

3R - 222

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

MESA CPD
Meter/Line ID - 02643

SITE DETAILS

Legals - Twn: 29N Rng: 14W Sec: 4 Unit: C
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: DUGAN PRODUCTION CORP.

PREVIOUS ACTIVITIES

Site Assessment: Nov-93 Excavation: Nov-93 (103 cy) Soil Boring: Mar-97
Monitor Well: Mar-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 7/17/97. Groundwater analytical data are presented in Table 1.

Well Points - Groundwater samples were collected from temporary monitoring wells. In addition, groundwater gradient was determined using the temporary monitoring wells.

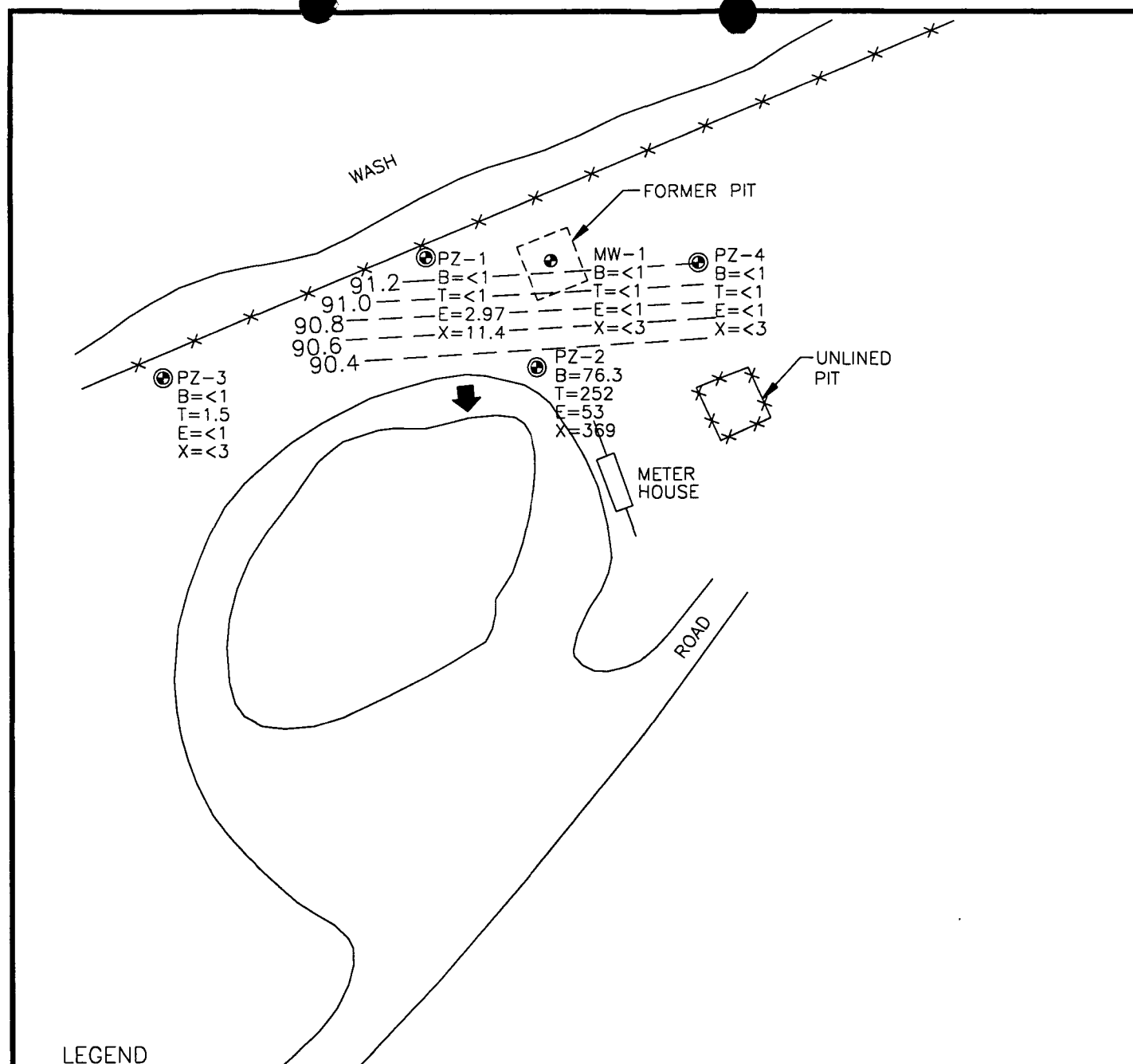
CONCLUSIONS

Based on groundwater levels collected from Well Point data, the groundwater flow trends to the south, as presented in Figure 1. One groundwater sample collected from PZ-2, which is downgradient of MW-1, was in excess of standards for benzene only at 76.3 ppb. Groundwater samples collected from 3 other temporary wells were below standards for BTEX.

Groundwater analytical data has been below standards since quarterly sampling was initiated at MW-1.

RECOMMENDATIONS

- Continue quarterly sampling 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.



LEGEND

⊙ PZ-1 APPROXIMATE PIEZOMETER LOCATION AND NUMBER

⊙ MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
 T TOLUENE (ug\L)
