3R - 228

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**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Pit Closure Reports

March 2001

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800398

PSC

EPFS GROUNDWATER PITS
2000 ANNUAL GROUNDWATER REPORT

OHIO C GOVT #3
Meter/Line ID - 72890

SITE DETAILS

Legals - Twn: 28N **Rng:** 11W **Sec:** 26 **Unit:** P
NMOCD Hazard Ranking: 40 **Land Type:** FEDERAL
Operator: MARATHON OIL COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Sep-94 **Excavation Pit 1:** Sep-94 (50 cy) **Re-Excavation Pit 1:** Sep-95 (1,183 cy)
Soil Boring: Sep-95 **Excavation Pit 2:** Sep-95 (1098 cy)
Geoprobe: Oct-96 **Monitor Well:** May-97 **Quarterly Sampling Initiated:** June-97
Submitted for Closure: March-99 **Denied Closure:** Jul-99
Additional Monitor Wells: Oct-99

Following the initial site assessment in September of 1994 (previously submitted), Pit #1 was excavated to 12 feet beneath ground surface (bgs). Approximately 50 cubic yards were removed during excavation. The headspace soil reading from the excavation bottom was 328 ppm. Soil analytical, submitted in the 1999 Annual Groundwater Report, were as follows: benzene – 150 mg/kg, total BTEX – 1840, and TPH (418.1) 11,800.

Pit #1 was re-excavated to 17 feet beneath ground surface (bgs) in September of 1995. The soil headspace reading from the excavation bottom was 197 ppm. Approximately 1183 cubic yards of contaminated soil was removed from the excavation. Soil analytical were as follows: benzene - <0.5 mg/kg, total BTEX – 1840 mg/kg, and TPH (418.1) 632 mg/kg (previously submitted).

One soil boring was drilled in the center of Pit #1 and a sample was collected from 13-15 feet bgs. The sample results were as follows: benzene – <0.5 mg/kg, total BTEX <3 mg/kg and TPH (418.1) 54.8 mg.

Pit #2, which is adjacent to Pit #1, was excavated to 13-17 feet beneath ground surface (bgs) where groundwater was encountered. Approximately 1098 cubic yards of contaminated soil was removed from the excavation. The headspace soil reading from the excavation bottom was 72 ppm. Soil analytical was as follows: benzene - <0.5 mg/kg, total BTEX <3 mg/kg, and TPH (418.1) 66.0 mg/kg (previously submitted). Due to size of excavations associated with Pit #1 and Pit #2, the excavation was joined and is reflected as one pit (El Paso Energy) in the figures.

Geoprobe data were collected in various locations upgradient and downgradient of MW-1 during October of 1996. Analytical data, previously submitted, from groundwater samples obtained using the Geoprobe indicated only benzene was slightly above standards downgradient of MW-1. The highest concentrations of contaminants were from groundwater samples collected cross-gradient and downgradient of the operator's production pit that is further downgradient of MW-1 as shown in Figures 1-3.

One soil boring was drilled in the center of Pit #2 and a monitoring well was installed (MW-1) in May 1997. No soil samples were collected. Groundwater sampling was initiated on June 26, 1997 and continued through March 27, 1998. Historical groundwater analytical data is presented in

Table 1. Groundwater analytical data prior to 2000 has been previously submitted in the annual reports for each respective year, including the well diagram and boring log for MW-1.

Marathon, in cooperation with EPFS, installed additional monitor wells in October of 1999 as requested by the NMOCD in correspondence dated July 28, 1999. Marathon also reports this site and well diagrams and boring logs for MW-2 through MW-5 should be included in their report.

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater sampling was resumed during June of 2000 for MW-1 through MW-5.

SUMMARY TABLES

Groundwater analytical data for this site is presented in Table 1.

SITE MAP

A quarterly site map with groundwater elevations and gradients are presented as Figures 1-3.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

EPFS did not conduct drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

BTEX parameters were below regulatory standards and isoconcentration maps were not generated.

CONCLUSIONS

EPFS has excavated over 2,332 cubic yards of contaminated soil from the former pits. Soil samples collected from both pits were below standards. Laboratory analyses of groundwater samples from MW-1 have shown no detectable levels of BTEX since 1997, as shown in Table 1.

EPFS, in cooperation with Marathon due to the side by side pits located at this site, agreed to continue sampling the existing monitor well, MW-1, and the additional monitor wells installed by Marathon in 1999 (MW-2, MW-3, MW-4, and MW-5) on a quarterly basis. Groundwater samples collected from MW-1 continue to demonstrate BTEX constituents below detectable levels.

The former pit owned by Marathon is next to and downgradient of the former pit owned by EPFS, as indicated in the site maps. Groundwater samples collected from the monitor wells MW-4 and MW-5, downgradient of these pits, indicate low levels of BTEX constituents at or below the NMWQCC groundwater standards during recent sampling. There are no detectable levels of BTEX found in the groundwater samples from MW-2 and MW-3 which are located further downgradient from monitor wells MW-4 and MW-5.

The site map and survey data used for determining the direction of groundwater flow was supplied by Marathon. The groundwater flow exhibits a north-northwest trend.

The low levels of BTEX constituents exhibited in MW-4 and MW-5 appear to be downgradient of both of the former pits. Since no detectable levels of BTEX were found in the monitor well located within the former EPFS pit it does not appear that the EPFS pit is the source of hydrocarbon impact.

Minimal impact has occurred to the groundwater at this site. All monitor wells where BTEX concentrations were detected show a decreasing trend, with no evidence of rebound, and are at or below NMWQCC standards. Based on the data presented, this site poses minimal risk to human health and the environment. No potential receptors exist within 1,000-feet of the site and all of the source material from the EPFS. Therefore, EPFS requests that this pit be closed and MW-1 be abandoned according to NMOCD specifications.

