

3R - 202

REPORTS

DATE:

1997



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

February 27, 1998

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

RECEIVED

MAR 02 1998

Environmental Bureau
Oil Conservation Division

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

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

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

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

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

Sincerely,

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

Sandra D. Miller
Environmental Manager

xc: Mr. Bill Liesse, BLM w/o enclosures
Mr. Denny Foust, NMOCD - Aztec w/enclosures; **Certified Mail #Z 295 387 298; #Z 295 387 299**
Ms. Charmaine Tso, Navajo EPA w/enclosures; **Certified Mail #Z 295 387 292**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520

PHILIP
ENVIRONMENTAL

EPFS GROUNDWATER PITS 1997 ANNUAL GROUNDWATER REPORT

JOHNSTON FEDERAL #6A
Meter/Line ID - 89232

SITE DETAILS

Legals - Twn: 31N Rng: 9W Sec: 35 Unit: F
NMOCD Hazard Ranking: 40 Land Type: FEDERAL
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 Excavation: Sep-94 (80 cy) Soil Boring: Aug-95
Monitor Well: Aug-95

1997 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 4/11/96 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 - A passive product removal system was installed in MW-1 on 7/21/97.

CONCLUSIONS

Based on groundwater levels collected from 4 groundwater monitoring wells, the groundwater flow trends to the northeast on this site, as presented in Figure 1.

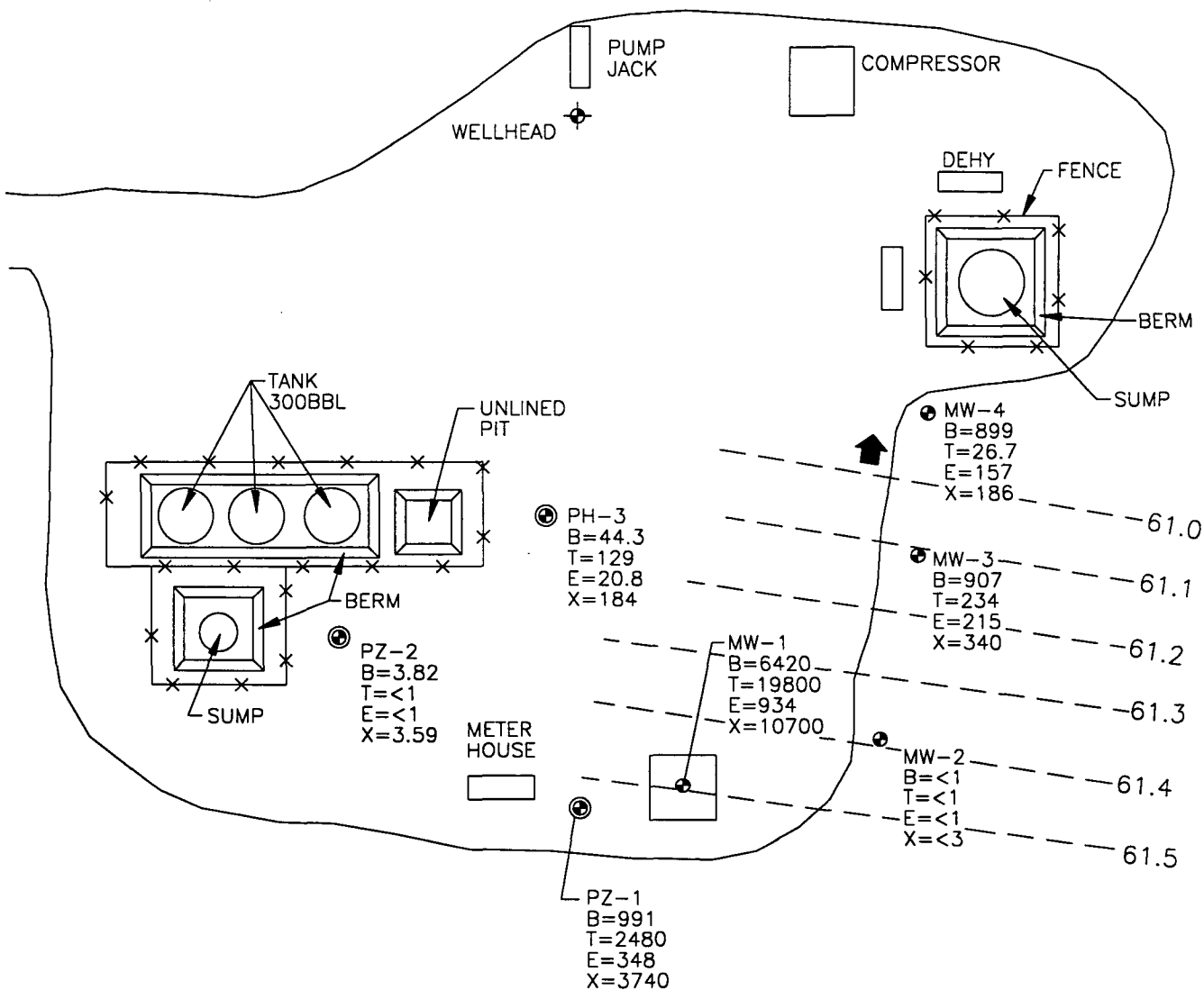
Groundwater samples collected from MW-1 have been in excess of standards for BTEX since quarterly sampling was initiated. In addition, product has been measured in MW-1, ranging from 0.08 feet to 1.11 feet. Approximately 3.5 gallons of product have been removed from MW-1 since initiation of product removal. All product has been disposed of at EPFS's Kutz Separator in Bloomfield, New Mexico. Groundwater sampling was discontinued after 4/11/97 due to the presence of product in MW-1. Groundwater samples collected from 2 downgradient monitoring wells (MW-3 and MW-4) are in excess of standards for benzene. MW-2, which is slightly down to cross-gradient has been below standards for BTEX since quarterly sampling was initiated.

Three temporary monitoring wells were installed and groundwater samples collected at each. PZ-1, which is cross-gradient of MW-1 was in excess of standards for benzene, toluene, and total xylenes. PZ-2, which is slightly cross-gradient of MW-1 was below standards for BTEX.

PH-3, which is slightly down-gradient of MW-1, and adjacent to the operators unlined pit was in excess of standards for benzene at 44.3 ppb, indicating a potential second source.

RECOMMENDATIONS

- EPFS proposes to conduct no further actions at this site, until the operator commences with remediation of their production pit.
- Continue product removal at MW-1 as needed.
- Discontinue quarterly sampling at all monitoring wells until product removal is complete. Following completion of product removal initiate sampling on an annual basis.



