

3R - 196

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



EPFS GROUNDWATER PITS

1997 ANNUAL GROUNDWATER REPORT

JAMES F BELL # 1E
Meter/Line ID - 94715

SITE DETAILS

Legals - Twn: 30N Rng: 13W Sec: 10 Unit: P
NMOCD Hazard Ranking: 40 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation: Apr-94 (0 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Downgradient MW's: Nov-95

1997 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 12/4/96 and has continued into 1997. Groundwater analytical data are presented in Table 1.

Well Point Installation - Groundwater samples were collected from temporary monitoring wells.

Product Removal - Product removal was initiated at MW-1 on 7/7/97 and MW-3 on 7/21/97.

CONCLUSIONS

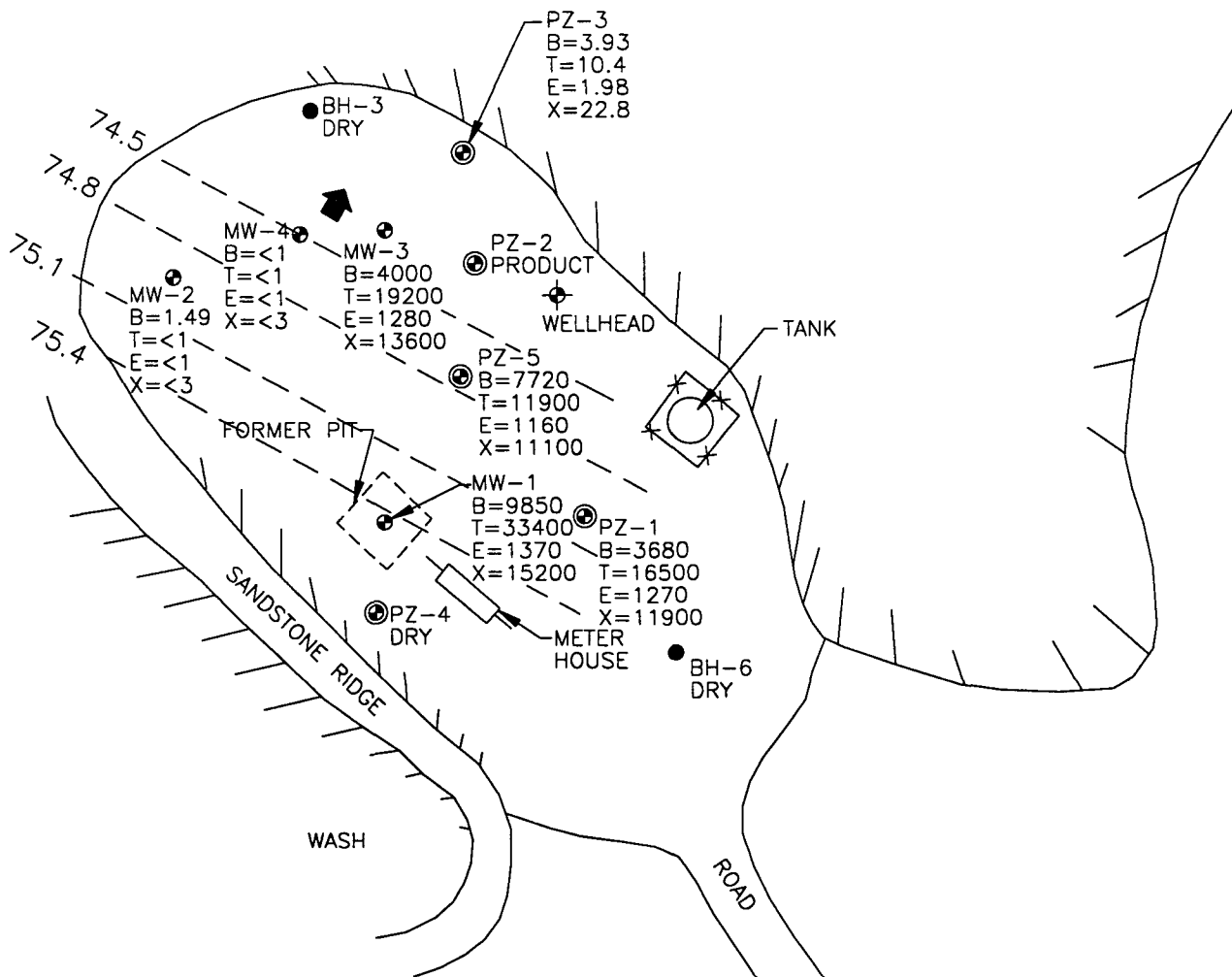
Based on groundwater levels collected from the four monitoring wells onsite, the groundwater flow trends to the north-northeast on this site, as presented in Figure 1.

Two downgradient wells have been below standards for BTEX since quarterly sampling was initiated (MW-2, and MW-4). Product has been measured in MW-1 and MW-3 since quarterly sampling was initiated. Approximately 183 gallons of product has been removed from MW-1 and 12 gallons from MW-3, since product removal was initiated. All product has been disposed of at EPFS's Kutz Separator in Bloomfield, NM.

No groundwater was encountered at three soil borings drilled on site, indicating a local perched aquifer. The three dry borings were drilled on the northwestern, southeastern, and southwestern edge of the well pad. The northeastern edge of the plume has not yet been defined, and any additional work will require off-site permission.

RECOMMENDATIONS

- Continue product removal at MW-1 and MW-3 as needed.
- Discontinue quarterly sampling until product removal is complete.
- Install downgradient product removal wells.
- Obtain permission to conduct an off-site investigation, and collect groundwater samples further downgradient of MW-3 to determine northern extent of migration.



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
 74.5 GROUNDWATER POTENTIOMETRIC SURFACE
 ↗ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520AF-001



TITLE:

J.F. BELL #1E
94715

DWN:

TMM

DES.:

CC

PROJECT NO.:

17520

EPFS GW PITS

CHKD:

CC

APPD:

DATE:

1/21/98

REV.:

0

FIGURE 1

TABLE 1

Sample #	Well Line #	Site Name	Sample Date	WV #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
961032	94715	James F. Bell #1E	12/04/96	1	Sample 4 - 1st Quarter	= 10300	= 33200	= 1400	= 15200	= 60100
970171	94715	James F. Bell #1E	3/5/97	1	Sample 4 - 2nd Quarter	= 9850	= 33400	= 1370	= 15200	= 59820
961033	94715	James F. Bell #1E	12/04/96	2	Sample 4 - 1st Quarter	= 252	= 1	= 1	= 3	= 8
970172	94715	James F. Bell #1E	3/5/97	2	Sample 4 - 2nd Quarter	= 149	= 1	= 1	= 3	= 1
961034	94715	James F. Bell #1E	12/04/96	3	Sample 4 - 1st Quarter	= 4210	= 19200	= 1140	= 11700	= 36250
970173	94715	James F. Bell #1E	3/5/97	3	Sample 4 - 2nd Quarter	= 4000	= 19200	= 1280	= 13600	= 38080
961035	94715	James F. Bell #1E	12/04/96	4	Sample 4 - 1st Quarter	< 1	< 1	< 1	< 3	< 6
970174	94715	James F. Bell #1E	3/5/97	4	Sample 4 - 2nd Quarter	< 1	< 1	< 1	< 3	< 6

02-31 KUTZ

RECORD OF SUBSURFACE EXPLORATION

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

PHILIP ENVIRONMENTAL

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

 Project Name EPNG PITS
 Project Number 14509 Phase 6000 77
 Project Location James F. Bell #1E 94715

 Elevation _____
 Borehole Location QP - S10 - T30 - R13
 GWL Depth 24.5' BBS
 Logged By CM CHANCE
 Drilled By K Padilla
 Date/Time Started 10/3/95-0825
 Date/Time Completed 10/3/95-1245

 Well Logged By CM Chance
 Personnel On-Site K Padilla, F. Rivera, D. Charlo
 Contractors On-Site _____
 Client Personnel On-Site _____

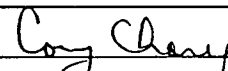
 Drilling Method 4 1/4" ID HSA / 8 1/4" L.D
 Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring			Drilling Conditions & Blow Counts
							Units: PPM			
							BZ	BH	HS	
0				Backfill to 3'						
5	1	5-6	3"	Br SAND, F-med sand, tr vf sand, V. dense, moist, odor			0	180	$\frac{910}{858}$	-0829h-
10	2	10-11	5"	lt Br SAND, med sand, tr vf-f, V. dense, dry			1	93	$\frac{501}{998}$	-0848
15	3	15-16	4"	Br silty SAND, vf-f sand, dense, dry			1	102	$\frac{1380}{2980}$	-0900
20	4	20-21	5"	AA			0	62	$\frac{108}{57}$	-1007
25	5	25-26	8"	Br silty SAND, vf-f sand, saturated Robish Br. Clayey SAND, med sand, tr f sand, v. stiff, moist			1	89	$\frac{33}{58}$	-GW 24.5' -1020 4 1/4 to 25'
30				TDB 30'						
35										
40										

Comments:

GW @ 24.5' BBS. Small perched water @ 24.5'. Pull 4 1/4 @ 25' & go back down w/ 8 1/4
 No sample due to encountering GW & high PID readings. Since perched layer is @ ~25', will
 drill to 30' & install 10' screen

Geologist Signature



RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

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

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

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location James F. Bell #1E 94715

Elevation _____
Borehole Location QP-SID-TJD-R13
GWL Depth 230' BGs
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 11/27/95 - 0905
Date/Time Completed 11/27/95 - 1525

