

3R - 233

REPORTS

DATE:

1997



Certified Mail: #Z 295 387 297; #Z 295 387 296

February 27, 1998

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

RECEIVED

MAR 02 1998

Environmental Bureau
Oil Conservation Division

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for 57 groundwater impacted locations that were identified during our pit closure project of 1994/1995.

Of the 57 reports, EPFS hereby requests your approval for closure of 11 of these locations. The 11 reports for which EPFS requests closure, are in 2 separate binders entitled "Request for Closure".

After you have had an opportunity to review these updates, EPFS would like to schedule a meeting with you to discuss issues related to closure criteria for some of the more complex locations that are currently being addressed.

If you have any questions regarding this information, please call me at 505/599-2141. I will contact you within the next quarter to schedule a meeting.

Sincerely,

A handwritten signature in cursive script that reads 'Sandra D. Miller'.

Sandra D. Miller
Environmental Manager

xc: Mr. Bill Liesse, BLM w/o enclosures

Mr. Denny Foust, NMOCD - Aztec w/enclosures; **Certified Mail #Z 295 387 298; #Z 295 387 299**

Ms. Charmaine Tso, Navajo EPA w/enclosures; **Certified Mail #Z 295 387 292**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520

PHILIP
ENVIRONMENTAL

EPFS GROUNDWATER PITS

1997 ANNUAL GROUNDWATER REPORT

SANCHEZ GAS COM B #1
Meter/Line ID - 75220

SITE DETAILS

Legals - Twn: 29N Rng: 10W Sec: 28 Unit: G
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 Excavation: Apr-94 (40 cy) Geoprobe: Oct-96
Soil Boring: Feb-97 Monitor Well: Feb-97

1997 ACTIVITIES

Monitor Well Installation - One groundwater monitor well was installed in the center of the former pit.

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 8/12/97. Groundwater analytical data are presented in Table 1.

