3R - 223

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

PSC
PHILIP SERVICES
CORP.

EPFS GROUNDWATER PITS
1999 ANNUAL GROUNDWATER REPORT

MILES FEDERAL #1A (CH)
Meter/Line ID - 94810

SITE DETAILS

Legals - Twn: 26N **Rng:** 7W **Sec:** 5 **Unit:** F
NMOCD Hazard Ranking: 40 **Land Type:** FEDERAL
Operator: LOUIS DREYFUS NATURAL GAS

PREVIOUS ACTIVITIES

Site Assessment: May-94 **Excavation:** Jun-94 (50 cy) **Soil Boring:** Sep-95
Monitor Well: Sep-95 **Geoprobe:** Feb-97 **Additional Monitor Wells:** Oct-99

1999 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH removal from MW-1 was re-initiated on February 4, 1999.

Monitor Well Installation – The groundwater gradient was estimated based on topography and additional wells were drilled as requested in OCD correspondence dated July 28, 1999. A downgradient monitoring well was not installed due to location restrictions on the west side of MW-1.

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. Groundwater level data and PSH recovery data are presented in Table 2.

SITE MAP

A site map showing the groundwater gradient is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The October 11, 1999, geologic logs and well completion diagrams are presented as Attachment 2.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 1999.

ISOCONCENTRATION MAPS

BTEX parameters in MW-2 and MW-3 were below regulatory standards and isoconcentration maps were not generated.

CONCLUSIONS

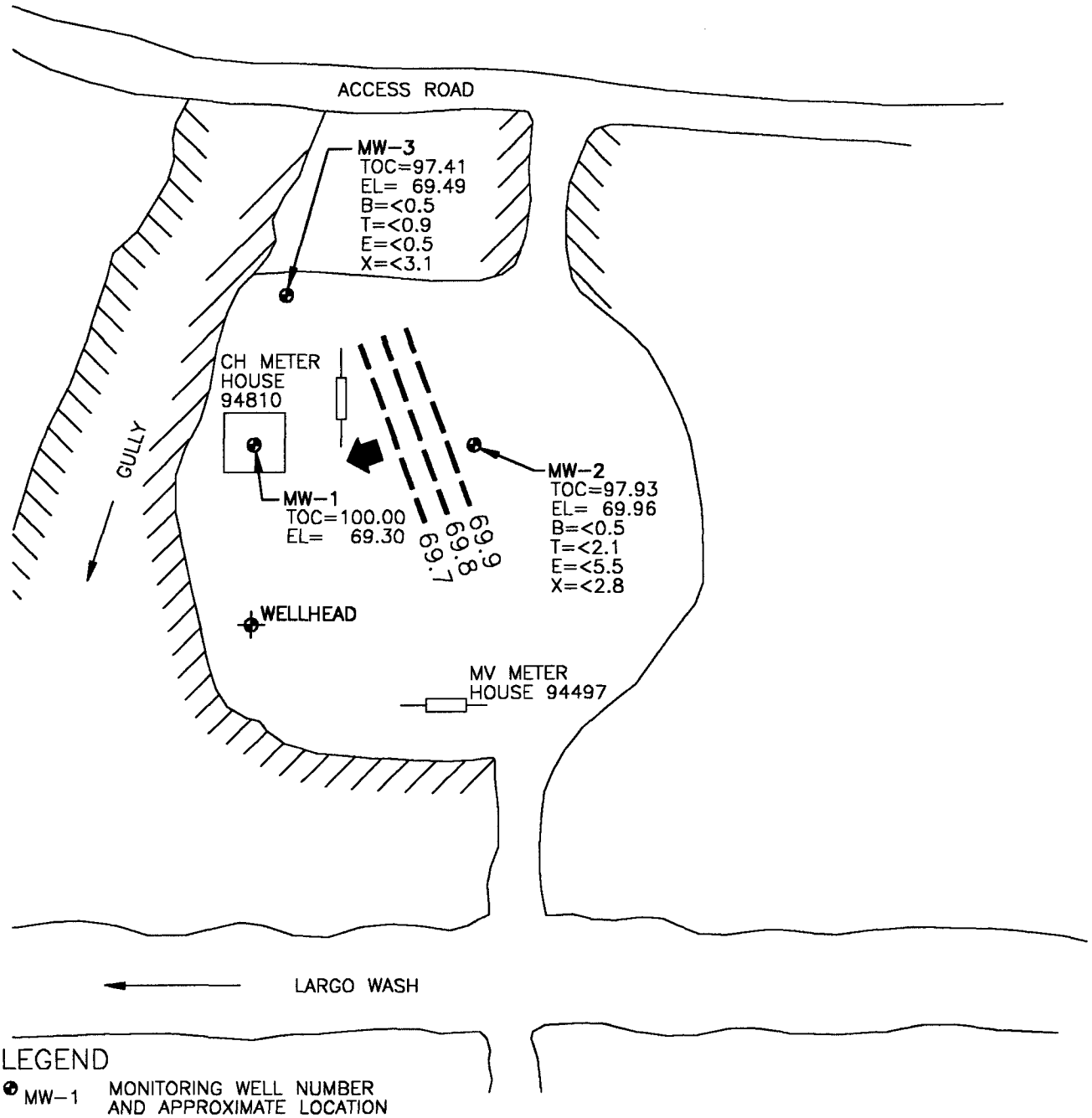
Quarterly sampling was discontinued due to the presence of free product. A total of 7.35 gallons of PSH has been recovered from MW-1 to date. Up to 0.27 feet of product was measured in MW-1 this year. All PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico. No product was removed in 1999.