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, R. Charlita
Contractors On-Site _____
Client Personnel On-Site _____
Drilling Method 8 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 BZ BH HS			Drilling Conditions & Blow Counts
0										Log Cuttings, No sampling
5				lt Br SAND, VF-F sand, hard						hard d-ly
10				AA						
15				DK Br silty SAND, VF-F sand, hard						
20	1	20-25	8	DK Br clayey SAND, VF-F sand, to med, dense, dry			Δ	Δ	Δ	
25	2	25-26.5	10	DK Br SAND, VF-F sand med dense, wet lt Br SAND F-med sand, dense, moist						-V. tight d-ly GWL @ 230' BGs
30										
35				TOB 32'						
40										

Comments:

Add 5 gal potable water @ 23' to loosen up hole. GW @ 23' after 15 min. Will
set well @ 22' BGs

Geologist Signature

CM Chance

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # BH4
Well # MW-3
Page 1 of 1

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location James F. Bell #1E 94715

Elevation _____
Borehole Location QP-S10-TJD-R13
GWL Depth 23.5' BGS
Logged By CM CHANCE
Drilled By K Padilla F. Rivera
Date/Time Started 11/28/95-1415
Date/Time Completed 11/29/95-1015

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, D. Charlie
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 4 1/4" ID HSA / 8 1/4" I.O.
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 BZ BH HS			Drilling Conditions & Blow Counts
0										Log cuttings No samples Drill
5				Br SILT, r F sand, dry			0	0	0	
10				Lt Br silt, SAND, F-med sand, dry			0	0	0	-v hard drilling
15				AA			0	0	0	-v hard drilling
20	1	20-21	4	DE Br SAND, F-med sand, r clay v dense, dry			0	0	0	
	2	23-23.5	4	AA			0	0	161	
25		25					0	15	NA	
30				Gry saturated SILT						
35				TOB 33'						
40										

Comments:

GW @ 23.5' BGS after setting overnights. Drilled pilot hole w/ 4 1/4" I.D. augers
due to very hard drilling. Pulled 4 1/4" augers @ 25' & went in w/ 8 1/4".

Geologist Signature

Corey Chance

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # BH5

Well # MW-4

Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 6000 77

Project Location James F. Bell #1E 94715

Elevation _____

Borehole Location QP - SID - T30 - R13

GWL Depth 23.5' BGS

Logged By CM CHANCE

Drilled By K Padilla

Date/Time Started 11/29/95 - 12/4

Date/Time Completed 12/4/95 - 1200

Well Logged By CM Chance

Personnel On-Site K Padilla, F. R. J. J. D. Chacali

Contractors On-Site _____

Client Personnel On-Site _____

Drilling Method 4 1/4" ID HSA / 8 1/4" I.D. 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 BZ BH HSE			Drilling Conditions & Blow Counts
0										Log Cuttings No Samples
5				lt br SILT w/ f-med sand, dry			0	0	0	v. hard drilling
10				AA			0	0	0	
15				DK br SILT, r/f-med sand, dry			0	0	0	
20	1	20-20.4	0	AA			0	0	0	GW @ 23.5'
25				DK br sandy CLAY, r/f sand, moist						v. hard drilling
30				Gray silty CLAY, r/f sand, hard, non plastic, dry						
35				TOB 22'						
40										

Comments:

GW @ 23.5' BGS after setting 15 min. Refusal @ 22'. Will set well @ 22'.
No water level. Will wait to let water accumulate.

Geologist Signature

Core Chance

RECORD OF SITE

PHILIP ENVIRONNA
4000 Monroe Road
Farmington, New Mexico
(505) 326-2262 FAX IE

Elevation _____
Borehole Location _____
GWL Depth _____
Logged By _____
Drilled By _____
Date/Time Started _____
Date/Time Completed _____

*Charge for boring
on this log only*

Borehole # BH-3
Well # MW-3-CMC
Page 1 of 1

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location James F. Bell #1E 94715

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, D. Charlie
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 3 1/4" ID HSA / 4 1/4" D
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
				BZ	BH	HS	
0							Log Cutting No Sampling
5			1-Br SILT, +r F-med sand, dry	0	0	0	
10			AA Br SAND, +r F sand, +r med, dry	0	0	0	-V. hard @ ~8' -Pull 8 1/4" auger & drill pilot hole 4 1/4"
15			1-Br AA	0	0	0	
20			AA	0	0	0	
25	1 25-26	4	Gray CLAY, +r silt, v. stiff, dry	0	0	0	-hard drilling
30	2 30-31	8	AA	0	0	0	
35			AA	0	0	0	
40			TDBJS'				

Comments:

Did not encounter GW @ this BH. Grout BH to surface. BH is ~175' from
MW-1 & 330° from MW-1

Geologist Signature

CM Chance

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

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

Project Name EPNG PITS

Project Number 14509 Phase 6001.77

Project Location James E. Bell #15 94715

On-Site Geologist CM Chance
 Personnel On-Site F. Rivera, D. Charlie
 Contractors On-Site _____
 Client Personnel On-Site _____

Elevation _____
Well Location QP-S16-T20-R12
GWL Depth _____
Installed By R. Padilla

Date/Time Started 10/3/95 - 1255
Date/Time Completed 10/3/95 - 1410

Depths in Reference to Ground Surface		
Item	Material	Depth
Top of Protective Casing		NA
Bottom of Protective Casing		NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout	- 94 # Type I-II Portland Powdered Bentonite	0'
Bottom of Grout	- 50# powdered Bentonite	14.7'
Top of Well Riser	1 1/4" dia SCH40	+3'
Bottom of Well Riser	Flush Thread PVC	19.7'
Top of Well Screen	1 1/4" dia SCH40 Flush Thread	19.7'
Bottom of Well Screen	0.01 slot PVC	29.7'
Top of Peltonite Seal	-50# Enviro Plug	14.7'
Bottom of Peltonite Seal	Bentonite	16.7'
Top of Gravel Pack	-50# 10-20	16.7'
Bottom of Gravel Pack	Silica Sand	29.7'
Top of Natural Cave-In		29.7'
Bottom of Natural Cave-In		30'
Top of Groundwater		
Total Depth of Borehole		30'

Top of Protective Casing NA
 Top of Riser +
 Ground Surface 0'

 Top of Seal 14.7'

 Top of Gravel Pack 16.7'

 Top of Screen 19.7'

 Bottom of Screen 29.7'
 Bottom of Borehole 30'

Comments: Used 5 gal potable water to hydrate bentonite. GW is clean but has odor
Leaking well cap & padlock placed on well

Geologist Signature

Case Change

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Morac Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

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

Project Name EPNG PITS

Project Number 14509 Phase 6001
Project Location James E. Bell #1E 94715

On-Site Geologist C.M. Chance
Personnel On-Site F. Rivera, D. Charlie
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location QP -S10 -T30 -R12
GWL Depth 22.50 BGS
Installed By K. Padilla

Date/Time Started 11/27/95 -1530
Date/Time Completed 11/28/95 -1015

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing	6"X5' steel		Top of Protective Casing	
Bottom of Protective Casing	Casing		Top of Riser	<u>+3.0'</u>
Top of Permanent Borehole Casing		NA	Ground Surface	<u>0'</u>
Bottom of Permanent Borehole Casing		NA		
Top of Concrete	Quicrete			
Bottom of Concrete	Cement Mix			
Top of Grout	5% Bentonite	0'		
Bottom of Grout	Cement slurry	10.9'		
Top of Well Riser	4" Sch 40	+3.0'		
Bottom of Well Riser	Flush Thread PVC	15.9'		
Top of Well Screen	4" O.D. 10" Sch 40	15.9'		
Bottom of Well Screen	Flush Thread PVC	30.9'	Top of Seal	<u>-10.9'</u>
Top of Peltonite Seal	Enviroplug	10.9'		
Bottom of Peltonite Seal	Pellets	12.9'	Top of Gravel Pack	<u>-12.9'</u>
Top of Gravel Pack	10-20 Grade Colorado	12.9'	Top of Screen	<u>-15.9'</u>
Bottom of Gravel Pack	Silica Sand	30.9'		
Top of Natural Cave-In		30.9'		
Bottom of Natural Cave-In		32.0'		
Top of Groundwater		22.5'		
Total Depth of Borehole		32.0'	Bottom of Screen	<u>-30.9'</u>
			Bottom of Borehole	<u>32.0'</u>

Comments: Bentonite hydrated w/ 10 gal potable water. Will complete well (pad, bumper post, casing) at later date. Interface probe had odor but no product level measured.

Geologist Signature

Cory Chance

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marvac Road
Farmington, New Mexico 87401
(506) 326-2262 FAX (506) 326-2388

Borehole # BH-4
Well # MW-3
Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 6001
Project Location James F. Bell #1E 94715

On-Site Geologist C.M. Chance
Personnel On-Site F. Rivera, D. Charlie
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location Q P -SID -T30 -R13
GWL Depth 22.52 BGS
Installed By K. Padilla

Date/Time Started 11/29/95 - 1015
Date/Time Completed 11/29/95 - 1220

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing	6" X 5' steel		Top of Protective Casing	
Bottom of Protective Casing	Casing		Top of Riser	
Top of Permanent Borehole Casing		NA	Ground Surface	<u>0'</u>
Bottom of Permanent Borehole Casing		NA		
Top of Concrete	Quicrete			
Bottom of Concrete	Cement Mix			
Top of Grout	5% Bentonite	0'		
Bottom of Grout	Cement slurry	12.1'		
Top of Well Riser	4" Sch 40	+3'		
Bottom of Well Riser	Flush Thread PVC	17.1'		
Top of Well Screen	4" O.D. slot Sch 40	17.1'		
Bottom of Well Screen	Flush Thread PVC	32.1'	Top of Seal	<u>-12.1'</u>
Top of Peltonite Seal	Enviroplug	12.1'		
Bottom of Peltonite Seal	Pellets	14.1'	Top of Gravel Pack	<u>-14.1'</u>
Top of Gravel Pack	10-20 Grade Colorado Silica Sand	14.1'	Top of Screen	<u>-17.1'</u>
Bottom of Gravel Pack		32.1'		
Top of Natural Cave-In		32.1'		
Bottom of Natural Cave-In		33'		
Top of Groundwater		22.52	Bottom of Screen	<u>-32.1'</u>
Total Depth of Borehole		33'	Bottom of Borehole	<u>-33.0'</u>

Comments: Seal hydrated w/ 5 gal potable water. Well will be completed at a later date.
No product level or data.

