

3R - 164

REPORTS

DATE:

2000



Certified Mail: #7000 1670 0012 7260 6739

February 26, 2001

Mr. William C. Olson
New Mexico Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87504

RECEIVED

FEB 28 2001

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 2000 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 sites that were identified during our pit closure project of 1994 / 1995.

Of the 32 reports (Volumes 1-4), EPFS hereby requests closure of six sites. The six 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". Four of the six sites were submitted in last years report and a decision has not been made on closure. The remaining two sites have been submitted in previous years and denied closure.

The Jaquez Com. C #1 and Jaquez Com. E #1 site is not included in with this years report and will be submitted by the required deadline of April 1, 2001

EPFS has also included for your information six Navajo sites in a separate binder.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Scott T. Pope'.

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; Certified Mail # 7000 1670 0012 7260 6722
Mr. Bill Liesse, BLM - w / enclosures (federal sites only), Certified Mail # 7000 1670 0012 7260 6715

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Pit Project Groundwater Report
Annual Report
Volume I

March 2001

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800398



164

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

**COLDIRON COM A #1
Meter/Line ID - 73551**

SITE DETAILS

Legals - Twn: 30N Rng: 11W Sec: 2 Unit: K
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation: Apr-94 (50 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Quarterly Sampling Initiated: Apr-96

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was performed quarterly during 2000.

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 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

Isoconcentration maps were not generated for this site.

CONCLUSIONS

Analytical results of groundwater samples from MW-1 show levels of total xylenes above NMWQCC groundwater standards during the first quarter and benzene levels above New Mexico groundwater standards during the last quarter. The analytical results of the groundwater samples from the second and third quarter events were below New Mexico groundwater standards for all constituents that were tested.

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 northwest on this site.

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

One groundwater sample collected upgradient from MW-1 at PH-2 was in excess of standards for all BTEX components and indicates the production pit upgradient of MW-1 may be an additional source.