Recently installed monitor wells MW-2 and MW-3 are below New Mexico groundwater standards for all BTEX constituents. Based on groundwater elevations observed in monitor wells MW-1, MW-2, and MW-3 the groundwater gradient is to the west-southwest.

Pertinent data from past groundwater reports include the following: Up to 0.20 feet of product has been measured in MW-1 in 1997. Quarterly sampling has been discontinued at MW-1, due to the presence of product. Based on groundwater levels collected from temporary well point data, the groundwater flow is to the northwest on this site.

RECOMMENDATIONS

- Continue quarterly free phase hydrocarbon (FPH) thickness monitoring.
- If FPH persist, install a passive skimmer for FPH removal.
- Following removal of FPH, sample annually until BTEX levels are below New Mexico Groundwater Standards, then sample quarterly for closure.
- After four clean quarters confirm gradient with temporary well points and collect down-gradient sample.



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
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
	GROUNDWATER GRADIENT
25.0	GROUNDWATER POTENTIOMETRIC SURFACE

NOT TO SCALE

N

PSC

TITLE:
MILES FED 1A (CH)
METER 94810
OCTOBER 15, 1999

DWN:	DES.:	PROJECT NO.: 17520
CJG	CC	EPFS GW PITS
CHKD: CC	APPD:	
DATE: 02/18/00	REV.: 0	FIGURE 1

CDL 17520AK-004

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
N/A	94810	Miles Fed 1A	02/04/99	1	Not sampled-Free Phase Hydrocarbons-See Table 2					
990416	94810	Miles Fed 1A	10/15/99	2	Sample 4 - 1st Quarter	< 0.5	= 2.1	= 5.5	= 2.8	= 10
990417	94810	Miles Fed 1A	10/15/99	3	Sample 4 - 1st Quarter	< 0.5	= 0.9	< 0.5	= 3.1	= 4

TABLE 2

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
94810	MILES FED 1A (CH)	02/24/99	1	30.69	30.96	0.27	0.00	0.00

ATTACHMENT 1
1999 GROUNDWATER ANAYLTICAL

MW2 p2 of 2

Water Sampling Data

JP SERVICES

Location No. _____

Serial No. WSD- _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 10/15/99

Project Name EPFS GROUNDWATER Project No. 02-8000018

Project Manager CIRBY Phase.Task No. _____

Site Name MW-2 MILES FEDERAL

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) 27.97'

Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

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: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
	2	VOA			X	HCL	X		0955

Filter Type _____ Chain-of-Custody Form Number C2393

Comments _____

Signature Cathy Cullicott Date 10/11/99 Reviewer _____ Date _____

Form A0202 Rev. 02/24/94

PHILIP ENVIRONMENTAL

Well Number MW 2

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of ___

Project Name EPFS GROUNDWATER Project Manager C. IRBY Project No. 628000.18

Client Company ___ Phase.Task No. ___

Site Name MILES FEDERAL 1A CH Site Address 94810

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) ~~27.38~~ 35'