 E ETHYL BENZENE (ug\L)
 X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

91.2 GROUNDWATER POTENTIOMETRIC SURFACE

➔ APPROXIMATE GROUNDWATER GRADIENT

0 30
 FEET



COL. 17520AD-001



TITLE:
 MESA CPD
 02643

DWN:
 TMM
 CHKD:
 CC
 DATE:
 1/22/98

DES.:
 CC
 APPD:
 REV.:
 0

PROJECT NO.: 17520
 EPFS GW PITS

FIGURE 1

TABLE 1

Sample #	Monitor Line #	Site Name	Sample Date	NFV #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Unknown (PPB)	Total BTEX
970261	02643	Mesa CPD	4/9/97	1	Phase II Drilling - Initial	<	<	<	<	<
970685	02643	Mesa CPD	7/17/97	1	Sample 4 - 1st Qtr	<	= 16.5	<	<	<
971151	02643	Mesa CPD	10/24/97	1	Sample 4 - 2nd Qtr	<	<	<	<	<

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 MESA CPD - 02643

Elevation

Borehole Location T29-R14-S4-Ltr C

GWL Depth 7' BGS

Logged By D CESARK

Drilled By M DONOHUE

Date/Time Started 3/4/97- 1430

Date/Time Completed " - 1500

Well Logged By

Personnel On-Site

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						
				7'						
				GW @ 7' BGS						
10				SILTSTONE @ 8'						
				TD = 13'						
15										
20										
25										
30										
35										
40										

Comments:

GW ENCOUNTERED @ 7' BGS, SILTSTONE BEDROCK @ 8', AUGER REFUSAL IN BEDROCK @ 13' BGS. NO SAMPLE COLLECTED. SET GW MON. WELL IN CTR. OF FORMER PIT. PLEASE REFER TO WELL COMP. DIAGRAM.

Geologist Signature

[Signature]

Comments:

WELLPOINTS

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ-1

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Mesa CPD D2242

Elevation

Well Location Ltr E -S4 -T29-R14

GWL Depth 6.67 TDR

Installed By K. Padilla

On-Site Geologist C CHANCE

Personnel On-Site D Charley

Contractors On-Site

Client Personnel On-Site

Date/Time Started 10/22/97

Date/Time Complete 10/22/97

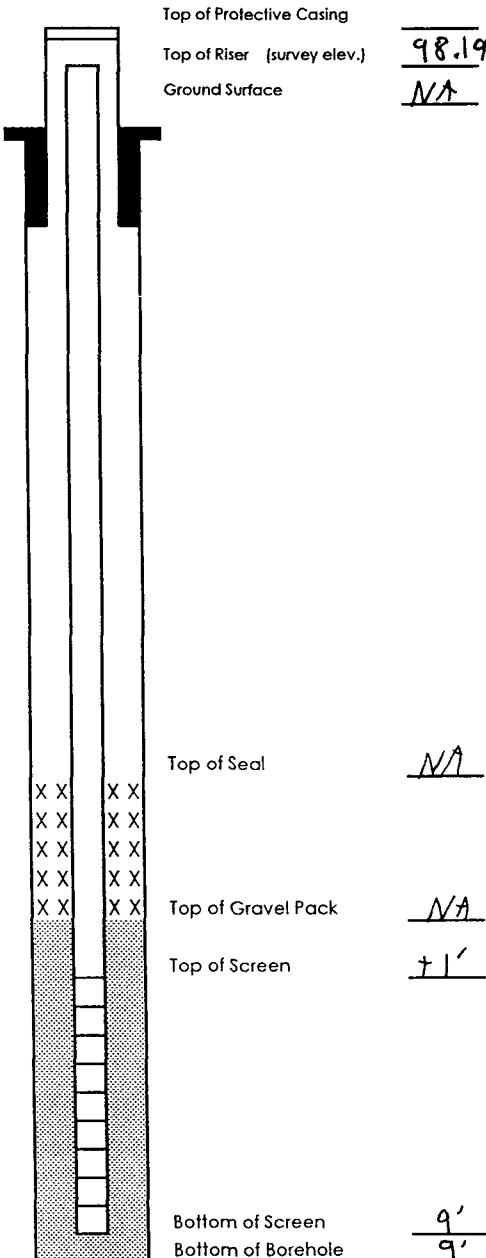
COMMENTS

- PZ1 is 275° & 26' from MW1

- Dark Black cuttings, strong odor @ ~5' BGS

- Install temp well & collect GW sample cmc 365

- Let well set overnight to get static water level



MW1 GW @ 8.45' TDR. Riser @ 99.76'

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ- 2

Pag 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Mesa CPD 02643

Elevation

Well Location Ltr E -S 4 -T29-R14

GWL Depth 7.59 TOR

Installed By K Padilla

On-Site Geologist C CHANCE

Personnel On-Site D Charley

Contractors On-Site

Client Personnel On-Site

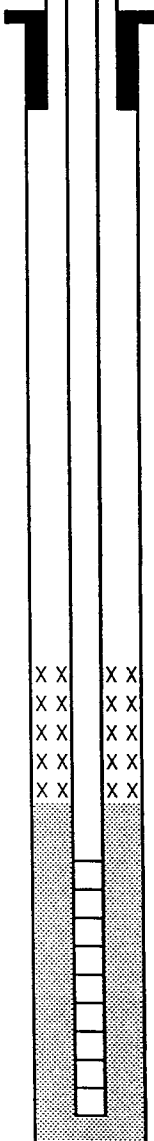
Date/Time Started 10/22/97

Date/Time Complete 10/22/97

COMMENTS

- PZ2 is 195° & 52' from MW1
- Install temp well & collect GW sample. CMF 366
- Let well set overnight to get static water level
- Dark Black sandy cuttings @ ~5-6'. May be drilling in an old pit.

Top of Protective Casing NA
 Top of Riser (survey elev.) 97.82
 Ground Surface



Top of Seal NA

Top of Gravel Pack NA

Top of Screen +1'

Bottom of Screen 9'

Bottom of Borehole 9'

(Note: Did not encounter GU @ 15'. Hole plugged to 10' & set well. May have drilled past GW @ 8'.) Hole plugged to 9' & set piezo