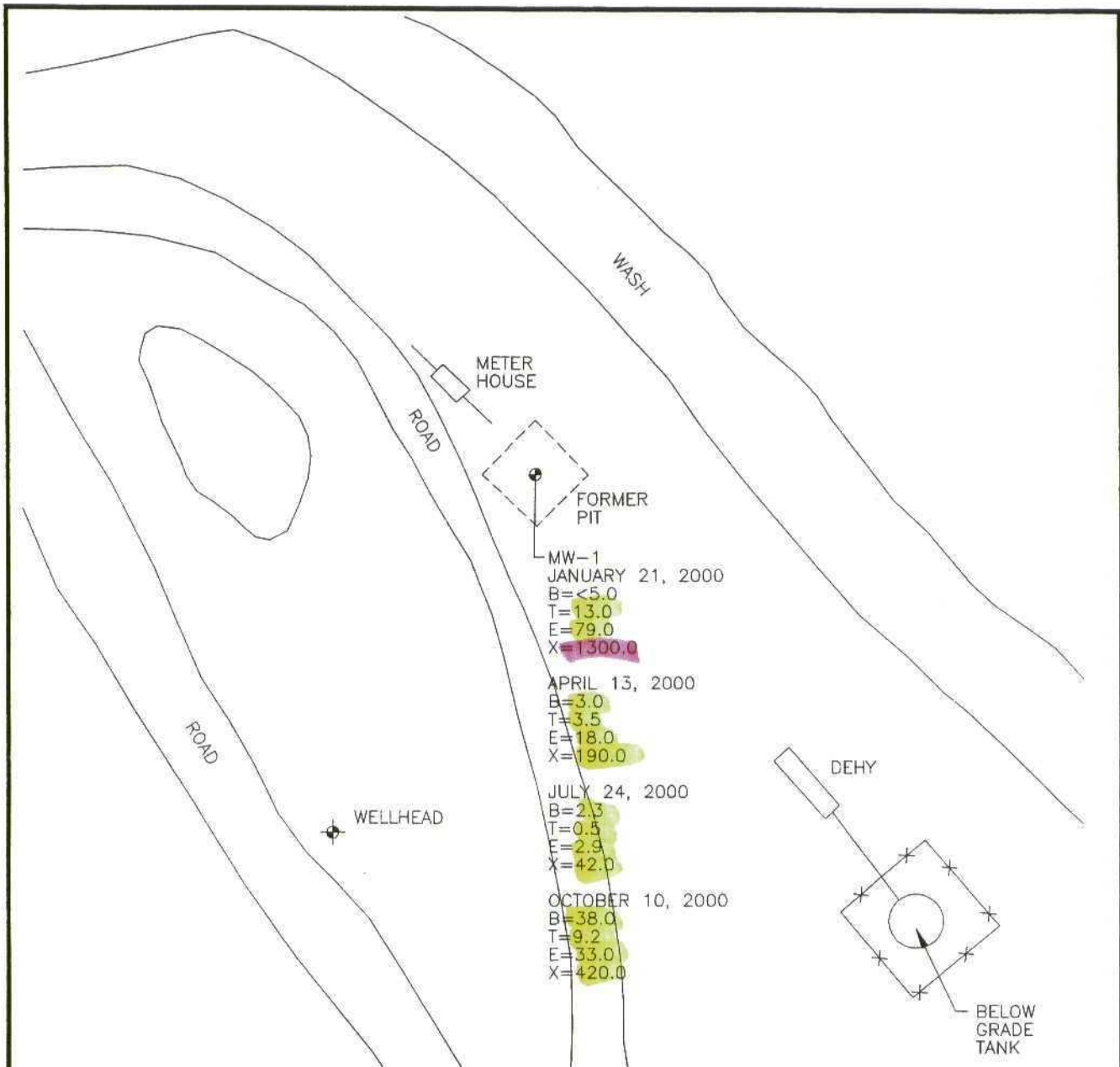
RECOMMENDATIONS

- Install additional downgradient monitor wells to determine if and to what extent hydrocarbon migration has occurred.
- EPFS will continue quarterly sampling at this site until BTEX constituents fall below NMWQCC Standards for four consecutive quarters.
- Following OCD approval for closure, MW-1 will be abandoned using OCD approved abandonment procedures.

Table 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
CIC-0001-MW1	73551	Coldiron A #1	01/21/2000	1	Sample 4 - 12th Quarter	< 5.0	= 13.0	= 79.0	= 1300.0	= 1392
COL-0004-MW1	73551	Coldiron A #1	04/13/2000	1	Sample 4 - 13th Quarter	= 3.0	= 3.5	= 18.0	= 190.0	= 214.5
COL-0007-MW1	73551	Coldiron A #1	07/24/2000	1	Sample 4 - 14th Quarter	= 2.3	= 0.5	= 2.9	= 42.0	= 47.7
COL-0010-MW1	73551	Coldiron A #1	10/10/2000	1	Sample 4 - 15th Quarter	= 38.0	= 9.2	= 33.0	= 420.0	= 500.2

Sample 4 - Quarterly Sampling



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



COL 628\00219A1-003



TITLE:
 COLDIRON COM A#1
 METER 73551
 JANUARY 22, 2001

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/30/01	REV.: 0

PROJECT NO.: 62800219 EPFS GW PITS
FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL



Well Number MW-1

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1

Project Name EPFS Quarterly Sampling

Project Manager Cecil Irby

Project No. 62800107

Client Company EPFS

Phase/Task No. 0301

Site Name Caldiron Com A#1

Site Address RURAL SAN JUAN Co.

Development Criteria

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

Water Volume Calculation
 Initial Depth of Well (feet) 45.24
 Initial Depth to Water (feet) 33.01
 Height of Water Column in Well (feet) 12.23
 Diameter (inches): Well 4" Gravel Pack

Methods of Development

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other _____
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	7.98		7.98 x 3
Gravel Pack			
Drilling Fluids			
Total			23.94

Instruments

- pH Meter
- DO Monitor
- Conductivity Meter BIT 9405
- Temperature Meter BIT 9405
- Other _____

Serial No. (If applicable) _____

Water Disposal

Separator tank (KUTZ)

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
1/21/2000	1534					8	8	16.3		2.92		dark gray
1/21/2000	1602					8	16	13.2		3.38		dark gray
1/21/2000	1622					8	24	13.3		3.86		dark gray
1/21/2000	1644					8	32	12.2		3.90		Med. gray

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

Comments PH METER MALFUNCTIONED. NO PH READINGS.

