3R - 248

REPORTS

DATE:
1999

EL PASO FIELD SERVICES

Certified Mail: **#Z 213 707 666 (Box 1 of 2)**
#Z 213 707 664 (Box 2 of 2)

March 24, 2000

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

RE: 1999 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 32 remaining groundwater impacted locations that were identified during our pit closure project of 1994 / 1995.

Of the 32 reports, EPFS hereby requests closure of 4 of these locations. The 4 sites EPFS is requesting closure on are presented in one separate binder entitled "San Juan Basin Pit Closures, El Paso Field Services, Pit Closure Reports".

The Jaquez Com. C #1 and Jaquez Com. E #1 site is included in a separate report which is entitled "Jaquez Com. C #1 and Jaquez Com. E #1 Annual Report for Soil and Groundwater Remediation".

EPFS has also included for your information five Navajo sites in a separate binder and a separate report for the Bisti Flare Pit #1.

If you have any questions concerning the enclosed reports or closure requests, please call me at (505) 599-2124.

Sincerely,

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # Z 213 707 667**
Mr. Bill Liesse, BLM – w / enclosures; **Certified Mail # Z 213 707 668**
Mr. John Jaquez, - w / Jaquez enclosures; **Certified Mail # Z 213 707 669**
Ms. Charmaine Tso, Navajo EPA – w / enclosures; **Certified Mail # Z 213 707 670**

bc: J. A. Lambdin w / enclosures
Philip Services Corp. – Cecil Irby, w / o enclosures
B. B. McDaniel / 24321 – NMOCD Regulatory w / o

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

RECEIVED
MAR 2 9 2000
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

March 2000

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800158

PHILIP SERVICES CORP.

EPFS GROUNDWATER PITS
1999 ANNUAL GROUNDWATER REPORT

W. D. HEATH B #5
Meter/Line ID - 87493

SITE DETAILS

Legals - Twn: 30N **Rng:** 9W **Sec:** 31 **Unit:** M
NMOCD Hazard Ranking: 30 **Land Type:** FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 **Excavation:** May-94 (50 cy) **Soil Boring:** May-95
Monitor Well: May-95 **Geoprobe:** Jan-97 **Quarterly Sampling Initiated:** Apr-96

1999 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring continued through 1999.

SUMMARY TABLES

Groundwater analytical data are presented in Table 1. Copies of the laboratory data sheets and associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 1999.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 1999.

ISOCONCENTRATION MAPS

BTEX parameters are at or below NMWQCC Standards and no isoconcentration maps were generated.