Initial Depth to Water (feet) 27.97' TOC

Height of Water Column in Well (feet) 7'

Diameter (inches): Well ___ Gravel Pack ___

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		.2 gal/'	4.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

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

Water Disposal

DUMPED ON GROUND

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 (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
10/15/99	9:34						1	1			16.3°	6.82	4750		WATER SLIGHTLY
10/15/99	9:36						1	2			16.2	7.00	5270		TURBID - LIGHT
10/15	9:38						1	3			16.3	7.17	5420		BROWNISH
10/15	9:43						1	4			16.2	6.72	5320		
10/15	9:46						1	5			15.7	6.97	3000		
10/15/99	9:50						1	6			15.5	7.09	3280		
10/15/99							1	7			15.6	7.17	3230		

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

Comments Recal PH meter between 3 & 4 gallons.

Sample ID - miles Federal MW 2

Developer's Signature(s) Cathy Culliford Date 10/15/99 Reviewer ___ Date ___

MW3 P2 Q2

Water Sampling Data

SC ESP SERVICES

Serial No. WSD-

Location No. _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 10/15/99

Project Name EPFS GROUNDWATER Project No. C02800018

Project Manager C. IRBY Phase.Task No. _____

Site Name MICES FEDERAL MW3

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) 27.92'

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	2	VOA			X	HCL	X		1025

Filter Type _____ Chain-of-Custody Form Number C2393

Comments _____

Signature Cathy Cuellar Date 10/15/99 Reviewer _____ Date _____

Form A0202 Rev. 02/24/94

PHILIP ENVIRONMENTAL

Well Number MW 3

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of ____

Project Name EPFS GROUNDWATER

Project Manager C. IRBY

Project No. G 280001 8

Client Company EPFS

Phase.Task No. ____

Site Name MILES FEDERAL 1A CH

Site Address 9481 O

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 35'
Initial Depth to Water (feet) 27.92
Height of Water Column in Well (feet) 7'
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing		.2	4.2
Gravel Pack			
Drilling Fluids			
Total			4.2

Instruments

Serial No. (If applicable)

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

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other ____

Water Disposal

DUMP ON GROUND

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 (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
10/15/99	10:08		X				1	1			16.1	6.88	2440		WATER IS
10/15/99	10:10		X				1	2			16.0	7.12	2560		SLIGHTLY
10/15/99	10:13		X				1	3			15.9	7.22	2400		TURBID W/YELLOWISH
10/15/99	10:16		X				1	4			15.8	7.26	2510		BROWN SEDIMENT
10/15/99	10:18		X				1	5			16.6	7.21	2500		

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

Comments Sample ID Miles Federal MW-3

Developer's Signature(s) Cathy Cullicott Date 10/15/99 Reviewer ____ Date ____

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990416
MTR CODE | SITE NAME:	94810	Miles Federal 1A
SAMPLE DATE | TIME (Hrs):	10/15/1999	955
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. | ANAL.:	N/A	10/25/1999
TYPE | DESCRIPTION:	MW-2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB				
TOLUENE	2.1	PPB				
ETHYL BENZENE	5.5	PPB				
TOTAL XYLENES	2.8	PPB				
TOTAL BTEX	10	PPB				

–BTEX is by EPA Method 8021 –

The Surrogate Recovery was at 102 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

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

Approved By: John Loutzenhiser 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	990417
MTR CODE | SITE NAME:	94810	Miles Federal 1A
SAMPLE DATE | TIME (Hrs):	10/15/1999	1025
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. | ANAL.:	N/A	10/25/1999
TYPE | DESCRIPTION:	MW-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB				
TOLUENE	0.9	PPB				
ETHYL BENZENE	<0.5	PPB				
TOTAL XYLENES	3.1	PPB				
TOTAL BTEX	4	PPB				

--BTEX is by EPA Method 8021 --

The Surrogate Recovery was at 96 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