Developer's Signature(s) Steve Allen

Date 1/21/2000

Reviewer RT Date 3/10/00

PINNACLE
LABORATORIES

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

Pinnacle Lab ID number 001062
February 01, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: CECIL IRBY

On 01/25/00 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

PINNACLE
LABORATORIES

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

CLIENT : PHILIP ENVIRONMENTAL PINNACLE ID : 001062
PROJECT # : 62800107 DATE RECEIVED : 01/25/00
PROJECT NAME : EPFS QUARTERLY SAMPLING REPORT DATE : 02/01/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	TRIP BLANK	AQUEOUS	01/21/00
02	CIC 0001 MW1-1	AQUEOUS	01/21/00



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 001062

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	TRIP BLANK	AQUEOUS	01/21/00	NA	01/31/00	1
02	CIC 0001 MW1-1	AQUEOUS	01/21/00	NA	01/31/00	10

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK	CIC 0001 MW1-1
BENZENE	0.5	UG/L	< 0.5	< 5.0
TOLUENE	0.5	UG/L	< 0.5	13
MBENZENE	0.5	UG/L	< 0.5	79
TOTAL XYLENES	0.5	UG/L	< 0.5	1300

SURROGATE:
BROMOFLUOROBENZENE (%) 95 114
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 013100
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 001062
DATE EXTRACTED : N/A
DATE ANALYZED : 01/31/00
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	23.7	119	22.8	114	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.7	109	20.5	103	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.1	116	21.8	109	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.8	111	63.6	106	5	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Project Name EPPS QUARTERLY SAMPLING

Project Manager ROBERT THOMPSON

Project No. 62800107

Client Company EL PASO FIELD SERVICES

Phase/Task No. 0301

Site Name COLDIRON A #1 (73551)

Site Address SAN JUAN CO.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 45.24' TOR
 Initial Depth to Water (feet) 35.16' TOR
 Height of Water Column in Well (feet)
 Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed	
	Cubic Feet	Gallons		
Well Casing	10.08	6.58 x 3		19.74
Gravel Pack				
Drilling Fluids				
Total				19.74

Methods of Development

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

Instruments

- pH Meter HYDAC
- DO Monitor
- Conductivity Meter HYDAC
- Temperature Meter HYDAC
- Other

Serial No. (If applicable)

Water Disposal KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Inlet Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (microsiemens/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
4/13/00	1500	X				5	6	20.9	4.06	2950		LIGHT BLACK
4/13/00	1508	X				5	10	20.3	5.67	3030		LIGHT BLACK
4/13/00	1516	X				5	15	19.3	5.96	3440		LIGHT BLACK
4/13/00	1524	X				5	20	19.9	6.37	3880		

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

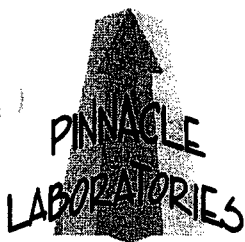
Comments WATER HAS SLIGHT STEEN ON SURFACE. SAMPLED AT 1532. LOC # C2522

Developer's Signature(s) Robert Thompson

Date 4/13/00

Reviewer

Date



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

Pinnacle Lab ID number **004057**
April 24, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

On 04/14/00 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.

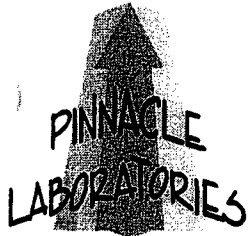
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

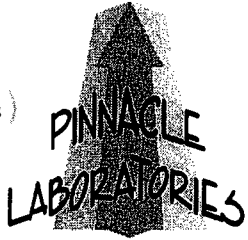
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 004057
PROJECT #	: 62800107	DATE RECEIVED	: 04/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/24/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	COL-0004-MW01	AQUEOUS	04/13/00



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 : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 004057

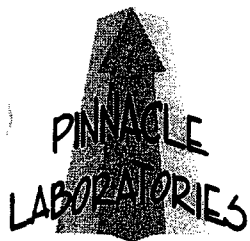
SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COL-0004-MW01	AQUEOUS	04/13/00	NA	04/16/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0004-MW01
BENZENE	0.5	UG/L	3.0
TOLUENE	0.5	UG/L	3.5
ETHYLBENZENE	0.5	UG/L	18
TOTAL XYLENES	0.5	UG/L	190

SURROGATE: .
BROMOFLUOROBENZENE (%) 125*
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

* Surrogate raised due to matrix interference.



