3R - 202

REPORTS

DATE:

2000

EL PASO FIELD SERVICES

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

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,

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**

10

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

PSC

202

EPFS GROUNDWATER PITS
2000 ANNUAL GROUNDWATER REPORT

JOHNSTON FEDERAL #6A
Meter/Line ID - 89232

SITE DETAILS

Legals - Twn: 31N **Rng:** 9W **Sec:** 35 **Unit:** F
NMOCD Hazard Ranking: 40 **Land Type:** FEDERAL
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 **Excavation:** Sep-94 (80 cy) **Soil Boring:** Aug-95
Monitor Well: Aug-95 **Quarterly Sampling Initiated:** Apr-96 **PSH Removal Initiated:** Jul-97
Additional Monitor Well: Jul-00

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH was not recovered in 2000.

Monitor Well Installation – An additional downgradient well was drilled cross-gradient (west) of MW-3 and MW-4, as requested by the OCD.

SUMMARY TABLES

Groundwater level data and PSH recovery data for MW-1 and MW-3 are presented in Table 1. Groundwater analytical data is presented in Table 2. Copies of the laboratory data sheets and the associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map with the groundwater elevations and gradient is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on July 7, 2000, and geologic logs and well completion diagrams are presented as Attachment 2.

DISPOSITION OF GENERATED WASTES

All recovered PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

Groundwater gradient maps produced this year show the groundwater gradient is towards the north. Analyses of groundwater samples from MW-2 indicate no detectable levels of BTEX. Laboratory analyses of samples from MW-4 exhibits levels of benzene above the NMWQCC groundwater standards.

As required by the OCD in correspondence dated July 28, 1999, one additional monitor well, numbered MW-5, was installed downgradient of MW-1 and cross gradient of MW-3 and MW-4.

Laboratory analysis show benzene and total xylene levels exceed the New Mexico groundwater standards in MW-5.

Pertinent data from previous groundwater reports include the following:
Based on groundwater levels collected from four groundwater monitor wells, the groundwater flows to the north-northeast on this site. Quarterly sampling was discontinued due to the presence of free product. All recovered PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

Groundwater samples collected from MW-1 have historically been in excess of New Mexico groundwater standards for BTEX since quarterly sampling was initiated. Groundwater samples collected from two down-gradient monitor wells (MW-3 and MW-4) have historically been in excess of standards for benzene. MW-2, which is slightly down to crossgradient, has been below New Mexico groundwater standards for BTEX since quarterly sampling was initiated.

EPFS has provided operator with all pertinent site data generated to date.

