3R - <u>213</u>

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 0 2 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,

Sindre & Miller

Såndra 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

Q

El Paso Field Services Farmington, New Mexico

Project 17520



EPFS GROUNDWATER PITS 1997 ANNUAL GROUNDWATER REPORT

LATERAL 0-21 LINE DRIP Meter/Line ID - LD151

SITE DETAILS

Legals - Twn: 30N Rng: 9W NMOCD Hazard Ranking: 40 Operator: EL PASO FIELD SERVICES Unit: O Land Type: FEDERAL

PREVIOUS ACTIVITIES

Site Assessment: Jan-95 Monitor Well: Oct-95 Test Excavation: Jan-95 Geoprobe: Nov-96

Sec: 12

Soil Boring: Oct-95

<u>1997 ACTIVITIES</u>

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 11/12/96 and has continued into 1997. Groundwater analytical data are presented in Table 1. **Well Point Installation** - 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 southeast at this site, as presented in Figure 1. A pipeline corridor is just south of MW-1, with a wash approximately 100 feet to the north.

Groundwater samples collected from MW-1 have been above standards for benzene since quarterly sampling was initiated. With the exception of the third quarter results, BTEX concentrations have steadily decreased since sampling was initiated. Groundwater samples collected from Geoprobe and temporary monitoring wells were all in excess of standards for benzene at varying degrees.

RECOMMENDATIONS

- Obtain permission to conduct an off-site investigation and define plume size.
- Discontinue quarterly sampling at MW-1, and initiate sampling on an annual basis.
- Site is very remote. If no downgradient migration has occurred site may be candidate for risk based closure.



)	PPS Groundwater Pits	997 Annual Groundwater Report
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Tetal BFE.	3560	192	3090	447	7114	
	IJ	п		11	Ш	
Total Nylenes (PPB)	1100	230	764	160	2530	
	11	- 11	- 11			
Ethyl Benzene (PPB)	96	15.6	50.8	8.42	174	
	1	μ	"	н	Ш	
Toluene (PPB)	1620	313	1220	179	3040	
	11		"	"		
Велхене (РРВ)	741	202	1050	99.5	1370	
	11	П	0		1	
Project	Sample 4 - 1 st Qtr	Sample 4 - 2nd Qtr	Sample 4 - 3rd Qtr	Sample 4 - 4th Qtr	Sample 4 - 5th Qtr	
Ħ.						
MW	1	1	-	-		
Sample Date	11/12/96	2/11/97	5/8/97	8/5/97	11/4/97	
Site Name	Lat 0-21 Line Drip	Lat 0-21 Line Drip	Lat 0-21 Line Drip	Lat 0-21 Line Drip	Lat 0-21 Line Drip	
Meter' Line #	LD151	LD151	LD151	LD151	LD151	
Sample #	960942	970085	970412	970808	971183	

Bloomfiel **RECORD OF SUBSURFACE EXPLORATION**



PHILIP ENVIRONMENTAL

10-22

4000 Monroe Road Farmington, New Mexico 87401 (506) 326-2262 FAX (505) 326-2388

Elevation	
Borehole Location	QD- SID- T30 - R9
GWL Depth	33.3 '
Logged By	CM CHANCE
Drilled By cm(KPadilla F. Rivern
Date/Time Started	10/24/95-0847
Date/Time Comple	ted 10/24/95

<	3	Borehole # Weil # Page J		<u>8H-1</u>		
			J	of	2	
Project Name	EPNG PITS					
Project Number	14509	Phase		6000	77	
Project Location	LAT O-	al Lin	£	Der		
Well Logged By	СМС	hance				
Personnel On-Site	K Pad	lilla , D. C	16	adio		
Contractors On-Site	-					
Client Personnel On-	Site	<u></u>				