Geologist Signature

Cory Chance

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marroc Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2368

Borehole # BH-5
Well # MW-4
Page 1 of 1

Project Name EPNG PITS

Project Number 14509 Phase 6001
Project Location James F. Bell #1E 94715

Elevation _____
Well Location QP-SID-T3D-R13
GWL Depth _____
Installed By K. Padilla

On-Site Geologist C.M. Chance
Personnel On-Site K. Padilla, D. Charlitz
Contractors On-Site _____
Client Personnel On-Site _____

Date/Time Started 12/4/95 - 1320
Date/Time Completed 12/4/95 - 1600

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing	6" x 5' steel		Top of Protective Casing	
Bottom of Protective Casing	Casing		Top of Riser <u>+3.0'</u>	
Top of Permanent Borehole Casing		NA	Ground Surface <u>0'</u>	
Bottom of Permanent Borehole Casing		NA		
Top of Concrete	Quicrete			
Bottom of Concrete	Cement Mix			
Top of Grout	5% Bentonite	0'		
Bottom of Grout	Cement slurry	10.25		
Top of Well Riser	4" Sch 40	+3.0		
Bottom of Well Riser	Flush Thread PVC	15.25		
Top of Well Screen	4" O.D. slot Sch 40	15.25		
Bottom of Well Screen	Flush Thread PVC	30.25	Top of Seal <u>-10.25</u>	
Top of Peltonite Seal	Enviroplug	10.25		
Bottom of Peltonite Seal	Pellets	12.25	Top of Gravel Pack <u>-12.25</u>	
Top of Gravel Pack	10-20 Grade Colorado Silica Sand	12.25	Top of Screen <u>-15.25</u>	
Bottom of Gravel Pack		30.25		
Top of Natural Cave-In		30.25		
Bottom of Natural Cave-In		32.0		
Top of Groundwater				
Total Depth of Borehole		32.0	Bottom of Screen <u>-30.25</u> Bottom of Borehole <u>-32.0'</u>	

Comments: Bentonite hydrated w/ potable water. Well will be completed as later date.

Geologist Signature: _____

C.M. Chance

WELLPOINTS

Long Change

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole #

Well # PZ- 3

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location J.F. Bell IE 94715

Elevation

Well Location Ltr P -SID-TJO-RJ2

GWL Depth 26.58 TDR

Installed By M. Penabaz

On-Site Geologist C CHANCE

Personnel On-Site C Gomez P. Chacley

Contractors On-Site

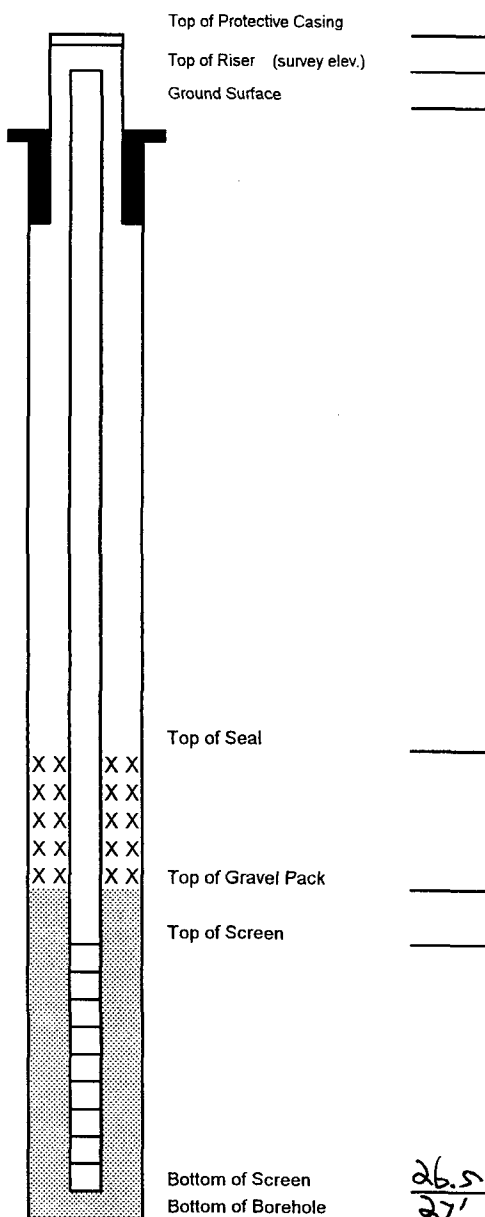
Client Personnel On-Site

Date/Time Started 9/16/97

Date/Time Completed 9/16/97

Depths in Reference to Ground Surface

Item	Material	Depth (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		
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 PZ2 is 169' ± 350' from MW1. V. hard drilling @ ~ 20'

No. product measured on 9/17/97

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 # PZ- 4

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location JF Bell IE 94715

Elevation

Well Location Ltr P -S10-T30-R13

GWL Depth DrY

Installed By M. Donahue

On-Site Geologist C CHANCE

Personnel On-Site C Gomez Dcharley

Contractors On-Site

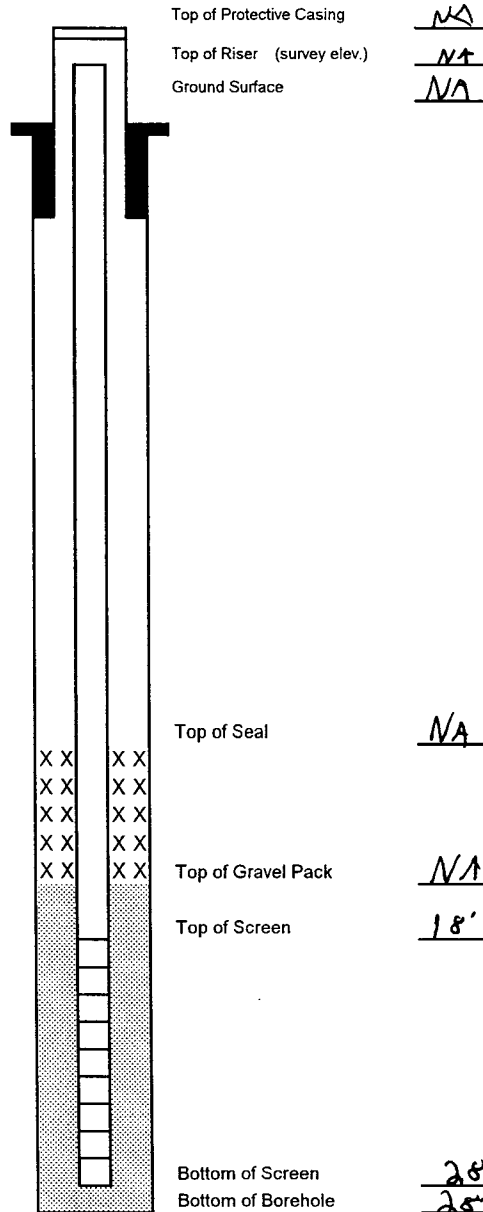
Client Personnel On-Site

Date/Time Started 9/12/97

Date/Time Completed 9/17/97

Depths in Reference to Ground Surface

Item	Material	Depth (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		
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 PZ4 is 175' + 27' from MHI. Soil sample @ 18' is 1235ppm

OK Br weathered SS med-coarse sand. Will let piezo set overnight

No GW measured on 9/19/97 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 # PZ- 35

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location JF Bell IE 94715

Elevation

Well Location Ltr P -S10-T30-R12

GWL Depth Prob. 24.59 GW 26.19 TOR

Installed By M. Denehy

On-Site Geologist

C CHANCE

Personnel On-Site

C Gomez M Denehy

Contractors On-Site

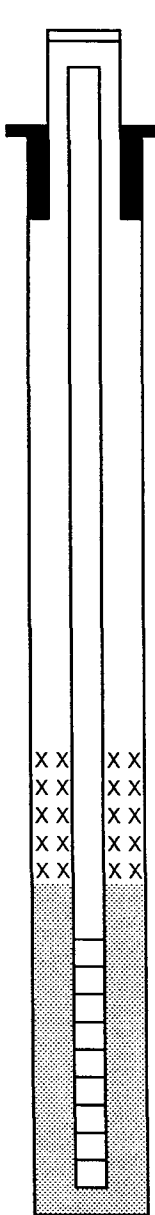
Client Personnel On-Site

Date/Time Started 9/17/97

Date/Time Completed 9/17/97

Depths in Reference to Ground Surface

Item	Material	Depth (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		
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 (survey elev.)