RECOMMENDATIONS

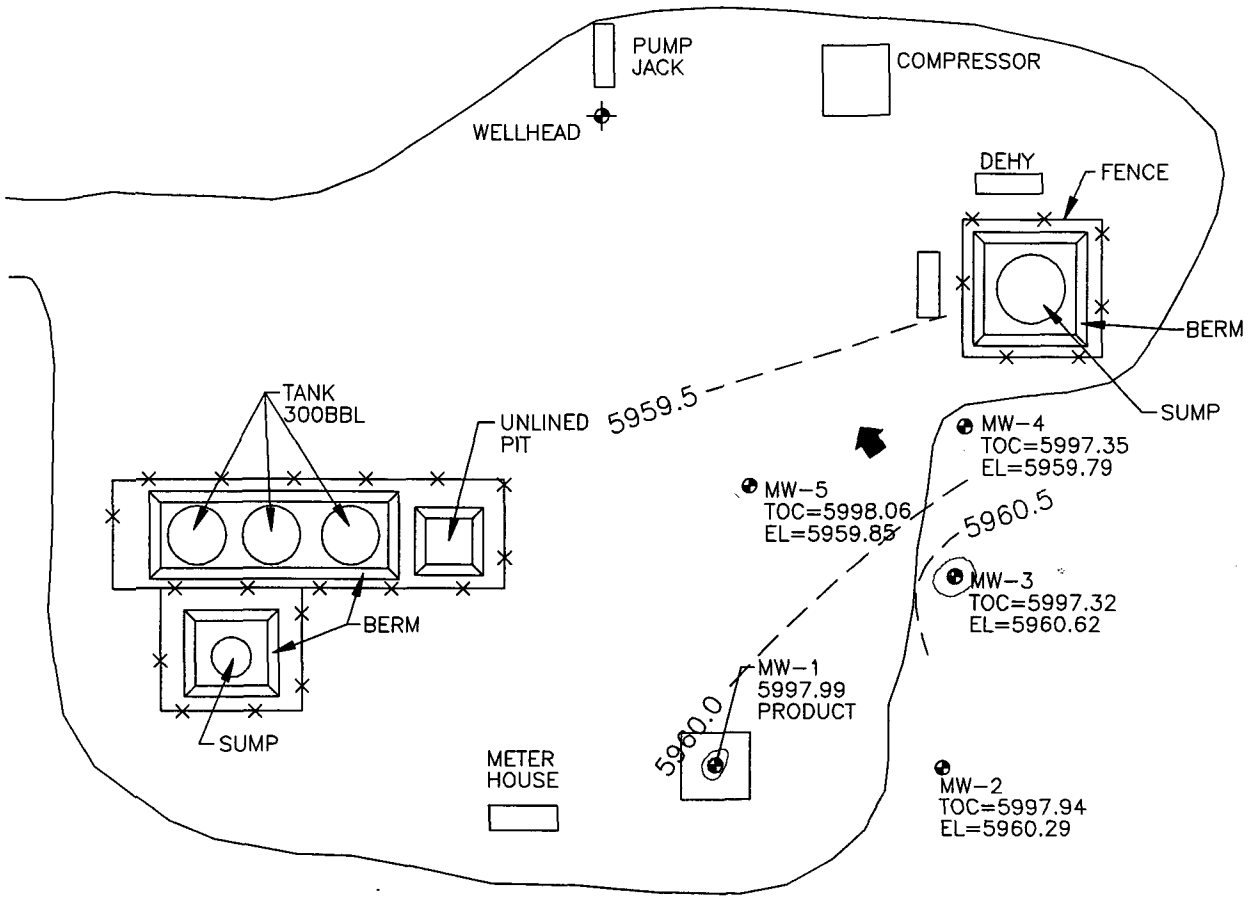
- A detailed evaluation of the groundwater flow direction should be conducted with new data collection.
- Perform product removal at MW-1 as needed.
- Following completion of product removal initiate sampling in monitor well MW-1 on an annual basis.
- Sample monitor well MW-2, MW-3, MW-4, and MW-5 annually.
- EPFS will continue to work with the operator at this site.

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
89232	JOHNSTON FEDERAL #6A	10/09/2000	1	37.49	38.04	0.55	0	0
89232	JOHNSTON FEDERAL #6A	10/04/2000	3	0	37.32	0	0	0

Table 2

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
JOH-0010-MW2	89232	JOHNSTON FEDERAL #6A	10/9/00	2	Sample 1 - 1st Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND
JOH-0010-MW4	89232	JOHNSTON FEDERAL #6A	10/9/00	4	Sample 1 - 1st Annual	= 81	= 36	= 45	= 20	182
JOH-0008-MW5	89232	JOHNSTON FEDERAL #6A	10/9/00	5	Sample 1 - 1st Annual	= 130	= 180	= 56	= 650	1016

ND - No detectable levels
Sample 1 - Annual Sampling



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
61.1	GROUNDWATER POTENTIOMETRIC SURFACE
	APPROXIMATE GROUNDWATER GRADIENT

NOTE: Well locations are to scale, relative to each other. The surface features are not to scale.