Drilling Method Air Monitoring Method

1641.0. 4 1/4" ID HSA PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Ai Units BZ	Monitor PPM BH	ing S HS	Drilling Conditions & Blow Counts
5	1	5 - 7	12	Br SAND, VF-FSA-P, loos +, Kry			0	0	00	-0851 hr
10 10	5	10-12	10	Br SAND, JFSAND, loose, dag			D	D	4/3	-0856
15 	2	ת - זי	8	¥ V			٥	٥	48.	-2902
20	ч	90-9J	5	Br SILT, louse, dry			D	3	97 91	-2928
25	5	9 7-9)	Ś	Br SAND, VF SANK, loose, dry			D	4	42	4610
30	6	6 .0C	8	Gry SAND, VF-FSond, ludse, dry			υ	د	72	093Y
35	7	72- يو	14	Br SAND, F-m eD, #* med dense, Wet			0	35	- 184	-D945
40										
Comments	:	Nore: GW bagg	Dr:11+ (2-33. 1 dic.	d vere doip line was lacared, nor <u>afric 15min</u> , CM(16) () <u>Aprior 10 Containerizing</u> . Will se Geologist Si	gnature	Lenter of Lent +	5 pit, 2 [ab - 1/4].		ÈPNI EX, TA	W) Sangely J&Yu

RECORD OF SUBSURFACE EXPLORATION



PHILIP ENVIRONMENTAL

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

Elevation	
Borehole Location	QD- SIQ- T)0- R9
GWL Depth	
Logged By	CM CHANCE
Drilled By	K. Radilla F. Rivery
Date/Time Started	10/24/95-2847
Date/Time Comple	ted 10/14/95 - 11/10

	:	Borehole Well #	#	BH-1	
		Page	a	of 2	
Project Name	EPNG PITS				
Project Number	14509	Phase	e	6000 77	
Project Location	LAT D-	AL L	ine	Drip	
Well Logged By	<u>CM C</u>	hance_			
Personnel On-Site	K Pad	illa, D .	CL	arlif	
Contractors On-Site					
Client Personnel On-	Site				

Drilling Method <u>4</u> Air Monitoring Method

4 1/4" ID HSA / 6/4 1.0 M PID, CGI

			Sample			Depth				
Depth	Sample	Sample	Туре &	Sample Description	uscs	Lithology	Ai	Monitor	ing	Drilling Conditions
(Feet)	Number	Interval	Recovery	Classification System: USCS	Symbol	Change	Units	: PPM	- <u>s</u>	& Blow Counts
I			(inches)		 	(feet)	BZ	вн	HS	
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Comments	:									
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MONITORING WELL INSTALLATION RECORD

Q0-S12-T30-R9

Philip Environmental Services Curp. 4000 Morroe Road Ferminaton, New Mexico 87401 (6061 326-2262 FAX (6061 326-2368

Elevation

Well Location

GWL Depth

Installed By_



	Borehole (Well # Page	#BH MW- 1_of	<u> </u>
Project Name	EPNG P	175	
Project Number	14509 Lat 0-21	Phase Line L	6 <u>001.</u> 77
On-Site Geologist Personnel On-Site Contractors On-Site	CM (K.Palill	Chance A. D.C.K	e arlis
Client Personnel O	n-Site		

ł

Date/Time Started $\frac{10/24/95 - 11/5}{15/24/95 - 1330}$

F. Rivera

32

Depths in Reference to Ground S		-				Top of Protective Casing	+2'
ltem	Material	Depth				Ground Surface	_0'
Top of Protective Casing		NA					
Bottom of Protective Casing		NA					
Casing		NA_					
Bottom of Permanent Borehole		1.1.1					
Casing		<u>INH</u>			11		•
Top of Concrete		NA					
Bottom of Concrete		NA					
Top of Grout	- 94 # Туре <u> </u>	0'					
Bottom of Grout	- SOH poudered Bearsoning	ر ا					
Top of Well Riser	"4" dia SCH40	+2'					
Bottom of Well Riser	Flush Thread PYC	28'					
Top of Well Screen	4" dia SCH40 Fluch Thread	28'				Top of Seal	23'
Bottom of Well Screen	0.01 Slot PVC	43'		202			
Top of Peltonite Seal	-SO# Enviro Plus	23'		200	2000		
Bottom of Pettonite Seal	Bentonitte	25'		xx	xx	Top of Gravel Pack	23
Top of Gravel Pack	-50# 10-20	25']			Top of Screen	78.
Bottom of Gravel Pack	SilicaSand	44.		E			
Top of Natural Cave-In		441					
Bottom of Natural Cave-In		45'					
Top of Groundwater						Bottom of Screen	43
		45			: <u>-</u> .	Bottom of Borehole	43 <u>45</u>