NA

Ground Surface

NA

Top of Seal

NA

Top of Gravel Pack

NA

Top of Screen

NA

Bottom of Screen

28'

Bottom of Borehole

28'

Comments PZ5 is 60' + 20° from MW1. GW sample (CNC 346)
Sent to Lab

Geologist Signature

Cory Chance

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # 6
Well # PZ-1
Page 1 of 1

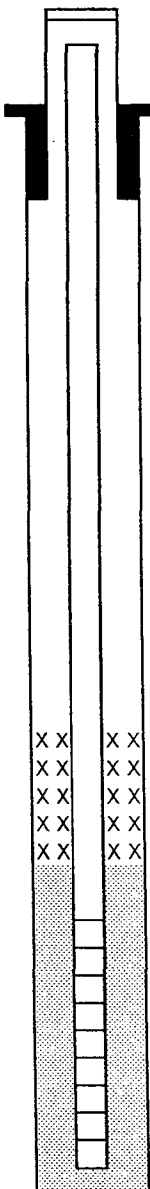
Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location JF BELL #1E-94715

Elevation _____
Well Location Ltr P -S10-T30-R13
GWL Depth _____
Installed By R PADILLA

On-Site Geologist D CESARK
Personnel On-Site R PADILLA, D CHARLEY
Contractors On-Site _____
Client Personnel On-Site N/A

Date/Time Started 9-4-97 1200
Date/Time Completed 11 / 1430

Depths in Reference to Ground Surface		
Item	Material	Depth (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		
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 _____

Top of Riser (survey elev.) _____

Ground Surface _____

Top of Seal _____

Top of Gravel Pack _____

Top of Screen _____

Bottom of Screen _____

Bottom of Borehole _____

Comments GW in MW's ~ 25' bgs (TOR), HH 20'-22' = 3571+ppm
HH 25'-27' = 775ppm. Perched zone (~10' bgs, no addl GW encountered).
 Geologist Signature [Signature] TD = 35' BGS

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # 7

Well # PZ-1

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location JF BELL#1E-94715

Elevation _____

Well Location Ltr P-S10-T30-R13

GWL Depth ~26 BGS

Installed By K PADILLA

On-Site Geologist D CESARK

Personnel On-Site K PADILLA, D CHARLEY

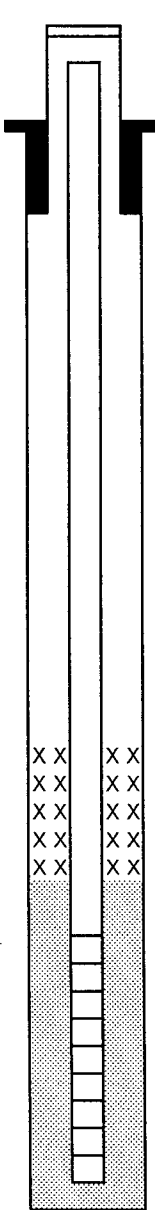
Contractors On-Site _____

Client Personnel On-Site N/A

Date/Time Started 9-4-97/1430

Date/Time Completed 11/1630

Depths in Reference to Ground Surface		
Item	Material	Depth (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		
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		<u>26'</u>
Total Depth of Borehole		<u>30'</u>



Top of Protective Casing _____

Top of Riser (survey elev.) _____

Ground Surface _____

Top of Seal N/A

Top of Gravel Pack N/A

Top of Screen -20'

Bottom of Screen -30'

Bottom of Borehole -30'

Comments MW GW = ~ 25.5' B TOP, HH 25.27' = 65ppm

Water level 9/5/97 22.74' BGS. No Product

Geologist Signature [Signature]



"WELL POINTS"

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER					
SAMPLERS: (Signature)		DATE: 9/4/97									
LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBERS OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID	SEQUENCE #	REMARKS
970956	9/4	1248	B	DEC 47	1	B		X		34	TRIP BLANK
970957	9/4	1550	W	DEC 48	2	VG		X		34	DEBELL #1E-94715 (PZ-1)
320/F											
RELINQUISHED BY: (Signature)						RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
9/4/97 1712						Carli Williams		9-597 1025			
RELINQUISHED BY: (Signature)						RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
9/4/97 1025								9/5/97 1025		M. Williams	
REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH						RESULTS & INVOICES TO:					
CARRIER CO.						FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499					
BILL NO.:						505-599-2144					
CHARGE CODE						505-599-2261					



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC48	970957
MTR CODE SITE NAME:	94715	JF Bell #1E
SAMPLE DATE TIME (Hrs):	9/4/97	1550
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/9/97	9/9/97
TYPE DESCRIPTION:	PZ-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	3680	PPB	50	D		
TOLUENE	16500	PPB	50	D		
ETHYL BENZENE	1270	PPB	50	D		
TOTAL XYLENES	11900	PPB	50	D		
TOTAL BTEX	33350	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 114.0 % 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 Tardiff

Date: 9-15-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC47	970956
MTR CODE SITE NAME:	94715	JF Bell #1E
SAMPLE DATE TIME (Hrs):	9/4/97	1248
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/9/97	9/9/97
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 112.9 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Feller

Date:

9-15-97



**QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX**

Samples: 970952 to 970960

QA/QC for 9/9/97 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	53.0	105.9	75 - 125 %	X
Toluene	Standard	50.0	52.5	105	75 - 125 %	X
Ethylbenzene	Standard	50.0	52.1	104	75 - 125 %	X
m & p - Xylene	Standard	100	104.7	104.7	75 - 125 %	X
o - Xylene	Standard	50.0	52.0	104	75 - 125 %	X
LCS LA-45476 25 PPB						
Benzene	Standard	25.0	26.9	107.7	39 - 150	X
Toluene	Standard	25.0	26.5	106	46 - 148	X
Ethylbenzene	Standard	25.0	26.3	105	32 - 160	X
m & p - Xylene	Standard	50.0	52.4	105	Not Given	X
o - Xylene	Standard	25.0	26.2	105	Not Given	X
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	53.6	107.2	75 - 125 %	X
Toluene	Standard	50.0	52.9	105.9	75 - 125 %	X
Ethylbenzene	Standard	50.0	52.5	104.9	75 - 125 %	X
m & p - Xylene	Standard	100	104.8	104.8	75 - 125 %	X
o - Xylene	Standard	50.0	52.4	105	75 - 125 %	X
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	54.4	108.9	75 - 125 %	X
Toluene	Standard	50.0	53.6	107.1	75 - 125 %	X
Ethylbenzene	Standard	50.0	52.8	105.6	75 - 125 %	X
m & p - Xylene	Standard	100	105.4	105.4	75 - 125 %	X
o - Xylene	Standard	50.0	52.8	105.6	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					RANGE	YES NO
970959						
Benzene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	5.4	5.3	3.28	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	1.92	1.78	7.28	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1	<1	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					RANGE	YES NO
2nd Analysis 970959						
Benzene	50	<1	54.9	109.7	75 - 125 %	X
Toluene	50	5.4	57.9	105	75 - 125 %	X
Ethylbenzene	50	1.9	52.4	101	75 - 125 %	X
m & p - Xylene	100	<1	107.6	107.6	75 - 125 %	X
o - Xylene	50	<1	54.0	108	75 - 125 %	X

Narrative: Acceptable

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 (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.

9/8/97 TRIP BLANK	SOURCE	PPB	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: CPVApproved By: John SatchiDate: 9-14-97



Natural Gas Company

CHAIN OF CUSTODY RECORD

Page _____ of _____

Well points

PROJECT NUMBER # 24324		PROJECT NAME Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER						
SAMPLES: (Signature)		DATE: 9/17/97										
LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBERS OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID	REQUESTED ANALYSIS	SEQUENCE #	REMARKS
970992	9/17/97	-	Water	Trip Blank	1	TD		✓				Trip Blank
970993	↓	0924	↓	CMC345	2	V6		✓				JF Bell IE 94715 P23
970994	↓	1100	↓	CMC346	2	V6		✓				" P25
EIL SEP 24 1997 38°F												
EIL SEP 24 1997 38°F												
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)				
Cory Chen		9/17/97 1220		C. Williams		9/18/97 10:20		A				
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)				
Cory Chen		9/17/97 1220		C. Williams		9/18/97 1020		M. Hopper				
REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH				SAMPLE RECEIPT REMARKS				RESULTS & INVOICES TO:				
CARRIER CO.								FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499				
BILL NO.:				CHARGE CODE				505-599-2144				
								FAX: 505-599-2261				



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	970992
MTR CODE SITE NAME:	94715	James F. Bell #1E
SAMPLE DATE TIME (Hrs):	9/17/97	0924
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/18/97	9/18/97
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 89.5 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: John Latchi

Date: 9-22-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC345	970993
MTR CODE SITE NAME:	94715	James F. Bell #1E
SAMPLE DATE TIME (Hrs):	9/17/97	0924
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/18/97	9/18/97
TYPE DESCRIPTION:	PZ-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	3.93	PPB				
TOLUENE	10.4	PPB				
ETHYL BENZENE	1.96	PPB				
TOTAL XYLENES	22.8	PPB				
TOTAL BTEX	39	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 84.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: John Lader

Date: 9-22-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC346	970994
MTR CODE SITE NAME:	94715	James F. Bell #1E
SAMPLE DATE TIME (Hrs):	9/17/97	1100
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/18/97	9/18/97
TYPE DESCRIPTION:	PZ-5	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7720	PPB	100			
TOLUENE	11900	PPB	100			
ETHYL BENZENE	1160	PPB	100			
TOTAL XYLENES	11100	PPB	100			
TOTAL BTEX	31880	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 81.5 % 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 Ladd

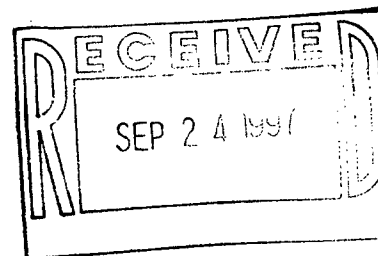
Date: _____

9-22-97

970994BTEXWellPoint, 9/22/97



EL PASO FIELD SERVICES



QUALITY CONTROL REPORT EPA METHOD 8020 - BTEX

Samples: 970989 to 970994

QA/QC for 9/18/97 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	48.7	97.4	75 - 125 %	X
Toluene	Standard	50.0	48.4	97	75 - 125 %	X
Ethylbenzene	Standard	50.0	48.3	97	75 - 125 %	X
m & p - Xylene	Standard	100	97.2	97.2	75 - 125 %	X
o - Xylene	Standard	50.0	48.1	96	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	24.0	95.8	39 - 150	X
Toluene	Standard	25.0	23.9	96	46 - 148	X
Ethylbenzene	Standard	25.0	23.7	95	32 - 160	X
m & p - Xylene	Standard	50.0	47.6	95	Not Given	X
o - Xylene	Standard	25.0	23.7	95	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	45.6	91.2	75 - 125 %	X
Toluene	Standard	50.0	45.2	90.5	75 - 125 %	X
Ethylbenzene	Standard	50.0	45.0	90.0	75 - 125 %	X
m & p - Xylene	Standard	100	90.4	90.4	75 - 125 %	X
o - Xylene	Standard	50.0	44.9	90	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	43.3	86.5	75 - 125 %	X
Toluene	Standard	50.0	43.2	86.3	75 - 125 %	X
Ethylbenzene	Standard	50.0	42.0	83.9	75 - 125 %	X
m & p - Xylene	Standard	100	83.8	83.8	75 - 125 %	X
o - Xylene	Standard	50.0	42.0	84.0	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
970989					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	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 970989					RANGE	
Benzene	50	<1	47.2	94.3	75 - 125 %	X
Toluene	50	<1	45.8	92	75 - 125 %	X
Ethylbenzene	50	<1	45.5	91	75 - 125 %	X
m & p - Xylene	100	<2	91.3	91.3	75 - 125 %	X
o - Xylene	50	<1	45.4	91	75 - 125 %	X

Narrative: Acceptable

AUTO BLANK 9/18/97	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 '072597	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.