0 40
FEET

N

PHILIP SERVICES CORP	TITLE: JOHNSTON FEDERAL #6A METER 89232 OCTOBER 9, 2000	DWN: TMM / DES.: LW; CHKD: LW / APPD: MN; DATE: 2/19/01 / REV.: 0	PROJECT NO.: 62800219 EPFS GW PITS; FIGURE 1

COL 628\00219AV-005

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

PHILIP ENVIRONMENTAL

Well Number MW05

☑ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page ____ of ____

Project Name EPFS quarterly Sampling Project Manager R Thompson Project No. 628001.07

Client Company E.P.F.S. Phase.Task No. 0301

Site Name Johnson Fed. GA (89232) Site Address Rural San Juan CO.

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) 42.84

Initial Depth to Water (feet) 38.11

Height of Water Column in Well (feet) 4.73

Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.73	.77 x 3	2.31
Gravel Pack			
Drilling Fluids			
Total			2.31

Instruments

	Serial No. (If applicable)
☑ pH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	HydAC
☑ Temperature Meter	HydAC
☐ Other ____	

Water Disposal

KLTZ Seperator Bloomfield NM.

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
8-30-00	11:02		X				.5	.5			20.5	6.65	2430		Brown in Color muddy slight odor
	11:06		X				.5	1			18.9	6.64	2320		" "
	11:11		X				.5	1.5			18.1	6.62	2320		" "
	11:16		X				.5	2			17.9	6.62	2310		" "
	11:20		X				.5	2.5			17.4	6.65	2200		no change

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

Comments Sampled for BTEX 11:23 pm

Developer's Signature(s) Chris A. Mary Date 8-30-00 Reviewer ____ Date ____

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2654

Project Name EPFS QUARTERLY SAMPLING

Project Number 62800107 Phase . Task 0301.

Samplers C. MAEZ

Laboratory Name PINNACLE

Location ALBQ. NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX 8021	Comments
JOH-0008-MW05	8/30/00	1123	H20	3	X	JOHNSON FED 6A 89232

Relinquished by:

Signature	Date	Time
Jenn Wagner	8/31/00	1530

Received By:

Signature	Date	Time

Samples Iced: ☑ Yes ☐ No

Carrier: GREYHOUND LINES

Airbill No. 6LI-1600918549

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) $HgCl_2$
- ☐ Other (Specify) _____

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 **009001**
September 06, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICE
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

On 09/01/00 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

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	: 009001
PROJECT #	: 62800107	DATE RECEIVED	: 09/01/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/06/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	JOH-0008-MW05	AQUEOUS	08/30/00

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 : PHILIP ENVIRONMENTAL PINNACLE I.D.: 009001
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	JOH-0008-MW05	AQUEOUS	08/30/00	NA	09/05/00	5

PARAMETER	DET. LIMIT	UNITS	JOH-0008-MW05
BENZENE	0.5	**UG/L**	**130**
TOLUENE	0.5	**UG/L**	**180**
ETHYLBENZENE	0.5	**UG/L**	**56**
TOTAL XYLENES	0.5	**UG/L**	**650**

SURROGATE:
BROMOFLUOROBENZENE (%) 115
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.	: 009001
BLANK I. D.	: 090500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/05/00
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:		
BFB FLUOROBENZENE (%)		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 #	: 090500	PINNACLE I.D.	: 009001
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 09/05/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	20.5	103	19.8	99	3	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.5	103	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.9	110	21.2	106	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.0	110	63.5	106	4	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

009001

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2654

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107 Phase . Task 0301.
Samplers C. MAEZ
Laboratory Name PINNACLE
Location ALBQ. NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX 8021	Comments
JOH-0008-MW05	8/30/00	1123	H2O	3	X	JOHNSON FED 89232 6A

Relinquished by:

Signature	Date	Time
Jenn. Wagner	8/31/00	1530

Received By:

Signature	Date	Time
Francine Trivino	9/1/00	0930

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) HgCl2
- ☐ Other (Specify)

Carrier: GREYHOUND LINES
Airbill No. 6CLI1606918544

Shipping and Lab Notes:

Rec'd @ 2.6°C

PE-176 4/95

PHILIP ENVIRONMENTAL

Well Number MW-02 ☐ Developing ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1

Project Name EPFS Quarterly Sampling Project Manager R Thompson Project No. 62800107

Client Company EPFS Phase.Task No. 0301

Site Name Johnston Fed #6A (89232) Site Address Rural San Juan CO.