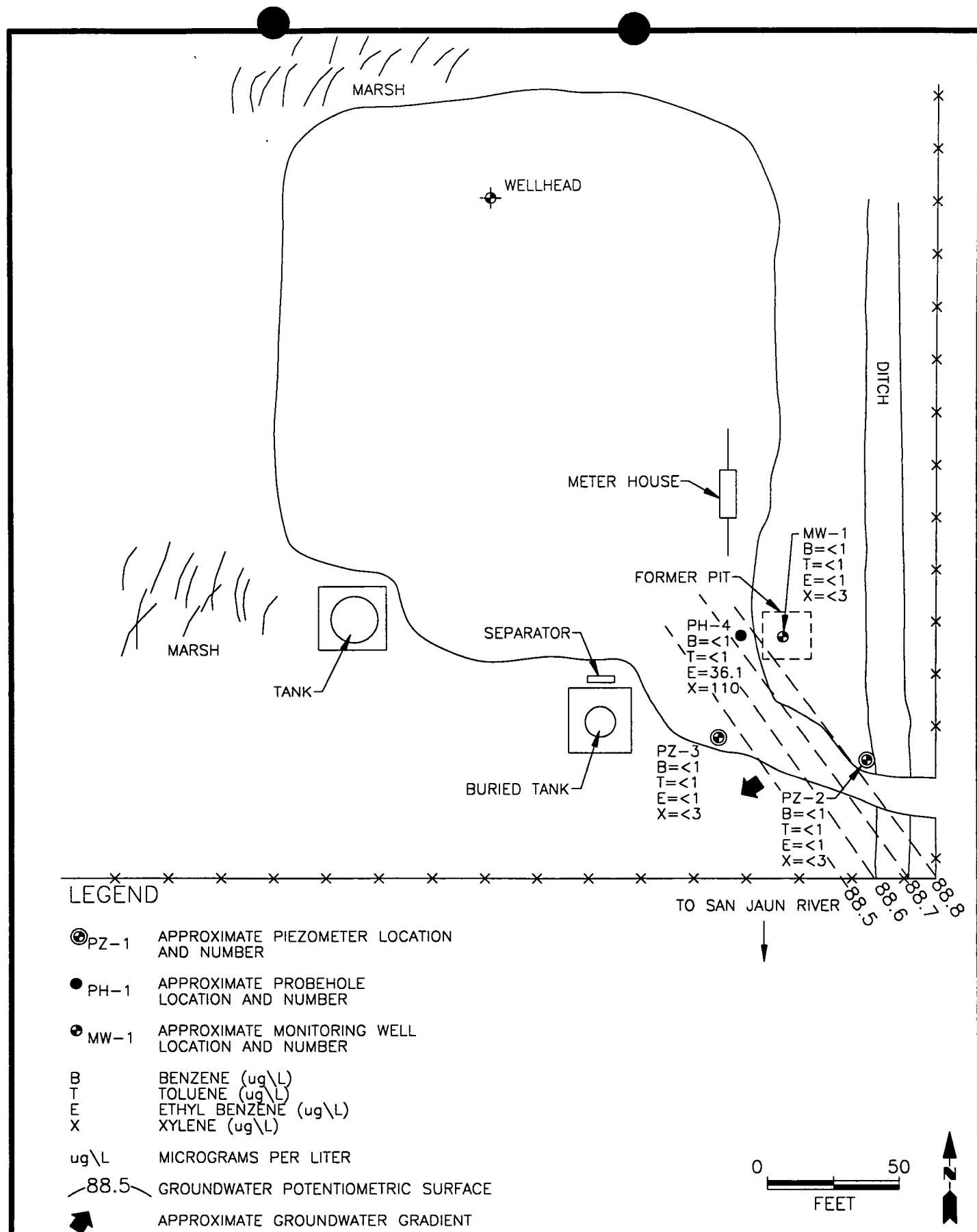
CONCLUSIONS

Based on groundwater levels collected from Geoprobe data, the groundwater flow trends to the southwest on this site, as presented in Figure 1. One downgradient sample collected from PZ-3 was below standards for BTEX. Additional cross gradient samples were below standards as well. Groundwater samples collected from MW-1 have been well below standards since quarterly sampling was initiated.

Based on groundwater analytical data from MW-1 there appears to be minimal impact to groundwater from this pit. In addition, Geoprobe groundwater analytical data indicate no downgradient migration of contaminants.

RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until 4 consecutive clean quarters are achieved.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



COL. 17520AA-001



TITLE:
SANCHEZ GAS COM B1
75220

DWN: TMM	DES.: CC
CHKD: CC	APPD:
DATE: 1/20/98	REV.: 0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1

EPIS Groundwater Pits
1997 Annual Groundwater Report

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
970207	75220	Sanchez GC B #1	3/11/97	1	Phase II Drilling - Initial	= 1.5	< 1	= 98.6	= 817	= 918
970853	75220	Sanchez GC B #1	8/12/97	1	Sample 4 - 1st Qtr	= 1.09	= 4.34	= 2.11	= 5.6	= 13
971190	75220	Sanchez GC B #1	11/6/97	1	Sample 4 - 2nd Qtr	< 1	< 1	< 1	< 3	< 6

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # BH- 2
Well # 1
Page 1 of 1

Project Name EPFS GW PITS
Project Number 17520 Phase 6001.77
Project Location SANCHEZ GC B#1 — 75220

Elevation _____
Borehole Location T29 R 10 S 28 Ltr G
GWL Depth 7' BGS
Logged By D CESARK
Drilled By M DONOHUE
Date/Time Started 2/27/97 — 1230
Date/Time Completed " — 1300

Well Logged By D CESARK
Personnel On-Site D CHARLEY
Contractors On-Site _____
Client Personnel On-Site _____
Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				BACKFILL						
5				TO						
10				10' GWC 7' (FROM PZ 1) — COBBLES C 9.5' —						
15				Auger Refusal in COBBLES C 14'						
20				TD = 14'						
25										
30										
35										
40										

Comments:

DEPTH TO GW 7' BGS AS MEASURED C PZ 1. PZ 1 WAS REMOVED & REPLACED WITH
MW-1. TD = 14' C AUGER REFUSAL IN COBBLES/GRAVELS. SINCE GW WAS LOCATED
IN FILL, NO SAMPLES WERE COLLECTED SET WELL - PLEASE SEE WELL CAMP. DIAGR.