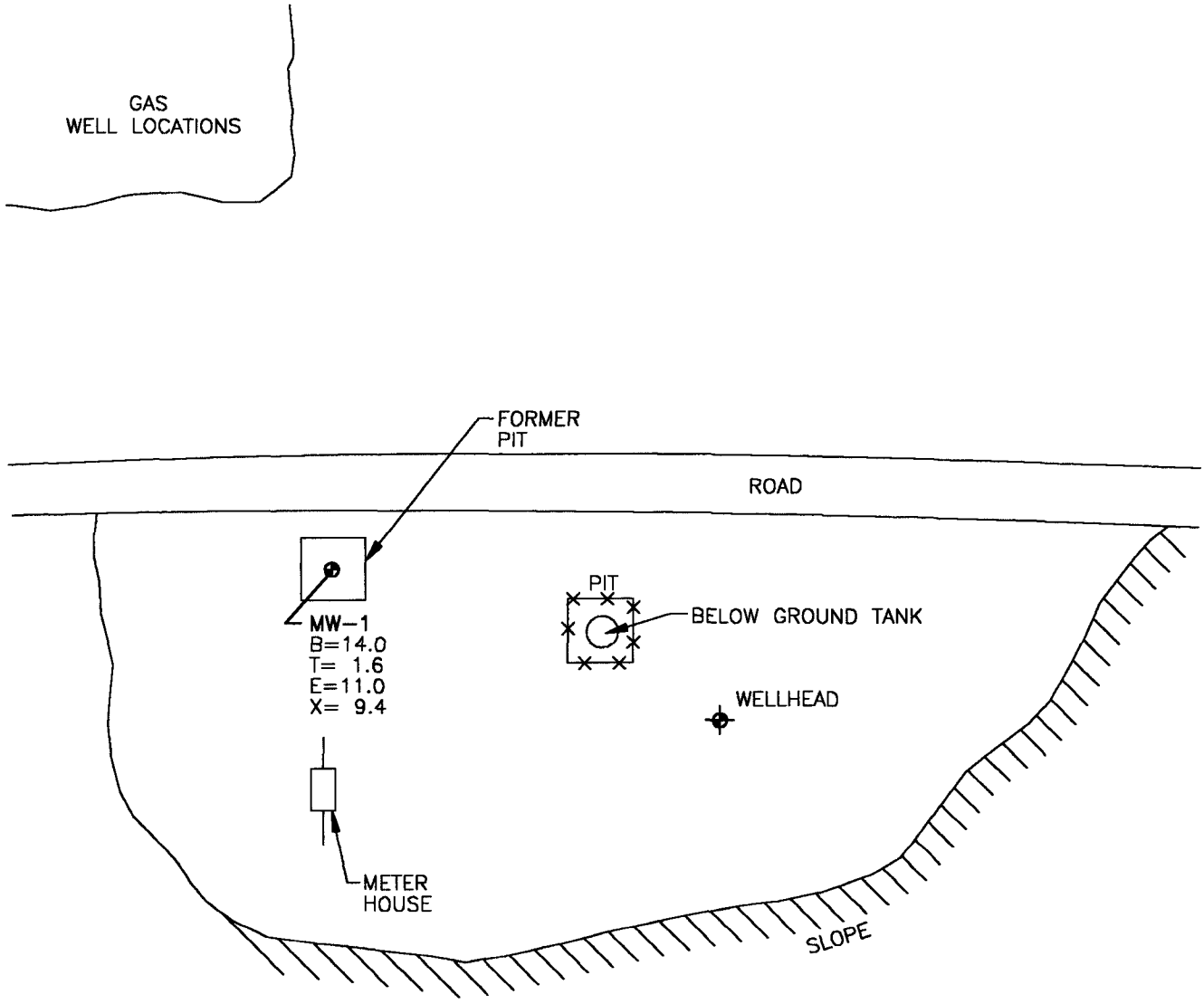
CONCLUSIONS

Analytical results of groundwater samples collected from MW-1 show levels of hydrocarbon constituents below New Mexico Groundwater Standards for all analytes except benzene during all monitoring events in 1999 and for all analytes including benzene during the third quarter of 1999. Analytical results show that all hydrocarbon constituents are below New Mexico Groundwater Standards

Pertinent data from past groundwater reports include the following: Based on groundwater levels collected from temporary well point data, the groundwater flow trends to the west southwest on this site. Elevated levels of hydrocarbon constituents were observed in the upgradient monitoring point PH-3. Benzene and toluene levels exceeded New Mexico Groundwater Standards in upgradient monitoring point PH-2.

RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until analytical results indicate hydrocarbon constituents are below New Mexico Groundwater Standards for four consecutive quarters.
- Following OCD approval for closure, MW-1 will be abandoned using OCD approved abandonment procedures.



LEGEND

⊕ MW-1	MONITORING WELL NUMBER AND APPROXIMATE LOCATION
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

PSC

TITLE:
WD HEATH B#5
METER 87493
OCTOBER 22, 1999

DWN:	DES.:
CJG	CI
CHKD:	APPD:
CI	
DATE:	REV.:
02/08/00	0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1

COL 17520BF-002

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
990010	87493	W D Heath B-5	01/14/99	1	Sample 4 - 12Th Quarter	= 13.3	= 2.50	= 7.03	= 7.50	= 30
990173	87493	W D Heath B-5	04/15/99	1	Sample 4 - 13th Quarter	= 10.5	= 1.52	= 9.36	= 4.66	= 26
990321	87493	W D Heath B-5	07/20/99	1	Sample 4 - 14th Quarter	= 7.59	< 1.00	= 8.74	< 3.00	= 16
990402	87493	W D Heath B-5	10/14/99	1	Sample 4 - 15th Quarter	= 14	= 1.60	= 11.00	= 9.40	= 36

ATTACHMENT 1
1999 GROUNDWATER ANAYLTICAL

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name WDHEATH B-5

Meter Code 87493

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) 44.21
Initial Depth to Water (feet) 29.05
Height of Water Column in Well (feet) 15.16
Diameter (inches): Well 2 Gravel Pack_____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		2.6	7.9
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					
1-14-99	0937										11.9	6.60	6740		
1-14-99	0946						3.0	3.0			12.0	5.52	6920		
1-14-99	0955						3.0	5.0			12.0	6.21	6950		
1-14-99	1007						3.0	8.0			11.5	6.45	6740		
1-14-99	1017						3.0	10.0			12.0	6.69	6800	1.0	