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) 43.86

Initial Depth to Water (feet) 37.65

Height of Water Column in Well (feet) 6.21

Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.21	9.05 x 3	12.15
Gravel Pack			
Drilling Fluids			
Total			12.15

Instruments

	Serial No. (if applicable)
☑ pH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Water Disposal

Kutz Seperator Bloomfield N.M.

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 09 00	1036		X				2.5	2.5			14.7	6.36	3490		Clear no odor
	1043		X				2.5	5			14.2	5.85	3210		Cloudy no odor
	1049		X				2.5	7.5			14.2	5.78	3200		
	1054		X				2.5	10			14.3	5.66	3200		
	1102		X				2.5	12.5			14.1	5.53	3180		

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

Comments Sampled for BTex 1107

Developer's Signature(s) Kris A. May Date 10-09-00 Reviewer RT Date 10/17/00

PHILIP ENVIRONMENTAL

Well Number MW 04 ☐ Develop. ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name EPFS quarterly sampling Project Manager R Thompson Project No. 62800102

Client Company EPFS Phase.Task No. 0301

Site Name Johnston Fed # CA (89232) Site Address Rural San Juan Co.

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) 49.32
Initial Depth to Water (feet) 37.56
Height of Water Column in Well (feet) 11.76
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	11.76	7.67x3	23.01
Gravel Pack			
Drilling Fluids			
Total			23.01

Instruments

	Serial No. (if applicable)
☑ pH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Water Disposal

Knight Separator Bloomfield N.M.

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
10-09-00	1239		X				4.75	4.75			15.9	6.07	3220		Clear slight odor
	1246		X				4.75	9.5			15.1	5.86	3190		" "
	1254		X				4.75	14.25			15.0	5.60	3210		Cloudy slight odor
	1259		X				4.75	19			14.9	5.52	3190		" "
	1307		X				4.75	23.75			14.9	5.68	3090		no change

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

Comments Sampled for BTEX 1314

Developer's Signature(s) Chris A. May Date 10 09 00 Reviewer RT Date 10/17/00

PHILIP

Chain of Custody Record

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

COC Serial No. C 2674

Project Name EpFS quarterly Sampling
Project Number 62400107 Phase . Task 0301 .5
Samplers C. Mace
Laboratory Name PINNACLE
Location ALBQ. N.M.

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments
SOH-0010-MW02	10-09-00	1107	H_2O	2	X	Johnston # 6A
SOH-0010-MW 04	10-09-00	1314	H_2O	2	X	Johnston # 6A

Relinquished by:

Signature	Date	Time
Chris A. Mace	10 10 00	1645

Received By:

Signature	Date	Time

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) H_2SO_4
- ☐ Other (Specify) _____

Carrier: Greyhound Airbill No. GLT 160691876?

Shipping and Lab Notes:

PE-176 4/95

PINNACLE LABORATORIES

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

OCT 2 0 2000

Pinnacle Lab ID number **010035**
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

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	: 010035
PROJECT #	: 62800107	DATE RECEIVED	: 10/11/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/18/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	JOH-0010-MW 02	AQUEOUS	10/09/00
02	JOH-0010-MW 04	AQUEOUS	10/09/00

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 : PHILIP ENVIRONMENTAL
PINNACLE I.D.: 010035
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	JOH-0010-MW 02	AQUEOUS	10/09/00	NA	10/12/00	1
02	JOH-0010-MW 04	AQUEOUS	10/09/00	NA	10/12/00	1