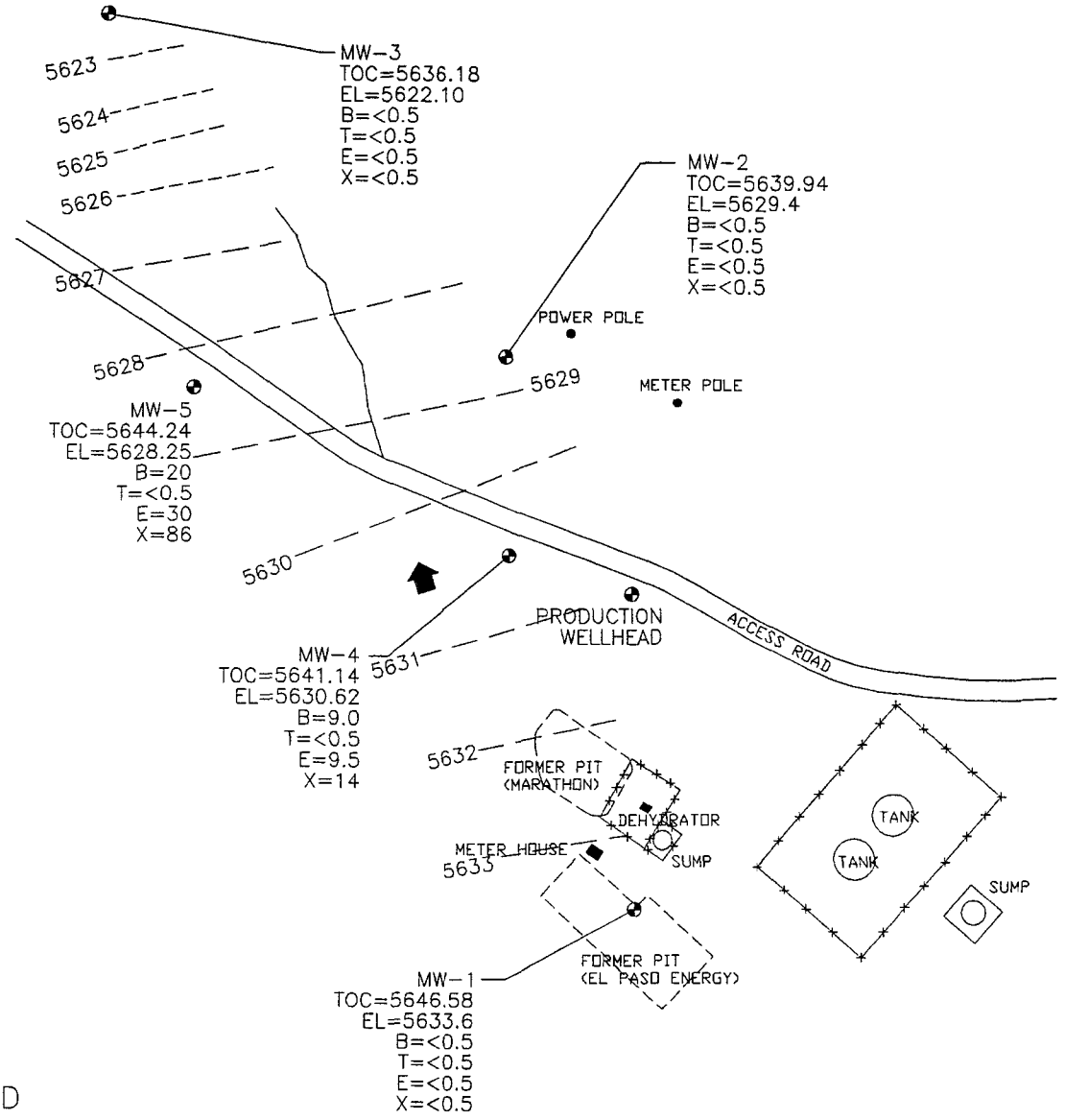
RECOMMENDATIONS

- This site is also reported by Marathon.
- EPFS requests closure of this site.
- Following OCD approval for closure, MW-1 will be abandoned in accordance with the Monitoring Well Abandonment Plan.

Table 1

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
970487	72890	OHIO C GOVT #3	5/22/97	1	Phase II Drilling	< 1	< 1	< 1	< 3	ND
970606	72890	OHIO C GOVT #3	6/26/97	1	Sample 4 - 1st Quarter	< 1	< 1	< 1	< 3	ND
970979	72890	OHIO C GOVT #3	9/12/97	1	Sample 4 - 2nd Quarter	< 1	< 1	< 1	< 3	ND
971272	72890	OHIO C GOVT #3	12/5/97	1	Sample 4 - 3rd Quarter	< 1	< 1	< 1	< 3	ND
980262	72890	OHIO C GOVT #3	3/27/98	1	Sample 4 - 4th Quarter	< 1	< 1	< 1	< 3	ND
OHI-0006-MW01	72890	OHIO C GOVT #3	6/1/00	1	Sample 4 - 5th Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0009-MW01	72890	OHIO C GOVT #3	9/6/00	1	Sample 4 - 6th Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0012-MW01	72890	OHIO C GOVT #3	12/4/00	1	Sample 4 - 7th Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0006-MW02	72890	OHIO C GOVT #3	6/1/00	2	Sample 4 - 1st Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0009-MW02	72890	OHIO C GOVT #3	9/6/00	2	Sample 4 - 2nd Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0012-MW02	72890	OHIO C GOVT #3	12/4/00	2	Sample 4 - 3rd Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0006-MW03	72890	OHIO C GOVT #3	6/1/00	3	Sample 4 - 1st Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0009-MW03	72890	OHIO C GOVT #3	9/6/00	3	Sample 4 - 2nd Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0012-MW03	72890	OHIO C GOVT #3	12/4/00	3	Sample 4 - 3rd Quarter	< 0.5	< 0.5	< 0.5	< 0.5	ND
OHI-0006-MW04	72890	OHIO C GOVT #3	6/1/00	4	Sample 4 - 1st Quarter	= 9.0	< 0.5	= 9.5	= 14	32.5
OHI-0006-MW04	72890	OHIO C GOVT #3	9/6/00	4	Sample 4 - 2nd Quarter	= 3.2	< 0.5	= 9.3	= 12	24.5
OHI-0006-MW04	72890	OHIO C GOVT #3	12/4/00	4	Sample 4 - 3rd Quarter	= 0.9	< 0.5	= 3.3	= 4.8	9
OHI-0006-MW05	72890	OHIO C GOVT #3	6/1/00	5	Sample 4 - 1st Quarter	= 20	< 0.5	= 30	= 86	136
OHI-0006-MW05	72890	OHIO C GOVT #3	9/6/00	5	Sample 4 - 2nd Quarter	= 15	< 0.5	= 24	= 78	117
OHI-0006-MW05	72890	OHIO C GOVT #3	12/4/00	5	Sample 4 - 3rd Quarter	= 10	< 0.5	= 22	= 65	97