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # 2

Well # 1

Page 1 of 1

Project Name

EPFS GW PITS

Project Number

17520

Phase 0002.77

Site Location

SANCHEZ GC B #1 - 75220

Elevation

Well Location T29N-R10W-S28-L6'

GWL Depth 7' BGS

Installed By M DONOHUE

On-Site Geologist

D CEZARK

Personnel On-Site

D CHARLEY

Contractors On-Site

Client Personnel On-Site

Date/Time Started 2/27/97 - 1300

Date/Time Completed " - 1415

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	SCH 40 PVC	+3'
Bottom of Well Riser	"	-3'
Top of Well Screen	.010 SLOT	-3'
Bottom of Well Screen	"	-13'
Top of Peltonite Seal	ENVIROPLUG	-5'
Bottom of Peltonite Seal	"	-2'
Top of Gravel Pack	10-20 SAND	-2'
Bottom of Gravel Pack	"	-13'
Top of Natural Cave-In		-13'
Bottom of Natural Cave-In		-14'
Top of Groundwater		-7'
Total Depth of Borehole		-14'

Top of Protective Casing

Top of Riser

Ground Surface

+3'

-0-

Top of Seal

-5'

Top of Gravel Pack

-2'

Top of Screen

-3'

Bottom of Screen

-13'

Bottom of Borehole

-14'

Comments:

Geologist Signature

[Signature]

GEOPROBE

Site Activities

10-Mar-97

Meter/Line #: 75220

Location/Line #: Sanchez Gas Com B #1

MW#:

Depth to GW:

Depth to Product:

Product Thickness:

Date: 10/29/96

Activity: Geoprobe

Sample Type: Geoprobe/Piezometer

Sample Depth: 6-9

Refusal Depth:

Comments: Install 3 piezos and 1 probe hole. PZ1 in center of pit

PIEZOMETER INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # PZ - 1

Well # _____

Page 1 of 1

Project Name EPFS PITS

Project Number 16297 Phase 6004

Site Location Sanchez GC B1 75220

Elevation _____

Well Location Center of Pit

GWL Depth 8.55 BG

Installed By K PADILLA

On-Site Geologist CM CHANCE

Personnel On-Site D CHARLEY

Contractors On-Site _____

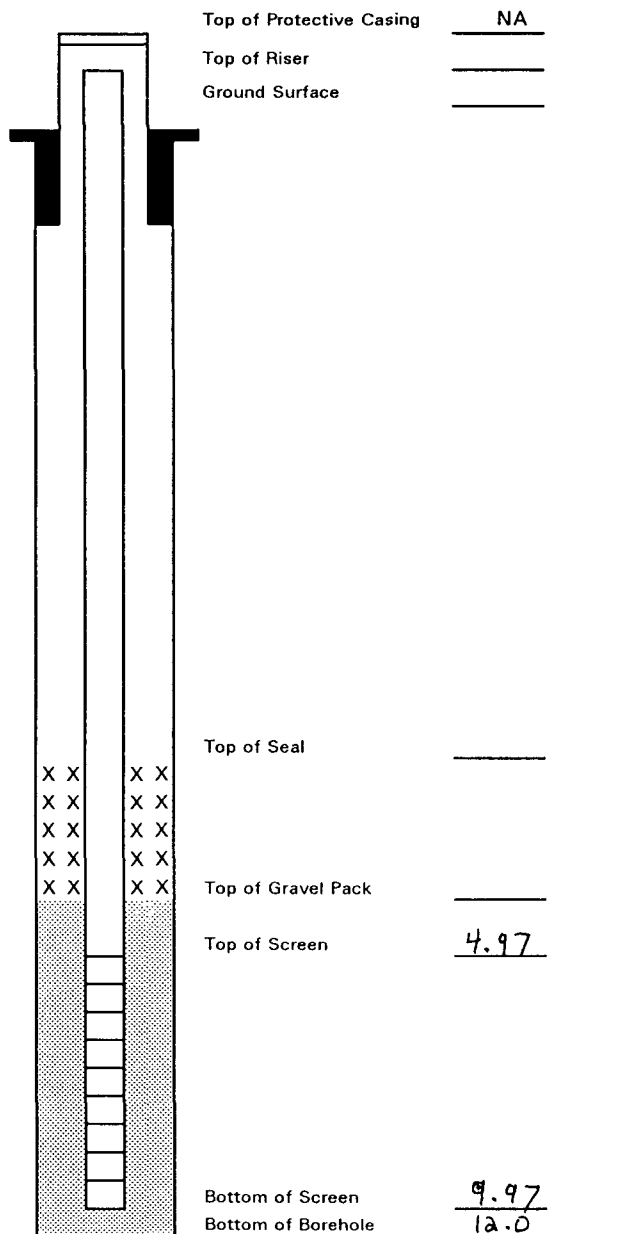
Client Personnel On-Site _____

Date/Time Started 10/29/96

Date/Time Completed 10/29/96

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
Bottom of Well Riser		
Top of Well Screen		
Bottom of Well Screen		
Top of Peltonite Seal		
Bottom of Peltonite Seal		
Top of Gravel Pack		
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Comments: _____

PIEZOMETER INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # PZ - 2

Well # _____

Page 1 of 1

Project Name EPFS PITS

Project Number 16297 Phase 6004

Site Location Sanchez GC B1 75220

Elevation _____

Well Location Center of Pit SE of P21

GWL Depth 8.29 BGS

Installed By K PADILLA

On-Site Geologist CM CHANCE

Personnel On-Site D CHARLEY

Contractors On-Site _____

Client Personnel On-Site _____

Date/Time Started 10/29/96

Date/Time Completed 10/29/96

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing			Top of Protective Casing <u>NA</u>
Bottom of Protective Casing			Top of Riser _____
Top of Permanent Borehole Casing		N/A	Ground Surface _____
Bottom of Permanent Borehole Casing		N/A	
Top of Concrete			
Bottom of Concrete			
Top of Grout			
Bottom of Grout			
Top of Well Riser			
Bottom of Well Riser			
Top of Well Screen			Top of Seal _____
Bottom of Well Screen			
Top of Peltonite Seal			
Bottom of Peltonite Seal			Top of Gravel Pack _____
Top of Gravel Pack			Top of Screen <u>6.5/</u>
Bottom of Gravel Pack			
Top of Natural Cave-In			
Bottom of Natural Cave-In			
Top of Groundwater			Bottom of Screen <u>9.0/</u>
Total Depth of Borehole			Bottom of Borehole <u>9.5</u>

Comments: _____

PIEZOMETER INSTALLATION RECORD

Philip Environmental Services, Inc.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # PZ - 3

Well # _____

Page 1 of 1

Project Name EPFS PITS

Project Number 16297 Phase 6004

Site Location Sanchez Gas Com Bl 75220

Elevation _____

Well Location SW of PZ1

GWL Depth 8.45 BGS

Installed By K PADILLA

On-Site Geologist CM CHANCE

Personnel On-Site D CHARLEY

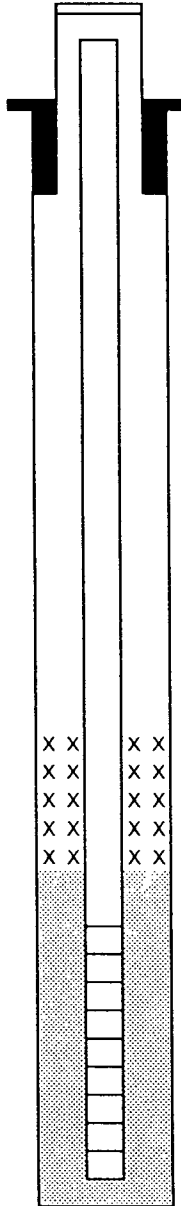
Contractors On-Site _____

Client Personnel On-Site _____

Date/Time Started _____

Date/Time Completed _____

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser		
Bottom of Well Riser		
Top of Well Screen		
Bottom of Well Screen		
Top of Peltonite Seal		
Bottom of Peltonite Seal		
Top of Gravel Pack		
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Top of Protective Casing NA