Comments_____

Developer's Signature Dennis Bird Date 1-14-99 Reviewer John Parker Date 1-18-99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990010
MTR CODE | SITE NAME:	87493	W D Heath B-5
SAMPLE DATE | TIME (Hrs):	1/14/99	1030
PROJECT:	Sample 4 12th Quarter	
ATE OF BTEX EXT. | ANAL.:	NA	1/15/99
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	13.3	PPB				
TOLUENE	2.50	PPB				
ETHYL BENZENE	7.03	PPB				
TOTAL XYLENES	7.50	PPB				
TOTAL BTEX	30	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.5 for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fowler Date: 1-18-99

El Paso Natural Gas Company

A 2444

CHAIN OF CUSTODY RECORD

Project No.	Project Name		
	[illegible]		
Samplers: (Signature) [illegible]		Date: 4-15-97	

[illegible]	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis				Remarks
[illegible]	4-15-97	1034		X	970173	[illegible]	[illegible]	X				[illegible]
[illegible]	4-15-97	—		X	———	[illegible]	[illegible]	X				[illegible]

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	4-15-97 / 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:
		[signature]	4-22-97 / 1445	Cool & Intact

Carrier Co:

Air Bill No.:

Carrier Phone No.

Date Results Reported / by: (Signature)

san juan repro Form 71-55 A

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name WD HEATH B-5

Meter Code 87493

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) 44.21
Initial Depth to Water (feet) 28.70
Height of Water Column in Well (feet) 15.51
Diameter (inches): Well 2 Gravel Pack_____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		2.7	8.1
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					
4-15-99	1011										15.8	5.61	5890		
4-15-99	1020						3.0	3.0			15.8	5.14	5980		
4-15-99	1028						2.0	5.0			15.7	5.62	6000		
4-15-99	1039						3.0	8.0			15.3	5.87	5770		
4-15-99	1048						2.0	10.0			15.1	6.32	5730	1.0	

Comments_____

Developer's Signature Dennis Bird Date 4-15-99 Reviewer John Sartor Date 4/23/99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990173
MTR CODE | SITE NAME:	87493	W D Heath B-5
SAMPLE DATE | TIME (Hrs):	4/15/99	1056
PROJECT:	Sample 4 - 13th Quarter	
)ATE OF BTEX EXT. | ANAL.:	NA	4/22/99
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	10.5	PPB				
TOLUENE	1.52	PPB				
ETHYL BENZENE	9.36	PPB				
TOTAL XYLENES	4.66	PPB				
TOTAL BTEX	26	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 Saulds Date: 4/23/99

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX
Samples: 990173 to 990181

QA/QC for 04/22/99 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	Standard	50.0	47.1	94.2	75 - 125 %	X	
Toluene	Standard	50.0	46.9	93.7	75 - 125 %	X	
Ethylbenzene	Standard	50.0	47.6	95.1	75 - 125 %	X	
m & p - Xylene	Standard	100	95.8	95.8	75 - 125 %	X	
o - Xylene	Standard	50.0	47.2	94.4	75 - 125 %	X	
SAMPLE NUMBER LCS LA-45476 25 PPB	**TYPE**	**EXPECTED RESULT PPB**	**ANALYTICAL RESULT PPB**	**%R**	**ACCEPTABLE RANGE**	**YES**	**NO**
Benzene	Standard	25.0	22.7	91	39 - 150	X	
Toluene	Standard	25.0	22.7	91	46 - 148	X	
Ethylbenzene	Standard	25.0	23.0	92	32 - 160	X	
m & p - Xylene	Standard	50.0	46.1	92	Not Given	X	
o - Xylene	Standard	25.0	22.9	92	Not Given	X	

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 990173	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE RANGE	YES	NO
Benzene	Matrix Duplicate	10.5	10.7	1.61	+/- 20 %	X	
Toluene	Matrix Duplicate	1.52	1.54	0.86	+/- 20 %	X	
Ethylbenzene	Matrix Duplicate	9.36	9.63	2.79	+/- 20 %	X	
m & p - Xylene	Matrix Duplicate	3.50	3.57	2.05	+/- 20 %	X	
o - Xylene	Matrix Duplicate	1.16	1.19	2.51	+/- 20 %	X	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 990173	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE RANGE	YES	NO
Benzene	25	10.5	31.6	84	75 - 125 %	X	
Toluene	25	1.52	21.9	81	75 - 125 %	X	
Ethylbenzene	25	9.36	30.4	84	75 - 125 %	X	
m & p - Xylene	50	3.50	45.9	85	75 - 125 %	X	
o - Xylene	25	1.16	22.0	83	75 - 125 %	X	

Narrative: Acceptable.