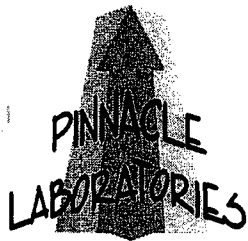
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004057
BLANK I. D.	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
1,2-DIFLUOROBENZENE (%) 92
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



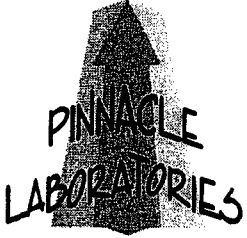
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004057
BLANK I. D.	: 041600	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/16/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
1,2-DIFLUOROBENZENE (%) 96
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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 Albuquerque, New Mexico 87107
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 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004057
MSMSD #	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	21.0	105	20.7	104	1	(80 - 120)	20
TOLUENE	<0.5	20.0	23.6	118	22.6	113	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.9	115	22.2	111	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	69.2	115	66.4	111	4	(80 - 120)	20

CHEMIST NOTES:
 N/A

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

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



Well Number MW-01
 Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Development
 Purging

Page 1 of 1

Project Name EPES QUARTERLY SAMPLING Project Manager R. THOMPSON Project No. 62800107

Client Company EPFS Phase/Task No. 0301

Site Name COLDIRON A#1 (73551) Site Address RURAL SAN JUAN CO.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 45.22 TOR
 Initial Depth to Water (feet) 35.51 TOR
 Height of Water Column in Well (feet) 9.71
 Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.71	6.33 x 3	19.0
Gravel Pack			
Drilling Fluids			
Total			19.0

Methods of Development

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

Instruments

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

Serial No. (if applicable)

HYDAC
HYDAC
HYDAC

Water Disposal

KUTZ SEPARATOR, BLOOMFIELD, NM

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
						Incremental	Cumulative					
7/24/00	1223	X				4	4	25.2	6.93	2770		CLEAR - GREY, HC (ODOR)
"	1229	X				4	8	23.0	7.10	3120		" "
"	1234	X				4	12	22.9	7.20	3500		" "
"	1240	X				4	16	22.8	7.22	3800		" "
"	1245	X				4	20	22.1	7.23	3930		" "

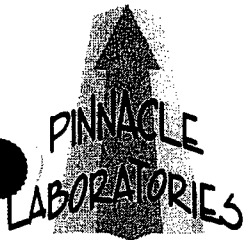
Circle the date and time that the development criteria are met.

Comments Sampled for BTEX at 1253

Developer's Signature(s) Jean Wagoner

Date 7/24/00

Reviewer RT Date 8/3/00



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

Pinnacle Lab ID number **007082**
August 03, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

On 07/28/00 Pinnacle Laboratories, 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.

H. Mitchell Rubenstein, Ph.D.
General Manager

MR: jt

Enclosure



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 : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 007082

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COL-0007-MW01	AQUEOUS	07/24/00	NA	08/01/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0007-MW01
BENZENE	0.5	UG/L	2.3
TOLUENE	0.5	UG/L	0.5
ETHYLBENZENE	0.5	UG/L	2.9
TOTAL XYLENES	0.5	UG/L	42

SURROGATE:
BROMOFLUOROBENZENE (%) 108
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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.	: 007082
BLANK I. D.	: 080100	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 08/01/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

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 (%)

95

SURROGATE LIMITS:

(80 - 120)

CLIENT NOTES:

N/A



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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 007079-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 007082
DATE EXTRACTED : NA
DATE ANALYZED : 08/01/00
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	17.3	87	16.7	84	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.1	101	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.0	115	21.9	110	5	(80 - 120)	20
TOTAL XYLENES	1.1	60.0	70.4	116	66.9	110	5	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Project Name E.P.F.S. Quarterly Sampling

Project Manager R. Thompson

Project No. 62800107

Client Company E.P.F.S.

Phase/Task No. 0301

Site Name COLDIRON COM A# 1 73551

Site Address Russell St

Jean Co.