LEGEND

● 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

61.1 GROUNDWATER POTENTIOMETRIC SURFACE

➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520AV-001

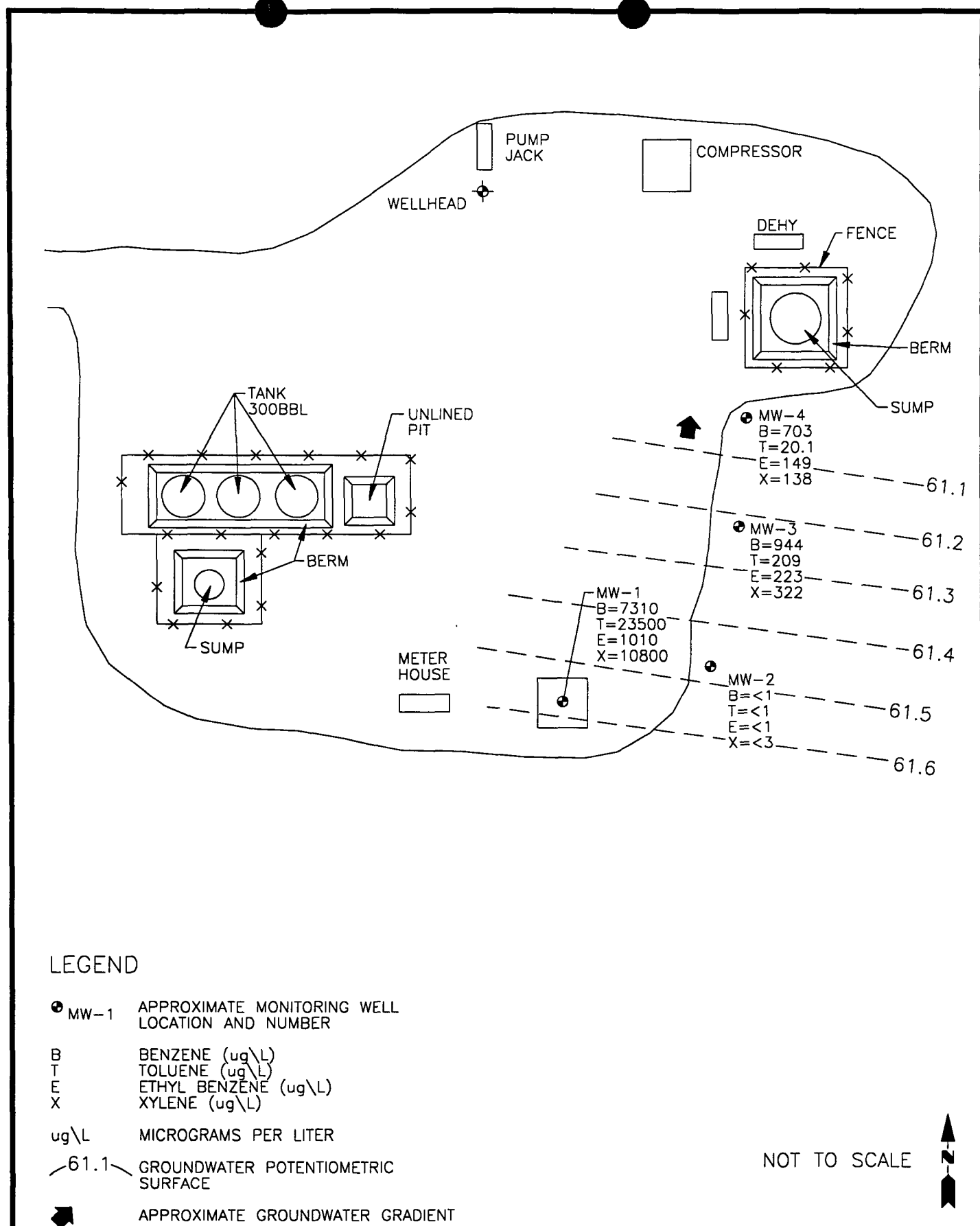


TITLE:
JOHNSTON FEDERAL #6A
89232 1/22/97

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

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1



COL 17520AV-002



TITLE:
JOHNSTON FEDERAL #6A
89232 4/11/97

DWN:
TMM
CHKD:
CC
DATE:
1/20/98

DES.:
CC
APPD:
REV.:
0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 2

EPFS Groundwater Pits
1997 Annual Groundwater Report

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total HTEX
960330	89232	Johnston Fed #6A	04/11/96	1	Sample 4 - 1st Qtr	= 775	= 1070	= 124	= 810	= 2779
960643	89232	Johnston Fed #6A	07/23/96	1	Sample 4 - 2nd Qtr	= 676	= 1980	= 233	= 2090	= 4979
960851	89232	Johnston Fed #6A	10/14/96	1	Sample 4 - 3rd Quarter	= 1790	= 8350	= 580	= 6200	= 16920
970013	89232	Johnston Fed #6A	1/22/97	1	Sample 4 - 4th Quarter	= 6420	= 19800	= 934	= 10700	= 37854
970262	89232	Johnston Fed #6A	4/11/97	1	Sample 4 - 5th Quarter	= 7310	= 23500	= 1010	= 10800	= 42620
960331	89232	Johnston Fed #6A	04/11/96	2	Sample 4 - 1st Qtr	< 1	< 1	< 1	= 3.13	= 6
960644	89232	Johnston Fed #6A	07/23/96	2	Sample 4 - 2nd Qtr	< 1	= 1.15	< 1	= 4.06	= 7
960852	89232	Johnston Fed #6A	10/14/96	2	Sample 4 - 3rd Quarter	< 1	= 1.04	< 1	= 4.85	= 8
970014	89232	Johnston Fed #6A	1/22/97	2	Sample 4 - 4th Quarter	< 1	< 1	< 1	< 3	< 6
970263	89232	Johnston Fed #6A	4/11/97	2	Sample 4 - 5th Quarter	< 1	< 1	< 1	< 3	< 6
960332	89232	Johnston Fed #6A	04/11/96	3	Sample 4 - 1st Qtr	= 772	= 231	= 113	= 379	= 1495
960651	89232	Johnston Fed #6A	07/23/96	3	Sample 4 - 2nd Qtr	= 687	= 112	= 115	= 209	= 1123
960853	89232	Johnston Fed #6A	10/14/96	3	Sample 4 - 3rd Quarter	= 900	= 240	= 140	= 340	= 1620
970015	89232	Johnston Fed #6A	1/22/97	3	Sample 4 - 4th Quarter	= 907	= 234	= 215	= 340	= 1696
970264	89232	Johnston Fed #6A	4/11/97	3	Sample 4 - 5th Quarter	= 944	= 209	= 223	= 322	= 1698
960334	89232	Johnston Fed #6A	04/11/96	4	Sample 4 - 1st Qtr	= 591	= 160	= 133	= 193	= 1077
960652	89232	Johnston Fed #6A	07/23/96	4	Sample 4 - 2nd Qtr	= 793	= 96.4	= 172	= 174	= 1235
960854	89232	Johnston Fed #6A	10/14/96	4	Sample 4 - 3rd Quarter	= 800	= 100	= 130	= 235	= 1265
970016	89232	Johnston Fed #6A	1/22/97	4	Sample 4 - 4th Quarter	= 899	= 26.7	= 157	= 186	= 1269
970265	89232	Johnston Fed #6A	4/11/97	4	Sample 4 - 5th Quarter	= 703	= 20.1	= 149	= 138	= 1010

04-41 Aztec

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole #

BH-1

Well #

Page

of

Project Name

EPNG Pits

Project Number

14509

Phase

601-6000

Project Location

Johnston Federal #6A, 89232

Elevation

Borehole Location T31R9, S35, F

GWL Depth

Logged By S.Kelly

Drilled By

M. Donohue

Date/Time Started

8/14/95 0945

Date/Time Completed

8/14/95, 1055

AK 8/14/95

Well Logged By

S.Kelly

Personnel On-Site

M. Donohue, J. O'Keefe, R. Rutledge

Contractors On-Site

Client Personnel On-Site

Drilling Method

4 1/4" ID HSA

Air Monitoring Method

CGI, PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU		Drilling Conditions & Blow Counts
							BZ	BH	
0				Backfill					
5				to 12'					
10									
15									
20	1	18- 19.5	1.5' 1.5'	silty SAND, dk brown, fine sand, 15-30% silt trace clay, loose, damp					435 136 0955
25	2	23- 25	1.6' 2.0'	SAA					269 108 1005
30	3	28- 29.5	1.2' 1.5'	SAND, dk-olive grey, med. to coarse, loose, damp well graded		27			263 311 1010
35		33- 35	.5' 2.0'	SAA					231 378 1017
40		38- 39.5	.6' 1.5'	SAA, wet					11 1025 - No lead, spec- wet sample
				TOB - 48.0					

Comments:

Sample from just above water table (SEK 52) sent to lab (BTEX & TPH) sample was bagged & iced prior to being put in jar. Drilled down to 48.0'. Cave in to 46.0' set well at 46.0'. 47.0' AK

Geologist Signature

David Kelly 8/10/95

MONITORING WELL INSTALLATION RECORD

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

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

Project Name EPNG Pit Drilling
Project Number 14509 Phase 6001.77
Project Location Johnston Fed #6A, 89232
On-Site Geologist S. Kelly
Personnel On-Site M. Donohue, J. O'Keefe, R. Rutledge
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location T31, R9, S.35, E
GWL Depth _____
Installed By M. Donohue, S. Kelly

Date/Time Started 8/4/95, 1055
Date/Time Completed 8/4/95, 1240

Depths in Reference to Ground Surface			
Item	Material	Depth	
Top of Protective Casing			Top of Protective Casing <u>N/A</u>
Bottom of Protective Casing			Top of Riser <u>+2.5'</u>
Top of Permanent Borehole Casing			Ground Surface <u>0.0</u>
Bottom of Permanent Borehole Casing			
Top of Concrete			
Bottom of Concrete			
Top of Grout	Type I & II cement with 5% bentonite	0.0	
Bottom of Grout	5-94# sack	27.7	
Top of Well Riser			
Bottom of Well Riser		32.0'	
Top of Well Screen	4" sch 40 .010 slot PVC	32.0'	
Bottom of Well Screen		47.0'	
Top of Bentonite Seal	Enviroplug med 1-50# bag	27.7'	Top of Seal <u>-27.7</u>
Bottom of Bentonite Seal		30.0'	
Top of Gravel Pack	10-20 coarse sand 9-50# bag	30.0'	Top of Gravel Pack <u>-30'</u>
Bottom of Gravel Pack		47.0'	Top of Screen <u>-32'</u>
Top of Natural Cave-In		47.0'	
Bottom of Natural Cave-In		48.0'	
Top of Groundwater		-36.5'	
Total Depth of Borehole		48.0'	Bottom of Screen <u>-47.0'</u> Bottom of Borehole <u>-48.0'</u>

Comments: _____

Geologist Signature

Sarah Kelly

RECORD OF SUBSURFACE EXPLORATION

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

Borehole # _____
Well # MW-02
Page 1 of 2

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Johnston Federal No. 6A
Meter 89232
Well Logged By S. Kelly K. Callahan
Personnel On-Site D. Charley, K. Padilla, F. Rivera
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Borehole Location T31 R9 Sec 35 Unit F
GWL Depth _____
Logged By K. Callahan
Drilled By K. Padilla
Date/Time Started 12/9/95, 0845
Date/Time Completed 12/9/95, 1030

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

Depth (feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDH BZ BH		Drilling Conditions & Blow Counts
0								
5			silty SAND, 15-30% silt fine graded sand, loose, dry, light brown					
10			STA					
15			STA					
20			silty SAND, 5-15% fines, fine to medium grained, loose, dry, brown					
25			SAND, medium to coarse grained, loose, dry, well graded, brown					
30			STA					
35			STA, damp					
40			STA, wet, gray.					

Comments:

Note: Lamp on PID out, will not come on - unable to conduct air monitoring with
PID. CGI placed on rig in breathing zone.
STA-Similar to Above

Geologist Signature

Karen Callahan

RECORD OF SUBSURFACE EXPLORATION

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

Borehole # _____
Well # MW-02
Page 2 of 2

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Johnston Federal No. 6A
Meter 89232
Well Logged By ~~S. Kelly~~ K. Gallaher
Personnel On-Site D. Charley, K. Padilla, F. Rivera
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Borehole Location T31 R9 Sec 35 Unit F
GWL Depth _____
Logged By K. Gallaher
Drilled By M. Donohue K. Padilla
Date/Time Started 12/9/95, 0845
Date/Time Completed 12/9/95, 1030

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

Depth (feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ RH	Drilling Conditions & Blow Counts
40							
45			TD=41 feet				At 41' hit hard surface, unable to advance any further. Will set well. Hard surface- sandstone
50							
15							
20							
25							
30							
35							
40							

Comments:

Geologist Signature K. Gallaher

MONITORING WELL INSTALLATION RECORD

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

Borehole #
Well # MW-02
Page 1 of 1

Project Name EPNG-Pit Drilling

Project Number 14509 Phase 6001
Project Location Johnston Federal No. 6A

On-Site Geologist K. Gallaher
Personnel On-Site K. Padilla, D. Charley, F. Rivera
Contractors On-Site
Client Personnel On-Site

Elevation
Well Location T31 R9 Sec 35 Unit F
GWL Depth
Installed By K. Gallaher
K. Padilla
Date/Time Started 12/9/95, 1030
Date/Time Completed 12/9/95

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing		-	Top of Protective Casing	<u>NA</u>
Bottom of Protective Casing		-	Top of Riser	<u>+3.0</u>
Top of Permanent Borehole Casing		<u>+3.0</u>	Ground Surface	<u>0.0</u>
Bottom of Permanent Borehole Casing				
Top of Concrete		-		
Bottom of Concrete		-		
Top of Grout	<u>2 1/2 Portland Cement Type I-6</u>	<u>0.0</u>		
Bottom of Grout	<u>6-96# bags</u>	<u>6.0</u>		
Top of Well Riser				
Bottom of Well Riser		<u>20</u>		
Top of Well Screen		<u>-28.0</u>	Top of Seal	<u>-28.0</u>
Bottom of Well Screen		<u>-40.6</u>		
Top of Peltonite Seal	<u>Emulsi 10.20 Sand</u>	<u>-28.0</u>	Top of Gravel Pack	<u>28.0</u>
Bottom of Peltonite Seal	<u>1.50# bags</u>	<u>-28.0</u>	Top of Screen	<u>30.6</u>
Top of Gravel Pack	<u>CS-1 10.20 Sand</u>	<u>-28.0</u>		
Bottom of Gravel Pack	<u>10# bags</u>	<u>-41.0</u>		
Top of Natural Cave-In		-		
Bottom of Natural Cave-In		-		
Top of Groundwater		<u>-37.35*</u>	Bottom of Screen	<u>-40.6</u>
Total Depth of Borehole		<u>-41.0</u>	Bottom of Borehole	<u>-41.0</u>