PARAMETER	DET. LIMIT	UNITS	JOH-0010-MW 02	JOH-0010-MW 04
BENZENE	0.5	UG/L	< 0.5	**81**
TOLUENE	0.5	UG/L	< 0.5	**36**
[illegible] BENZENE	0.5	UG/L	< 0.5	**45**
TOT[illegible] XYLENES	0.5	UG/L	< 0.5	**20**
SURROGATE:				
BROMOFLUOROBENZENE (%)			114	117
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.	: 010035
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
SURROGATE:		
BROMOFLUOROBENZENE (%)		105
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.	: 010035
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
S[redacted]GATE:		
BRO[redacted]FLUOROBENZENE (%)		107
SURROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 101300	PINNACLE I.D.	: 010035
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 10/13/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	17.4	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

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

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

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

010035

COC Serial No. C 2674

Project Name EpFS quarterly Sampling
Project Number 62600107 Phase . Task 0301
Samplers C. McCoy
Laboratory Name PINNACLE
Location ALBQ. N.M.

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX 8021	Lab ID #	Comments
JOH-0010-MW02	10-09-00	1107	H_2O	2	x	01	Johnston # 6A
JOH-0010-MW04	10-09-00	1314	H_2O	2	x	02	Johnston # 6A

Relinquished by:

Signature	Date	Time
Chris A. Mc	10 10 00	1645

Received By:

Signature	Date	Time
Jimene Juvio	10/11/00	0930

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) $HgCl_2$
- ☐ Other (Specify) _____

Carrier: Greyhound
Airbill No. GLI 1606918764

Shipping and Lab Notes:

Rec'd @ 4.8°c

-176 4/95

ATTACHMENT 2

2000 MONITOR WELL INSTALLATION RECORDS

MONITORING WELL INSTALLATION RECORD

Borehole # MW-05
~~Well #~~ METER # 89232
Page 1 of 1

Philip Services Corporation
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS DRILLING
Project Number 62800219 Cost Code 35
Project Location T31-R9-S35-F

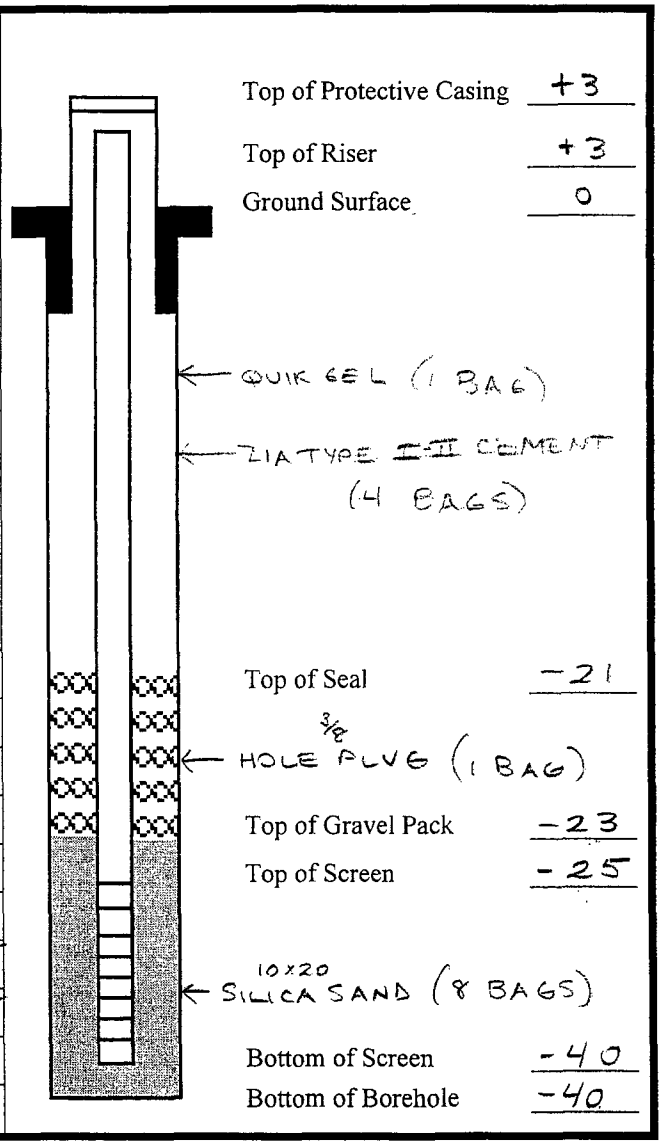
Elevation
Well Location JOHNSON FEDERAL 6-A
GWL Depth -35.19
Installed By D. PADILLA