Top of Riser _____

Ground Surface _____

Top of Seal _____

Top of Gravel Pack _____

Top of Screen 6.65

Bottom of Screen 9.15

Bottom of Borehole 9.50

Comments: _____



Natural Gas Company

A 2684

CHAIN OF CUSTODY RECORD

[illegible]

Air Bill No.:



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC237	947968
MTR CODE SITE NAME:	75220	Sanchez Gas Com B 1
SAMPLE DATE TIME (Hrs):	10/29/96	925
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	PZ1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	32.5	PPB	10	D		
TOLUENE	< 1	PPB	10	D		
ETHYL BENZENE	33.0	PPB	10	D		
TOTAL XYLENES	4039	PPB	10	D		
TOTAL BTEX	4105	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 109 % for this sample All QA/QC was acceptable.
The "D" qualifier indicates that the analyte is calculated based on a secondary dilution factor.

Narrative:

DF = Dilution Factor Used

Approved By: _____

Date: _____

11/5/96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC238	947969
MTR CODE SITE NAME:	75220	Sanchez Gas Com B 1
SAMPLE DATE TIME (Hrs):	10/29/96	1115
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	P22	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	< 3	PPB				
TOTAL BTEX	< 6	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 108 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____

Date: _____

11/5/96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC239	947970
MTR CODE SITE NAME:	75220	Sanchez Gas Com B 1
SAMPLE DATE TIME (Hrs):	10/29/96	1221
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	PZ3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	< 3	PPB				
TOTAL BTEX	< 6	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 106 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____

Date: _____

11/5/96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC240	947971
MTR CODE SITE NAME:	75220	Sanchez Gas Com B 1
SAMPLE DATE TIME (Hrs):	10/29/96	1230
PROJECT:	GEOPROBE	
DATE OF BTEX EXT. ANAL.:	10/31/96	10/31/96
TYPE DESCRIPTION:	PH4	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	< 1	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	36.1	PPB				
TOTAL XYLENES	110	PPB				
TOTAL BTEX	146	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 108 % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____

John Toldo

Date: _____

11/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 947968 - 947971

QA/QC for 10/30/96 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-52589 50 PPB						
Benzene	Standard	50.0	55.4	111	75 - 125 %	X
Toluene	Standard	50.0	54.9	110	75 - 125 %	X
Ethylbenzene	Standard	50.0	54.6	109	75 - 125 %	X
m & p - Xylene	Standard	100	109	109	75 - 125 %	X
o - Xylene	Standard	50.0	54.2	108	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
LCS LA-45476 25 PPB						
Benzene	Standard	25.0	25.8	103	39 - 150	X
Toluene	Standard	25.0	25.9	104	46 - 148	X
Ethylbenzene	Standard	25.0	26.2	105	32 - 160	X
m & p - Xylene	Standard	50.0	53.0	106	Not Given	X
o - Xylene	Standard	25.0	26.3	105	Not Given	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	52.7	105	75 - 125 %	X
Toluene	Standard	50.0	52.1	104	75 - 125 %	X
Ethylbenzene	Standard	50.0	51.8	104	75 - 125 %	X
m & p - Xylene	Standard	100	103	103	75 - 125 %	X
o - Xylene	Standard	50.0	51.7	103	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	52.2	104	75 - 125 %	X
Toluene	Standard	50.0	51.6	103	75 - 125 %	X
Ethylbenzene	Standard	50.0	51.1	102	75 - 125 %	X
m & p - Xylene	Standard	100	102	102	75 - 125 %	X
o - Xylene	Standard	50.0	51.1	102	75 - 125 %	X

Narrative: Acceptable.