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

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

PHILIP ENVIRONMENTAL

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2393

Project Name EPFS GROUNDWATER

Project Number G2800018 Phase . Task

Samplers C. CULLICOTT

Laboratory Name

Location

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX	Comments
MILES FEDERAL MW2	10/15/99	0955	AQ	2	X	
MILES FEDERAL MW3		1025				
TRIP BLANK		1045				
HAMMOND MW 2		1125				
HAMMOND MW 3		1150				
HAMNER MW 2		1250				
HAMNER MW 3		1335				
MESA CPD MW 2		1450				
MESA CPD MW 3	↓	1505	↓	↓	↓	

Relinquished by:

Signature	Date	Time
Cathy Cullicott	10/15/99	1540

Received By:

Signature	Date	Time
REFRIGERATOR		
Dennis Bird	10-20-99	10:05

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☐ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Carrier: Airbill No.

Shipping and Lab Notes:

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **910073**
October 28, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
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
J. Lambdin 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	: 910073
PROJECT #	: (none)	DATE RECEIVED	: 10/21/99
PROJECT NAME	: PIT MONITOR WELLS	REPORT DATE	: 10/28/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	990416	AQUEOUS	10/15/99
02	990417	AQUEOUS	10/15/99
03	990418	AQUEOUS	10/15/99
04	990419	AQUEOUS	10/15/99
05	990420	AQUEOUS	10/15/99
06	990421	AQUEOUS	10/15/99
07	990422	AQUEOUS	10/15/99
08	990423	AQUEOUS	10/15/99
09	TRIP BLANK	AQUEOUS	10/15/99
10	990424	AQUEOUS	10/19/99
11	990425	AQUEOUS	10/19/99

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	990416	AQUEOUS	10/15/99	NA	10/25/99	1
02	990417	AQUEOUS	10/15/99	NA	10/25/99	1
03	990418	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990416	990417	990418
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	**UG/L**	**2.1**	**0.9**	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**5.5**	< 0.5	< 0.5
TOTAL XYLENES	0.5	**UG/L**	**2.8**	**3.1**	< 0.5

SURROGATE:				
BROMOFLUOROBENZENE (%)		102	96	94
SURROGATE LIMITS	(80 - 120)			

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 910073
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	990419	AQUEOUS	10/15/99	NA	10/25/99	1
05	990420	AQUEOUS	10/15/99	NA	10/25/99	1
06	990421	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990419	990420	990421
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5
SURROGATE:					
BROMOFLUOROBENZENE (%)			103	104	101
SURROGATE LIMITS	(80 - 120)				

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 910073
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	990422	AQUEOUS	10/15/99	NA	10/25/99	1
08	990423	AQUEOUS	10/15/99	NA	10/25/99	1
09	TRIP BLANK	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990422	990423	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 102 100 97
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 910073
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
10	990424	AQUEOUS	10/19/99	NA	10/25/99	1
11	990425	AQUEOUS	10/19/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990424	990425
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5
SURROGATE:				
BROMOFLUOROBENZENE (%)			103	101
SURROGATE LIMITS	(80 - 120)			

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 910073
BLANK I. D.	: 102599	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 10/25/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS		

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

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 910073-03	PINNACLE I.D.	: 910073
CLIENT	: EL PASO FIELD SERVICES	DATE EXTRACTED	: NA
PROJECT #	: (none)	DATE ANALYZED	: 10/25/99
PROJECT NAME	: PIT MONITOR WELLS	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	19.7	99	19.8	99	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.3	102	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	20.8	104	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	64.7	108	64.0	107	1	(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 #: 9910073

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: JOHN CAMBRIN

COMPANY: EL PASO FIELD SERVICES

ADDRESS: 770 WEST NAVAJO
FARMINGTON NM 87401

PHONE: (505) 599-2144

FAX: (505) 599-2261

BILL TO: SAME AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	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:		NUMBER OF CONTAINERS
990416	10-15-99	0955	WATER						X																							2
990417	10-15-99	1025	WATER						X																							2
990418	10-15-99	1125	WATER						X																							2
990419	10-15-99	1155	WATER						X																							2
990420	10-15-99	1250	WATER						X																							2
990421	10-15-99	1335	WATER						X																							2
990422	10-15-99	1450	WATER						X																							2
990423	10-15-99	1505	WATER						X																							2
TRIP BLANK	10-15-99		WATER						X																							1

ANALYSIS REQUEST (1)