ND = No detectable levels
Sample 4 - Quarterly Sampling



LEGEND

⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER
58	GROUNDWATER POTENTIOMETRIC SURFACE
➘	GROUNDWATER GRADIENT

0 100
FEET

N

PHILIP SERVICES CORP

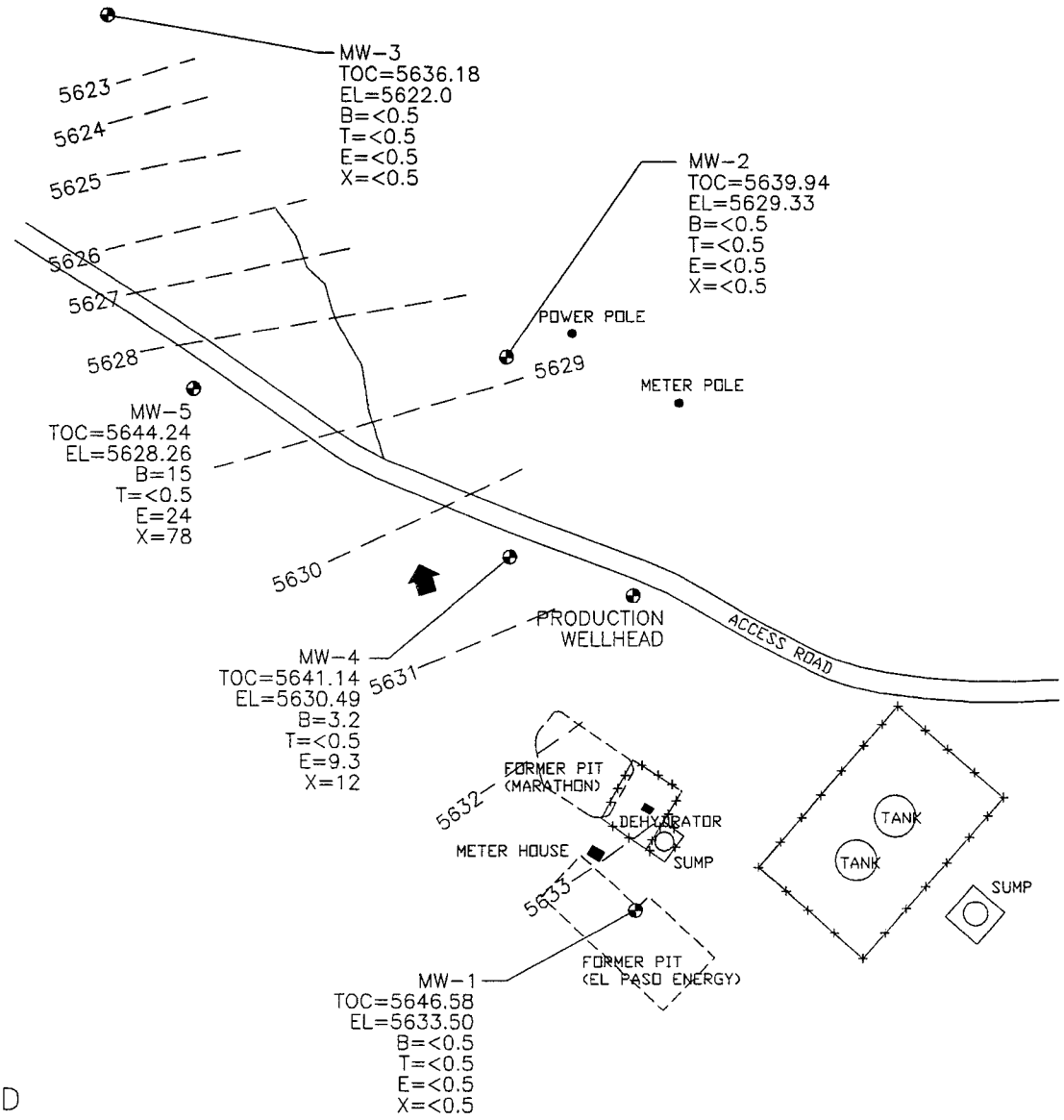
628\00219-001
COL

TITLE:
OHIO "C" GOVERNMENT #3
METER 72890
JUNE 1, 2000

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
2/21/01	0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 1



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER
58	GROUNDWATER POTENTIOMETRIC SURFACE
	GROUNDWATER GRADIENT

0 100
FEET
N

PHILIP SERVICES CORP

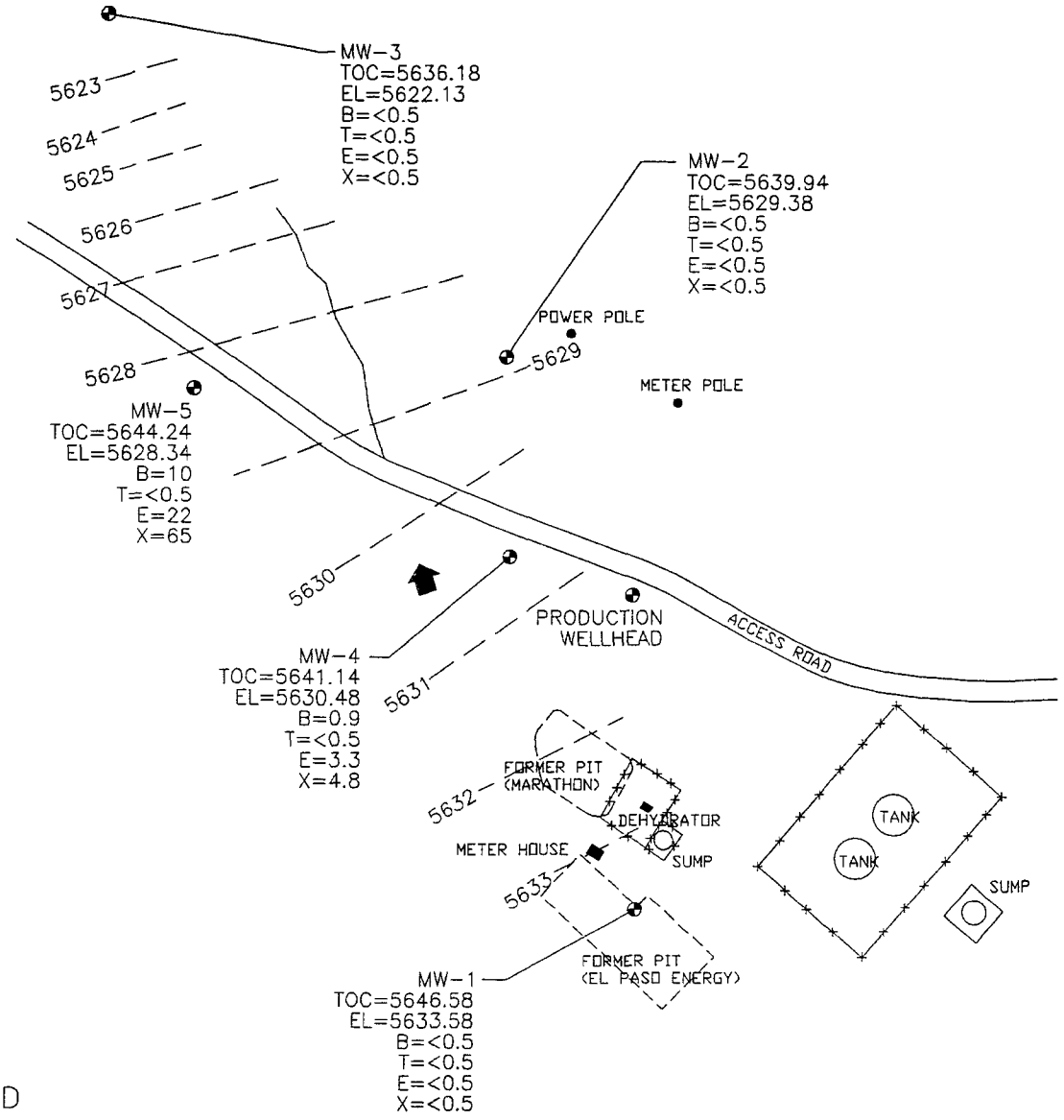
TITLE:
OHIO "C" GOVERNMENT #3
METER 72890
SEPTEMBER 6, 2000