MWINSTAL.WK1

Geologist Signature

Cory Chance

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PH-3

Pag 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Mesa CPD 02642

Elevation

Well Location Ltr E -S4 -T29-R14

GWL Depth ~2.5' BGS

Installed By K. Padilla

On-Site Geologist C CHANCE

Personnel On-Site D. Charley

Contractors On-Site

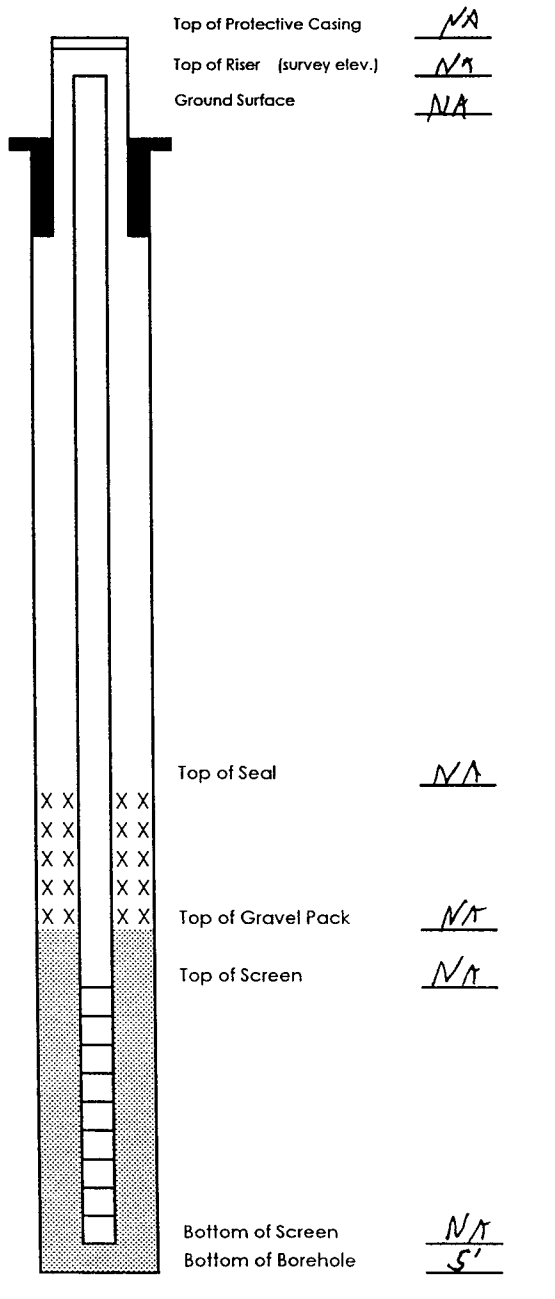
Client Personnel On-Site

Date/Time Started 10/22/97

Date/Time Complete 10/22/97

COMMENTS

- PH3 is 80' $\downarrow$ 255° From MW1.
- GW sample collected from open hole. CMC362
- BH hole plugged to surface.



TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ PZ4

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Mesa CPD 02642

Elevation

Well Location Ltr E -S4 -T29-R14

GWL Depth

Installed By R Padilla

On-Site Geologist C CHANCE

Personnel On-Site D Charley

Contractors On-Site

Client Personnel On-Site

Date/Time Started 10/22/97

Date/Time Complete 10/22/97

COMMENTS

- PZ4 is 95° ± 39' From MW1
- Install temp well & collect GW sample CMC 368
- BH hole plugged to surface

Top of Protective Casing

NA

Top of Riser (survey elev.)

NA

Ground Surface

NA

Top of Seal

NA

Top of Gravel Pack

NA

Top of Screen

± 1'

Bottom of Screen

9'

Bottom of Borehole

9

Well Bints



CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NAME		Pit Closure Project / Well Bints		CONTRACT LABORATORY P. O. NUMBER	
OBJECT NUMBER	# 24324	DATE	10/22/97	LAB PID	SEQUENCE #
LAB ID	DATE	TIME	MATRIX	FIELD ID	REMARKS
971139	10/22/97	0905	Water	CMC364	CMC Mesa CPD 02643 PZ1
971140	-	-	-	Trip Blank	Trip Blank
971141	10/22/97	1045	-	CMC365	Mesa CPD 02643 PZ2
971142	1050	-	-	CMC366	" BHI
971143	1140	-	-	CMC367	" PZ3
971144	1430	-	-	CMC368	" PZ4
971145	1515	-	-	CMC369	Turner A171676 PZ1
				CMC370*	" PZ2
RECEIVED NOV 6 1997					
Note: CMC366 (BHI) is a grab sample from the wash from 2.5' BGS					
ELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
		10/22/97 1700			
ELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
				10/23/97 1153	
EQUISHED TURNAROUND TIME:		J ROUTINE ☐ RUSH ☐		RESULTS & INVOICES TO:	
* non-preserved				FIELD SERVICES/LABORATORY	
				EL PASO NATURAL GAS COMPANY	
				P.O. BOX 4990	
				FARMINGTON, NEW MEXICO 87499	
CHARGE CODE		SAMPLE RECEIPT REMARKS		505-599-2144	
		Temp. 30°C IN TACT		FAX: 505-599-2261	
ILL NO.:					