PROJECT INFORMATION	
PROJ. NO.:	
PROJ. NAME:	PIT MONITOR WELLS
P.O. NO.:	
SHIPPED VIA:	FED-X

SAMPLE RECEIPT	
NO. CONTAINERS:	17
CUSTODY SEALS:	Y / N / NA
RECEIVED INTACT:	Y / N
BLUE ICE / ICE:	Y / N

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Dennis Bird Time: 1258	Signature: Time:
Printed Name: DENNIS BIRD Date: 10-20-99	Printed Name: Date:
Company: EL PASO FIELD SERVICE	Company:
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Time: 1625
Printed Name: Date:	Printed Name: Date: 10/21
Company:	American Environmental Network (NM), Inc.

American Environmental Network (Arizona), Inc.

CHAIN OF CUSTODY

DATE 10-20-99 PAGE 1 OF 1

AEN LAB I.D. 91673

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

REPORT: Attn. to: JOHN LAMBDIN

COMPANY: EL PASO FIELD SERVICES
ADDRESS: 710 WEST NAVAJO
FARMINGTON NM 87401
PHONE: (505) 599-2144
FAX: (505) 599-2261

BILL TO: SAMEAS ABOVE
COMPANY:
ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	COMPOSITE OR GRAB	BTEX 1228	NUMBER OF CONTAINERS
990424	10-19-99	1552	WATER	-10		X	2
990425	10-19-99	1600	WATER	-11		X	2

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)
Fuel Fingerprint (MOD.8015)
Gas (M8015)
Diesel (BLS-191)
BTXE/MTBE (8020/602)
Chlorinated Hydrocarbons (601/8010)
Aromatic Hydrocarbons (602/8020)
Volatiles 502.2 (SDWA/UST)
Pesticides/PCB (608/8080/505/508)
Herbicides (615/8150/515)
Semi-Volatiles GC/MS (Tics/No Tics)
Volatile Organics GC/MS (624/8240/8260)
Polynuclear Aromatics (610/8310)
RCRA Metals by Total Digestion
RCRA Metals by TCLP (1311)

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: PIT MONITOR WELLS
P.O. NO.:
SHIPPED VIA: FED-X

☐ UST (72 hr. ext.) ☐ NPDES ☐ SDWA ☐ RCRA ☐ OTHER

SAMPLE RECEIPT

NO. CONTAINERS: 4
CUSTODY SEALS: Y / N / NA
RECEIVED INTACT: (Y) / N / NA
RECEIVED ICE: (Y) / N / NA

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

Comments: 3.6

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Dennis Bird Time: 1259	Signature: Time:	Signature: Time:
Printed Name: DENNIS BIRD Date: 10-20-99	Printed Name: Date:	Printed Name: Date:
Company: EL PASO FIELD SERVICE Phone:	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: (LAB) 3.**
Signature: Time:	Signature: Time:	Signature: Time: 1625
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 10/21
Company:	Company:	American Environmental Network

ATTACHMENT 2
MONITOR WELL INSTALLATION

ECORD OF SUBSURFACE EXPLORATION

Borehole # 1
Well # MW2
Page 1 of 2

ilip Environmental Services Corp.
:CO Monroe Road
rmington, New Mexico 87401
05) 3[redacted]282 FAX (505) 326-2388

Project Name MEPFS GROUNDWATER
Project Number 62800018 Phase 35
Project Location MILES FEDERAL 1-A CT

levation
orehole Location T26N R7W S5F
SWL Depth 27.5'
.ogged By C.CULLICOTT
Drilled By D.PADILLA & A.LUERITO
Date/Time Started 10/11/99 10:45 am
Date/Time Completed 10/11/99 1:15 pm
METER # 014810

Well Logged By C.CULLICOTT
Personnel On-Site E.PADILLA, D.PADILLA, A.LUERITO
Contractors On-Site Ø
Client Personnel On-Site Ø