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
2/21/01	0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 2

COL 628\00219-002



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER
58	GROUNDWATER POTENTIOMETRIC SURFACE
	GROUNDWATER GRADIENT

0 100
FEET
N

PHILIP SERVICES CORP

TITLE:
OHIO "C" GOVERNMENT #3
METER 72890
DECEMBER 4, 2000

DWN:	DES.:	PROJECT NO.: 62800219
TMM	LW	EPFS GW PITS
CHKD:	APPD:	
LW	MN	
DATE:	REV.:	FIGURE 3
2/21/01	0	

COL 628\00219-003

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

PHILIP ENVIRONMENTAL

Well Number MN-01

Serial No. WDPD-

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

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

Client Company EL PASO FIELD SERVICES Phase.Task No. 0301

Site Name OHIO C GOV. #3 (72890) 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) 21.69 TOR
Initial Depth to Water (feet) 12.98 TOR
Height of Water Column in Well (feet) 8.71
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	8.71	5.69 x 3	17.1
Gravel Pack			
Drilling Fluids			
Total			17.1

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal

KUTZ SEPARATOR, 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
6/1/00	1328		X				4	4			21.7	7.48	1760		CLEAR, LIGHT BROWN
"	1334		X				4	8			18.7	7.35	1880		"
"	1340		X				3	11			18.6	7.39	1990		"

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

Comments Sampled for BTEX at 1346. Well bailed dry at 11 gallons

Developer's Signature(s) Jason Wagner Date 6/1/00 Reviewer RT Date 6/2/00

PHILIP ENVIRONMENTAL

Well Number MW-02 ☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

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

Client Company EPFS: EL PASO FIELD SERVICES Phase.Task No. 0301

Site Name OHIO C GOV #3 (72890) 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) 16.57 TOR
Initial Depth to Water (feet) 10.54 TOR
Height of Water Column in Well (feet) 6.03
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.03	3.94 x 3	11.8
Gravel Pack			
Drilling Fluids			
Total			11.8

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal

KUTZ SEPARATOR, 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
6/1/00	1442		X				3	3			20.0	7.63	2450		CLOUDY, BROWN
"	1447		X				3	6			17.5	7.53	2430		"
"	1450		X				3	9			16.9	7.42	2490		"
"	1454		X				3	12			17.0	7.42	2450		"

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

Comments Sampled for BTEX at 1455.

Developer's Signature(s) Jim Wagner Date 6/1/00 Reviewer RT Date 6/2/00

PHILIP ENVIRONMENTAL

Well Number MW-03

Serial No. WDPD-

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

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

Client Company EL PASO FIELD SERVICES Phase.Task No. 0301

Site Name OHIO C GOV #3 (72890) 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) 21.54 TOR
Initial Depth to Water (feet) 14.08 TOR
Height of Water Column in Well (feet) 7.46
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	7.46	48.7 x 3	14.6
Gravel Pack			
Drilling Fluids			
Total			14.6

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal

KUTZ SEPARATOR, 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
6/1/00	1406		X				4	4			20.4	7.44	2430		CLOUDY, BROWN
"	1412		X				4	8			16.9	7.44	2470		"
"	1417		X				4	12			15.8	7.39	2530		"
"	1422		X				4	16			16.1	7.40	2460		"

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

Comments SAMPLED FOR BTEX AT 1426

Developer's Signature(s) Jana Wagner Date 6/1/00 Reviewer RT Date 6/2/00

PHILIP ENVIRONMENTAL

Well Number MW-04

Serial No. WDPD-

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name EPFS QUARTERLY SAMPLING

Project Manager R. THOMPSON

Project No. 62800107

Client Company EL PASO FIELD SERVICES

Phase.Task No. 0301

Site Name OHIO C GOV #3 (72890)

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) 21.25 TOB

Initial Depth to Water (feet) 10.52 TOB

Height of Water Column in Well (feet) 10.53

Diameter (inches): Well 4 Gravel Pack 7

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.53	6.87 x 3	20.6
Gravel Pack			
Drilling Fluids			
Total			20.6

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	~~OYST~~
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal

KUTZ SEPARATOR, 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
6/1/00	1519		X				4	4			19.0	7.51	1930		CLOUDY, GREY
"	1523		X				4	8			21.2	7.42	1940		"
"	1524		X				4	12			17.3	7.36	1990		"
"	1531		X				4	16			18.4	7.36	2160		"
	1536		X				5	21			23.8	7.40	2190		"

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

Comments Sampled for BTEX at 1538.