EL PASO FIELD SERVICES LAB
QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX
Samples: 947968 - 947971

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
947969					RANGE	
Benzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2.0	<2.0	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis					RANGE	
947969						
Benzene	50	<1.0	52.8	106	75 - 125 %	X
Toluene	50	<1.0	52.8	106	75 - 125 %	X
Ethylbenzene	50	<1.0	52.2	104	75 - 125 %	X
m & p - Xylene	100	<2.0	104	104	75 - 125 %	X
o - Xylene	50	<1.0	52.0	104	75 - 125 %	X

Narrative: Acceptable

ADDITIONAL ANALYTICAL BLANKS:

AUTO BLANK	SOURCE	PPB	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

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

Narrative: Acceptable.

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

Narrative: Acceptable.

Reported By: Mda

Approved By: John Lorch

Date: 11/5/90

**1997 GROUNDWATER
ANALYTICAL**



Chain of Custody Record

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

COC Serial No. C 3059

Project Name		EPF5 G.W.P.T.S	
Project Number		17520	
Phase		Task 6003	
Task		77	
Samplers		J. Long	
Laboratory		Name EPN4	
Location		Farming, NM	
Sample Number (and depth)	Date	Time	Matrix
JAL T.R.P. BLANK	3-10-97	1115	WATER
JAL 14046.01	3-10-97	1245	WATER
JAL 04906.01	3-10-97	1610	WATER
JAL T.R.P. BLANK	3-11-97	1000	WATER
JAL 60157.01	3-11-97	1045	WATER
JAL 95210.01	3-11-97	1325	WATER
JAL 75220.01	3-11-97	1530	WATER
JAL T.R.P. BLANK	3-12-97	1150	WATER
JAL 71676.01	3-12-97	1155	WATER
JAL T.R.P. BLANK	3-13-97	1000	WATER
JAL 7406.01	3-13-97	1010	WATER

Type of Analysis and Bottle	Total Number of Bottles	Comments
STEX	1	ONE VIA TOO OLD
	2	HEADSPACE PRESERVATIVE
	2	ONE VIA TOO OLD
	1	HEADSPACE PRESERVATIVE
	2	
	2	
	2	
	1	air bottle
	2	
	1	
	2	

Relinquished by:		Received By:	
Signature	Date	Signature	Date
	3-13-97		3/13/97

Samples Iced:	Yes ☒ No ☐	Carrier:	Airbill No.
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ Cyanide Sodium hydroxide (NaOH)		Rec'd - Cool and In-TAT JY	
☒ Volatile Organic Analysis Hydrochloric acid (HCl)			
☐ Metals Nitric acid (HNO3)			
☐ TPH (418.1) Sulfuric acid (H2SO4)			
☐ Other (Specify) _____			
☐ Other (Specify) _____			



EL PASO FIELD SERVICES



5-22-97

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JAL 75220-01	970207
MTR CODE SITE NAME:	75220	Sanchez GC B #1
SAMPLE DATE TIME (Hrs):	3/11/97	1550
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. ANAL.:	3/15/97	3/15/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1.50	PPB	2	D		
TOLUENE	<1	PPB	2	D		
ETHYL BENZENE	98.6	PPB	2	D		
TOTAL XYLENES	817	PPB	2	D,D1		
TOTAL BTEX	917	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101 for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D1" qualifier indicates that the analyte concentration exceeded the calibration curve limit.

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative:

M&P Xylene - over calibration, FID result = 2,130

Approved By: _____

John L. Lavelle

Date: _____

4/5/97

970207,4/4/97

Well Development and Purging Data

☒ Development
☐ Purging

Well Number MW01

Serial No. WDPD.