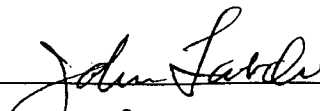
9/19/97 TRIP BLANK	SOURCE	PPB	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By:

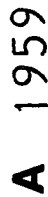


Approved By:



Date: 9-22-97

**1997 GROUNDWATER
ANALYTICAL**

[illegible]



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	961032
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-1
SAMPLE DATE TIME (Hrs):	12/4/96	1305
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	12/6/96	12/6/96
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	10300	PPB	200	D		
TOLUENE	33200	PPB	200	D		
ETHYL BENZENE	1400	PPB	200	D		
TOTAL XYLENES	15200	PPB	200	D		
TOTAL BTEX	60100	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 102 % 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 Labadie

Date:

12/9/96



Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	961032
DATE SAMPLED:	12/04/96
TIME SAMPLED (Hrs):	1305
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	6.9	Units	12/05/96
Alkalinity as CO ₃	0.0	PPM	12/05/96
Alkalinity as HCO ₃	881	PPM	12/05/96
Calcium as Ca	276	PPM	12/05/96
Magnesium as Mg	53	PPM	12/05/96
Total Hardness as CaCO ₃	907	PPM	12/05/96
Chloride as Cl	51	PPM	12/05/96
Sulfate as SO ₄	34	PPM	12/05/96
Fluoride as F	0.5	PPM	12/05/96
Nitrate as NO ₃ -N	0.7	PPM	12/05/96
Nitrite as NO ₂ -N	<0.1	PPM	12/05/96
Ammonium as NH ₄ ⁺	<0.1	PPM	12/05/96
Phosphate as PO ₄	0.5	PPM	12/05/96
Potassium as K	8.3	PPM	12/05/96
Sodium as Na	32	PPM	12/05/96
Total Dissolved Solids	2,060	PPM	12/05/96
Conductivity	1,590	umhos/cm	12/05/96
Anion/Cation %	8.4%	%, <5.0 Accepted	12/09/96

Lab Remarks:

Anion/Cation balance is unacceptable due to the presence of an unidentified anionic component.

Reported By: inda

Approved By: John L. Lach

Date: 12/9/96

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	961032
SAMPLE DATE:	12/04/96
SAMPLE TIME (Hrs):	1305
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-1

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIUM	2.06	1.00
CADMIUM	<.0002	0.010
CHROMIUM	<.001	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	0.050
SILVER	<.001	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, 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: mda

Approved By: John Lardner

Date: 1-3-97

QUALITY CONTROL REPORT

Sample ID: 961032 through 961035
Date Sampled: 12/04/96

Date Reported: 01/02/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	36.0	32.4	111%
Barium	65.4	64.9	116%
Cadmium	2.74	2.38	115%
Chromium	5.16	4.76	108%
Lead	33.9	29.7	114%
Mercury	4.21	4.59	92%
Selenium	36.3	40.5	90%
Silver	4.35	4.32	101%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.148	0.144	2.7%
Cadmium	ND	ND	NA
Chromium	0.002	0.003	NA*
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

* Results <5X DL

SPIKE ANALYSIS (µg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	ND	108	100	108%
Barium	148	1060	1000	91%
Cadmium	ND	11.4	10.0	115%
Chromium	2.0	53.8	50.0	104%
Lead	ND	44.6	50.0	86%
Mercury	ND	1.78	2.00	89%
Selenium	ND	52.5	50.0	105%
Silver	ND	50.1	50.0	99%

METHOD BLANK

Analyte	Found Result (µg/L)	Detection Level (µg/L)
Arsenic	ND	10
Barium	ND	10
Cadmium	ND	0.2
Chromium	ND	2
Lead	ND	4
Mercury	ND	0.24
Selenium	ND	3
Silver	ND	0.5

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Linder

Date: 1-3-97



Well Development and Purging Data

Well Number 94715
Meter Code 94715

Site Name JAMES F. BELL #1/E

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) 32.55
Initial Depth to Water (feet) 28.0
Height of Water Column in Well (feet) 4.63

Diameter (inches): Well 4 Gravel Pack 4

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		3.0	9.0
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments	1.84' OF FREE FLOATING HYDROCARBON. BALCO PAYE 40 GALLONS.
----------	--

Developer's Signature Bennie Bird Date 12/4/96 Reviewer John Zell Date 12/9/96

JAMES F BELL #1E

INC # 94715

Sample #s 961032, 961034

American Environmental Network, Inc.

AEN I.D. 612317

December 17, 1996

El Paso Field Service
P.O. Box 4990
Farmington, NM 87499



Project Name/Number: J.F. BELL #1E (NONE)

Attention: John Lambdin

On 12/06/96, American Environmental Network (NM), Inc., (ADHS License No. AZ0015) received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by American Environmental Network (FL) Inc., 11 East Olive Road, Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
General Manager

MR:ft

Enclosure

American Environmental Network, Inc.

CLIENT : EL PASO FIELD SERVICE DATE RECEIVED : 12/06/96
PROJECT # : (NONE)
PROJECT NAME : J.F. BELL #1E REPORT DATE : 12/17/96

AEN ID: 612317

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	612317-01	961032 mw-1	AQUEOUS	12/04/96
02	612317-02	961034 mw-2	AQUEOUS	12/04/96

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	2

AEN STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 612150
 Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
 Project Number: 612317
 Project Name: EL PASO FIELD SERVICES
 Project Location: N/S
 Test: POLYNUCLEAR AROMATICS BY 8310
 Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Matrix: WATER
 QC Level: II

MW-1

Lab Id: 001
 Client Sample Id: 612317-01
 Batch: PAW225
 Blank: A
 Dry Weight %: N/A
 Sample Date/Time: 04-DEC-96 1305
 Received Date: 07-DEC-96
 Extraction Date: 09-DEC-96
 Analysis Date: 11-DEC-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	5	
ACENAPHTHYLENE	UG/L	180	5	
ANTHRACENE	UG/L	ND	5	
BENZO (a) ANTHRACENE	UG/L	11	5	
BENZO (a) PYRENE	UG/L	6.1	2	
BENZO (b) FLUORANTHENE	UG/L	ND	5	
BENZO (g,h,i) PERYLENE	UG/L	ND	5	
BENZO (k) FLUORANTHENE	UG/L	ND	5	
CHRYSENE	UG/L	ND	5	
DIBENZO (a,h) ANTHRACENE	UG/L	ND	5	
FLUORANTHENE	UG/L	ND	5	
FLUORENE	UG/L	30	5	
INDENO (1,2,3-cd) PYRENE	UG/L	ND	5	
NAPHTHALENE	UG/L	580	5	
PHENANTHRENE	UG/L	48	5	
PYRENE	UG/L	32	5	
1-METHYLNAPHTHALENE	UG/L	1100	5	E
2-METHYLNAPHTHALENE	UG/L	1000	5	E
2-CHLOROANTHRACENE	%REC/SURR	D	28-138	
ANALYST	INITIALS	JBT		

Comments:

E = EXCEEDS CALIBRATION CURVE; THEREFORE, RESULTS ARE ESTIMATED.
 SAMPLE WAS NOT FURTHER DILUTED AND RE-ANALYZED BECAUSE COMPOUND
 WAS NOT CONSIDERED TO BE A PAH COMPOUND.
 D = DILUTED OUT.

Total Naphthalenes = 2680 ppb WQCC Limit = 30 ppb
 Benzo(a) Pyrene = 6.1 ppb WQCC Limit = 0.7 ppb

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 612150
 Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
 Project Number: 612317
 Project Name: EL PASO FIELD SERVICES
 Project Location: N/S
 Test: POLYNUCLEAR AROMATICS BY 8310
 Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Matrix: WATER
 QC Level: II

MW-2

Lab Id: 002 Sample Date/Time: 04-DEC-96 1436
 Client Sample Id: 612317-02 Received Date: 07-DEC-96
 Batch: PAW225 Extraction Date: 09-DEC-96
 Blank: A Dry Weight %: N/A Analysis Date: 11-DEC-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	2	
ACENAPHTHYLENE	UG/L	26	2	
ANTHRACENE	UG/L	ND	2	
BENZO(a) ANTHRACENE	UG/L	6	2	
BENZO(a) PYRENE	UG/L	1.3	0.6	
BENZO(b) FLUORANTHENE	UG/L	ND	2	
BENZO(g,h,i) PERYLENE	UG/L	ND	2	
BENZO(k) FLUORANTHENE	UG/L	ND	2	
CHRYSENE	UG/L	2	2	
DIBENZO(a,h) ANTHRACENE	UG/L	ND	2	
FLUORANTHENE	UG/L	21	2	
FLUORENE	UG/L	8	2	
INDENO(1,2,3-cd) PYRENE	UG/L	ND	2	
NAPHTHALENE	UG/L	280	2	
PHENANTHRENE	UG/L	15	2	
PYRENE	UG/L	4	2	
1-METHYLNAPHTHALENE	UG/L	420	2	
2-METHYLNAPHTHALENE	UG/L	350	2	
2-CHLOROANTHRACENE	%REC/SURR	D	28-138	
ANALYST	INITIALS	JBT		

Comments:

E = EXCEEDS CALIBRATION CURVE; THEREFORE, RESULTS ARE ESTIMATED.
 SAMPLE WAS NOT FURTHER DILUTED AND RE-ANALYZED BECAUSE COMPOUND
 WAS NOT CONSIDERED TO BE A PAH COMPOUND.
 D = DILUTED OUT.

