65	3800		
9-25-97	0943						5.0	5.0			15.8	7.07	4520		
9-25-97	0948						5.0	10.0			15.5	7.22	5590		
9-25-97	0956						5.0	15.0			15.7	7.29	6520		
9-25-97	1002						5.0	20.0			15.6	7.32	7590		
9-25-97	1009						5.0	25.0			15.6	7.34	8090		
9-25-97	1015						5.0	30.0			15.8	7.35	8090	1.0	

Comments

Developer's Signature Dennis Bird Date 9-25-97 Reviewer John Fowler Date 10-6-97

SAMPLE 4 3RD QTR.

El Paso Natural Gas Company

A 2161

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis				Remarks
	MC # LD094			BTXE				
Samplers: (Signature) Dennis Bird	Date: 12-9-97							

MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	12-9-97	1205		X	971290	G-1	4°C	X				K-17 LINE DRIP MW-1

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	12-9-97 1725				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marsha Hoppe	12/10/97 0920		

Carrier Co: | Carrier Phone No. | Date Results Reported / by: (Signature)

Air Bill No.:

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971290
MTR CODE | SITE NAME:	LD094	K-17 Line Drip
SAMPLE DATE | TIME (Hrs):	12/9/97	1205
PROJECT:	Sample 4 3rd Quarter	
DATE OF BTEX EXT. | ANAL.:	12/15/97	12/15/97
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 102.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 1/2/98

971290BTEXMW,12/16/97

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name K-17 LINE DRIP

Meter Code 10094

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 33.15
Initial Depth to Water (feet) 21.13
Height of Water Column in Well (feet) 12.02
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.9	23.8
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
12-9-97	1116										12.3	6.64	5080		
12-9-97	1122						5.0	5.0			11.4	7.05	5870		
12-9-97	1128						5.0	10.0			11.5	7.23	6630		
12-9-97	1135						5.0	15.0			11.3	7.32	8590		
12-9-97	1143						5.0	20.0			11.1	7.35	9240		
12-9-97	1150						5.0	25.0			10.2	7.40	9450	1.0	

Comments

Developer's Signature Dennis Bird Date 12-9-97 Reviewer John Taylor Date 1/2/98