Development Criteria

- 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Water Volume Calculation

Initial Depth of Well (feet) 46.26
 Initial Depth to Water (feet) 35.06
 Height of Water Column in Well (feet) 11.2
 Diameter (inches): Well _____ Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>11.2</u>	<u>2.31x3</u>	<u>21.93</u>
Gravel Pack			
Drilling Fluids			
Total			<u>21.93</u>

Methods of Development

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

Instruments

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

Serial No. (if applicable)

Hydac

Hydac

Hydac

Water Disposal

K-12 Separator Bloomfield NM.

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>10-10-00</u>	<u>1449</u>	<u>X</u>				<u>4.5</u>	<u>4.5</u>	<u>13.4</u>	<u>7.02</u>	<u>3350</u>		<u>DISPOSED BY FIRM</u>
	<u>1455</u>	<u>X</u>				<u>4.5</u>	<u>9.0</u>	<u>14.1</u>	<u>6.82</u>	<u>3800</u>		<u>RETURN TO EG LABOR</u>
	<u>1503</u>	<u>X</u>				<u>4.5</u>	<u>13.5</u>	<u>14.0</u>	<u>6.67</u>	<u>4450</u>		<u>"</u>
	<u>1509</u>	<u>X</u>				<u>4.5</u>	<u>18.0</u>	<u>13.8</u>	<u>6.54</u>	<u>4950</u>		<u>"</u>
	<u>1516</u>	<u>X</u>				<u>4.5</u>	<u>22.5</u>	<u>13.8</u>	<u>6.73</u>	<u>4990</u>		<u>NO CHANGE</u>

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

Comments Sampled for BTEX 15.21

Developer's Signature(s) R. Thompson

Date 10-10-00

Reviewer RT

Date 10/17/00

PINNACLE
LABORATORIES

OCT 20 2000

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

Pinnacle Lab ID number **010034**
October 18, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

On 10/11/00 Pinnacle Laboratories, 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.

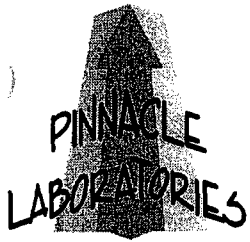
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

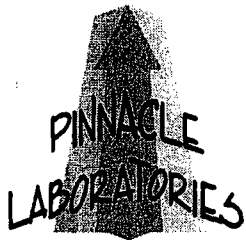
MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 010034
PROJECT #	: 62800107	DATE RECEIVED	: 10/11/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/18/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	COL-0010-MW 01	AQUEOUS	10/10/00
02	TRIP BLANK	AQUEOUS	10/10/00



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 010034

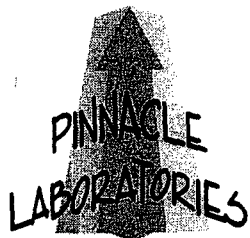
SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COL-0010-MW 01	AQUEOUS	10/10/00	NA	10/12/00	1
02	TRIP BLANK	AQUEOUS	10/10/00	NA	10/12/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0010-MW 01	TRIP BLANK
BENZENE	0.5	UG/L	38	< 0.5
TOLUENE	0.5	UG/L	9.2	< 0.5
BENZENE	0.5	UG/L	33	< 0.5
TOTAL XYLENES	0.5	UG/L	420	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 178* 104
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

* High surrogate due to matrix interference.



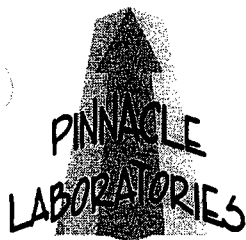
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010034
BLANK I. D.	: 101200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/12/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

8 GATE:
BROMOFLUOROBENZENE (%) 105
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



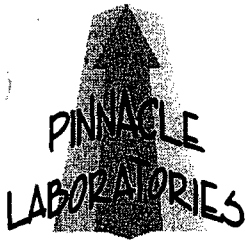
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010034
BLANK I. D.	: 101300	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/13/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

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 (%) 107
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010034
MSMSD #	: 010035-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/13/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	17.4	87	18.6	93	7	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	21.3	107	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	22.7	114	5	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	65.1	109	68.3	114	5	(80 - 120)	20

CHEMIST NOTES:
 N/A

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

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