Comments: 0.4-foot PVC sump

*measured after well installation from top

Geologist Signature

Karey Gallaher

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2386

Borehole #
Well # MW-3
Page 1 of 2

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Johnston Federal No. 6A, 89232

Elevation _____
Borehole Location _____
GWL Depth _____
Logged By S. Kelly
Drilled By M. Donohue
Date/Time Started 12/11/95, 0900
Date/Time Completed 12/11/95, 1030

Well Logged By S. Kelly
Personnel On-Site M. Donohue, D. Charley
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						B2	B14		<u>Cuttings</u>
0									
5			silty SAND, light brown, fine to med. angular sand, loose, dry, 10-25% silt.			0	0	0	
10			SAA			0	5	.4	
15			SAA			0	0	0	
20			SAA			0	0	0	
25			silty SAND, light brown, fine to med. angular sand 10-25% silt, occasional coarse angular sand, loose, dry			0	48	3.6	
30			silty SAND, light brown 5-15% silt, med. to coarse angular sand, loose, damp.			0	107	4	Hit sandstone at approx 35'.
35			SAND, dk grey, fine to coarse angular sand, dense, damp, well graded, occasional fine subangular gravel			0	60	4	Drilling got softer between 36' and 39' then got hard again.
40									

Comments:

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

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

Borehole # MW-3
Well # 2 of 2
Page

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Johnston Federal No. 64, 89232

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

Well Logged By S. Kelly
Personnel On-Site _____
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
40			clayey SAND, dk grey, 5-15% clay, fine to med. angular sand, wet, dense.			0	78	-	
45			SAND, grey, fine angular sand, v. dense, wet.			0	393	-	
50			TOB - 47.0'						After pulling rods at 1050' water level is at 44.6' and rising.
15									
20									
25									
30									
35									
40									

Comments: _____

Geologist Signature _____

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marvot Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2366

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

Project Name EPNG Pit Drilling

Project Number 14509 Phase 6000

Project Location Johnston Federal No. 6#
89232

On-Site Geologist S. Kelly
Personnel On-Site M. Donohue, D. Charley
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location _____
GWL Depth _____
Installed By M. Donohue

Date/Time Started 12/11/95, 1030
Date/Time Completed 12/11/95, 1300

Depths in Reference to Ground Surface				
Item	Material	Depth		
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	Type I & II cement w/ bentonite	0.0		
Bottom of Grout	7-94# 52 lbs cement 5-50# sack bent.	-24.9		
Top of Well Riser	4", Sch. 40 PVC	-24.9	+2.5	
Bottom of Well Riser	" "	-30.9	24.9	12/11/95
Top of Well Screen	4", Sch 40 PVC .010 slot	-30.9		
Bottom of Well Screen	" "	-45.9		
Top of Peltonite Seal	Enviroplug Mod.	-24.9		
Bottom of Peltonite Seal	2-50# bags	-28.4		
Top of Gravel Pack	10-20 CSSI sand	-28.4		
Bottom of Gravel Pack	15-50# bags	-46.3		
Top of Natural Cave-In	Blow in	-46.3		
Bottom of Natural Cave-In	" "	-47.0		
Top of Groundwater		-37.13		
Total Depth of Borehole		46.30	47.0	

Top of Protective Casing

Top of Riser +2.5

Ground Surface 0.0'

Top of Seal 24.9

Top of Gravel Pack 28.4'

Top of Screen 30.90'

Bottom of Screen 45.90'

Bottom of Borehole 46.30

Comments: 4' PVC and cap at bottom of screen. Top of Groundwater measurement is from TOC.

Geologist Signature _____

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2386

Borehole # _____
Well # MW-4
Page 1 of 2

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Johnston Federal No. 6A, 89232

Elevation _____
Borehole Location _____
GWL Depth _____
Logged By S. Kelly
Drilled By M. Donohue
Date/Time Started 12/11/95 1310
Date/Time Completed 12/11/95 1445

Well Logged By S. Kelly
Personnel On-Site M. Donohue, D. Charley
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	Cuttings	
0									
5									
10			silty SAND, light brown, 20-35% silt, fine angular sand, loose, dry			0	1	0	
15			SAA			0	3	.4	
20			silty SAND, light brown, 5-15% silt, fine to coarse angular sand, loose, dry well graded			0	7	0	
25						0	21	—	
30			SAA			0	61	.9	
35			silty SAND, brown, 10-25% silt, fine to coarse angular sand, loose, damp, occ. v. fine subrounded gravel			0	25	2	Drilling gets harder at 35'
40			silty SAND, black, 10-25% silt, fine to med. sand, loose damp.		36	0	127	—	

Comments:

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole #

Well #

Page

MW-4
2 of 2

Project Name

Project Number

Project Location

EPNG Pit Drilling

14509

Phase

###

Johnston Federal Lab. GA, 99232

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

S. Kelly

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

M. Donohue

Date/Time Started

Date/Time Completed

Drilling Method

Air Monitoring Method

6 3/4" ID Hollow Stem Auger

PID, CGI

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
4.0			clayey SAND, brown, 5-15% clay, fine to med, angular sand with occ. coarse angular sand and fine gravel, dense, wet		44	0	34	—	
4.5			clayey SILT, olive, 5-15% clay with some 10-20% v. fine sand, v. dense,		?	0	42	—	
5.0			clayey SAND, grey, 5-15% clay, fine to coarse angular sand, v. dense						
6.0									
15									
20									
25									
30									
35									
40									

CUTTINGS OFF AUGERS

TOB = 47.0'

Comments:

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marvick Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2366

Borehole #

Well #

Page

MW-4

of

Project Name

EPUG Pit Drilling

Project Number

14509 Phase 6000.77

Project Location

Johnston Federal No. 64, 89232

On-Site Geologist

S. Kelly

Personnel On-Site

M. Donohue, D. Charley

Contractors On-Site

Client Personnel On-Site

Elevation

Well Location

GWL Depth

Installed By

M. Donohue

Date/Time Started

12/11/95, 1445

Date/Time Completed

12/11/95, 1725

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing			Top of Protective Casing	
Bottom of Protective Casing			Top of Riser	<u>+2.0</u>
Top of Permanent Borehole Casing			Ground Surface	<u>0.0</u>
Bottom of Permanent Borehole Casing				
Top of Concrete				
Bottom of Concrete				
Top of Grout	Type I all cement w/ 5% bentonite	0.0		
Bottom of Grout	19-94 #6 bag cement 1-50 #6 bag bent	25.6		
Top of Well Riser	4" Sch 40 PVC			
Bottom of Well Riser	" "	31.6'		
Top of Well Screen	4" Sch 40 PVC .010 slot	31.6'		
Bottom of Well Screen	" "	46.6'		
Top of Peltonite Seal	Enviroplug med	25.6	Top of Seal	<u>-25.6'</u>
Bottom of Peltonite Seal		29.1		
Top of Gravel Pack	10-20 CSSI sand	29.1	Top of Gravel Pack	<u>-29.1</u>
Bottom of Gravel Pack	17-50 #6 bags	47.0	Top of Screen	<u>31.6'</u>
Top of Natural Cave-In		N/A		
Bottom of Natural Cave-In		N/A		
Top of Groundwater				
Total Depth of Borehole		47.0	Bottom of Screen	<u>46.6'</u>
			Bottom of Borehole	<u>47.0</u>

Comments: .4' PVC end cap at bottom of screen.

Geologist Signature

WELLPOINTS

TEMPORARY PIEZOMETER INSTALLATION

Philip Services Corp.

4000 Monroe Rd.

Farmington, NM 87401

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

Borehole # _____

Well # PZ-1

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Johnston Fed #6A 89232

Elevation _____

Well Location Ltr F -S35-T31-R9

GWL Depth 34.80 BGS

Installed By K. Padilla

On-Site Geologist C CHANCE

Personnel On-Site D Charley

Contractors On-Site _____

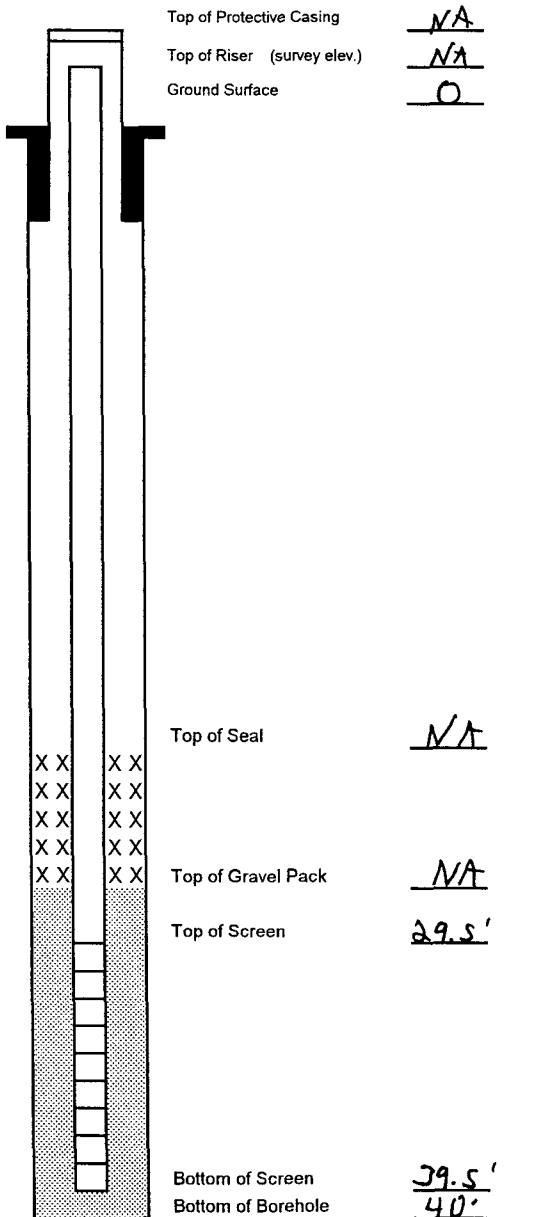
Client Personnel On-Site _____

Date/Time Started 8/28/97

Date/Time Completed 8/28/97

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 PZ1 is 266° ± 21' From MW1. Sample CMC 338 sent to Lab. Cuttings contaminated @ ~15' BGS. Piezo pulled & grouted 8/29/97