Developer's Signature(s) Jason Wagner Date 6/1/00

Reviewer RT Date 6/2/00

Form A0101 Rev. 10/6/94

F:\NEWFORM\PE_A0101.DOT 1/31/96

PHILIP ENVIRONMENTAL

Well Number MW-05

☐ Development ☒ 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 EL PASO FIELD SERVICES Phase.Task No. 0301

Site Name Otto C GOV #3 (72890) 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) 21.72 TOR
Initial Depth to Water (feet) 15.99 TOR
Height of Water Column in Well (feet) 5.73
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5.73	3.74 x 3	11.22
Gravel Pack			
Drilling Fluids			
Total			11.22

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal

KUTZ SEPARATOR, 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
6/1/00	1555		X				3	3			17.6	7.46	1760		DARK BROWN
"	1557		X				3	6			16.8	7.33	1930		"
"	1602		X				3	9			16.4	7.35	1980		"

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

Comments Well bailed dry at 9 gallons
Sampled for BTEX at 1603

Developer's Signature(s) Jason Wagner Date 6/1/00 Reviewer RT Date 6/2/00

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2564

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107 Phase . Task 0301 .
Samplers R. THOMPSON
Laboratory Name PINNACLE LABS
Location ALBUQUERQUE, NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX	Comments
OH1-0006-MW01	6/1/00	1346	H_2O	2	X	OH10 C GOV #3 MW01 72890
OH1-0006-MW02	6/1/00	1455	H_2O	2	X	OH10 C GOV #3 MW02 72890
OH1-0006-MW03	6/1/00	1426	H_2O	2	X	OH10 C GOV #3 MW03 72890
OH1-0006-MW04	6/1/00	1538	H_2O	2	X	OH10 C GOV #3 MW04 72890
OH1-0006-MW05	6/1/00	1603	H_2O	2	X	OH10 C GOV #3 MW05 72890
						OH10 C GOV 72890 #3 MW06

Relinquished by:

Signature	Date	Time
Jessica L Wagner	6/2/00	0800

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) _____
- ☐ Other (Specify) _____

Carrier: GREYHOUND LINES
Airbill No. GLI1606918610

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 **006017**
June 07, 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 06/02/00 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.

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	: 006017
PROJECT #	: 62800107	DATE RECEIVED	: 06/02/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 06/07/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OHI-0006-MW01	AQUEOUS	06/01/00
02	OHI-0006-MW02	AQUEOUS	06/01/00
03	OHI-0006-MW03	AQUEOUS	06/01/00
04	OHI-0006-MW04	AQUEOUS	06/01/00
05	OHI-0006-MW05	AQUEOUS	06/01/00

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.: 006017
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OHI-0006-MW01	AQUEOUS	06/01/00	NA	06/05/00	1
02	OHI-0006-MW02	AQUEOUS	06/01/00	NA	06/05/00	1
03	OHI-0006-MW03	AQUEOUS	06/01/00	NA	06/05/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0006-MW01	OHI-0006-MW02	OHI-0006-MW03
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 (%)			104	108	109
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 : PHILIP ENVIRONMENTAL
PINNACLE I.D.: 006017
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	OHI-0006-MW04	AQUEOUS	06/01/00	NA	06/05/00	1
05	OHI-0006-MW05	AQUEOUS	06/01/00	NA	06/05/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0006-MW04	OHI-0006-MW05
BENZENE	0.5	**UG/L**	**9.0**	**20**
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**9.5**	**30**
TOTAL XYLENES	0.5	**UG/L**	**14**	**86**
SURROGATE:				
BROMOFLUOROBENZENE (%)			111	119
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.	: 006017
BLANK I. D.	: 060500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 06/05/00
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:		
BROMOFLUOROBENZENE (%)		108
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 #	: 006015-01	PINNACLE I.D.	: 006017
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 06/05/00
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	18.6	93	19.2	96	3	(80 - 120)	20
TOLUENE	<0.5	20.0	20.2	101	20.4	102	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.9	105	21.6	108	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	63.8	106	64.9	108	2	(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

006017

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2564

Project Name EPFS QUARTERLY SAMPLING

Project Number 62800107 Phase . Task 0301 .

Samplers R. THOMPSON

Laboratory Name PINNACLE LABS

Location ALBUQUERQUE, NM

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX	Lab ID #	Comments
OH1-0006-MW01	6/1/00	1346	H_2O	2	X	01	OH10 C GOV #3 MW01
OH1-0006-MW02	6/1/00	1455	H_2O	2	X	02	OH10 C GOV #3 MW02
OH1-0006-MW03	6/1/00	1426	H_2O	2	X	03	OH10 C GOV #3 MW03
OH1-0006-MW04	6/1/00	1538	H_2O	2	X	04	OH10 C GOV #3 MW04
OH1-0006-MW05	6/1/00	1603	H_2O	2	X	05	OH10 C GOV #3 MW05
							OH10 C GOV #3 MW06

Relinquished by:

Signature	Date	Time
Jacqueline Wagner	6/2/00	0500

Received By:

Signature	Date	Time
Francine Jones	6/2/00	1730

Samples Iced: ☒ Yes ☐ No

Carrier: GREYHOUND LINES

Airbill No. GLI 6006918610

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) _____

Shipping and Lab Notes:

Rec'd @ 4.3°C

PE-176 4/95

PHILIP ENVIRONMENTAL

WELL DEVELOPMENT AND PURGING DATA

Well Number MW 01 — ☐ Development ☑ Purging

Serial No. WDPD-

Project Name EpFS quarterly Sampling — Project Manager R Thompson — Project No. 62900107

Client Company EpFS — Phase.Task No. 0301

Site Name OHIO C GOVT. #3 (72890) — 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
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 30.68

Initial Depth to Water (feet) 13.09

Height of Water Column in Well (feet) 17.6

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	[illegible]	[illegible]	[illegible]
Gravel Pack			
Drilling Fluids			
Total			[illegible]

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

Water Disposal: K-T-Z 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
9/06/00	2:47		X				[illegible]	[illegible]			24.1	[illegible]	3300		Cloudy no odor
	3:01		X				[illegible]	[illegible]			[illegible]	7.10	3180		[illegible]
	3:15		X				[illegible]	[illegible]			22.0	6.92	3170		" "
	3:30		X				[illegible]	[illegible]			21.4	6.69	3110		" "
							[illegible]	[illegible]			20.2	6.75	3070		Remained The Same