On-Site Geologist J. WAGNON
Personnel On-Site K. PADILLA, R. LEFEBRE
Contractors On-Site NONE
Client Personnel On-Site NONE

Date/Time Started 07/07/00, 0940
Date/Time Completed 07/07/00, 1210

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		+3
Bottom of Protective Casing		0
Top of Permanent Borehole Casing		0
Bottom of Permanent Borehole Casing		-40
Top of Concrete		+0.04
Bottom of Concrete		0
Top of Grout		0
Bottom of Grout		-21
Top of Well Riser		+3
Bottom of Well Riser		-40
Top of Well Screen		-25
Bottom of Well Screen		-40
Top of Peltonite Seal		-21
Bottom of Peltonite Seal		-23
Top of Gravel Pack		-23
Bottom of Gravel Pack		-40
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		-35.19
Total Depth of Borehole		-40



Comments: _____

Geologist Signature Jenn Wagnon

RECORD OF SUBSURFACE EXPLORATION

Borehole # MW-05
~~Well#~~ METER # 89232
Page 1 of 1

Philip Environmental Services Corporation
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location T31-R9-S35-F

Elevation
Borehole Location JOHNSON FEDERAL #6A
GWL Depth -35.19
Logged By J. Wagnon
Drilled By ~~K. Padilla~~ D. PADILLA
Date/Time Started 7/7/00, 0940
Date/Time Completed 7/7/00, 1010

Well Logged By J. Wagnon
Personnel On-Site R. Lefebre, K. PADILLA
Contractors On-Site None
Client Personnel On-Site None

Drilling Method 4 1/4 ID ~~HAS~~ HSA
Air Monitoring Method PID

AIR

Depth (Feet)	Sample Number	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				0-7'							
0956	1	5-7	7"	FINE TO (-) MED BROWN SAND, POORLY CONSOLIDATED. BOTTOM 5" MOIST.					5.7 ppm	7 COUNTS	
10											
1002	2	10-12	12"	7-12' AS ABOVE, ALL MOIST.					158 ppm	5 COUNTS	0.0 ppm
15											
1008	3	15-17	13"	12-17' AS ABOVE, BOTTOM 8" SANDY CLAY. DRY-MOIST					16.8 ppm	9 COUNTS	
20											
1013	4	20-22	14"	17-22' FINE TO MED BROWN SAND, POORLY CONSOLIDATED, BOTTOM 2" CLAYEY, MIDDLE 4" COARSE.					0.0 ppm	11 COUNTS	0.0 ppm
25											
1021	5	25-27	10"	22-27' FINE TO (+) MED BROWN-GREEN-GREY SAND. ODOR, INITIAL PID = 50.3. MID 4" CSE GRAVELS UP TO 1".					101 ppm	14 COUNTS ODOR APPARENT	0.0 ppm
30											
1028	6	30-32	10"	27-32' GREY TO BLUE FINES TO PEBBLES, STRONG ODOR. BOTTOM 2" BLUE SANDY CLAY.					10.9 ppm	10 COUNTS	0.0 ppm
35											
1038	7	35-37	7"	32-37' WET DARK BLUE TO GREY SAND & CLAY. STRONG ODOR. PEBBLES UP TO 1".					89.6 ppm	35 COUNTS	
1052				TD = 40' BGS							0.2 ppm
40											

Comments:

Geologist Signature Jana Wagnon