AUTO BLANK	SOURCE	PPB (1 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (one analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (one analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

TRIP BLK 04/15,16,19/99	SOURCE	PPB (three analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: J.L. Approved By: John Tabor Date: 4-23-99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990321
MTR CODE | SITE NAME:	87493	W.D. Heath B-5
SAMPLE DATE | TIME (Hrs):	7/20/99	1035
PROJECT:	Sample 4 - 14th Quarter	
DATE OF BTEX EXT. | ANAL.:	NA	7/21/99
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7.59	PPB	1			
TOLUENE	<1.0	PPB	1			
ETHYL BENZENE	8.74	PPB	1			
TOTAL XYLENES	<3.0	PPB	1			
TOTAL BTEX	16	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 86 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Saunders Date: 7/22/99

El Paso Natural Gas Company

SAMPLE 4 14TH QTR

CHAIN OF CUSTODY RECORD

Project Number	Project Name	Samplers: (Signature)	Date
	MC # 87493	Dennis Bird	7-20-99

Lab ID	Date	Time	Matrix	Sample Number	Total No. of Containers	Composite or Grab	Requested Analysis: BTXE	Remarks
	7-20-99	1035	WATER	990321	2	G	X	W. D. HEATH B-5
	7-20-99		WATER		1	G	X	TRIP BLANK

Contract Laboratory P.O. Number

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	7-20-99 1712				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
				7/21/99 1425	

Requested Turnaround Time:
☑ Routine ☐ Rush _____

Carrier Co.

Bill No.:

Sample Receipt Remarks: Cool & Intact

Charge Code

Results & Invoices to:

North Region Laboratory
El Paso Natural Gas Company
P. O. Box 4990
Farmington, New Mexico 87499

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

White-Testing Laboratory Yellow-EPNG Lab Pink-Field Sampler

FM-08-0565 (9-91)

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name W.D. HEATH B-5

Meter Code 87493

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) 44.71
Initial Depth to Water (feet) 29.02
Height of Water Column in Well (feet) 15.19
Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		2.6	7.9
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					
7-20-99	0945										19.5	6.11	5900		
7-20-99	0954						3.0	3.0			19.0	6.02	5820		
7-20-99	1002						2.0	5.0			18.7	6.06	5790		
7-20-99	1015						3.0	8.0			18.7	6.44	5760		
7-20-99	1025						2.0	10.0			18.6	6.64	5440	1.0	

Comments

Developer's Signature Dennis Bird Date 7-20-99 Reviewer John Fowler Date 7/21/99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990402
MTR CODE | SITE NAME:	87493	W.D. Heath B-5
SAMPLE DATE | TIME (Hrs):	10/14/1999	1205
PROJECT:	Sample 4 - 15th Quarter	
DATE OF BTEX EXT. | ANAL.:	N/A	10/22/1999
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	14	PPB				
TOLUENE	1.6	PPB				
ETHYL BENZENE	11	PPB				
TOTAL XYLENES	9.4	PPB				
TOTAL BTEX	36	PPB				

–BTEX is by EPA Method 8021 –

The Surrogate Recovery was at 105 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:
Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By: John Gardin Date: 11/2/99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990403
MTR CODE | SITE NAME:	87493	W.D. Heath B-5
SAMPLE DATE | TIME (Hrs):	10/14/1999	1205
PROJECT:	Sample 4 - 15th Quarter	
DATE OF BTEX EXT. | ANAL.:	N/A	10/22/1999
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: Field Duplicate

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	17	PPB				
TOLUENE	1.8	PPB				
ETHYL BENZENE	12	PPB				
TOTAL XYLENES	13	PPB				
TOTAL BTEX	44	PPB				

--BTEX is by EPA Method 8021 --

The Surrogate Recovery was at 112 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:
Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By: John Saenz Date: 11/2/99

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name W.D. HEATH B-5

Meter Code 87493

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) 44.21
Initial Depth to Water (feet) 28.20
Height of Water Column in Well (feet) 16.01

Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		2.8	8.4
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					
10-14-99	1115										18.0	7.16	6810		
10-14-99	1125						3.0	3.0			16.7	7.24	7100		
10-14-99	1134						2.0	5.0			16.7	7.26	7000		
10-14-99	1146						3.0	8.0			16.8	7.24	6870		
10-14-99	1155						2.0	10.0			16.8	7.24	6750	1.5	

Comments

Developer's Signature Dennis Bird Date 10-14-99 Reviewer John Landa Date 10/28/99

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **910071**
October 28, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name (none)
Project Number (none)

Attention: JOHN LAMBDIN

On 10/21/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **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.