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-2

Page 1 of 1

Project Name EPFS GW PITS

Project Number 17520 Phase 6006

Site Location Johnston Fed LA 89222

Elevation

Well Location Ltr F -S35-T31-R9

GWL Depth 34.88 BGS

Installed By R Padilla

On-Site Geologist C CHANCE

Personnel On-Site D Charley

Contractors On-Site

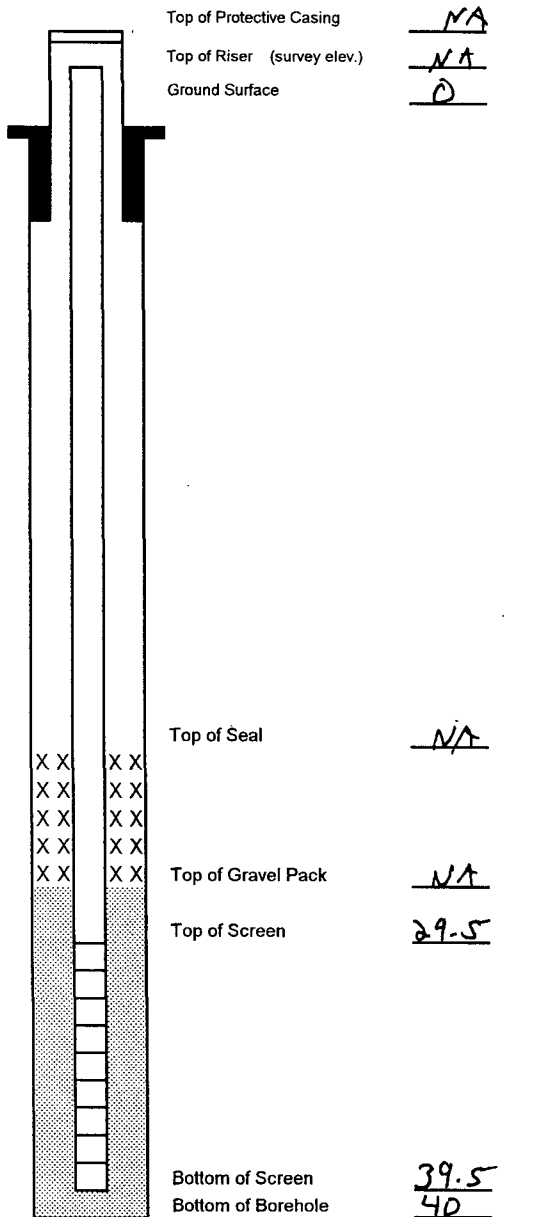
Client Personnel On-Site

Date/Time Started 8/28/97

Date/Time Completed 8/28/97

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 320° ± 57' From MW1. Sample CMC 339 sent to

lab. Contaminated cuttings @ ~35' BGS. Piezo pulled & grouted 8/29/97

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-3
Page 1 of 1

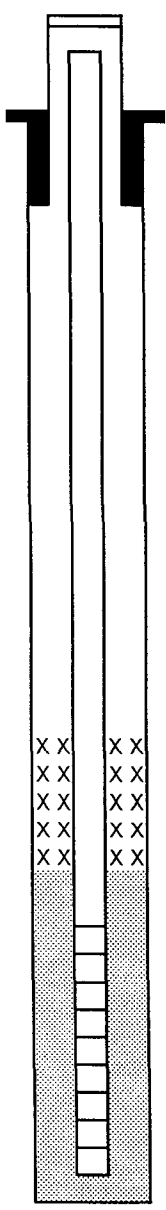
Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location Johnson Fed 6A 89232

Elevation _____
Well Location Ltr F -SJS-TJ1-R9
GWL Depth 34.9 BGS
Installed By K. Padilla

On-Site Geologist C CHANCE
Personnel On-Site D Charley
Contractors On-Site _____
Client Personnel On-Site _____

Date/Time Started 8/29/97
Date/Time Completed 8/29/97

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 D

Top of Seal NA

Top of Gravel Pack NA

Top of Screen 29'

Bottom of Screen 39'

Bottom of Borehole 40'

Comments PZ3 is 16' + 50' from MW1. Sample CMC 340 sent to lab.
PZ3 pulled & grouted on 8/29/97

Geologist Signature

C. Chance

PROJECT NAME # 24324 Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER			
SAMPLERS: (Signature) <i>Cony Chane</i>				DATE: 8/28/97			
LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBERS OF CONTAINERS	SAMPLE TYPE	SEQUENCE #
970944	8/28/97	1300	Water	CMC 338	2	VG	Johnston Fed 6A 89232 PZ1
970942	↓	↓	↓	Trip Blank	1	TB	Trip Blank
970943	↓	1445	↓	CMC 339	2	VG	Johnston Fed 6A 89232 PZ2
RECEIVED SEP - 9 1997							
42°F							
RELINQUISHED BY: (Signature) <i>Cony Chane</i>				DATE/TIME 8/28/97 1700		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)				DATE/TIME		RECEIVED OF LABORATORY BY: (Signature)	
RELINQUISHED BY: (Signature)				DATE/TIME 8/29/97 1020		RECEIVED OF LABORATORY BY: (Signature) <i>Mark Hoffa</i>	
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:	CMC338	970941
MTR CODE SITE NAME:	89232	Johnston Fed. #6A
SAMPLE DATE TIME (Hrs):	8/28/97	1300
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
TYPE DESCRIPTION:	PZ-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	991	PPB	20	D		
TOLUENE	2480	PPB	20	D		
ETHYL BENZENE	348	PPB	20	D		
TOTAL XYLENES	3740	PPB	20	D		
TOTAL BTEX	7559	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 98.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

Narrative:

Approved By:

John Latch

Date:

9-8-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	970942
MTR CODE SITE NAME:	73551	Johnston Fed. #6A
SAMPLE DATE TIME (Hrs):	8/28/97	1300
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
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 100.7 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: John Latta

Date: 9-8-97

970942TripBlankBTEX,9/3/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC339	970943
MTR CODE SITE NAME:	89232	Johnston Fed. #6A
SAMPLE DATE TIME (Hrs):	8/28/97	1445
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	8/29/97	8/29/97
TYPE DESCRIPTION:	PZ-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	3.82	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	3.59	PPB				
TOTAL BTEX	7	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 96.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

Narrative:

Approved By:

John L. Linder

Date:

9-8-97

970943BTEX, 9/3/97



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 NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
ICV LA-52589 50 PPB						
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
LCS LA-45476 25 PPB						
Benzene	Standard	25.0	25.6	102.2	39 - 150	X
Toluene	Standard	25.0	25.6	102	46 - 148	X
Ethylbenzene	Standard	25.0	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
CCV LA-52589 50 PPB						
Benzene	Standard	50.0	50.5	101.0	75 - 125 %	X
Toluene	Standard	50.0	49.8	99.6	75 - 125 %	X
Ethylbenzene	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
CCV LA-52589 50 PPB						
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 ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
970943					RANGE	
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 %	X
m & p - Xylene	Matrix Duplicate	3.59	3.7	3.64	+/- 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 970943					RANGE	
Benzene	50	3.8	54.4	101.2	75 - 125 %	X
Toluene	50	<1	51.6	103	75 - 125 %	X
Ethylbenzene	50	<1	50.5	101	75 - 125 %	X
m & p - Xylene	100	3.59	103.7	100.1	75 - 125 %	X
o - Xylene	50	<1	50.1	100	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	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.

TRIP BLANK	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.

Reported By: _____

Approved By: John L. Latta

Date: 9-8-97

PROJECT NAME # 24324 Pit Closure Project				CONTRACT LABORATORY P. O. NUMBER			
SAMPLERS: (Signature) Cory Chace				REMARKS			
LAB ID	DATE	TIME	MATRIX	FIELD ID	SEQUENCE #	LAB PID	TPH EPA 418.1
970946	8/29/97	1210	Water	CMC340			
970947	V	-	↓	Trip Blank			
RECEIVED SEP 15 1997							
33°F							
RELINQUISHED BY: (Signature) Cory Chace 8/29/97 1700				RECEIVED BY: (Signature) [Signature] 9/2/97 1130		DATE/TIME 9/2/97 1130	
REQUESTED TURNAROUND TIME: ☐ ROUTINE ☐ RUSH				RELINQUISHED BY: (Signature) [Signature] 9/2/97 1130		RECEIVED OF LABORATORY BY: (Signature) [Signature] 9/2/97 1130	
CARRIER CO.				SAMPLE RECEIPT REMARKS		RESULTS & INVOICES TO:	
CHARGE CODE				FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499		505-599-2144 FAX: 505-599-2261	



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC340	970946
MTR CODE SITE NAME:	89232	Johnston Fed. #6A
SAMPLE DATE TIME (Hrs):	8/29/97	1210
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/3/97	9/3/97
TYPE DESCRIPTION:	PH-3	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	44.3	PPB				
TOLUENE	129	PPB				
ETHYL BENZENE	20.8	PPB				
TOTAL XYLENES	184	PPB				
TOTAL BTEX	378	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.9 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Smith

Date:

9-8-97

970946BtexWellPoint,9/8/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	Trip Blank	970947
MTR CODE SITE NAME:	89232	Johnston Fed. #6A
SAMPLE DATE TIME (Hrs):	8/29/97	1210
PROJECT:	Well Points	
DATE OF BTEX EXT. ANAL.:	9/3/97	9/3/97
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 93.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John J. [Signature]

Date:

9-8-97

970947BtexWellPointTripBlank,9/8/97

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX

Samples: 970946 to 970950

QA/QC for 9/03/97 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.0	96.0	75 - 125 %	X
Toluene	Standard	50.0	47.6	95	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.6	95	75 - 125 %	X
m & p - Xylene	Standard	100	95.5	95.5	75 - 125 %	X
o - Xylene	Standard	50.0	47.3	95	75 - 125 %	X
LCS LA-45476 25 PPB					RANGE	
Benzene	Standard	25.0	24.3	97.1	39 - 150	X
Toluene	Standard	25.0	24.1	96	46 - 148	X
Ethylbenzene	Standard	25.0	23.9	96	32 - 160	X
m & p - Xylene	Standard	50.0	48.2	96	Not Given	X
o - Xylene	Standard	25.0	24.5	98	Not Given	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.9	97.7	75 - 125 %	X
Toluene	Standard	50.0	48.2	96.3	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.9	95.8	75 - 125 %	X
m & p - Xylene	Standard	100	96.1	96.1	75 - 125 %	X
o - Xylene	Standard	50.0	47.9	96	75 - 125 %	X
CCV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	48.2	96.3	75 - 125 %	X
Toluene	Standard	50.0	47.6	95.2	75 - 125 %	X
Ethylbenzene	Standard	50.0	47.3	94.6	75 - 125 %	X
m & p - Xylene	Standard	100	94.9	94.9	75 - 125 %	X
o - Xylene	Standard	50.0	47.4	94.8	75 - 125 %	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
970946					RANGE	
Benzene	Matrix Duplicate	44.3	45.1	1.87	+/- 20 %	X
Toluene	Matrix Duplicate	128.5	131.0	1.87	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	20.77	21.38	2.90	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	159.11	163.1	2.45	+/- 20 %	X
o - Xylene	Matrix Duplicate	25.08	25.93	3.35	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 970946					RANGE	
Benzene	50	44.3	91.0	93.4	75 - 125 %	X
Toluene	50	128.5	174.6	92	75 - 125 %	X
Ethylbenzene	50	20.8	67.9	94	75 - 125 %	X
m & p - Xylene	100	159.1	253.9	94.8	75 - 125 %	X
o - Xylene	50	25.1	70.9	92	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 (2 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.