eologist Signature



Philin Services Corn.		۱ ۱	Well # PZ-
1000 Monroe Rd.		I	
Farmington, NM 87401	Project Name	EPFS GW	PITS
505) 326-2262 FAX (505) 326-2388	Site Location	17520	LD LD 151
Elevation	On-Site Geologi	st <u>C CH</u>	IANCE
Well Location Ltr () -SI)-TJO-R9	Personnel On-S	iite <u> </u>	Charley
Installed By K Pads (Ia	Client Personne	I On-Site	
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Date/Time Started <u>8/16/97</u> Date/Time Completed 8/16/97			
Depths in Reference to Ground Surface		Top of Protective Ca	sing NA
ltem Material Depth		Top of Riser (surve	y elev.) 99. [D
(feet)			
Top of Protective Casing			
Bottom of Protective Casing	┍┛╎╎┩		
Top of			
Permanent Borehole Casing			
Bottom of Permanent Borehole Casing			
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	NA
Bottom of Well Screen			
Top of Peltonite Seal		Top of Grovel Boy	~k
Bottom of Peltonite Seal		Top of Screen	<u> </u>
Top of Gravel Pack			
Bottom of Gravel Pack			
Top of Natural Cave-In			
Bottom of Natural Cave-In			
Top of Groundwater		Bottom of Screen Bottom of Boreho	
Total Depth of Borehole			
Comments PZI is 355° +24' From	mMWJ.	Sampled	PZI (CMC336
+ submit to lab. Piezo pul	lad + BH o	roused 8	129/97
- J- WILL IN 1120 PM	IN N DII (PREAL OF	Krili /

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Philip Services Corp.					vvei Page	# <u>F2-05</u> 3_1_of_1_
4000 Monroe Rd. Farmington NM 87401			Project N	lame	EPES GW PITS	
(505) 326-2262 FAX (505) 326-2388			Project N Site Loca	lumber ation	$\frac{17520}{La+O-d}$	Phase 600
Elevation	-T ?D-R9		On-Site (Geolog	ist <u>C CHANG</u>	
GWL Depth 35.02 TOR ()	<u>4.84 ele</u> r)		Contract Client Pe	ors On ersonne	-Site	
Date/Time Started	197					
Depths in Reference to C	Ground Surf	ace	F =-	=	Top of Protective Casing	NA
ltem	Material	Depth (feet)			Ground Surface	
Top of Protective Casing						
Bottom of Protective Casing						N .
Top of Permanent Borehole Casing		· ·				
Bottom of						
Permanent Borehole Casing		+				
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	NA
Bottom of Well Screen			X X X X	X X X X		
Top of Peltonite Seal			x x x x	x x x x		
Bottom of Peltonite Seal					1 op of Gravel Pack	<u>_1V_7</u>
Top of Gravel Pack					i op of Screen	- . .
Bottom of Gravel Pack				1		
Top of Natural Cave-In				-		
Bottom of Natural Cave-In		_				
Top of Groundwater				_	Bottom of Screen	35
Total Depth of Borehole						
Comments P22 is 75	• 1 27'	From	NWI.	<u>. </u>	ample PZZ	(cmc2)7
Asubuit to	lab G	rout PZ	2 8	2/29	117	



Page of	CONTRACT LABORATORY P. O. NUMBER	H DENCE	REMARKS	Lat 0-21 LD151 P212	Trip Black	LO-21 LOISI PZ2	NECEIVEN	SFD 0 1007		RECEVENCE TERP. 30°C		Note: PZ APZZ reacted Vigoroush	With HCL. Also, septems on Wills	are breaking cracking	e) DATETIME J RECEIVED BY (Signature)	C (1200) S-27-97 13415	HECEIVED OF LABORATORY BY: (Signalure)	8-27.97 1344 devere Und	RESULTS & INVOICES TO: FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY	P. O. BOX 4990 FARMINGTON, NEW MEXICO 87499	505-599-2144 FAX: 505-599-2261
CUSTUDY RECORD	REQUESTED ANALYS	8 61D 8050 .EX	та Ачаа ВАЛ		$\overline{\mathbf{A}}$										RELINQUISHED BY: (Signatur		RELINQUISHED BY: (Signatur				
CHAIN OF	ਤਸ <u>਼</u> ਸਤਾ			91 K	1 78	2 16					4992				gnature)		iynature)		REMARKS		
BEIL SO Natural Gas Company Well Points	ECT NUMBER PROJECT NAME 24324 Pit Closure Project	LERS: (Signature)		70932 8964971100 Water (mc 2) 6	7093/ 1 - 1 Trip Dank	TUENNO VISIEN VEROC									AUSHED BY: (Signature) DATE/TIME RECEIVED BY: (Sig	Con C Queres 8/24/1700	QUISHED DY Signature) DATE/TIME RECEIVED BY: (5)		IESTED TURNAROUND TIME: SAMPLE RECEIPT UTINE DRUSH	CHARGE CODE	40:

- -----

2

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

1M-00-0303 A (HEV. 03-34)



FIELD SERVICES LABORATORY ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	970931
MTR CODE SITE NAME:	LD151	Lat 0-21
SAMPLE DATE TIME (Hrs):	8/26/97	1100
PROJECT:	Well P	oints
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
TYPE DESCRIPTION:	Trip Blank	Water

Field Remarks:

RESULTS

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

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 100.1 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

John Furde. Date: <u>9-8-9</u>7 Approved By: 970931TripBlankBTEX,9/3/97



FIELD SERVICES LABORATORY ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC336	970932
MTR CODE SITE NAME:	LD151	Lat 0-21
SAMPLE DATE TIME (Hrs):	8/26/97	1100
PROJECT:	Well P	oints
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
TYPE DESCRIPTION:	PZ-1	Water

Field Remarks:

RESULTS PARAMETER RESULT UNITS QUALIFIERS DF 0 BENZENE 2101 PPB 20 D TOLUENE 5080 PPB 20 D1 ETHYL BENZENE 337 **PPB** 20 D TOTAL XYLENES 3740 PPB 20 D TOTAL BTEX 11258 PPB

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 100.1 % for this sample All QA/QC was acceptable. DF = Dilution Factor Used

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

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

Jelu Jabli

Approved By:

Date: 9-8-97

970932BTEX,9/3/97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC337	970933
MTR CODE SITE NAME:	LD151	Lat 0-21
SAMPLE DATE TIME (Hrs):	8/26/97	1215
PROJECT:	Well P	oints
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
TYPE DESCRIPTION:	PZ-2	Water

Field Remarks:

RESULTS PARAMETER RESULT UNITS QUALIFIERS DF 0 BENZENE 4310 PPB 50 D TOLUENE 4730 PPB 50 D ETHYL BENZENE 548 PPB 50 D TOTAL XYLENES 5340 PPB 50 D TOTAL BTEX 14928 PPB

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 99.6 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

Narrative:

John Jakoln Approved By:

Date: 9-8-97

970933BTEX,9/3/97

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 970931 to 970933, 970938 to 970943

QA/QC for 8/29/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE		EXPECTED	ANALYTICAL		ACCEPTABLE
NUMBER	TYPE	RESULT	RESULT	%R	
ICV LA-52589		PPB	PPB		YES NO
50 PPB					RANGE
Benzene	Standard	50.0	49.9	99.9	75 - 125 % X
Toluene	Standard	50.0	49.6	99	75 - 125 % X
Ethylbenzene	Standard	50.0	49.5	99	75 - 125 % X
m & p - Xylene	Standard	100	99.1	99.1	75 - 125 % X
o - Xylene	Standard	50.0	49.2	98	75 - 125 % X
SAMPLE		EXPECTED	ANALYTICAL		ACCEPTABLE
NUMBER	ТҮРЕ	RESULT	RESULT	%R	
LCS LA-45476		PPB	PPB		YES NO
25 PPB					RANGE
Benzene	Standard	25.0	25.6	102.2	39 - 150 X
Toluene	Standard	25.0	25.6	102	46 - 148 X
Ethylbenzene	Ethylbenzene Standard		25.3	101	32 - 160 X
m & p - Xylene	Standard	50.0	50.8	102	Not Given X
o - Xylene	Standard	25.0	25.5	102	Not Given X
SAMPLE		EXPECTED	ANALYTICAL		ACCEPTABLE
NUMBER	ТҮРЕ	RESULT	RESULT	%R	
CCV LA-52589		PPB	PPB		YES NO
50 PPB					RANGE
Benzene	Standard	50.0	50.5	101.0	75 - 125 % X
Toluene	Standard	50.0	49.8	99.6	75 - 125 % X
Ethylenzene	Standard	50.0	49.7	99.4	75 - 125 % X
m & p - Xylene	Standard	100	99.5	99.5	75 - 125 % X
o - Xylene	Standard	50.0	49.7	99	75 - 125 % X
SAMPLE		EXPECTED	ANALYTICAL		ACCEPTABLE
NUMBER	ТҮРЕ	RESULT	RESULT	%R	
CCV LA-52589		PPB	PPB		YES NO
50 PPB					RANGE
Benzene	Standard	50.0	50.3	100.6	75 - 125 % X
Toluene	Standard	50.0	49.3	98.7	75 - 125 % X
Ethylbenzene	Standard	50.0	48.8	97.5	75 - 125 % X
m & p - Xylene	Standard	100	97.4	97.4	75 - 125 % X
o - Xylene	Standard	50.0	48.9	97.8	75 - 125 % X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE	ТҮРЕ	SAMPLE RESULT	DUPLICATE RESULT	RPD	ACC	CEPTAE	BLE
ID 970943		PPB	PPB		RANGE	YES	NO
Benzene	Matrix Duplicate	3.8	3.9	2.25	+/- 20 %	X	
Toluene	Matrix Duplicate	<1	1.0	200.00	+/- 20 %		x
Ethylbenzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	Х	
m & p - Xylene	Matrix Duplicate	3.59	3.7	3.64	+/- 20 %	Х	
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	Х	