Drilling Method AUGER
Air Monitoring Method PID

Depth (Feet)		Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0				SLOW DRILLING 0-15'						
5	(1)	5-6½		(1)-FULL RECOVERY TAN LOOSE SAND, SILTY, POORLY SORTED, WET MORE CONSOLIDATED PIECES, CLEAN, DRY						(1) 43 BLOWS SS 0.0 PPM
10	(2)	10-11½		(2) 12" RECOVERY MODERATELY CONSOLIDATED SILTY, GRAVELLY SAND, ORANGE TO GREY, DRY, CLEAN						(2) 40+ BLOWS SS 0.0 PPM
15	(3)	15-16½		(3) 12" RECOVERY LOOSE TAN GRAVELLY SILTY SAND. DRY, CLEAN						(3) 23 BLOWS SS 0.0 PPM
20	(4)	20-21½		(4) 12" RECOVERY UPPER 8" LOOSE GREY-YELLOW TAN TO ORANGE GRAVELLY SAND. LOWER 4" - SILTY GRAVELLY SAND, MORE COHERENT, ALL DRY, CLEAN						(4) 33 BLOWS SS 0.0 PPM
25	(5)	25-26½								(5) 50+ BLOWS SS 0.0 PPM
30	(6)	30-31½		(5) SPLIT SPOON REFUSAL AFTER 55 BLOWS, 12" RECOVERY LOOSE GRAVELLY SAND. UPPER 4" ORANGE, REST TAN DAMP, CLEAN (6) OVER						(6) 50+ BLOWS SS 0.0 PPM
35										
40										

Comments: SUNNY, WARM
MW1 DTP 30.54' DTW 30.76' FROM TOC
GWN 28'

Geologist Signature Cathy Cullicott

ONITORING WELL INSTALLATION RECORD

ip Environmental Services Corp.
) Mentoe Road
[redacted] Mexico 87401
) 326-[redacted] FAX (505) 326-2388

Borehole # 1
Well # MW 2
Page 2 of 2

Project Name EPFS GROUNDWATER
Project Number 62800018 Phase 35
Project Location MILES FEDERAL

vation
ll Location T26N R7W S5F
/L Depth 27.5'
tailed By D. PADILLA & A. WERITO

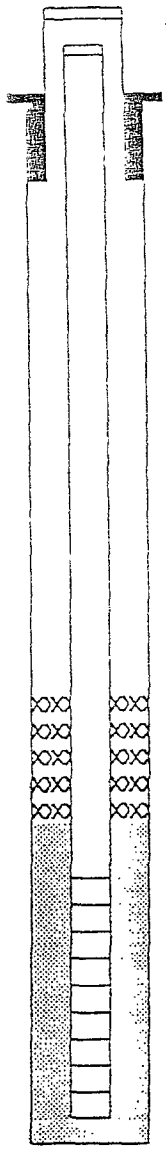
On-Site Geologist C. CULLICOTT
Personnel On-Site E. PADILLA, D. PADILLA,
Contractors On-Site Ø A. WERITO
Client Personnel On-Site Ø

te/Time Started 10/11/99 10:15 am
te/Time Completed 10/11/99 1:15 pm

Meter 94810

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	65
Bottom of Well Riser	2"	25'
Top of Well Screen	2"	25'
Bottom of Well Screen	2"	35'
Top of Peltonite Seal	BENT.	21'
Bottom of Peltonite Seal	CHIPS	23'
Top of Gravel Pack	CO.	23'
Bottom of Gravel Pack	SAND	35'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater	27.5'	
Total Depth of Borehole		35'



Top of Protective Casing
Top of Riser
Ground Surface
Top of Seal 21'
Top of Gravel Pack 23'
Top of Screen 25'
Bottom of Screen 35'
Bottom of Borehole 35'

Comments: ONLY 10' OF SCREEN DTW 27.5 1:45

WELL DEVELOPED BY E. PADILLA WITH 5 gallons REMOVED. WATER WAS CLEAR TO SLIGHTLY TURBID. WELL IS GOOD PRODUCER DTW after Bailing 27.6

Geologist Signature Cathy Cullicott

ECORD OF SUBSURFACE EXPLORATION

illip Environmental Services Corp.
00 Monroe Road
rmington, New Mexico 87401
05) 326-2262 FAX (505) 326-2388

Borehole # 2
Well # MW3
Page 1 of 2

Project Name EPFS GROUNDWATER
Project Number G2X00018 Phase 35
Project Location MILES FEDERAL #1A