Page _____ of _____

Project Name EPFS GW. PITS

Project Manager

Project No. 17520

Client Company ELP 250

Phase.Task No. 0600377

Site Name Sanchez B1 (75220)

Site Address

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 16.04
Initial Depth to Water (feet) 14.07
Height of Water Column in Well (feet) 5.97
Diameter (inches): Well 4 Gravel Pack

Instruments

~~pH~~ pH Meter

☐ DO Monitor

Methods of Development

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

Water Disposal

Demanded - 12362596

Water Removal Data

[illegible]

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

Comments

Developer's Signature(s)

Date 3-11-67

Reviewer

Date _____



Water Sampling Data

Location No. MW1Serial No. WSD-Group List Number Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 3-11-97Project Name CPS GWPIS Project No. 17520Project Manager Cort Chance Phase/Task No. 0003. 77Site Name Sanchez B1 (75220)

Sampling Specifications

Requested Sampling
Depth Interval (feet) 100'
Requested Wait Following
Development/Purging (hours) —

Initial Measurements

Time Elapsed From Final Development/Purging ^{min} (hours) 10
Initial Water Depth (feet) 10.07
Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

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

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)
Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	G	40			H			ISZL 75220+01 T: 11-5-0

Filter Type Chain-of-Custody Form Number Comments Signature [Signature] Date 3-11-97 Reviewer Date



Natural Gas Company

A 2054

CHAIN OF CUSTODY RECORD

[illegible]



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970853
MTR CODE SITE NAME:	75220	Sanchez B-1 MW-1
SAMPLE DATE TIME (Hrs):	8/12/97	1335
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	8/13/97	8/13/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1.09	PPB				
TOLUENE	4.34	PPB				
ETHYL BENZENE	2.11	PPB				
TOTAL XYLENES	5.60	PPB				
TOTAL BTEX	13	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 87.0 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Lardner

Date:

8/27/97



Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970853
DATE SAMPLED:	08/12/97
TIME SAMPLED (Hrs):	1335
SAMPLED BY:	DB
MATRIX:	Water
METER CODE:	75200
SAMPLE SITE NAME:	Sanchez B-1 MW-1
SAMPLE POINT:	MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.43	Units	08/14/97
Alkalinity as CO ₃	0	PPM	08/14/97
Alkalinity as HCO ₃	410	PPM	08/14/97
Calcium as Ca	182	PPM	08/13/97
Magnesium as Mg	30.9	PPM	08/13/97
Total Hardness as CaCO ₃	582	PPM	08/13/97
Chloride as Cl	9.9	PPM	08/13/97
Sulfate as SO ₄	831	PPM	08/13/97
Fluoride as F	0.99	PPM	08/14/97
Nitrate as NO ₃ -N	<0.6	PPM	08/13/97
Nitrite as NO ₂ -N	<0.6	PPM	08/13/97
Ammonium as NH ₄ ⁺	<0.1	PPM	08/13/97
Phosphate as PO ₄	<0.6	PPM	08/13/97
Potassium as K	4.8	PPM	08/13/97
Sodium as Na	238	PPM	08/13/97
Total Dissolved Solids	1,630	PPM	08/14/97
Conductivity	2,040	umhos/cm	08/14/97
Anion/Cation %	4.9%	%, <5.0 Accepted	08/25/97

Lab Remarks:

Reported By: CV

Approved By: John Ladd

Date: 8/27/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970853
SAMPLE DATE:	08/12/97
SAMPLE TIME (Hrs):	1335
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	75220
SAMPLE SITE NAME:	Sanchez B #1
SAMPLE POINT:	MW-1

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC (As)	<0.004	0.100
BARIIUM (Ba)	0.09	1.00
CADMIUM (Cd)	<0.0002	0.010
CHROMIUM (Cr)	<0.004	0.050
LEAD (Pb)	<0.003	0.050
MERCURY (Hg)	<0.0002	0.002
SELENIUM (Se)	<0.011	0.050
SILVER (Ag)	<0.0004	0.050

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7081, Barium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: CV