TRIP BLANK	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.

Reported By: CV

Approved By: John Jordan

Date: 9-11-97

**1997 GROUNDWATER
ANALYTICAL**



El Paso
Natural Gas Company

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Contract Laboratory	
Samplers: (Signature)		Date	Receiving Temp. (°F)	Requested Analysis	
Dennis Bird		4/11/96	34°	EPFS	
Whe.#	Date	Time	Matrix	Sample Number	Remarks
89232	4/11/96	1256	WATER	960330	JOHNSTON FED #6A MW-1
	4/11/96	1412	WATER	960331	JOHNSTON FED #6A MW-2
	4/11/96	1607	WATER	960332	JOHNSTON FED #6A MW-3
	4/11/96	1607	WATER	960333	JOHNSTON FED #6A MW-3 FIELD CAMP
89232	4/11/96	1630	WATER	960334	JOHNSTON FED #6A MW-4
			WATER		TRIP BLANK
					MC = 89232
Relinquished by: (Signature) Dennis Bird Date/Time 4/12/96 1040 Received by: (Signature) Date/Time Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time					
Results & Invoices to:				Date Results Reported / by: (Signature)	

Charge Code
4/12/96 1041
Remarks: *Marcel Armenta*

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960330
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-1
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1256
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/12/96
SAMPLE TYPE:	Water SAMPLE 4

Mr # 89232

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	775	D (x10)	10
TOLUENE	1070	D (x10)	740
ETHYL BENZENE	124	D (x10)	750
TOTAL XYLENES	810	D (x10)	620
SURROGATE % RECOVERY	97.6	Allowed Range 80 to 120 %	

NOTES:

The "D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By:

mh

Approved By:

John Ladden

Date:

4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960330
DATE SAMPLED:	04/12/96
TIME SAMPLED (Hrs):	1256
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline (Mtr 89232)
SAMPLE POINT:	Johnson Federal #6A MW-1

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.7	Units	04/16/96
Alkalinity as CO ₃	0	PPM	04/16/96
Alkalinity as HCO ₃	305	PPM	04/16/96
Calcium as Ca	510	PPM	04/16/96
Magnesium as Mg	57	PPM	04/16/96
Total Hardness as CaCO ₃	1,404	PPM	04/16/96
Chloride as Cl	23	PPM	04/16/96
Sulfate as SO ₄	1,605	PPM	04/16/96
Fluoride as F	0.9	PPM	04/16/96
Nitrate as NO ₃ -N	<0.6	PPM	04/16/96
Potassium as K	1.6	PPM	04/16/96
Sodium as Na	182	PPM	04/16/96
Total Dissolved Solids	2,690	PPM	04/16/96
Conductivity	2,480	umhos/cm	04/16/96
Anion/Cation %	1.4%	%, < 5.0 Accepted	04/16/96

Lab Remarks:

te analyzed out of holding.

Reported By:

mh

Approved By:

[Signature]

[Signature]

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960330
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Johnson Fed #6A MW-1
METER CODE:	89232
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1256
SAMPLED BY:	D. Bird

REMARKS:

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.003	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	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 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: John Lathan

Date: 10/5/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960331
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-2
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1412
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/12/96
SAMPLE TYPE:	Water

Mtz# 89232

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	<1.0		10
TOLUENE	<1.0		740
ETHYL BENZENE	<1.0		750
TOTAL XYLENES	3.13		620
SURROGATE % RECOVERY	97.7	Allowed Range 80 to 120 %	

NOTES:

Reported By: mh

Approved By: John Tardien

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960331
DATE SAMPLED:	04/12/96
TIME SAMPLED (Hrs):	1412
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline (mat #89232)
SAMPLE POINT:	Johnson Federal #6A MW-2

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.0	Units	04/16/96
Alkalinity as CO ₃	0	PPM	04/16/96
Alkalinity as HCO ₃	160	PPM	04/16/96
Calcium as Ca	487	PPM	04/16/96
Magnesium as Mg	57	PPM	04/16/96
Total Hardness as CaCO ₃	1,351	PPM	04/16/96
Chloride as Cl	26	PPM	04/16/96
Sulfate as SO ₄	1,726	PPM	04/16/96
Fluoride as F	1.1	PPM	04/16/96
Nitrate as NO ₃ -N	<0.6	PPM	04/16/96
Potassium as K	1.9	PPM	04/16/96
Sodium as Na	177	PPM	04/16/96
Total Dissolved Solids	2,720	PPM	04/16/96
Conductivity	2,650	umhos/cm	04/16/96
Anion/Cation %	3.5%	%, <5.0 Accepted	04/16/96

Lab Remarks:

Nitrate analyzed out of holding.

Reported By: mh

Approved By: John Lumbini

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960331
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Johnson Fed #6A MW-2
METER CODE:	89232
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1412
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.004	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	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 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: John Jordan

Date: 10/5/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960332
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-3
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1607
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/12/96
SAMPLE TYPE:	Water

intr # 89232

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	772	D (x5)	10
TOLUENE	231	D (x5)	740
ETHYL BENZENE	113	D (x5)	750
TOTAL XYLENES	379	D (x5)	620
SURROGATE % RECOVERY	96.9	Allowed Range 80 to 120 %	

ES:

'D' Qualifier indicates that the reported result for this analyte is calculated based on the secondary
on factor shown.

Tested By: mh

Approved By: John Lueder

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960332
DATE SAMPLED:	04/12/96
TIME SAMPLED (Hrs):	1607
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline (Intr 89232)
SAMPLE POINT:	Johnson Federal #6A MW-3

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.7	Units	04/16/96
Alkalinity as CO_3	0	PPM	04/16/96
Alkalinity as HCO_3	399	PPM	04/16/96
Calcium as Ca	493	PPM	04/16/96
Magnesium as Mg	58	PPM	04/16/96
Total Hardness as CaCO_3	1,373	PPM	04/16/96
Chloride as Cl	22	PPM	04/16/96
Sulfate as SO_4	1,506	PPM	04/16/96
Fluoride as F	0.9	PPM	04/16/96
Nitrate as $\text{NO}_3\text{-N}$	<0.6	PPM	04/16/96
Potassium as K	2.0	PPM	04/16/96
Sodium as Na	177	PPM	04/16/96
Total Dissolved Solids	2,550	PPM	04/16/96
Conductivity	2,600	umhos/cm	04/16/96
Anion/Cation %	1.9%	%, < 5.0 Accepted	04/16/96

Lab Remarks:

Nitrate analyzed out of holding.

Reported By: mh

Approved By:

John Larkin

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960332
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Johnson Fed #6A MW-3
METER CODE:	89232
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1607
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.005	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	0.0007*	0.050

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

* The sample was redigested and reanalyzed for silver on 5/23/96.

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 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
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: *mlh*

Approved By: *John L. Larkin*

Date: *6/11/96*

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960332
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Johnson Fed #6A MW-3
METER CODE:	89232
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1607
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.005	0.050
LEAD	<0.004	0.050
MERCURY	<0.002	0.002
SELENIUM	<0.005	0.050
SILVER	0.0391 *	0.050

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

* The preserved but undigested sample was analyzed and showed <0.0004 mg/L Ag.

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 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
- 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, SEPA, June, 1991.
- Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
- Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: _____

Date: _____

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960334
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-4
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1630
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/12/96
SAMPLE TYPE:	Water

MTR 89232

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	591	D (x5)	10
TOLUENE	160	D (x5)	740
ETHYL BENZENE	133	D (x5)	750
TOTAL XYLENES	193	D (x5)	620
SURROGATE % RECOVERY	97.6	Allowed Range 80 to 120 %	

NOTES:
The "D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By: mh

Approved By: John Linder

Date: 4/17/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960334
DATE SAMPLED:	04/12/96
TIME SAMPLED (Hrs):	1630
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline (Mtr # 89232)
SAMPLE POINT:	Johnson Federal #6A MW-4

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	8.0	Units	04/16/96
Alkalinity as CO ₃	0	PPM	04/16/96
Alkalinity as HCO ₃	356	PPM	04/16/96
Calcium as Ca	502	PPM	04/16/96
Magnesium as Mg	58	PPM	04/16/96
Total Hardness as CaCO ₃	1,392	PPM	04/16/96
Chloride as Cl	22	PPM	04/16/96
Sulfate as SO ₄	1,569	PPM	04/16/96
Fluoride as F	1.0	PPM	04/16/96
Nitrate as NO ₃ -N	<0.6	PPM	04/16/96
Potassium as K	1.0	PPM	04/16/96
Sodium as Na	174	PPM	04/16/96
Total Dissolved Solids	2,640	PPM	04/16/96
Conductivity	2,590	umhos/cm	04/16/96
Anion/Cation %	2.3%	%, <5.0 Accepted	04/16/96

Lab Remarks:

Nitrate analyzed out of holding.