Elevation
Borehole Location T26N R7W S5F
SWL Depth 27.94'
Logged By C. CULLICOTT
Drilled By D. PADILLA & A. WERITO
Date/Time Started 10/11/99 1:15pm
Date/Time Completed 10/11/99 3:15pm
METER 94810

Well Logged By C. CULLICOTT
Personnel On-Site F. PADILLA, D. PADILLA, A. WERITO
Contractors On-Site Ø
Client Personnel On-Site Ø

Drilling Method AUGER
Air Monitoring Method PID

Depth (Feet)		Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0										
5	(1)	5-6½		(1) 4" RECOVERY LOOSE BROWN SILTY SAND, DRY, CLEAN						(1) 13 BLOWS SS 0.0 ppm
10	(2)	10-11½		(2) 10" RECOVERY LOOSE, DRY, YELLOW GRAVELLY SILTY SANDY/ PIECES OF SANDSTONE, YELLOW FOR 6", THEN REST IS TAN.						(2) 35 BLOWS SS 0.0 ppm
15	(3)	15-16½		(3) 12" RECOVERY LOOSE DRY GRAVELLY SILTY SAND (SAND IS MOSTLY COARSE), UPPER 6" IS YELLOWISH WHITE POWDERY MATRIX + CHUNKS OF YELLOW SANDSTONE. LOWER 6" IS GRAYEISH TAN						(3) 52 BLOWS SS 0.0 ppm
20	(4)	20-21½								(4) 50+ BLOWS SS 0.0 ppm
25	(5)	25-26½								(5) 50+ BLOWS SS 0.0 ppm
30	(6)	30-31½		(4) 10" RECOVERY MODERATELY CONSOLIDATED FINE SILTY SAND, BROWN CLEAN, SLIGHTLY DAMP						(6) 50+ BLOWS SS 0.0 ppm
35				(5) SPLIT SPOON REFUSAL AFTER ~25 BLOWS 6" RECOVERY yellowish brown damp, loose, POORLY SORTED SAND w/ SANDSTONE pieces CLEAN						
40										

Comments: SUNNY, HOT

Geologist Signature Cathy Cullicott

MONITORING WELL INSTALLATION RECORD

Phillip Environmental Services Corp.
[redacted] New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # 2
Well # MW3
Page 2 of 2

Project Name EPFS GROUNDWATER
Project Number 62800018 Phase 35
Project Location MILES FEDERAL #1A

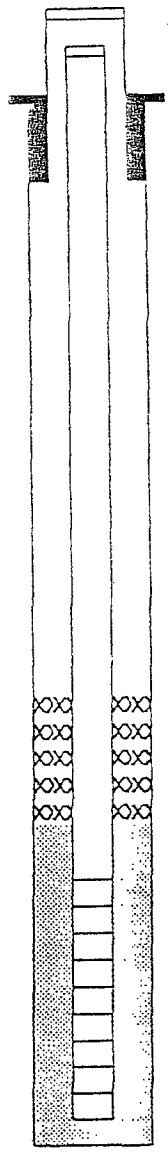
Elevation
Well Location T26N R7W S5 F
SWL Depth 27.94'
Installed By D. PADILLA & A. WERITO
Date/Time Started 10/11/99 1:15pm
Date/Time Completed 10/11/99 3:15pm

On-Site Geologist C. CULLICOTT
Personnel On-Site E. PADILLA, O. PADILLA,
Contractors On-Site Ø A. WERITO
Client Personnel On-Site Ø

Meter 94810

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	GS
Bottom of Well Riser	2"	25'
Top of Well Screen	2"	25'
Bottom of Well Screen	2"	35'
Top of Peltonite Seal	BENT.	21'
Bottom of Peltonite Seal	CHIPS	23'
Top of Gravel Pack	CO	23'
Bottom of Gravel Pack	SAND	35'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		27.94'
Total Depth of Borehole		35'



Top of Protective Casing
Top of Riser
Ground Surface
Top of Seal 21'
Top of Gravel Pack 23'
Top of Screen 25'
Bottom of Screen 35'
Bottom of Borehole 35'

Comments: Well developed w/ 5 gallons removed 3:20-3:35
well is good producer - DTW AFTER BAILING 28.38'
Water was turbid throughout bailing yellowish brown sediment

Geologist Signature Cathy Cullicott