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

Comments Sampled for RTEX 3.36 pm

Developer's Signature(s) [signature] — Date 09-06-00 — Reviewer RT — Date 9/19/00

C526

PHILIP ENVIRONMENTAL

Well Number MW-02 ☐ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name EPFS quarterly Sampling Project Manager R Thompson Project No. 628 00107

Client Company EPFS Phase.Task No. 0301

Site Name OHIO C. GOUT. # 3 (72890) 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) 16.59
Initial Depth to Water (feet) 10.62
Height of Water Column in Well (feet) 5.97
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5.97	3.89 x 3	11.67
Gravel Pack			
Drilling Fluids			
Total			11.67

Instruments

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

Water Disposal

K&T 2 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
09.02.00	8:39		X				2.5	2.5			17.7	6.44	4910		Cloudy milky No odor
	8:43		X				2.5	5			18.2	6.41	5030		" "
	8:48		X				2.5	7.5			17.9	6.38	5020		" "
	8:52		X				2.5	10			17.8	6.39	4990		" "
	8:57		X				2.5	12.5			17.9	6.30	5000		Remained The Same

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

Comments Sampled for BTex 9:03 Am

Developer's Signature(s) Rico A. Mon Date 09-07-00 Reviewer RT Date 9/19/00

PHILIP ENVIRONMENTAL

Well Number MW - 03

☐ Development ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Serial No. WDPD-

Project Name EpFS quarterly Sampling Project Manager R. Thompson Project No. 62800107

Client Company EpFS Phase.Task No. 0301

Site Name OHio GOVT. #3 (72890) 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) 21.52

Initial Depth to Water (feet) 14.18

Height of Water Column in Well (feet) 7.34

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	7.34	4.79 x 3	14.37
Gravel Pack			
Drilling Fluids			
Total			14.37

Instruments

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

Methods of Development

Pump: ☐ Centrifugal ☐ Submersible ☐ Peristaltic

Bailer: ☑ Bottom Valve ☐ Double Check Valve ☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

K-T2 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
09-07-00	10:30		X				3	3			22.8	5.90	5 730		Cloudy no odor
	10:35		X				3	6			20.7	5.91	6400		" "
	10:39		X				3	9			19.9	6.05	6120		" "
	10:43		X				3	12			19.3	6.09	6030		" "
	10:47		X				3	15			19.2	6.08	6030		No Change

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

Comments Sampled for BTEX 10:51 AM

Developer's Signature(s) Chris A. Mancy Date 09-07-00 Reviewer RT Date 9/19/00

PHILIP ENVIRONMENTAL

Well Number MW-04

☐ Development ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name EpFS quarterly sampling | Project Manager R Thompson | Project No. 628001.07

Client Company EpFS | Phase.Task No. 0301

Site Name Ohio C Govt #3 (72890) | 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) 20.95
Initial Depth to Water (feet) 10.65
Height of Water Column in Well (feet) 10.3
Diameter (inches): Well 4" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.3	6.72 x 3	20.16
Gravel Pack			
Drilling Fluids			
Total			20.16

Instruments

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

Water Disposal

Kutz Bloomfield Seperator 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
09-06-00	402		X				4.25	4.25			26.2	6.61	2690		mild sl/Gray Septic odor
	4:09		X				4.25	8.5			25.6	6.95	2750		" "
	4:13		X				4.25	12.75			23.3	6.94	2750		" "
	4:19		X				4.25	17.0			22.2	6.92	2740		" "
	4:26		X				4.25	21.25			22.4	6.96	2830		no Change

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

Comments Sampled for BTEX 4:30 pm

Developer's Signature(s) Chris A May Date 09-06-00 Reviewer RT Date 9/19/00

6529

PHILIP ENVIRONMENTAL

Well Number MW-05

☐ Development ☑ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Serial No. WDPD-

Project Name EpFS quarterly Sampling

Project Manager R. Thompson

Project No. 628 00102

Client Company EpFS

Phase.Task No. 0301

Site Name OHIO C. GOVT. #3 (72890)

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) 21.71
Initial Depth to Water (feet) 15 98
Height of Water Column in Well (feet) 5 23
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5 73	3.74 x 3	11.22
Gravel Pack			
Drilling Fluids			
Total			11.22

Instruments

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

Water Disposal

KnT2 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
09-07-00	9:36		X				2.25	2.25			21.0	6.31	3,630		Cloudy Green in color Septic Odor
	9:39		X				2.25	4.5			19.0	6.34	3580		" "
	9:43		X				2.25	6.75			18.0	6 35	3770		" "
	9:49		X				2.25	9			17.5	6.31	3920		" "
	9:53		X				2.25	11.25			17.4	6.31	4010		no Change

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

Comments Sampled for BTex 9:59 Am

Developer's Signature(s) Chris A. Mm

Date 09-07-00

Reviewer RT Date 9/19/00

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2447

Project Name EpFS quarterly Sampling
Project Number 62900107 Phase . Task 0301
Samplers C-Maez
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	Comments
OHI-0009-MW 01	09-06-00	3:36 pm	H2O	2		OHIO C. GOUT. #3
OHI-0009-MW-04	09-06-00	4:30 pm	H2O	2		OHIO C. GOUT #3
OHI-0009-MW-02	09-07-00	9:03 AM	H2O	2		OHIO C. GOUT #3
OHI-0009-MW-03	09-07-00	10:51 AM	H2O	2		OHIO C. GOUT #3
OHI-0009-MW-05	09-07-00	9:59 AM	H2O	2		OHIO C. GOUT #3

Relinquished by:

Signature	Date	Time
Chris A-Maez	09-07-00	1:30

Received By:

Signature	Date	Time

Samples Iced: ☐ Yes ☐ No

Carrier: 1 greyhound Bus Lines

Airbill No. GL 160 CT 8654

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:

PE-176 4/95

PINNACLE LABORATORIES

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

SEP 15 2000

Pinnacle Lab ID number **009051**
September 13, 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 09/08/00 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	: 009051
PROJECT #	: 62800107	DATE RECEIVED	: 09/08/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/13/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OHI-0009-MW 01	AQUEOUS	09/06/00
02	OHI-0009-MW 04	AQUEOUS	09/06/00
03	OHI-0009-MW 02	AQUEOUS	09/07/00
04	OHI-0009-MW 03	AQUEOUS	09/07/00
05	OHI-0009-MW 05	AQUEOUS	09/07/00