TOTAL Naphthalenes = 1050 ppb WQcc Limit = 30 ppb
 Benzo (A) Pyrene = 1.3 ppb WQcc Limit = 0.7 ppb

American Environmental Network, Inc.

"Method Report Summary"

Accession Number: 612150
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 612317
Project Name: EL PASO FIELD SERVICES
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
612317-01	ACENAPHTHYLENE	UG/L	180
	BENZO (a) ANTHRACENE	UG/L	11
	BENZO (a) PYRENE	UG/L	6.1
	FLUORENE	UG/L	30
	NAPHTHALENE	UG/L	580
	PHENANTHRENE	UG/L	48
	PYRENE	UG/L	32
	1-METHYLNAPHTHALENE	UG/L	1100
	2-METHYLNAPHTHALENE	UG/L	1000
	ACENAPHTHYLENE	UG/L	26
612317-02	BENZO (a) ANTHRACENE	UG/L	6
	BENZO (a) PYRENE	UG/L	1.3
	CHRYSENE	UG/L	2
	FLUORANTHENE	UG/L	21
	FLUORENE	UG/L	8
	NAPHTHALENE	UG/L	280
	PHENANTHRENE	UG/L	15
	PYRENE	UG/L	4
	1-METHYLNAPHTHALENE	UG/L	420
	2-METHYLNAPHTHALENE	UG/L	350

American Environmental Network, Inc.

"QC Report"

Title: Water Blank
Batch: PAW225
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: A Date Analyzed: 10-DEC-96 Date Extracted: 09-DEC-96

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO (a) ANTHRACENE	UG/L	ND	1
BENZO (a) PYRENE	UG/L	ND	1
BENZO (b) FLUORANTHENE	UG/L	ND	1
BENZO (g, h, i) PERYLENE	UG/L	ND	1
BENZO (k) FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO (a, h) ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO (1, 2, 3-cd) PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	89	28-138
ANALYST	INITIALS	JBT	

Comments:

[Handwritten signature]
12/15/96

American Environmental Network, Inc.

"QC Report"

Title: Water Reagent
Batch: PAW225
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 10-DEC-96
RSD Date Analyzed: 10-DEC-96

RS Date Extracted: 09-DEC-96
RSD Date Extracted: 09-DEC-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	5.7	57	4.6	46	21	46	46-110
BENZO(k) FLUORANTHENE	10.0	<1	9.5	95	7.8	78	20	30	58-128
CHRYSENE	10.0	<1	9.4	94	7.6	76	21	29	62-129
PHENANTHRENE	10.0	<1	9.2	92	7.9	79	15	28	61-116
PYRENE	10.0	<1	9.0	90	7.5	75	18	26	62-120

Surrogates:
2-CHLOROANTHRACENE 105 90 28-138

Comments:

Notes:

N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT

UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.

* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Handwritten signature and date:
12/18/96

American Environmental Network, Inc.

"QC Report"

Title: Water Matrix
Batch: PAW225
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Dry Weight %: N/A
Sample Spiked: 612150-1

MS Date Analyzed: 11-DEC-96
MSD Date Analyzed: 11-DEC-96

MS Date Extracted: 10-DEC-96
MSD Date Extracted: 10-DEC-96

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	Rec Lmts
ACENAPHTHYLENE	10.0	264	90	-174092	-17201	51	18-146	
BENZO(k) FLUORANTHENE	10.0	15.9	14.4	-15*	10.4	-55* 114*40	26-137	
CHRYSENE	10.0	8.1	12.4	43	9.9	18 82*	69	16-156
PHENANTHRENE	10.0	52	22	-300*17	-350*15	36	30-145	
PYRENE	10.0	28.9	14.0	-149*10.4	-185*22	41	39-137	

Surrogates:
2-CHLOROANTHRACENE 247* 115 28-138

Comments:

MATRIX SPIKE/MATRIX SPIKE DUPLICATE HAD RECOVERY(S) AND/OR RPD(S) OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE. REFER TO REAGENT SPIKE/REAGENT SPIKE DUPLICATE DATA.

Notes:

N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

12/18/96

American Environmental Network, Inc.
Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX

AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW = STEVE WILHITE
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
KS = KENDALL SMITH
KK = KERRY LEMONT
RP = ROB PEREZ
JBT = JENNIFER TORRANCE
LP = LAVERNE PETERSON
PLD = PAULA DOUGHTY

Interlab Chain of Custody

DATE: 12/1/ PAGE: 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D MCNEIL

COMPANY: American Environmental Network
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

American Environmental
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

Kim McNeil

SAMPLEID	DATE	TIME	MATRIX	LABID
----------	------	------	--------	-------

Metals - TAL

Metals - PP List

Metals - RCRA

RCRA Metals by TCLP (1311)

TOX
TOC
Gen Chemistry

Oil and Grease
BOD
COD
Pesticides/PCB (608/8080)
Herbicides (615/8150)
Base/Neutral Acid Compounds GC/MS (625/8270)
Volatile Organics GC/MS (624/8240)
Polynuclear Aromatics (610/8310)
8240 (TCLP 1311) ZHE
8270 (TCLP 1311)

TO-14

Gross Alpha/Beta

NUMBER OF CONTAINERS

[illegible]

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJECT NUMBER	612317	TOTAL NUMBER OF CONTAINERS		SAN DIEGO		Signature:	Time:	Signature:	Time:
PROJECT NAME	E1 Pine Field Services	CHAIN OF CUSTODY SEALS		Paragon		Printed Name:	Date:	Printed Name:	Date:
QC LEVEL	STD IV	INTACT?		RENTON		John Caldwell	12/2/96		
QC REQUIRED	MS MSD BLANK	RECEIVED GOOD COND /COLD		PENSACOLA		Albuquerque			
LAB STANDARD	RUSHY	LAB NUMBER		PORTLAND		RECEIVED BY:	1.	RECEIVED BY: (LAB)	2.
DATE	Week (12/13/96)			PHOENIX		Signature:	Time:	Signature:	Time:
RUSH SURCHARGE:	50%					Printed Name:	Date:	Printed Name:	Date:
CLIENT DISCOUNT:	Low Level Benzene(A) Pyrene					Signature:	Time:	Signature:	Time:
SPECIAL CERTIFICATION REQUIRED:	() YES () NO					Printed Name:	Date:	Printed Name:	Date:

PROJECT MANAGER: JOHN LAMBORN				ANALYSIS REQUEST																						
COMPANY: EL PASO FIELD SERVICE CO.																										
ADDRESS: P.O. BOX 4990																										
PHONE: FARMINGTON, N.M. 87411																										
FAX: (505) 599-2144																										
BILL TO: (505) 599-2261																										
COMPANY: SAME AS ABOVE																										
ADDRESS:																										
SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TPH	(MOD.8015) Diesel/Direct/Inject	(M8015) Gas/Purge & Trap	Gasoline/BTEX & MTBE (M8015/8020)	BTEX/MTBE (8020)	BTEX & Chlorinated Aromatics (602/8020)	BTEX/MTBE/EDC & EDB (8020/8010/Short)	Chlorinated Hydrocarbons (601/8010)	504 EDB □ / DBCP □	Polynuclear Aromatics (610/8310)	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	ACRA Metals (8)	ACRA Metals by TCLP Method (311)	Metals	NUMBER OF CONTAINERS
961032	12-4-96	1305	WATER	-01																						2
961034	12-4-96	1436	WATER	-02																						2

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS				RELINQUISHED BY:	
PROJ. NO.:		(RUSH) ☐ 12hr ☐ 148hr ☒ 172hr ☐ 1 WEEK (NORMAL) ☐	Signature: DENNIS BIRD		Signature: [Blank]		
PROJ. NAME: J.F. GELL #1E		CERTIFICATION REQUIRED: ☐ INM ☐ SDWA ☐ OTHER	Printed Name: DENNIS BIRD		Printed Name: [Blank]		
P.O. NO.:		METHANOL PRESERVATION ☐	Company: EL PASO FIELD SERVICE		Company: [Blank]		
SHIPPED VIA: FEDEX		COMMENTS: FIXED FEE ☐	RECEIVED BY: [Blank]		RECEIVED BY: (LAB) [Blank]		
SAMPLE RECEIPT			Signature: [Blank]		Signature: [Blank]		
NO. CONTAINERS: 4			Time: 6138-6113-6115-90002-5115		Time: [Blank]		
CUSTODY SEALS: (NONE)			Date: LOW LEVEL BLENDED (B) PYRENE <07 PPB		Date: [Blank]		
RECEIVED INTACT: YES			Printed Name: [Blank]		Printed Name: [Blank]		
BLUE BEAD: YES			Company: [Blank]		Company: American Environmental Network (NM), Inc		



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	961033
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-2
SAMPLE DATE TIME (Hrs):	12/4/96	1335
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	12/6/96	12/6/96
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	2.52	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	2.52	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