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC364	971139
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/22/97	0905
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/24/97	10/24/97
TYPE DESCRIPTION:	PZ-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	2.97	PPB				
TOTAL XYLENES	11.4	PPB				
TOTAL BTEX	14	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101.1 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Toluene was detected in the associated vial blank at a concentration of 1.6 ppb

Approved By:

John Saldaña

Date:

10-28-97

971139BTEXWP,10/28/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	971140
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/22/97	0905
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/24/97	10/24/97
TYPE DESCRIPTION:	Trip Blank	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 108.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Toluene was detected in the associated vial blank at a concentration of 1.6 ppb

Approved By:

Date:

10-28-97

971140BTEXWPTB,10/28/97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC367	971142
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/22/97	1050
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/25/97	10/25/97
TYPE DESCRIPTION:	PZ-3	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	1.50	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 102.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Toluene was detected in the associated vial blank at a concentration of 1.6 ppb

Approved By:

John Smith

Date:

10-28-97

971142BTEXWP,10/28/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC368	971143
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/22/97	1140
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	10/25/97	10/25/97
TYPE DESCRIPTION:	PZ-4	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 102.3 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

luene was detected in the associated vial blank at a concentration of 1.6 ppb

Approved By:

Date:

10-28-97

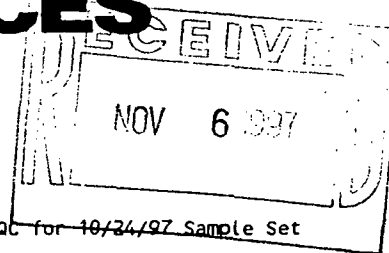
971143BTEXWP,10/28/97

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX

Samples: 971139 to 971151

QA/QC for 10/24/97 Sample Set



LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.0	96.1	75 - 125 %	X
Toluene	Standard	50.0	47.8	96	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.7	95	75 - 125 %	X
m & p - Xylene	Standard	100	95.4	95.4	75 - 125 %	X
o - Xylene	Standard	50.0	47.3	95	75 - 125 %	X
LCS LA-45476 25 PPB					RANGE	
Benzene	Standard	25.0	24.3	97.0	39 - 150	X
Toluene	Standard	25.0	24.1	97	46 - 148	X
Ethylbenzene	Standard	25.0	24.1	96	32 - 160	X
m & p - Xylene	Standard	50.0	48.3	97	Not Given	X
o - Xylene	Standard	25.0	24.3	97	Not Given	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.6	97.3	75 - 125 %	X
Toluene	Standard	50.0	48.6	97.3	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.6	95.1	75 - 125 %	X
m & p - Xylene	Standard	100	95.0	95.0	75 - 125 %	X
o - Xylene	Standard	50.0	47.6	95	75 - 125 %	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.8	97.5	75 - 125 %	X
Toluene	Standard	50.0	48.5	97.0	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.2	94.5	75 - 125 %	X
m & p - Xylene	Standard	100	93.9	93.9	75 - 125 %	X
o - Xylene	Standard	50.0	47.3	94.6	75 - 125 %	X

Narrative: Acceptable.

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB		ACCEPTABLE	
					YES	NO
971148					RANGE	
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1	1.3	200.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<2	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Toluene was detected in the associated blank at the level shown. Data was qualified.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 971148					RANGE	
Benzene	50	<1	49.0	97.9	75 - 125 %	X
Toluene	50	<1	49.2	98	75 - 125 %	X
Ethylbenzene	50	<1	48.3	97	75 - 125 %	X
m & p - Xylene	100	<2	96.6	96.6	75 - 125 %	X
o - Xylene	50	<1	48.1	96	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (2 analyzed with set)		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 (1 analyzed with set)		STATUS
Benzene	Vial + Boiled Water	<1.0		ACCEPTABLE
Toluene	Vial + Boiled Water	1.62		NOTED
Ethylbenzene	Vial + Boiled Water	<1.0		ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0		ACCEPTABLE

Narrative: Data for associated samples was qualified.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (none 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.