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE	SPIKE	SAMPLE	SPIKE		AC	CEPTAE	BLE
lD	ADDED	RESULT	SAMPLE	%R		•	
2nd Analysis	PPB	PPB	RESULT			YES	NO
970943		a daa dhaa middi ah. Maalii ahaa ahaa ahaa	PPB		RANGE	· · · · ·	
Benzene	50	3.8	54.4	101.2	75 - 125 %	Х	
Toluene	50	< 1	51.6	103	75 - 125 %	Х	
Ethylbenzene	50	<1	50.5	101	75 - 125 %	Х	
m & p - Xylene	100	3.59	103.7	100.1	75 - 125 %	Х	
o - Xylene	50	<1	50.1	100	75 - 125 %	Х	

Narrative: Acceptable

AUTO BLANK	SOURCE	PPB data in the second s	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.

	SOURCE	РРВ	STATUS
SOIL VIAL BLANK	Lot MB1461		
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	SOURCE	PPB: Content of the second	STATUS
CARRYOVER CHECK		(None analyzed with this set)	
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.

(i		1.				
	TRIP	SOURC	E			STATUS
	BLANK			(None analyzed with this set)	· 	
	Benzene	Vial + Boile	d Water	<1.0		ACCEPTABLE
	Toluene	Vial + Boile	d Water	<1.0		ACCEPTABLE
	Ethylbenzene	Vial + Boile	d Water	<1.0		ACCEPTABLE
	Total Xylenes	Vial + Boile	d Water	<3.0		ACCEPTABLE

Narrative: Acceptable.

Reported By: _____

Approved By: John Jalle Date: 9-8-97

1997 GROUNDWATER ANALYTICAL

A 2311		Remarks	T. 0-21 M.W. 1 MC LO151	T. J-21 MW-1 MC LO156							Date/Time Received by: (Signature)		Date/Time Received by: (Signature)	ktow well.	rted / by: (Signature)	
ELF3SO Natural 6as Company DF CUSTODY RECORD	Type Requested Analysis and No.	Sample Contain- ers	R3 40C X X X 4 44	5-1 4°C X X X /J			7	/	/		Relinquished by: (Signature)		Relinquished by: (Signature)	inature) 11/ DéterTime Remarks: Prod	BNo. Date Results Repo	
	1 FIELO PIPELINE Date: 11-12-92	Sample Number	960942	460743							Date/Time Received by: (Signature)	141396 1605	Date/Time Received by: (Signature)	Date/Time Received for Laboratory by: (Sig	VIIIUNAN Carrier Phon	
	Project No. Project Name Elimo, Samplers: (Signature)	OF TIME Date Time Comp. GRAB	inster 11-12-96 1436 X	1435 141296 1435 1435 ×							Relinquished by: (Signature)	Levere Brok	Relinquished by: (Signature)	Relinquished by: (Signature)	Carrier Co:	Air Bill No.:





FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab iD
SAMPLE NUMBER:	N/A	960942
MTR CODE SITE NAME:	LD151	Lat O-21 Line Drip MW-1
SAMPLE DATE TIME (Hrs):	11/12/96	1436
PROJECT:	Sample 4	- 1st Quarter
DATE OF BTEX EXT. ANAL.:	11/14/96	11/14/96
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

		RESULTS			
PARAMETER	RESULT	UNITS	DF	QUALIF	IERS
BENZENE	741	РРВ	10	D	
TOLUENE	1620	РРВ	10	D	
ETHYL BENZENE	99.0	РРВ	10	D	
TOTAL XYLENES	1100	РРВ	10	D	
TOTAL BTEX	3560	РРВ		<u> </u>	

-BTEX is by EPA Method 8020 -

The Surrogate Recovery was at 103 % for this sample All QA/QC was acceptable. DF = Dilution Factor Used

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

Narrative:

Approved By: _____

Date: 11/20/910

960942.XLS,11/20/96





Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960942	
DATE SAMPLED:	11/12/96	
TIME SAMPLED (Hrs):	1436	
SAMPLED BY:	D. Bird	
MATRIX:	Water	
SAMPLE SITE NAME:	Lateral 0-21	
SAMPLE POINT:	Monitor Well MW-1	

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.2	Units	11/14/96
Alkalinity as C03	0.0	PPIM	11/14/96
Alkalinity as HC03	299	PPM	11/14/96
Calcium as Ca	433	PPM	11/15/96
Magnesium as Mg	61.4	РРМ	11/15/96
Total Hardness as CaC0 ₃	1,334	PPM	11/15/96
Chloride as Cl	21.9	РРМ	11/14/96
Sulfate as S04	1,653	РРМ	11/14/96
Fluoride as F	1.00	PPM	11/15/96
Nitrate as N03-N	<1.1	PPM	11/14/96
Phosphate as PO ₄	<3.6	PPM	11/14/96
Potassium as K	0.83	PPM	11/15/96
Sodium as Na	240	PPM	11/15/96
Total Dissolved Solids	2,700	PPM	11/14/96
Conductivity	2,580	umhos/cm	11/14/96
Anion/Cation %	3.8%	%, <5.0 Accepted	12/18/96

Lab Remarks:

Reported By: 09

Approved By: _____

Date: 14/18/96





FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960942
SAMPLE DATE:	11/12/96
SAMPLE TIME (Hrs):	1436
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	LD151
SAMPLE SITE NAME:	Bloomfield Pipeline
SAMPLE POINT:	Lat. 0-21 MW-1

REMARKS:

	RESULTS	
PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIUM	0.15	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.002	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	0.050
SILVER	<.0005	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, 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 7421, Lead (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. nod 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: MAA

Approved By: John Labola

Date: 12/18/96



QUALITY CONTROL REPORT

Sample ID: 960942 a Date Sampled: 11/12/96

960942 and 960943 11/12/96

Date Reported: 12/16/96

3 1A	NUARD REFERENCE			
Analyte	Found Result (µg/L)	Known Value (μg/L)	•	% Recovery
Arsenic	32.8	32.4		101%
Barium	75.5	64.9		116%
Cadmium	2.75	2.38		116%
Chromium	5.07	4.76	1	107%
Lead	28.8	29.7		97%
Mercury	4.86	4.59		106%
Selenium	36.3	40.5		90%
Silver	4.81	4.32		111%
]	DUPLICATE ANALYS	S (mg/L)		
Analyte	Original Sample Result	Duplicate Sample Result		% RPD
Arsenic	0.025	0.027		7.7%
Barium	0.58	0.55		5.3%
Cadmium	ND	ND		NA
Chromium	ND	ND		NA
Lead	ND	ND		NA
Mercury	ND	ND		NA
Selenium	ND	ND		NA
	ND			NA
1997 - 12 Maria Sangi un vacadasente casso das 4 4 7 y un "1 y concerti frede presentaria" - 1 das varia tatendo e e	SPIKE ANALYSIS	μg/L)		
Analyte	Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	25.3	132	100	106%
Banum	580	1520	1000	94%
Cadmium	ND	9.72	10.0	97%
Chromium	ND	59.8	50.0	118%
Lead	ND	42.9	50.0	86%
Mercury	ND	1.81	2.00	91%
Selenium	ND	47.9	50.0	9 6%
Silver	ND	51.6	50.0	<u> 103% </u>
	METHOD BLAN	IK		
Analyte	Fou Res (µg/	nd ult L)		Level (µg/L)
Arsenic	ND			10
Barium	NE			10
Cadmium	NE			0.2
Chromium	NE			2
Lead	NC			4
Mercury	NC			0.24
Selenium	NC			3
Silver	NC			0.5
NOT Detected at stated detection level.		NA: NOT Applicable.		