Approved By: John L. Lober

Date: 9-16-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970853
SAMPLE DATE:	08/12/97
SAMPLE TIME (Hrs):	1335
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	75220
SAMPLE SITE NAME:	Sanchez B #1
SAMPLE POINT:	MW-1

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC (As)	0.004	0.100
BARIUM (Ba)	0.09	1.00
CADMIUM (Cd)	<0.0002	0.010
CHROMIUM (Cr)	<0.004	0.050
LEAD (Pb)	<0.003	0.050
MERCURY (Hg)	<0.0002	0.002
SELENIUM (Se)	<0.011	0.050
SILVER (Ag)	<0.0004	0.050

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7081, Barium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: CV

Approved By: John Larkin

Date: 9-11-97



QUALITY CONTROL REPORT

Sample ID: 970853
Date Reported: 09/05/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	94.4%
Barium	0.064	0.065	98.8%
Cadmium	0.0013	0.0012	110%
Chromium	0.008	0.007	103%
Lead	0.044	0.042	105%
Mercury	0.0041	0.0046	89.3%
Selenium	0.040	0.041	98.8%
Silver	0.0062	0.0068	91.2%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	0.008	0.008	0.8%
Barium	0.106	0.114	7.3%
Cadmium	ND	ND	NA
Chromium	0.004	0.005	4.7%
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SPIKE ANALYSIS (mg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.008	0.118	0.100	107%
Barium	0.106	0.997	1.00	89.1%
Cadmium	ND	0.0105	0.010	99.7%
Chromium	0.004	0.052	0.050	94.9%
Lead	ND	0.054	0.050	102%
Mercury	ND	0.0017	0.0020	89.0%
Selenium	ND	0.054	0.050	105%
Silver	ND	0.0393	0.005	78.4%

METHOD BLANK

Analyte	Found Result (mg/L)	Detection Level (mg/L)
Arsenic	ND	0.004
Barium	ND	0.019
Cadmium	ND	0.0002
Chromium	ND	0.004
Lead	ND	0.003
Mercury	ND	0.00019
Selenium	ND	0.011
Silver	ND	0.0004

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Lovelace

Date: 9-8-97



Well Number 11W-1
Meter Code 75320

Development Criteria

- ## Methods of Development

- ☐
- Other

Diameter (inches): Well

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O.

KUTZ SEPARATOR

[illegible]

Developer's Signature Lennia Bird

Date 8/2-97 Reviewer _____

John Todd.

Date 9/27/91



A 2129

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Sample: (Signature)		Date: 11-6-97		Type and No. of Sample Containers		Preservation Technique	
Date	Time	Comp.	GRAB	Sample Number			
WATER	11-6-97 1013		X	971190	5-1 4°C X	BTKE	SANCHEZ GC R#1 MW-1
WATER	11-6-97		X		5-1 4°C X		TRIP BLANK
[The following rows are crossed out with a diagonal line]							
Relinquished by: (Signature)				Date/Time	Received by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird				11-6-97 1718			
Relinquished by: (Signature)				Date/Time	Received by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)				Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:
					M. Hopper	11/17/97 6715	
Carrier Co:				Carrier Phone No.		Date Results Reported / by: (Signature)	
Air Bill No.:							



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971190
MTR CODE SITE NAME:	75220	Sanchez GC B #1
SAMPLE DATE TIME (Hrs):	11/6/97	1013
PROJECT:	Sample 4 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	11/7/97	11/7/97
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 95.3 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

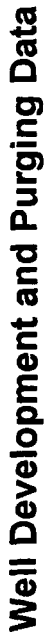
Approved By:

John L. L...

Date:

11/12/97

971190BTEXMW,11/10/97



☐	Development
☒	Purging

Well Number MW-1
Meter Code 75220

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

Initial Depth of Well (feet) 15.97
Initial Depth to Water (feet) 10.37
Height of Water Column in Well (feet) 5.60

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

☐ other

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 20.0

Water Disposal

KOTZ SEPARDTAP

[illegible]

Comments

Developer's Signature Tennio Bird

Date 11-6-91

John Fella

Date 11/12/97