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.
General Manager

MR: jt

Enclosure

Reviewed + Accepted
11/2/99

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: EL PASO FIELD SERVICES	PINNACLE ID	: 910071
PROJECT #	: (none)	DATE RECEIVED	: 10/21/99
PROJECT NAME	: (none)	REPORT DATE	: 10/28/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	990402	AQUEOUS	10/14/99
02	990403	AQUEOUS	10/14/99
03	990404	AQUEOUS	10/14/99
04	TRIP BLANK	AQUEOUS	10/14/99

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 910071
PROJECT # : (none)
PROJECT NAME : (none)

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	990402	AQUEOUS	10/14/99	NA	10/22/99	1
02	990403	AQUEOUS	10/14/99	NA	10/22/99	1
03	990404	AQUEOUS	10/14/99	NA	10/22/99	50

PARAMETER	DET. LIMIT	UNITS	990402	990403	990404
BENZENE	0.5	**UG/L**	**14**	**17**	< 25
TOLUENE	*0.5*	***UG/L***	***1.6***	***1.8***	***200***
ETHYLBENZENE	0.5	**UG/L**	**11**	**12**	**470**
TOTAL XYLENES	0.5	**UG/L**	**9.4**	**13**	**8800**
SURROGATE:					
BROMOFLUOROBENZENE (%)			105	112	105
SURROGATE LIMITS	(80 - 120)				

CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 910071
PROJECT # : (none)
PROJECT NAME : (none)

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	TRIP BLANK	AQUEOUS	10/14/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5
SURROGATE:			
BROMOFLUOROBENZENE (%)			103
SURROGATE LIMITS	(80 - 120)		

CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 910071
BLANK I. D.	: 102599	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 10/25/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: (none)		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		102
SURROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 102299	PINNACLE I.D.	: 910071
CLIENT	: EL PASO FIELD SERVICES	DATE EXTRACTED	: NA
PROJECT #	: (none)	DATE ANALYZED	: 10/22/99
PROJECT NAME	: (none)	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	17.2	86	20.1	101	16	(80 - 120)	20
TOLUENE	<0.5	20.0	18.1	91	21.7	109	18	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	18.1	91	20.8	104	14	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	56.0	93	63.1	105	12	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

American Environmental Network (NM), Inc.

CHAIN OF CUSTODY

DATE: 10-20-99 PAGE: 1 OF 1

AEN(NM) Accession #: 910071

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: JOHN CAMBOIN

COMPANY: EL PASO FIELD SERVICES

ADDRESS: 720 WEST NAVAJO
FARMINGTON NM 87401

PHONE: (505) 599-2144

FAX: (505) 599-2261

BILL TO: SAME AS ABOVE

COMPANY:

ADDRESS:

LAB I.D.	SAMPLE I.D.	DATE	TIME	MATRIX	LAB I.D.
	990402	10-14-99	1205	WATER	
	990403	10-14-99	1205	WATER	
	990404	10-14-99	1445	WATER	
	TRIP BLANK	10-14-99		WATER	

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline)	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310)	General Chemistry:			Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NO. OF CONTAINERS
				X																					2
				X																					2
				X																					2
				X																					1

PROJECT INFORMATION

PROJ. NO.:

PROJ. NAME:

P.O. NO.:

SHIPPED VIA: FED-X

SAMPLE RECEIPT

NO. CONTAINERS	7
CUSTODY SEAL	(Y) N/A
RECEIVED INTACT	Y
BLUE ICE/ICE	(Y)

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) X

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.

Signature: Donna Bird Time: 1048

Printed Name: DENNIS BIRD Date: 10-20-99

Company: EL PASO FIELD SERVICES

RECEIVED BY: 1.

Signature: Time:

Printed Name: Date:

Company:

RELINQUISHED BY:

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY: (LAB) 2.

Signature: Time: 1605

Printed Name: Date: 10/21/99

American Environmental Network (NM), Inc.