Reported By: ///

Approved By:

JouZalla

Date: 12/18/9/

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Carrier Co:		UNDIN CONTENT	ne No.	122/	1000 Dat	e Results Repor	ted / by: (Signature)		
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FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab iD
SAMPLE NUMBER:	N/A	970085
MTR CODE SITE NAME:	LD151	Lat 0-21 MW-1
SAMPLE DATE TIME (Hrs):	2/11/97	1137
PROJECT:	Sample 4 -	2nd Quarter
DATE OF BTEX EXT. ANAL.:	2/13/97	2/13/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS PARAMETER QUALIFIERS RESULT UNITS DF 0 BENZENE 202 PPB 5 D TOLUENE 313 PPB 5 D ETHYL BENZENE 15.6 PPB 5 D TOTAL XYLENES PPB 5 230 D TOTAL BTEX 761 PPB

-BTEX is by EPA Method 8020 -

The Surrogate Recovery was at 95.8 % for this sample All QA/QC was acceptable. DF = Dilution Factor Used

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

Narrative:

John Sola Approved By:

Date: _____ Z - (9 - 17

970085.XLS,2/18/97

IJ	mber	Instruments	区 Temperature Meter 区 Other <u>んの CK</u> EMETS KIT	Water Disposal <i>大い</i> TC <i>ちらのARA TOR</i>			Conductivity Dissolved Comments	277 1915 mgh.	6.70 26/D	6.81 2600	6 92 2680	6.70 2620	6.11 ×420 100		
pment and Purging Dat	Development Well Nu Purging Meter C	101 22 1.27	avel Pack Veli Galions to be ons Removed	3 22.0			Product Volume Temperature Removed (gallons) °C	Jath Increment Cumulative	051 2.	145	a'>/	70 15.3	2.6.		2 10 04
Well Develo	ļ	Water Volume Calculat Initial Depth of Weil (feet) <u>177</u> Initial Depth to Water (feet) <u>73.3</u> Height of Water Column in Weil (feet	Diameter (inches): Weil <u>4</u> Gr Water Volume in V item Cubic Feet Gall	Well Casing Gravel Pack	Drilling Fluids Total		Ending Water Volume Depth Removed (gal	(loet) Increment Cum	5.0 5.	50 10	50 13	205		ON SMELL.	
EPPS BL MSO FIELD SERVICES	Site Name <u>687</u> 0-2/	Development Criteria X 3 to 5 Casing Volumes of Water Removel Stabilization of Indicator Parameters Other	Central of DevelopInent Pump Bailer Centrifugal X Bottom Valve		Other	Vater Removal Data	Date Time Development Removal Intake Method Rate Depth Dirmo Baller (reviewich A-con	3-21-97 1024	2-1497 1035	×12 104	-1.65 1.059	-//47/1/23		omments LIGHT HYDROCARB.	Part and the second of the sec

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Relinquished by: (Signature)	Date/Time Received by: (Signature)	Relinquished by: (Signature)	Date/Time Received by: (Signature	
Relinquished by: (Signature)	Date/Time Received for Laboratory by: (Si	gnature) 5/ Pate/Time Remarks:		
Carrier Co:	Carribation Carribation	A 1 / 77 0 / 10 Date Resul	ts Reported / by: (Signature)	
Air Bill No.:				
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FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970412
MTR CODE SITE NAME:	LD151	Lat O-21 Line Drip MW-1
SAMPLE DATE TIME (Hrs):	5/8/97	1105
PROJECT:	Sample 4	- 3rd Quarter
DATE OF BTEX EXT. ANAL.:	5/14/97	5/14/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS												
PARAMETER	RESULT	UNITS	DF	QUALIF	IERS							
BENZENE	1050	РРВ	5	D,D1								
TOLUENE	1220	PPB	5	D,D1								
ETHYL BENZENE	50.8	РРВ	5	D								
TOTAL XYLENES	764	РРВ	5	D								
TOTAL BTEX	3090	PPB										