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.: 009051
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OHI-0009-MW 01	AQUEOUS	09/06/00	NA	09/11/00	1
02	OHI-0009-MW 04	AQUEOUS	09/06/00	NA	09/11/00	1
03	OHI-0009-MW 02	AQUEOUS	09/07/00	NA	09/11/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0009-MW 01	OHI-0009-MW 04	OHI-0009-MW 02
BENZENE	0.5	**UG/L**	< 0.5	**3.2**	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	**UG/L**	< 0.5	**9.3**	< 0.5
TOTAL XYLENES	0.5	**UG/L**	< 0.5	**12**	< 0.5
SURROGATE:					
BROMOFLUOROBENZENE (%)			104	114	103
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 RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL PINNACLE I.D.: 009051
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	OHI-0009-MW 03	AQUEOUS	09/07/00	NA	09/11/00	1
05	OHI-0009-MW 05	AQUEOUS	09/07/00	NA	09/11/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0009-MW 03	OHI-0009-MW 05
BENZENE	0.5	**UG/L**	< 0.5	**15**
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYLBENZENE	0.5	**UG/L**	< 0.5	**24**
TOTAL XYLENES	0.5	**UG/L**	< 0.5	**78**
SURROGATE:				
BROMOFLUOROBENZENE (%)			99	113
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.	: 009051
BLANK I. D.	: 091100	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/11/00
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 (%)		104
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 #	: 009051-01	PINNACLE I.D.	: 009051
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 09/11/00
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	20.1	101	19.7	99	2	(80 - 120)	20
TOLUENE	<0.5	20.0	21.0	105	21.1	106	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.1	111	21.7	109	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.0	110	65.7	110	0	(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

069051

COC Serial No. C 2447

Project Name EpFS quarterly Sampling
Project Number 62900107 Phase . Task 0301
Samplers C. Maez
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
OHI-0009-MW 01	09-06-00	3:36pm	H20	2	X	01	OHIO C. GOVT. #3
OHI-0009-MW-04	09-06-00	4:30 pm	H20	2	X	02	OHIO C. GOVT #3
OHI-0009-MW-02	09-07-00	9:03 Am	H20	2	X	03	OHIO C. GOVT #3
OHI-0009-MW-03	09-07-00	10:51 Am	H20	2	X	04	OHIO C. GOVT #3
OHI-0009-MW-05	09-07-00	9:59 Am	H20	2	X	05	OHIO C. GOVT #3

Relinquished by:

Signature	Date	Time
Chris A. May	09-07-00	16 00

Received By:

Signature	Date	Time
Jeanine Jones	9/8/00	1420

Samples Iced: ☐ Yes ☐ No

Carrier: 1 grey hound Bus Lines

Airbill No. GL1 160 671 8654

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:

Rec'd @ 4.1°C

PE-176 4/95

WELL DEVELOPMENT AND PURGING DATA

ENVIRONMENTAL

Well Number MW 01 ☐ Dev ☑ Purge

Serial No. WDPD-

Page 1 of 1

Project Name EPFS Quarterly Sampling | Project Manager R Thompson | Project No. 628001.07

Client Company El Paso Field Services | Phase.Task No. 0301

Site Name OHIO C. GOV. #3 (72890) | 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) 21.69
Initial Depth to Water (feet) 13.00
Height of Water Column in Well (feet) 9.69
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	9.69	5.66 X 3	16.98
Gravel Pack			
Drilling Fluids			
Total			16.98

Instruments

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

Water Disposal

A-1 Z Separator 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
12-04-00	1020		X				3.5	3.5			12.8	6.60	5240		clear no odor
	1027		X				3.5	7			12.7	6.67	5370		" "
	1032		X				3.5	10.5			13.1	6.56	5410		no change

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

Comments After Bailing Approximately 11.5 gallons Bailed well Dry Let Recover Sampled for BTEX 1100

Developer's Signature(s) Chris A. Macy Date 12-04-00 Reviewer RT Date 12/7/00

PHILIP ENVIRONMENTAL

Well Number MW 02

☐ Development ☑ Purge

WELL DEVELOPMENT AND PURGE DATA

Serial No. WDPD-

Project Name EPFS quarterly sampling

Project Manager R. Thompson

Project No. 62800107

Client Company El Paso Field Services

Phase.Task No. 0301

Site Name OHIO C. GOV. #3 (72890)

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) 16.69

Initial Depth to Water (feet) 10.56

Height of Water Column in Well (feet) 6.13

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Gallons	Gallons to be Removed
Well Casing	6.13	4.0 x 3	12.0
Gravel Pack			
Drilling Fluids			
Total			12.0

Instruments

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

Water Disposal

Knock 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 (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-04-00	1215		X				2.5	2.5			11.2	5.86	5150		Cloudy no odor
	1219		X				2.5	5			11.7	5.80	5280		" "
	1225		X				2.5	7.5			12.0	5.87	5290		" "
	1224		X				2.5	10			12.7	5.97	5420		" "
	1232		X				2.5	12			13.1	5.84	5430		no change

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

Comments Sampled for BTEX 1236

Developer's Signature(s) Chris A. Mag

Date 12-04-00

Reviewer RT Date 12/7/00

PHILIP ENVIRONMENTAL

Well Number MW 03 ☐ Develop ☑ Purging

Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name EPFS quarterly sampling Project Manager R Thompson Project No. 62800107

Client Company El paso Field Services Phase.Task No. 0301

Site Name OHIO C gov. #3 (72890) 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) 21.05

Initial Depth to Water (feet) 14.05

Height of Water Column in Well (feet) 7

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	7	45 x 3	13.68
Gravel Pack			
Drilling Fluids			
Total			13.68

Instruments

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

Water Disposal

Kutz 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 Pumped (gallons): Increment	Water Volume Pumped (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-04-00	1307		X				2.75	2.75			13.2	5.81	5720		Cloudy No odor
	1311						2.75	5.5			13.9	5.71	5800		" "
	1316						2.75	8.25			14.3	5.59	5810		" "
	1320						2.75	11			14.4	5.50	5810		" "
	1323						2.75	13.75			14.5	5.47	5820		no Change

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

Comments Sampled for BTEX 1323

Developer's Signature(s) Chris A. May Date 12-04-00 Reviewer RT Date 12/7/00

WELL DEVELOPMENT AND PURGING DATA

ENVIRONMENTAL

Well Number MW 04 ☐ Dev ☑ Purg

Serial No. WOPD-

Page 1 of 1

Project Name EPFS quarterly sampling | Project Manager R Thompson | Project No. 62800107