Narrative:

Approved By:

John L. Lelich

Date:

12/9/96



Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	961033
DATE SAMPLED:	12/04/96
TIME SAMPLED (Hrs):	1335
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-2

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.4	Units	12/05/96
Alkalinity as CO ₃	0.0	PPM	12/05/96
Alkalinity as HCO ₃	161	PPM	12/05/96
Calcium as Ca	36	PPM	12/05/96
Magnesium as Mg	10	PPM	12/05/96
Total Hardness as CaCO ₃	131	PPM	12/05/96
Chloride as Cl	21	PPM	12/05/96
Sulfate as SO ₄	95	PPM	12/05/96
Fluoride as F	0.4	PPM	12/05/96
Nitrate as NO ₃ -N	0.4	PPM	12/05/96
Nitrite as NO ₂ -N	<0.1	PPM	12/05/96
Ammonium as NH ₄ ⁺	<0.1	PPM	12/05/96
Phosphate as PO ₄	<0.1	PPM	12/05/96
Potassium as K	3.8	PPM	12/05/96
Sodium as Na	58	PPM	12/05/96
Total Dissolved Solids	340	PPM	12/05/96
Conductivity	457	umhos/cm	12/05/96
Anion/Cation %	0.2%	%, < 5.0 Accepted	12/09/96

Lab Remarks:

Reported By: Inda

Approved By: John L. Linder

Date: 12/9/96



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	961033
SAMPLE DATE:	12/04/96
SAMPLE TIME (Hrs):	1335
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-2

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIUM	0.06	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.001	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	0.050
SILVER	<.001	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, 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:

onda

Approved By:

John L. Lick

Date: 1-3-97

QUALITY CONTROL REPORT

Sample ID: 961032 through 961035
Date Sampled: 12/04/96

Date Reported: 01/02/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	36.0	32.4	111%
Barium	65.4	64.9	116%
Cadmium	2.74	2.38	115%
Chromium	5.16	4.76	108%
Lead	33.9	29.7	114%
Mercury	4.21	4.59	92%
Selenium	36.3	40.5	90%
Silver	4.35	4.32	101%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.148	0.144	2.7%
Cadmium	ND	ND	NA
Chromium	0.002	0.003	NA*
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

* Results <5X DL

SPIKE ANALYSIS (µg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	ND	108	100	108%
Barium	148	1060	1000	91%
Cadmium	ND	11.4	10.0	115%
Chromium	2.0	53.8	50.0	104%
Lead	ND	44.6	50.0	86%
Mercury	ND	1.78	2.00	89%
Selenium	ND	52.5	50.0	105%
Silver	ND	50.1	50.0	99%

METHOD BLANK

Analyte	Found Result (µg/L)	Detection Level (µg/L)
Arsenic	ND	10
Barium	ND	10
Cadmium	ND	0.2
Chromium	ND	2
Lead	ND	4
Mercury	ND	0.24
Selenium	ND	3
Silver	ND	0.5

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By:

mh

Approved By:

John Linder

Date:

1-3-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	961034
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-3
SAMPLE DATE TIME (Hrs):	12/4/96	1436
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	12/6/96	12/6/96
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	D		
BENZENE	4210	PPB	200	D		
TOLUENE	19200	PPB	200	D		
ETHYL BENZENE	1140	PPB	200	D		
TOTAL XYLENES	11700	PPB	200	D		
TOTAL BTEX	36300	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 102 % 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 Larch

Date:

12/9/96



Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	961034
DATE SAMPLED:	12/04/96
TIME SAMPLED (Hrs):	1436
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-3

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.8	Units	12/05/96
Alkalinity as CO ₃	0.0	PPM	12/05/96
Alkalinity as HCO ₃	357	PPM	12/05/96
Calcium as Ca	87	PPM	12/05/96
Magnesium as Mg	35	PPM	12/05/96
Total Hardness as CaCO ₃	360	PPM	12/05/96
Chloride as Cl	62	PPM	12/05/96
Sulfate as SO ₄	271	PPM	12/05/96
Fluoride as F	0.6	PPM	12/05/96
Nitrate as NO ₃ -N	<0.1	PPM	12/05/96
Nitrite as NO ₂ -N	<0.1	PPM	12/05/96
Ammonium as NH ₄ ⁺	<0.1	PPM	12/05/96
Phosphate as PO ₄	<0.1	PPM	12/05/96
Potassium as K	3.0	PPM	12/05/96
Sodium as Na	119	PPM	12/05/96
Total Dissolved Solids	830	PPM	12/05/96
Conductivity	1,060	umhos/cm	12/05/96
Anion/Cation %	3.2%	%, <5.0 Accepted	12/09/96

Lab Remarks:

Reported By: mda

Approved By: John Lambden

Date: 12/9/96



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	961034
SAMPLE DATE:	12/04/96
SAMPLE TIME (Hrs):	1436
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-3

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIUM	0.04	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.002	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	0.050
SILVER	<.001	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, 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: Inda

Approved By: John Larch

Date: 1-3-97

QUALITY CONTROL REPORT

Sample ID: 961032 through 961035
Date Sampled: 12/04/96

Date Reported: 01/02/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	36.0	32.4	111%
Barium	65.4	64.9	116%
Cadmium	2.74	2.38	115%
Chromium	5.16	4.76	108%
Lead	33.9	29.7	114%
Mercury	4.21	4.59	92%
Selenium	36.3	40.5	90%
Silver	4.35	4.32	101%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.148	0.144	2.7%
Cadmium	ND	ND	NA
Chromium	0.002	0.003	NA*
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

* Results <5X DL.

SPIKE ANALYSIS (µg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	ND	108	100	108%
Barium	148	1060	1000	91%
Cadmium	ND	11.4	10.0	115%
Chromium	2.0	53.8	50.0	104%
Lead	ND	44.6	50.0	86%
Mercury	ND	1.78	2.00	89%
Selenium	ND	52.5	50.0	105%
Silver	ND	50.1	50.0	99%

METHOD BLANK

Analyte	Found Result (µg/L)	Detection Level (µg/L)
Arsenic	ND	10
Barium	ND	10
Cadmium	ND	0.2
Chromium	ND	2
Lead	ND	4
Mercury	ND	0.24
Selenium	ND	3
Silver	ND	0.5

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Swick

Date: 1-3-97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	961035
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-4
SAMPLE DATE TIME (Hrs):	12/4/96	1505
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	12/6/96	12/6/96
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				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 102 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. Linder

Date:

12/9/96



Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	961035
DATE SAMPLED:	12/04/96
TIME SAMPLED (Hrs):	1505
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-4

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.8	Units	12/05/96
Alkalinity as CO ₃	0.0	PPM	12/05/96
Alkalinity as HCO ₃	207	PPM	12/05/96
Calcium as Ca	75	PPM	12/05/96
Magnesium as Mg	18	PPM	12/05/96
Total Hardness as CaCO ₃	263	PPM	12/05/96
Chloride as Cl	29	PPM	12/05/96
Sulfate as SO ₄	249	PPM	12/05/96
Fluoride as F	0.9	PPM	12/05/96
Nitrate as NO ₃ -N	<0.1	PPM	12/05/96
Nitrite as NO ₂ -N	<0.1	PPM	12/05/96
Ammonium as NH ₄ ⁺	<0.1	PPM	12/05/96
Phosphate as PO ₄	<0.1	PPM	12/05/96
Potassium as K	4.4	PPM	12/05/96
Sodium as Na	82	PPM	12/05/96
Total Dissolved Solids	598	PPM	12/05/96
Conductivity	771	umhos/cm	12/05/96
Anion/Cation %	2.9%	%, <5.0 Accepted	12/09/96

Lab Remarks:

Reported By: mda

Approved By: John F. Welch

Date: 12/9/96



FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	961035
SAMPLE DATE:	12/04/96
SAMPLE TIME (Hrs):	1505
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	94715
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	James F. Bell #1E MW-4

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<.010	0.100
BARIIUM	0.07	1.00
CADMIUM	<.0002	0.010
CHROMIUM	0.002	0.050
LEAD	<.004	0.050
MERCURY	<.00024	0.002
SELENIUM	<.003	0.050
SILVER	<.001	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, 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: mdr

Approved By: John L. L...

Date: 1-3-97

QUALITY CONTROL REPORT

Sample ID: 961032 through 961035
Date Sampled: 12/04/96

Date Reported: 01/02/97

STANDARD REFERENCE MATERIAL

Analyte	Found Result (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	36.0	32.4	111%
Barium	65.4	64.9	116%
Cadmium	2.74	2.38	115%
Chromium	5.16	4.76	108%
Lead	33.9	29.7	114%
Mercury	4.21	4.59	92%
Selenium	36.3	40.5	90%
Silver	4.35	4.32	101%

DUPLICATE ANALYSIS (mg/L)

Analyte	Original Sample Result	Duplicate Sample Result	% RPD
Arsenic	ND	ND	NA
Barium	0.148	0.144	2.7%
Cadmium	ND	ND	NA
Chromium	0.002	0.003	NA*
Lead	ND	ND	NA
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

* Results <5X DL.