10/23/97 TRIP BLANK	SOURCE	PPB (2 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: CV

Approved By: John T. L. L.

Date: 11-3-97



Well P₊s.

Page _____ of _____

White - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	971158
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/24/97	1020
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	11/5/97	11/5/97
TYPE DESCRIPTION:	Trip Blank	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 91.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. Labin

Date:

11/10/97

971158BTEXWPTB,11/7/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC365	971159
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/24/97	1020
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	11/6/97	11/6/97
TYPE DESCRIPTION:	PZ-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	76.3	PPB	5	D		
TOLUENE	252	PPB	5	D		
ETHYL BENZENE	53.0	PPB	5	D		
TOTAL XYLENES	369	PPB	5	D		
TOTAL BTEX	750	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

Narrative:

Approved By:

John Sullivan

971159BTEXWP,11/7/97

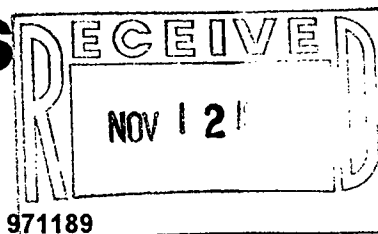
Date:

11/10/97



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX



Samples: 971158 to 971159, 871175 to 971176, 971178^{to} 971183, 971185 to 971189

QA/QC for 11/5/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	46.1	92.3	75 - 125 %	X
Toluene	Standard	50.0	46.1	92	75 - 125 %	X
Ethylbenzene	Standard	50.0	46.1	92	75 - 125 %	X
m & p - Xylene	Standard	100	92.4	92.4	75 - 125 %	X
o - Xylene	Standard	50.0	46.0	92	75 - 125 %	X
SAMPLE NUMBER LCS LA-45476 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	23.4	93.5	39 - 150	X
Toluene	Standard	25.0	23.6	94	46 - 148	X
Ethylbenzene	Standard	25.0	23.3	93	32 - 160	X
m & p - Xylene	Standard	50.0	47.1	94	Not Given	X
o - Xylene	Standard	25.0	23.4	94	Not Given	X
SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	46.4	92.8	75 - 125 %	X
Toluene	Standard	50.0	46.2	92.4	75 - 125 %	X
Ethylbenzene	Standard	50.0	46.1	92.1	75 - 125 %	X
m & p - Xylene	Standard	100	91.9	91.9	75 - 125 %	X
o - Xylene	Standard	50.0	46.1	92	75 - 125 %	X
SAMPLE NUMBER CCV LA-52589 50 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	50.0	46.2	92.4	75 - 125 %	X
Toluene	Standard	50.0	46.4	92.7	75 - 125 %	X
Ethylbenzene	Standard	50.0	45.4	90.7	75 - 125 %	X
m & p - Xylene	Standard	100	90.6	90.6	75 - 125 %	X
o - Xylene	Standard	50.0	45.5	91.1	75 - 125 %	X

Narrative: Acceptable.

Benzene	Standard	50.0	45.3	90.7	75 - 125 %	X
Toluene	Standard	50.0	44.8	89.5	75 - 125 %	X
Ethylbenzene	Standard	50.0	44.0	88.0	75 - 125 %	X
m & p - Xylene	Standard	100	87.0	87.0	75 - 125 %	X
o - Xylene	Standard	50.0	44.2	88.4	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 971179	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2	<2	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 971179	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	50	<1	46.6	93.2	75 - 125 %	X
Toluene	50	<1	46.3	93	75 - 125 %	X
Ethylbenzene	50	<1	46.2	92	75 - 125 %	X
m & p - Xylene	100	<2	92.1	92.1	75 - 125 %	X
o - Xylene	50	<1	46.2	92	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB (1 analyzed with set)	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 (1 analyzed with 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 (none 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.