Reported By: mh

Approved By: John L. Linder

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960334
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Johnson Fed #6A MW-4
METER CODE:	89232
SAMPLE DATE:	04/11/96
SAMPLE TIME (Hrs):	1630
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.002	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	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 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: John Lallan

Date: 5/30/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

Sample ID: 960320 to 960323, 960325 to 960327, 960330 to 960334,
960340 to 960343, 960350 to 960353, 960355 to 960356,
960370 to 960373, and 960375 to 960378, 960380 & 960386

Date Reported: 05/10/96

TOTAL METALS

LABORATORY CONTROL SAMPLE

Analyte	Found Value (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	26.2	27.0	97%
Barium	309	315	98%
Cadmium	3.06	2.90	106%
Chromium	7.09	6.70	106%
Lead	35.9	39.5	91%
Mercury	1.79	1.75	102%
Selenium	36.7	31.0	118%
Silver	3.16	3.06	103%

LABORATORY CONTROL SAMPLE (2nd run)

Analyte	Found Value (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	NA	NA	NA
Barium	NA	NA	NA
Cadmium	2.76	2.90	95%
Chromium	7.34	6.70	110%
Lead	35.9	39.5	91%
Mercury	1.71	1.75	98%
Selenium	NA	NA	NA
Silver	NA	NA	NA

NA: Not Applicable. A second run was not required.

Reported By:

m/h

Approved By:

John L. Linder

Date:

10/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, DUPLICATE ANALYSIS

SAMPLE ID: 960321

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	ND	ND	NA
Cadmium	ND	ND	NA
Chromium	1.65	1.61	2.5%
Lead	2.3	2.1	8.2%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SAMPLE ID: 960343

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	ND	ND	NA
Cadmium	ND	ND	NA
Chromium	1.14	1.28	11.6%
Lead	2.4	2.1	11.7%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SAMPLE ID: 960375

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	1.15	1.12	2.6%
Cadmium	0.56	0.55	1.8%
Chromium	29.1	29.0	0.3%
Lead	12.1	13.3	9.4%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

ND: Analyte Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: [Signature]

Date: 10/5/96 (2)

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, SPIKE ANALYSIS

SAMPLE ID: 960321

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	ND	47.4	45.5	104%
Barium	236	1098	959	92%
Cadmium	ND	8.12	9.59	85%
Chromium	1.65	51.9	45.5	108%
Lead	ND	37.3	45.5	82%
Mercury	ND	1.94	2.00	97%
Selenium	ND	9.64	9.60	100%
Silver	ND	43.0	45.5	95%

SAMPLE ID: 960343

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	ND	53.7	45.5	118%
Barium	166	1102	959	99%
Cadmium	ND	9.33	9.60	96%
Chromium	1.14	39.8	45.5	85%
Lead	ND	40.0	45.5	88%
Mercury	ND	1.92	2.00	96%
Selenium	ND	10.3	9.60	108%
Silver	ND	36.0	45.5	79%

SAMPLE ID: 960375

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	8.5	55.3	45.5	105%
Barium	1036	1889	959	99%
Cadmium	0.42	11.1	9.60	112%
Chromium	29.1	59.5	45.5	73%
Lead	10.9	38.1	45.5	62%
Mercury	ND	2.03	2.00	101%
Selenium	ND	9.47	9.60	99%
Silver	ND	39.1	45.5	86%

NOTE: Spike recoveries for Cr and Pb for Sample 960375 are below acceptance criteria due to matrix interference.

Reported By: mh

Approved By: [Signature]

Date: 10/5/90

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, METHOD BLANK ANALYSIS

04/24/96 METHOD BLANK

Analyte	Found Value ($\mu\text{g/L}$)	Detection Level ($\mu\text{g/L}$)
Arsenic	ND	25
Barium	ND	500
Cadmium	ND	0.5
Chromium	ND	1
Lead	ND	4
Mercury	ND	0.24 *
Selenium	ND	5
Silver	ND	0.4

04/25/96 METHOD BLANK

Analyte	Found Value ($\mu\text{g/L}$)	Detection Level ($\mu\text{g/L}$)
Arsenic	ND	25
Barium	ND	500
Cadmium	ND	0.5
Chromium	ND	1
Lead	11	4
Mercury	ND	0.24 *
Selenium	ND	5
Silver	ND	0.4

ND: Not Detected at stated detection level.

NA: Not Applicable.

NOTE: All detection levels except Hg are 5X MDL.

Hg detection level is based on a Practical Quantitation Level (PQL) of 10X MDL.

To: John Lambdin

Date: April 6, 1996

From: Dennis Bird

Place: Laboratory Services

Subject: Aztec Pipeline Pit Monitor Wells

On Thursday, April 11, 1996, I went to the Aztec Pipeline and sampled the following pit monitor wells. The following analytical parameters are to be performed on these groundwater samples: BTXE, 8 RCRA Metals, General Chemistry to include Nitrate as NO3 and Dissolved Oxygen. The samples were assigned the laboratory numbers 960330 to 960334. The dissolved oxygen results were taken at the time of sampling with a ChemMets kit. The Field Service Laboratory will be performing all of the analysis.

The following information was collected on each well.

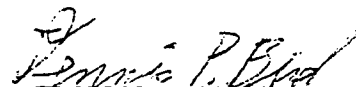
Well Name	Monitor Well#	Pipe ID	Static Level	Total Depth	Gallons Bailed	Dissolved Oxygen	
960330	Johnston Fed. #6A	MW-1	4"	37.48'	51.20'	30.0	1.5 ppm
960331	Johnston Fed. #6A	MW-2	4"	37.47'	46.90'	20.0	1.0 ppm
960332	Johnston Fed. #6A	MW-3	4"	37.17'	47.70'	25.0	1.5 ppm
960334	Johnston Fed. #6A	MW-4	4"	37.42'	50.00'	25.0	1.5 ppm

A field duplicate was collected on monitor well MW-3

not entered in DATA BASE

All bailing and sampling was done with disposable, one time use equipment and bottles. All samples were preserved on ice immediately after collection. The static level and total depth was measured from the top of the pipe.

Should you have any question or comments, please let me know.


Dennis P. Bird

cc: Nancy Prince
Sandra Miller

Sando 4-2nd Qtr



A 2507

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date: 7-23-96		Type and No. of Sample Containers		Preservation Technique	
Date	Time	Comp.	GRAB	Sample Number			
7-23-96	1501		X	960643	G-2	X	JOHNSTON FEDERAL #6A MW-1 MC 899332
7-23-96	1618		X	960644	G-2	X	JOHNSTON FEDERAL #6A MW-2 MC 899332
7-23-96	---		X	---	G-1	X	TRIP BLANK
[Diagonal line across remaining rows]							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Dennis Bird		7-23-96 1752					
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Remarks:	
				M. J. [Signature]		7/24/96 0815	
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)			
Air Bill No.:							

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960643
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-1
METER CODE:	89232
SAMPLE DATE:	07/23/96
SAMPLE TIME (Hrs):	1501
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/24/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	676	D (X5)	10
TOLUENE	1980	D (X5)	740
ETHYL BENZENE	233	D (X5)	750
TOTAL XYLENES	2090	D (X5)	620
SURROGATE % RECOVERY	89.8	Allowed Range 80 to 120 %	

NOTES:

The "D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By:

mh

Approved By:

John Lander

Date:

8/14/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960644
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnson Federal #6A MW-2
METER CODE:	89232
SAMPLE DATE:	07/23/96
SAMPLE TIME (Hrs):	1618
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/24/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	<1.0		10
TOLUENE	1.15		740
ETHYL BENZENE	<1.0		750
TOTAL XYLENES	4.06		620
SURROGATE % RECOVERY	88.3	Allowed Range 80 to 120 %	

NOTES:



Well Development and Purging Data

Well Number 24

Meter Code 89732

Site Name JOHNSTON FEDERAL #8A

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) 51.20

Initial Depth to Water (feet) 37.55

Height of Water Column in Well (feet) 13.65

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			27.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

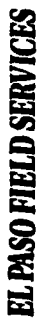
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments	Comments
DOE OF HYDROCARBON SECON. STRONG HYDROCARBON SECON.	

Developer's Signature Dennis Bird Date 7-23-96 Reviewer JR Date 8/14/96



Well Development and Purging Data

Well Number NW-2
Meter Code 89232

Site Name JOHNSTON FEDERAL #8A

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) 46.40
Initial Depth to Water (feet) 37.80
Height of Water Column In Well (feet) 9.30
Diameter (inches): Well 4 Gravel Pack

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			18.7
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other W.P.C.

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments

Developer's Signature
Dennis Bird

Date 7-23-96 Reviewer [Signature]

Date 8/14/96

American Environmental Network, Inc.

AEN I.D. 607358



August 6, 1996

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

Project Name/Number: JOHNSTON FED.#8A MW-1 (NONE)

Attention: John Lambdin

On 07/25/96, American Environmental Network (NM), Inc., (ADHS License No. AZ0015) received a request to analyze aqueous sample(s). The sample(s) 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 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 : 07/25/96
PROJECT # : (NONE)
PROJECT NAME : JOHNSTON FED.#8A MW-1 REPORT DATE : 08/06/96

AEN ID: 607358

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	607358-01	960643	AQUEOUS	07/23/96

Johnston Federal #6A

Water Code # 89232

MW-71

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLE(S)</u>
AQUEOUS	1

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.

"FINAL REPORT FORMAT - SINGLE"

Accession: 607559
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 607358
Project Name: EPFS
Project Location: JOHNSTON FED.
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

Lab Id: 001
Client Sample Id: 607358-01
Sample Date/T: 23-JUL-96 1501
Received Date: 26-JUL-96

Batch: PAW133
Blank: B
Dry Weight %: N/A
Extraction Date: 27-JUL-96
Analysis Date: 29-JUL-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
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	3	1	
2-CHLOROANTHRACENE	%REC/SURR	81	28-138	
ANALYST	INITIALS	BV		

Comments:

American Environmental Network, Inc.

"Method Report Summary"

Accession Number: 607559
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 607358
Project Name: EPFS
Project Location: JOHNSTON FED.
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
607358-01	2-METHYLNAPHTHALENE	UG/L	3

"QC Report"

Title: Water Blank
Batch: PAW133
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: B Date Analyzed: 29-JUL-96 Date Extracted: 27-JUL-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	83	28-133
ANALYST	INITIALS	BV	

Comments:

Y
SPAC

"QC Report"

Title: Water Reagent
 Batch: PAW133
 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: 29-JUL-96
 RSD Date Analyzed: 29-JUL-96

RS Date Extracted: 26-JUL-96
 RSD Date Extracted: 26-JUL-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	Rec Lmts
ACENAPHTHYLENE	10.0	<1	7.8	78	6.0	60	26	46-110
BENZO (k) FLUORANTHENE	10.0	<1	9.1	91	7.6	76	18	30-128
CHRYSENE	10.0	<1	9.1	91	7.6	76	18	29-129
PHENANTHRENE	10.0	<1	8.8	88	7.2	72	20	28-116
PYRENE	10.0	<1	7.8	78	6.8	68	14	26-120

Surrogates:
 2-CHLOROANTHRACENE 88 77 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.