SPIKE ANALYSIS (µg/L)

Analyte	Original Sample Result	Spike Sample Result	Spike Added	Recovery Percent
Arsenic	ND	108	100	108%
Barium	148	1060	1000	91%
Cadmium	ND	11.4	10.0	115%
Chromium	2.0	53.8	50.0	104%
Lead	ND	44.6	50.0	86%
Mercury	ND	1.78	2.00	89%
Selenium	ND	52.5	50.0	105%
Silver	ND	50.1	50.0	99%

METHOD BLANK

Analyte	Found Result (µg/L)	Detection Level (µg/L)
Arsenic	ND	10
Barium	ND	10
Cadmium	ND	0.2
Chromium	ND	2
Lead	ND	4
Mercury	ND	0.24
Selenium	ND	3
Silver	ND	0.5

ND: Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: John Linder

Date: 1-3-97



Well Development and Purging Data

Well Number NW-2
Meter Code 94715

Development	Purging
☐	☒

Site Name JAMES F. BELL #15

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 34.4
Initial Depth to Water (feet) 26.09
Height of Water Column in Well (feet) 8.31

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.5	16.5
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other DO CHEMISTS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments

Developer's Signature Pennie Bird Date 12-4-96 Reviewer John Leach Date 12/9/96



Well Development and Purging Data

Well Number NW-3

Site Name JAMES F. BELL #15

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) 35.1
Initial Depth to Water (feet) 27.2
Height of Water Column in Well (feet) 7.38

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.9	14.6
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other DO Controller

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments

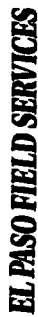
0.56' of FREE FLOATING HYDROCARBON

Developer's Signature Dennis Bish

Date 12-4-96 Reviewer

John Smith

Date 12/9/96



Well Development and Purging Data

Well Number nw-4
Meter Code 94715

	Development	Purging
1. Identify the data to be purged	☐	☒
2. Identify the data to be retained	☐	☒
3. Identify the data to be deleted	☐	☒
4. Identify the data to be archived	☐	☒
5. Identify the data to be migrated	☐	☒
6. Identify the data to be destroyed	☐	☒
7. Identify the data to be moved	☐	☒
8. Identify the data to be updated	☐	☒
9. Identify the data to be restored	☐	☒
10. Identify the data to be backed up	☐	☒
11. Identify the data to be encrypted	☐	☒
12. Identify the data to be decrypted	☐	☒
13. Identify the data to be compressed	☐	☒
14. Identify the data to be decompressed	☐	☒
15. Identify the data to be indexed	☐	☒
16. Identify the data to be deindexed	☐	☒
17. Identify the data to be analyzed	☐	☒
18. Identify the data to be aggregated	☐	☒
19. Identify the data to be partitioned	☐	☒
20. Identify the data to be repartitioned	☐	☒
21. Identify the data to be shuffled	☐	☒
22. Identify the data to be sorted	☐	☒
23. Identify the data to be grouped	☐	☒
24. Identify the data to be joined	☐	☒
25. Identify the data to be split	☐	☒
26. Identify the data to be merged	☐	☒
27. Identify the data to be replicated	☐	☒
28. Identify the data to be deduplicated	☐	☒
29. Identify the data to be backed up	☐	☒
30. Identify the data to be restored	☐	☒
31. Identify the data to be encrypted	☐	☒
32. Identify the data to be decrypted	☐	☒
33. Identify the data to be compressed	☐	☒
34. Identify the data to be decompressed	☐	☒
35. Identify the data to be indexed	☐	☒
36. Identify the data to be deindexed	☐	☒
37. Identify the data to be analyzed	☐	☒
38. Identify the data to be aggregated	☐	☒
39. Identify the data to be partitioned	☐	☒
40. Identify the data to be repartitioned	☐	☒
41. Identify the data to be shuffled	☐	☒
42. Identify the data to be sorted	☐	☒
43. Identify the data to be grouped	☐	☒
44. Identify the data to be joined	☐	☒
45. Identify the data to be split	☐	☒
46. Identify the data to be merged	☐	☒
47. Identify the data to be replicated	☐	☒
48. Identify the data to be deduplicated	☐	☒
49. Identify the data to be backed up	☐	☒
50. Identify the data to be restored	☐	☒
51. Identify the data to be encrypted	☐	☒
52. Identify the data to be decrypted	☐	☒
53. Identify the data to be compressed	☐	☒
54. Identify the data to be decompressed	☐	☒
55. Identify the data to be indexed	☐	☒
56. Identify the data to be deindexed	☐	☒
57. Identify the data to be analyzed	☐	☒
58. Identify the data to be aggregated	☐	☒
59. Identify the data to be partitioned	☐	☒
60. Identify the data to be repartitioned	☐	☒
61. Identify the data to be shuffled	☐	☒
62. Identify the data to be sorted	☐	☒
63. Identify the data to be grouped	☐	☒
64. Identify the data to be joined	☐	☒
65. Identify the data to be split	☐	☒
66. Identify the data to be merged	☐	☒
67. Identify the data to be replicated	☐	☒
68. Identify the data to be deduplicated	☐	☒
69. Identify the data to be backed up	☐	☒
70. Identify the data to be restored	☐	☒
71. Identify the data to be encrypted	☐	☒
72. Identify the data to be decrypted	☐	☒
73. Identify the data to be compressed	☐	☒
74. Identify the data to be decompressed	☐	☒
75. Identify the data to be indexed	☐	☒
76. Identify the data to be deindexed	☐	☒
77. Identify the data to be analyzed	☐	☒
78. Identify the data to be aggregated	☐	☒
79. Identify the data to be partitioned	☐	☒
80. Identify the data to be repartitioned	☐	☒
81. Identify the data to be shuffled		

Site Name JAMES F. BELL #15

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 34.2
Initial Depth to Water (feet) 26.27
Height of Water Column in Well (feet) 7.93

Diameter (Inches): Well 4 Gravel Pack _____

Methods of Development

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

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other DO-C

Water Disposal
KUTZ SEPARATOR

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

Water Removal Data

[illegible]

Comments

Developer's Signature Pennia Bird Date 12-4-96 Reviewer John Fella Date 12/2/96



A 2244

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Requested Analysis		Preservation Technique		Type and No. of Sample Containers	Remarks
Samplers: (Signature) <i>Dennis Bird</i>	ACTEC PIPELINE	Date: 3-5-97					
Date	Time	Comp.	GRAB	Sample Number			
3-5-97	1107		X	970171	400	X	JAMES F. BELL #1E MW-1 MC 94715
3-5-97	1121		X	970172	400	X	JAMES F. BELL #1E MW-2 MC 94715
3-5-97	1300		X	970173	400	X	JAMES F. BELL #1E MW-3 MC 94715
3-5-97	1359		X	970174	400	X	JAMES F. BELL #1E MW-4 MC 94715
3-5-97			X		400	X	TRIP BLANK
Relinquished by: (Signature) Received by: (Signature) Relinquished by: (Signature) Received by: (Signature) Relinquished by: (Signature) Received by: (Signature)							
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	970171
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-1
SAMPLE DATE TIME (Hrs):	3/5/97	1107
PROJECT:	Sample 4 - 2nd Quarter	
DATE OF BTEX EXT. ANAL:	3/10/97	3/10/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	9850	PPB	200	D		
TOLUENE	33400	PPB	200	D		
ETHYL BENZENE	1370	PPB	200	D		
TOTAL XYLENES	15200	PPB	200	D		
TOTAL BTEX	59800	PPB				

The Surrogate Recovery was at 102 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: _____

Date: _____

4/1/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970173
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-3
SAMPLE DATE TIME (Hrs):	3/5/97	1300
PROJECT:	Sample 4 - 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	3/10/97	3/10/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	4000	PPB	200	D		
TOLUENE	19200	PPB	200	D		
ETHYL BENZENE	1280	PPB	200	D		
TOTAL XYLENES	13600	PPB	200	D		
TOTAL BTEX	38100	PPB				

The Surrogate Recovery was at 102 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 Zulech

Date:

4/5/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970174
MTR CODE SITE NAME:	94715	James F. Bell #1E MW-4
SAMPLE DATE TIME (Hrs):	3/5/97	1359
PROJECT:	Sample 4 - 2nd Quarter	
DATE OF BTEX EXT. ANAL.:	3/10/97	3/10/97
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 108 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Teller

Date:

4/5/97



Well Number 11W-1
Meter Code 94715

Site Name JAMES F. BELL #7E

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

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

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

Water Disposal
KUTZ SEPARATOR

[illegible]

Comments BAILED DRY @ 5.0 SALLONS. STRONG HYDROCARBON SMOELL. 20' OF FREE FLOATING HYDROCARB.

Developer's Signature Lennie Bird Date 3-5-97 Reviewer [Signature] Date 4/5/97



Well Number mw-2
Meter Code 94715

Site Name JAMES F. BELL #1/E

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 Removal Data

[illegible]

Comments

Comments

Developer's Signature

Tennis Bied

Date 3-5-97

Reviewer:

Ans. Fisher

Date 4/5/97

Water Volume Calculation

Initial Depth of Well (feet) 34.4
Initial Depth to Water (feet) 26.3
Height of Water Column in Well (feet) 8.1

Diameter (Inches): Well _____ 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. C

Water Disposal

KUTZ SEPARATOR



Well Development and Purging Data

Well Number MW-3
Meter Code 94715

Site Name JAMES F. BELL #1E

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 35.10
Initial Depth to Water (feet) 28.87
Height of Water Column in Well (feet) 6.23

Diameter (Inches): Well 4 Gravel Pack.

Methods of Development

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

Instruments

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

Water Disposal
KUTZ SEPARATOR

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.1	12.4
Gravel Pack			
Drilling Fluids			
Total			

Water Removal Data

[illegible]

1.78' OF FREE FLOATING HYDROCARBON. STRONG HYDROCARBON SMELL.

Developer's Signature Donna Bird Date 3-5-97 Reviewer J. J. Zulu Date 4/5/97



Well Number MW-4

Well Number mw.4
Meter Code 94715

☐	Development
☒	Purging

Site Name JAMES F. BELL #1E

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 342
Initial Depth to Water (feet) 26.44
Height of Water Column in Well (feet) 7.76

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.1	15.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

2109 5804970

Water Removal Data

[illegible]

Comments	Bailed only 0 15.0 gallons
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Developer's Signature Dennis Bird Date 3-5-97 Reviewer Don Lohler Date 4/5/97