The Surrogate Recovery was at 97.0 for this sample All QA/QC was acceptable. DF = Dilution Factor Used

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

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

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Approved By:	Xouxall	

Date: 4/3/97

970412,6/2/97

		ster	CHEMETS KIT	024000	04141714			ssolved	mg/L					35			Date 5/27/47
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ELPA	Site N		Methc				Water			5-2-5	から	S. B.				Commer	Developt

Mde 4- 474 Other CHAIN OF CUSTODY RECORD	Main Requested Mocn Date: P_S_GR Requested Mocn Date: P_S_GR Analysis Mocn Comp GRAB Sample Number ers	X 970808 61 4°C X 1475AI.02/ LINEDRIP MC LOIS/ X			Date/Time Received by: (Signature) Relinquished by: (Signature) Date/Time Received by: (Signature)	Date/Time Received by: (Signature) Relinquished by: (Signature) Date/Time Received by: (Signature)	Date/Time Received for aboratory by: (Signature) B/ pate/Time Remarks: Image: Signature Image: Signature Image: Signature Image: Signature Carrie/Phone No. Date Results Reported / by: (Signature)	
SANDLe 4- 476	Project No. Project Name Samplers: (Signature) Den Mai Comp. GRAB	WHER REAT 1131 X			Relingwished by: (Signature) Date/Til	Retinquished by: (Signature) Date/Ti	Relinquished by: (Signature) Date/Ti Carrier Co:	



FIELD SERVICES LABORATORY ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970808
MTR CODE SITE NAME:	LD151	Lateral 0-21 Line Drip MW-1
SAMPLE DATE TIME (Hrs):	8/5/97	1121
PROJECT:	Sample	4 - 4th Quarter
DATE OF BTEX EXT. ANAL.:	8/6/97	8/6/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS PARAMETER RESULT UNITS QUALIFIERS 0 DF BENZENE D 99.5 PPB 5 TOLUENE PPB 5 179 D **ETHYL BENZENE** 8.42 PPB 5 D TOTAL XYLENES 160 **PPB** 5 D TOTAL BTEX 447 PPB

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 90.5 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

John Farther:

Narrative:

Approved By:

Date:	 8/2

8/97

970808BTEX,8/25/97

|--|

A 2121	Requested Analysis Remarks	LATERAL DEI LINE ORIP MW-1 TRIP BLANK		Ire) Date/Time Received by: (Signature)	Remarks: Date Results Reported / by: (Signature)
CHAIN OF CUSTODY RECORD	-t-77 No. Sample Contain- ers	52 4°C X 6-1 4°C X		y: (Signature) Relinquished by: (Signat r: (Signature) Relinquished by: (Signat	ar Laboratory by: (Signature) 1, 1 Date/Time
APLE 4 STHAPP	Troject Name MC#L0151 PMM Digl Date: 11- PMM BAB Sample Number Time Comp. GRAB Sample Number	1055 X 971/83		ature) Date/Time Received by <i>ELOR</i> 11-4-77 1718 ature) Date/Time Received by	ature) Date/Time Received to
Omland No	Samplers: (Signature)	11-14-11-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11 1-14-11		Relinguished by: (Signi OLPMMD Relinguisfied by: (Signe	Relinquished by: (Signa Carrier Co: Air Bill No.:

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971183
MTR CODE SITE NAME:	LD151	Lateral 0-21 Line Drip
SAMPLE DATE TIME (Hrs):	11/4/97	1055
PROJECT:	Sample	4 5th Quarter
DATE OF BTEX EXT. ANAL.:	11/6/97	11/6/97
TYPE DESCRIPTION:	MW-1	Water

......

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS					
			DF	<u>0</u>				
BENZENE	1370	РРВ	5	D				
TOLUENE	3040	РРВ	5	D				
ETHYL BENZENE	174	PPB	5	D				
TOTAL XYLENES	2530	РРВ	5	D				
TOTAL BTEX	7114	РРВ						

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 92.5 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

John Furth.

Narrative:

Approved By: _

Date: <u>11/12/97</u> 971183BTEXMW,11/10/97

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