8/2/96

"QC Report"

Title: Water Matrix
Batch: PAW133
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: 607531-3

MS Date Analyzed: 29-JUL-96
MSD Date Analyzed: 29-JUL-96

MS Date Extracted: 26-JUL-96
MSD Date Extracted: 26-JUL-96

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	7.1	71	6.9	69	3	42	14-135
BENZO(k) FLUORANTHENE	10.0	<1	7.8	78	5.6	56	33	58	25-142
CHRYSENE	10.0	<1	8.2	82	7.8	78	3	51	3-176
PHENANTHRENE	10.0	<1	8.5	85	8.2	82	4	55	27-146
PYRENE	10.0	<1	7.5	76	7.4	74	3	47	15-157

Surrogates:
2-CHLOROANTHRACENE 83 83 28-143

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.

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)

ATI/GC/FID

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

ATI/GC/FIX

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

ATI/GC/FPD

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

ATI/GC/PID

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

ATI/GC/TCD

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

SW - STEVE WILHITE
PL - PAUL LESCHENSKY
RW - ROBERT WOLFE
BV - BEN VAUGHN
BC - BETH COLEMAN
KS - KENDALL SMITH
KK - KERRY KUST
DWB - DAVID W. BOWERS
RP - ROB PEREZ
JBT - JENNIFER TORRANCE



Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 7-23-96 PAGE 1 OF 1

ATLAB ID: 607558

PROJECT MANAGER: JOHN CAMBOLIN

COMPANY: EL PASO FIELD SERVICE CO.

ADDRESS: P.O. Box 4990

PHONE: (505) 579-2144

FAX: (505) 579-2261

BILL TO: SAME AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

960643 7-23-96 1501 WATER -21

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
Chlorinated Hydrocarbons (601/8010)	
Aromatic Hydrocarbons (602/8020)	
SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	
Pesticides/PCB (808/8080)	
Herbicides (815/8150)	
Base/Neutral/Acid Compounds GC/MS (825/8270)	
Volatile Organics GC/MS (824/8240)	
Polynuclear Aromatics (810/8310)	X
SDWA Primary Standards - Arizona	
SDWA Secondary Standards - Arizona	
SDWA Primary Standards - Federal	
SDWA Secondary Standards - Federal	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	

NUMBER OF CONTAINERS

2

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.: NO. CONTAINERS: 2

PROJ. NAME: THURSTON FLD. BY: M. J. CUSTODY SEALS: Y INDOOR

P.O. NO.: RECEIVED INTACT: Y

SHIPPED VIA: FEDEX RECEIVED COULD: 8

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☒ 1 WEEK (NORMAL) ☐ 2 WEEK

Comments: CHARGE #

6138-6113-6115-98002-515

LOW LEVEL BEVED (A) PAYMENT < 0.7 PPG

SAMPLED & RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

RELINQUISHED BY: 3.

Signature: Dennis Brix Time: 1757

Printed Name: DENNIS BRIX Date: 7-23-96

Company: EL PASO FIELD SERVICE

Signature:

Printed Name:

Company:

Signature:

Printed Name:

Company:

RECEIVED BY: 1.

RECEIVED BY: 2.

RECEIVED BY (LAB): 3.

Signature:

Time:

Printed Name:

Date:

Company:

Signature:

Time:

Printed Name:

Date:

Company:

Signature:

Time:

Printed Name:

Date:

Company:

Sample 4 - 2nd Qtr



Natural Gas Company

A 2595

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date: 7-25-96		Preservation Technique			
Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Relinquished by: (Signature)	Received by: (Signature)
7-25-96	1125		X	960651	G-2	X	JOHN HUSTON FEB 28 1125 MC 87232
7-25-96	1238		X	960652	G-2	X	JOHN HUSTON FEB 28 1125 MC 87232
7-25-96	1523		X	960653	G-2	X	COLORADO A+H 1125 MC 73537
7-25-96	---		X	---	G-1	X	TRIP BLANK
[Diagonal line across the rest of the table]							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)			
Air Bill No.:		Remarks:					

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:

960651

SITE NAME:

Aztec Pipeline

SAMPLE SITE:

Johnston Fed #6A MW-3

METER CODE:

89232

SAMPLE DATE:

07/25/96

SAMPLE TIME (Hrs):

1125

SAMPLED BY:

D. Bird

DATE OF BTEX ANALYSIS:

07/30/96

SAMPLE TYPE:

Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	687	D (x10)	10
TOLUENE	112	D (x10)	740
ETHYL BENZENE	115	D (x10)	750
TOTAL XYLENES	209	D (x10)	620
SURROGATE % RECOVERY	88.7	Allowed Range 80 to 120 %	

NOTES:

"D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By:

mda

Approved By:

John F. ...

Date:

8/14/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960652
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Johnston Fed #6A MW-4
METER CODE:	89232
SAMPLE DATE:	07/25/96
SAMPLE TIME (Hrs):	1238
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/30/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	793	D (x5)	10
TOLUENE	96.4	D (x2)	740
ETHYL BENZENE	172	D (x2)	750
TOTAL XYLENES	174	D (x2)	620
SURROGATE % RECOVERY	100.5	Allowed Range 80 to 120 %	

NOTES:

D* Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By: mda

Approved By: John Loefer

Date: 8/14/96



Well Development and Purging Data

Well Number MW-3
Meter Code 89232

Site Name JOHNSTON FEDERAL #6A

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 47.70
Initial Depth to Water (feet) 37.30
Height of Water Column in Well (feet) 10.40

☒ Conductivity Meter
☒ Temperature Meter
☒ Other 0.0. CHEMETS KIT

Methods of Development

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

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments _____

Developer's Signature Dennis Biesch Date 7-25-96 Reviewer JS Date 8/14/96



Well Development and Purging Data

Well Number 9W-4
Meter Code 89232

☐	Development
☒	Purging

Site Name JOHNSTON FEDERAL #8A

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) 50.00
 Initial Depth to Water (feet) 37.54
 Height of Water Column in Well (feet) 12.46

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			25.0
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments

Developer's Signature Dennis Bird Date 7-25-96 Reviewer J Date 8/14/96



CHAIN OF CUSTODY RECORD

Meter Code # 89232

Project No.		Project Name		Total No. of Containers		Chain of Custody Seals		Intact?		Requested Analysis		Contract Laboratory	
Samplers: (Signature)		Date		Receiving Temp. (°F)		Composite or Grab		See Attached		BTX		EL PASO FIELD SERVICE	
Dennis Bird		10-15-96										770 WEST MADRID	
Lab ID	Date	Time	Matrix	Sample Number									Remarks
	10-14-96	1243	WATER	960851	2								JOHNSTON FED. #8A MW-1
	10-14-96	1410	WATER	960852	2								JOHNSTON FED. #8A MW-2
	10-14-96	1513	WATER	960853	2								JOHNSTON FED. #8A MW-3
	10-14-96	1637	WATER	960854	2								JOHNSTON FED. #8A MW-4
	10-14-96	---	WATER	---	1								TRIP BLANK

Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time		Received by: (Signature)			
Dennis Bird		10-15-96 0908											
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: (Signature)		Remarks:		Date/Time		Date/Time		Date Results Reported / by: (Signature)	
				M. J. Papp		10/15/96 1600							
Results & Invoices to:													



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960851
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-1
SAMPLE DATE TIME (Hrs):	10/14/96	1243
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/15/96	10/15/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1790	PPB	10	D		
TOLUENE	8350	PPB	20	D1		
ETHYL BENZENE	580	PPB	10	D		
TOTAL XYLENES	6200	PPB	10	D		
TOTAL BTEX	16920	PPB				

—BTEX is by EPA Method 8020 —

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

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

The Surrogate Recovery was at 97.9 % for this sample All QA/QC was acceptable.

Narrative: _____

= Dilution Factor Used

Approved By: John Lander

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960852
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-2
SAMPLE DATE TIME (Hrs):	10/14/96	1410
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/15/96	10/15/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	1.04	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	4.85	PPB				
TOTAL BTEX	5.89	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 93.8 % for this sample All QA/QC was acceptable.
Narrative: _____

_____ = Dilution Factor Used

Approved By: John L. Smith

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960853
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-3
SAMPLE DATE TIME (Hrs):	10/14/96	1513
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/15/96	10/15/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	900	PPB	5	D		
TOLUENE	240	PPB	5	D		
ETHYL BENZENE	140	PPB	5	D		
TOTAL XYLENES	340	PPB	5	D		
TOTAL BTEX	1620	PPB				

—BTEX is by EPA Method 8020 —

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

The Surrogate Recovery was at 93.8 % for this sample All QA/QC was acceptable.

Narrative: _____

DF = Dilution Factor Used

Approved By: John Lutch

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960854
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-4
SAMPLE DATE TIME (Hrs):	10/14/96	1637
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/16/96	10/16/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	800	PPB	5	D		
TOLUENE	100	PPB	5	D		
ETHYL BENZENE	130	PPB	5	D		
TOTAL XYLENES	235	PPB	5	D		
TOTAL BTEX	1265	PPB				

-BTEX is by EPA Method 8020 -

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

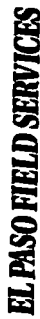
The Surrogate Recovery was at 93.8 % for this sample All QA/QC was acceptable.