Client Company El paso Field Services | Phase.Task No. 0301

Site Name OHIO C. GOV. #3 (72890) | Site Address Rural San Juan CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal (10)
☑ 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) 20 92
Initial Depth to Water (feet) 10 66
Height of Water Column in Well (feet) 10.26
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.26	6.69 x 3	20.07
Gravel Pack			
Drilling Fluids			
Total			20.07

Instruments

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

Water Disposal

LTZ 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
12 04 00	11 19		x				4.25	4.25			12.2	6.72	4190		cloudy, gray Rotten egg odor
	11 23		x				4.25	8.5			13.6	6.12	4450		" "
	11 29		x				4.25	12.75			13.5	6.02	4460		" "
	11 33		x				4.25	17			13.5	5.94	4660		" "
	11 39		x				4.25	21.25			13.1	5.86	4600		no change

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

Comments Sampled for BTEX 1143

Developer's Signature(s) Chris T. May Date 12-04-00 Reviewer RT Date 12/7/00

PHILIP ENVIRONMENTAL

Well Number MW 05 ☐ Develop ☑ Purging

Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name EPFS quarterly sampling Project Manager R. Thompson Project No. 62800107

Client Company El paso Field Services Phase.Task No. 0301

Site Name OHIO C. gov. #3 (72890) 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) 21.70

Initial Depth to Water (feet) 15.90

Height of Water Column in Well (feet) 5.8

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5.8	3.78x3	11 34
Gravel Pack			
Drilling Fluids			
Total			11.34

Instruments

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

Water Disposal

KMTR 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
12-04-00	1354						2.5	2.5			13.3	5.61	3910		cloudy greenish tint Rotten egg odor
	1402						2.5	5			14.6	5.87	4060		" "
	1407						2.5	7.5			14.6	5.84	4260		No Change
							2.5	10							
							2.5	12.5							

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

Comments After Bailing Approximately 8.5 gallons Bailed well Dry 1410 LeT Recover Sampled for BTEX 1440

Developer's Signature(s) Chris A. May Date 12-04-00 Reviewer RT Date 12/7/00

PHILIP ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2802

Project Name EPFS Quarterly Sampling
Project Number 62800107 Phase . Task 0301
Samplers C. Maez
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	Comments
OHI-0012-MW01	12-04-00	1100	H_2O	2	X	OHIO C.GOUR 3 (72 890)
OHI-0012-MW51	12-04-00	1100	H_2O	2	X	
OHI-0012-MW02	12-04-00	1236	H_2O	2	X	
OHI-0012-MW03	12-04-00	1327	H_2O	2	X	
OHI-0012-MW04	12-04-00	1134	H_2O	2	X	
OHI-0012-MW05	12-04-00	1440	H_2O	2	X	

Relinquished by:

Signature	Date	Time
Kim A. Mann	12-07-00	1430

Received By:

Signature	Date	Time

Samples Iced: ☑ Yes ☐ No

Carrier: Greyhound

Airbill No. GLI 160691499 5

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) _____

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 **012033**
December 13, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/SCOTT POPE

On 12/08/00 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	: 012033
PROJECT #	: 62800107	DATE RECEIVED	: 12/08/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 12/13/00

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
012033 - 01	OHI-0012-MW01	AQUEOUS	12/04/00
012033 - 02	OHI-0012-MWS1	AQUEOUS	12/04/00
012033 - 03	OHI-0012-MW02	AQUEOUS	12/04/00
012033 - 04	OHI-0012-MW03	AQUEOUS	12/04/00
012033 - 05	OHI-0012-MW04	AQUEOUS	12/04/00
012033 - 06	OHI-0012-MW05	AQUEOUS	12/04/00

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
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 012033

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OHI-0012-MW01	AQUEOUS	12/04/00	NA	12/12/00	1
02	OHI-0012-MWS1	AQUEOUS	12/04/00	NA	12/12/00	1
03	OHI-0012-MW02	AQUEOUS	12/04/00	NA	12/12/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0012-MW01	OHI-0012-MWS1	OHI-0012-MW02
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 (%)			98	98	98
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 : PHILIP ENVIRONMENTAL PINNACLE I.D.: 012033
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	OHI-0012-MW03	AQUEOUS	12/04/00	NA	12/12/00	1
05	OHI-0012-MW04	AQUEOUS	12/04/00	NA	12/12/00	1
06	OHI-0012-MW05	AQUEOUS	12/04/00	NA	12/12/00	1

PARAMETER	DET. LIMIT	UNITS	OHI-0012-MW03	OHI-0012-MW04	OHI-0012-MW05
BENZENE	**0.5**	UG/L	< 0.5	**0.9**	**10**
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETH[illegible]BENZENE	**0.5**	UG/L	< 0.5	**3.3**	**22**
TOT[illegible]XYLENES	**0.5**	UG/L	< 0.5	**4.8**	**65**

SURROGATE:				
BROMOFLUOROBENZENE (%)		97	103	106
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.	: 012033
BLANK I. D.	: 121200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 12/12/00
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 (%)		96
SURROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 012033-01	PINNACLE I.D.	: 012033
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 12/12/00
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	19.7	99	19.9	100	1	(80 - 120)	20
TOLUENE	<0.5	20.0	19.2	96	19.4	97	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.7	104	20.9	105	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	60.5	101	61.1	102	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

PHILIP ENVIRONMENTAL

Chain of Custody Record

012033

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2802

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	BTEX 8021	Lab ID #	Comments
OHI-0012-MW01	12-04-00	1100	H_2O	2	X	01	OHIO C.GOUT 3 (72890)
OHI-0012-MW51	12-04-00	1100	H_2O	2	X	02	
OHI-0012-MW02	12-04-00	1236	H_2O	2	X	03	
OHI-0012-MW03	12-04-00	1327	H_2O	2	X	04	
OHI-0012-MW04	12-04-00	1134	H_2O	2	X	05	
OHI-0012-MW05	12-04-00	1440	H_2O	2	X	06	

Relinquished by:

Signature	Date	Time
Chris A. Maez	12-07-00	1430

Received By:

Signature	Date	Time
Marlene Jaime	12/8/00	1005

Samples Iced: ☑ Yes ☐ No

Carrier: Greyhound

Airbill No. GLI 160691998 5

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) _____

Shipping and Lab Notes:

Rec'd @ 4.3°C

PE-176 4/95