10/5/97 TRIP BLANK	SOURCE	PPB (3 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: *ME*

Approved By: *John Ladd*

Date: *11/10/97*

**1997 GROUNDWATER
ANALYTICAL**



Initial
CHAIN OF

Page 1 of 1

White - Tasting Laboratory Cannery - EDNGL 10 Pink - Field Samples



4-24-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC32	970261
MTR CODE SITE NAME:	2643	Mesa CPD
SAMPLE DATE TIME (Hrs):	4/9/97	1418
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/11/97
TYPE DESCRIPTION:	Monitor Well	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				

The Surrogate Recovery was at 100 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

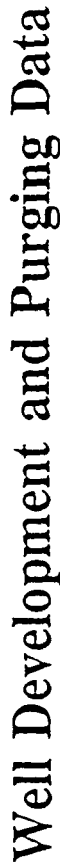
Narrative:

Approved By:

[Signature]

Date:

4/14/97



~~Development~~
~~Purging~~

Well Number MW-1

Page 1 of 1

Project Name GW PITS Project Manager C CHANCE Project No. 17520
Client Company EPFS Phase/Task No. 6003.77
Site Name MESA CPD - 02643 Site Address _____

Water Volume Calculation

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

Initial Depth of Well (feet) 13' 66S
Initial Depth to Water (feet) 4' 66S
Height of Water Column in Well (feet) 9'

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

☐ Other

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

Instruments

☒ pH Meter

☐ DO Monitor

☒ Conductivity Meter☒ Temperature Meter☐ Other

Water Disposal

Water Removal Data

[illegible]

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

Comments: Bailed water relatively clear, strong, but little silt. Wall did not bail dry. Water had muddy odor, but no presence of H_2S .

Developer's Signature(s) _____ Date 4/9/97 Reviewer _____ Date _____



Water Sampling Data

Location No. MW-1Serial No. WSD-

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 4/9/97Project Name EPFS GW PITS Project No. 17520Project Manager C CHANCE Phase Task No. 6003.77Site Name MESA CPD-02643

Sampling Specifications

Requested Sampling

Depth Interval (feet) _____

Requested Wait Following

Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) _____

Initial Water Depth (feet) _____

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)	

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

Sample Containers

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
EPA 8020 BTEX	3	G/VV	40		X	Y	X		DRC 32 (MW-1)
"	1	"	"				X		TRIP BLANK- DRC 30

Filter Type _____ Chain-of-Custody Form Number _____

Comments * PLEASE REFER TO WELL DEVELOPMENT + PURGING DATA FORM.Signature [Signature] Date 4/9/97 Reviewer _____ Date _____



8/7/97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970685
MTR CODE SITE NAME:	62643	Mesa CPD MW-1
SAMPLE DATE TIME (Hrs):	7/17/97	1331
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	7/17/97	7/17/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	16.5	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	16.5	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.3 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. Smith

Date:

7/31/97



8/7/97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970685
DATE SAMPLED:	07/17/97
TIME SAMPLED (Hrs):	1331
SAMPLED BY:	Dennis Bird
MATRIX:	Water
METER CODE:	2643
SAMPLE SITE NAME:	Mesa CPD
SAMPLE POINT:	MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.6	Units	07/18/97
Alkalinity as CO ₃	0.0	PPM	07/18/97
Alkalinity as HCO ₃	450	PPM	07/18/97
Calcium as Ca	318	PPM	07/21/97
Magnesium as Mg	67	PPM	07/21/97
Total Hardness as CaCO ₃	1,068	PPM	07/21/97
Chloride as Cl	1,810	PPM	07/17/97
Sulfate as SO ₄	1,660	PPM	07/17/97
Fluoride as F	1.8	PPM	07/21/97
Nitrate as NO ₃ -N	< 1.1	PPM	07/17/97
Nitrite as NO ₂ -N	< 1.1	PPM	07/17/97
Ammonium as NH ₄ ⁺	< 0.6	PPM	07/21/97
Phosphate as PO ₄	< 1.1	PPM	07/17/97
Potassium as K	4.7	PPM	07/21/97
Sodium as Na	1640	PPM	07/21/97
Total Dissolved Solids	5,850	PPM	07/21/97
Conductivity	8,230	umhos/cm	07/17/97
Anion/Cation %	0.2%	%, < 5.0 Accepted	07/29/97

Lab Remarks:

Reported By: onda

Approved By: John L. L...

Date: 7/31/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	970685
SAMPLE DATE:	07/17/97
SAMPLE TIME (Hrs):	1331
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	02643
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Mesa CPD MW-1

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	0.006	0.100
BARIIUM	0.04	1.00
CADMIUM	<0.0002	0.010
CHROMIUM	0.009	0.050
LEAD	<0.003	0.050
MERCURY	<0.0002	0.002
SELENIUM	<0.011	0.050
SILVER	0.0005	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: mh

Approved By: John L. Smith

Date: 9-8-97



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

Sample ID: 970685
Date Reported: 08/28/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (mg/L)	Known Value (mg/L)	% Recovery
Arsenic	0.031	0.032	94.4%
Barium	0.061	0.065	94.6%
Cadmium	0.0012	0.0012	103%
Chromium	0.008	0.007	103%
Lead	0.013	0.012	108%
Mercury	0.0041	0.0046	89.3%
Selenium	0.040	0.041	98.8%
Silver	0.0066	0.0068	97.6%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	0.0078	0.0077	1.3%
Barium	0.222	0.216	2.7%
Cadmium	ND	ND	NA
Chromium	0.014	0.014	2.6%
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	0.0004	0.0002	NA

SPIKE ANALYSIS (mg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	0.0078	0.118	0.100	110%
Barium	0.222	1.247	1.00	94.2%
Cadmium	ND	0.0101	0.010	101%
Chromium	0.014	0.064	0.050	101%
Lead	ND	0.044	0.050	88.3%
Mercury	ND	0.0018	0.0020	89.0%
Selenium	ND	0.060	0.050	117%
Silver	ND	0.0550	0.050	110%

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	0.0002
Selenium	ND	0.011
Silver	ND	0.0004

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John L. Linder

Date: 9-8-97



Well Number MW-1
Meter Code 03643

Site Name *MESA CPD*

Development Criteria

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

Methods of Development

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

Water Volume Calculation.

Initial Depth of Well (feet) 16.35
Initial Depth to Water (feet) 8.23
Height of Water Column In Well (feet) 8.12
Diameter (Inches): Well 4 Gravel Pack

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.4	16.1
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments

Developer's Signature

Date 7-11-77

Reviewer

Date _____

7/31/97

SAMPLE 4 2009TR



A 2119

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Type and No. of Sample Containers		Preservation Technique		Requested Analysis		Remarks	
Samplers: (Signature) <i>[Signature]</i>		MC # 03643		Date: 10-24-97							
Date	Time	Comp.	GRAB	Sample Number							
10/24/97	1330		X	971151							
WATER						4°C X		MESA CPD MW-1			
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time	
<i>[Signature]</i>		10/24/97 1516									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Date/Time		Remarks:			
				<i>[Signature]</i>		10/27/97 0715					
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	971151
MTR CODE SITE NAME:	02643	Mesa CPD
SAMPLE DATE TIME (Hrs):	10/24/97	1350
PROJECT:	Sample 4 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	10/24/97	10/24/97
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 101.7 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Toluene was detected in the associated vial blank at a concentration of 1.6 ppb

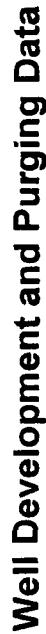
Approved By:

John Larch

Date:

11/7/97

971151BTEXMW,11/4/97



Site Name MESA CPD

☐ Development
☒ Purging

Well Number MW-1

Meter Code 02643

Development Criteria

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

Methods of Development

- | | | | |
|--------------------------|--------------------|--------------------------|---------------------------------|
| ☐ | Pump | ☐ | Baller |
| ☐ | Centrifugal | ☐ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 16.75

Initial Depth to Water (feet) 8.44 201

Height of Water Column in Well (feet) 7.77

4 Diameter (inches): Well

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.2	15.7
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|---------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>D.O. C</u> |

Water Disposal

KUTZ 5609A72P

Water Removal Data

[illegible]

Comments

Comments _____
Developer's Signature *Lennix Bird*

Date 10/24/91 Reviewer _____

John Fowler

Date 11/10/97