Narrative: _____

DF = Dilution Factor Used

Approved By: John Swick

Date: 10-21-96



Well Number MW-1
Meter Code 89232

Site Name JOHNSTON FEDERAL ~~SA~~

Development Criteria

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

Methods of Development

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

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 51.20
Initial Depth to Water (feet) 32.73
Height of Water Column in Well (feet) 18.48

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		8.9	26.7
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	0.15' OF FREE FLOATING HYDROCARBON. STRONG HYDROCARBON SMELL
----------	--

Developer's Signature Gennie Bivsh Date 10-14-96 Reviewer John Sarda Date 10-21-96



Well Development and Purging Data

Well Number 11W-2
Meter Code 89732

Site Name JOHNSTON FEDERAL #6A

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) 46.90
Initial Depth to Water (feet) 37.70
Height of Water Column in Well (feet) 9.2

Diameter (Inches): Well 4 Gravel Pack

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 0.25

Water Disposal

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments:

Developer's Signature Dennis Birch

Date 10-14-96 Reviewer _____

John L. Litch

Date 10-21-96



Well Development and Purging Data

Well Number MW-3
Meter Code 89232

Site Name JOHNSTON FEDERAL #1A

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) 47.70
Initial Depth to Water (feet) 33.40
Height of Water Column in Well (feet) 10.3

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.8	20.4
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

Developer's Signature Dennis Bird Date 10-14-96 Reviewer John Luth Date 10-21-96



Well Number MW-4
Meter Code 89232

Site Name JOHNSTON FEDERAL #8A

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

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

Initial Depth of Well (feet) 50.00
Initial Depth to Water (feet) 32.64
Height of Water Column In Well (feet) 13.36
Diameter (Inches): Well 4 Gravel Pack

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

Water Disposal

KOTZ SEPARATOR

[illegible]

Developer's Signature Dennis Bird Date 10-14-96 Reviewer John Fentler Date 10-21-96



A 1989

[illegible]



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970013
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-1
SAMPLE DATE TIME (Hrs):	01/22/97	1134
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/23/97	1/23/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	6420	PPB	50	D		
TOLUENE	19800	PPB	100	D		
ETHYL BENZENE	934	PPB	50	D		
TOTAL XYLENES	10700	PPB	50	D		
TOTAL BTEX	37900	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 97.3 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

Narrative: _____

Approved By: _____

John Lavelle

Date: _____

1-29-97



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970014
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-2
SAMPLE DATE TIME (Hrs):	01/22/97	1305
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/24/97	1/24/97
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				

—BTEX is by EPA Method 8020—

The Surrogate Recovery was at 89.8 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Lamberti

Date: 1-29-97



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID N/A	Lab ID 970015
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-3
SAMPLE DATE TIME (Hrs):	01/22/97	1508
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/23/97	1/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	907	PPB	10	D		
TOLUENE	234	PPB	10	D		
ETHYL BENZENE	215	PPB	10	D		
TOTAL XYLENES	340	PPB	10	D		
TOTAL BTEX	1700	PPB				

—BTEX is by EPA Method 8020—

The Surrogate Recovery was at 97.5 % 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 Lambert

Date: _____

1-29-97



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970016
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-4
SAMPLE DATE TIME (Hrs):	01/22/97	1540
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/24/97	1/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	759	PPB	5	D		
TOLUENE	17.8	PPB	5	D		
ETHYL BENZENE	131	PPB	5	D		
TOTAL XYLENES	142	PPB	5	D		
TOTAL BTEX	1050	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 89.6 % 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 Landa

Date:

1-29-97



Well Number 9W-1
Meter Code 89232

Site Name JOHNSTON FEDERAL #6A

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) 57.20
Initial Depth to Water (feet) 38.26
Height of Water Column in Well (feet) 18.94

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		8.6	25.7
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

10/21/2012 5:09 PM

Water Removal Data

[illegible]

Comments 0.93' OF FREE FLOATING HYDROCARBON. STRONG HYDROCARBON SMELL.

Developer's Signature Dennis Bird Date 1-22-97 Reviewer John Fubler Date 1-29-97



Well Development and Purging Data

Well Number MW-2
Meter Code 89232

Site Name JOHNSTON FEDERAL #6A

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) 4690
Initial Depth to Water (feet) 37.66
Height of Water Column in Well (feet) 9.24
Diameter (Inches): Well 4 Gravel Pack

Diameter (Inches): Well 4 Gravel Pack

Instruments

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

Water Disposal

KOTZ SEPARATOR

Water Removal Data

[illegible]

Comments

Committee _____
Developer's Signature Dennis Bird Date 1-22-97 Reviewer John Lumb Date 1-29-97



John Fambolin Date 1-29-97



Date 1-29-97



CHAIN OF CUSTODY RECORD

SAMPLE 4 - 5th Qtr

10/15/15

CHAIN OF CUSTODY RECORD

Project No.	Project Name		Date		Type and No. of Sample Containers		Preservation Technique		Requested Analysis		Remarks
Samplers: (Signature)	Date	Time	Comp.	GRAB	Sample Number						
<i>Denise Bied</i>	4-10-97	1337		X	970262	G-2	40C	X	X	X	JOHNSTON FED. #6A MW-1 MC 87932
	4-10-97	1452		X	970263	G-2	40C	X	X	X	JOHNSTON FED. #6A MW-2 MC 87932
	4-10-97	1612		X	970264	G-2	40C	X	X	X	JOHNSTON FED. #6A MW-3 MC 87932
	4-10-97	1641		X	970265	G-2	40C	X	X	X	JOHNSTON FED. #6A MW-4 MC 87932
	4-10-97			X	TRIP BLANK	G-1	40C	X	X		TRIP BLANK
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
<i>Denise Bied</i>		4-10-97 1848									
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: (Signature)		Date/Time		Remarks:			
				<i>William E. Dwyer</i>		4/10/97 0740					
Carrier Co:		Air Bill No.:		Date Results Reported / by: (Signature)							



6-3-97

FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970262
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-1
SAMPLE DATE TIME (Hrs):	4/10/97	1337
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/14/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7310	PPB	50	D		
TOLUENE	23500	PPB	50	D,D1		
ETHYL BENZENE	1010	PPB	50	D		
TOTAL XYLENES	10800	PPB	50	D		
TOTAL BTEX	42600	PPB				

The Surrogate Recovery was at 100 % 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.

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

Narrative:

Approved By:

John L. Linder

Date:

4/23/97



6-3-97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970262
DATE SAMPLED:	04/10/97
TIME SAMPLED (Hrs):	1337
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	89232
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Johnson Federal #6A MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.0	Units	04/18/97
Alkalinity as CO ₃	0.0	PPM	04/18/97
Alkalinity as HCO ₃	357	PPM	04/18/97
Calcium as Ca	516	PPM	04/19/97
Magnesium as Mg	53	PPM	04/19/97
Total Hardness as CaCO ₃	1,505	PPM	04/19/97
Chloride as Cl	22	PPM	04/11/97
Sulfate as SO ₄	1,576	PPM	04/11/97
Fluoride as F	0.8	PPM	04/18/97
Nitrate as NO ₃ -N	<0.1	PPM	04/11/97
Nitrite as NO ₂ -N	<0.1	PPM	04/11/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/19/97
Phosphate as PO ₄	<0.1	PPM	04/11/97
Potassium as K	1.3	PPM	04/19/97
Sodium as Na	173	PPM	04/19/97
Total Dissolved Solids	2,690	PPM	04/19/97
Calculated TDS	2,517	PPM	04/19/97
Conductivity	2,960	umhos/cm	04/11/97
Anion/Cation %	2.2%	%, <5.0 Accepted	04/21/97

Remarks:

Reported By: mh

Approved By: John L. Lard

Date: 4/23/97



EL PASO FIELD SERVICES



6-3-97

FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970263
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-2
SAMPLE DATE TIME (Hrs):	4/10/97	1452
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/14/97
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 103 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John Latch

Date: _____

4/23/97



Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970263
DATE SAMPLED:	04/10/97
TIME SAMPLED (Hrs):	1452
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	89232
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Johnson Federal #6A MW-2

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.4	Units	04/18/97
Alkalinity as CO ₃	0	PPM	04/18/97
Alkalinity as HCO ₃	161	PPM	04/18/97
Calcium as Ca	510	PPM	04/19/97
Magnesium as Mg	55	PPM	04/19/97
Total Hardness as CaCO ₃	1,501	PPM	04/19/97
Chloride as Cl	28	PPM	04/11/97
Sulfate as SO ₄	1,750	PPM	04/11/97
Fluoride as F	1.0	PPM	04/18/97
Nitrate as NO ₃ -N	0.9	PPM	04/11/97
Nitrite as NO ₂ -N	<0.1	PPM	04/11/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/19/97
Phosphate as PO ₄	<0.1	PPM	04/11/97
Potassium as K	1.7	PPM	04/19/97
Sodium as Na	182	PPM	04/19/97
Total Dissolved Solids	2,750	PPM	04/19/97
Calculated TDS	2,608	PPM	04/19/97
Conductivity	3,030	umhos/cm	04/11/97
Anion/Cation %	2.6%	%, <5.0 Accepted	04/21/97

Remarks:

Reported By: mh

Approved By:

John F. Lark

Date:

4/23/97



EL PASO FIELD SERVICES



6-3-97

FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970264
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-3
SAMPLE DATE TIME (Hrs):	4/10/97	1612
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/14/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	944	PPB	10	D		
TOLUENE	209	PPB	10	D		
ETHYL BENZENE	223	PPB	10	D		
TOTAL XYLENES	322	PPB	10	D		
TOTAL BTEX	1700	PPB				

The Surrogate Recovery was at 99.9 % 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 Leach

Date:

4/23/97



EL PASO FIELD SERVICES



6-3-97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970264
DATE SAMPLED:	04/10/97
TIME SAMPLED (Hrs):	1612
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	89232
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Johnson Federal #6A MW-3

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.2	Units	04/18/97
Alkalinity as CO_3	0	PPM	04/18/97
Alkalinity as HCO_3	468	PPM	04/18/97
Calcium as Ca	505	PPM	04/19/97
Magnesium as Mg	55	PPM	04/19/97
Total Hardness as CaCO_3	1,489	PPM	04/19/97
Chloride as Cl	24	PPM	04/11/97
Sulfate as SO_4	1,460	PPM	04/11/97
Fluoride as F	0.6	PPM	04/18/97
Nitrate as $\text{NO}_3\text{-N}$	<0.1	PPM	04/11/97
Nitrite as $\text{NO}_2\text{-N}$	<0.1	PPM	04/11/97
Ammonium as NH_4^+	<0.2	PPM	04/19/97
Phosphate as PO_4	0.2	PPM	04/11/97
Potassium as K	1.3	PPM	04/19/97
Sodium as Na	174	PPM	04/19/97
Total Dissolved Solids	2,590	PPM	04/19/97
Calculated TDS	2,451	PPM	04/19/97
Conductivity	2,940	umhos/cm	04/11/97
Anion/Cation %	1.9%	%, < 5.0 Accepted	04/21/97

Remarks:

Reported By: mh

Approved By: John Lubich

Date: 4/23/97



6-3-97

FIELD SERVICES LABORATORY

ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970265
MTR CODE SITE NAME:	89232	Johnston Fed #6A MW-4
SAMPLE DATE TIME (Hrs):	4/10/97	1841
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/11/97	4/14/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	703	PPB	10	D		
TOLUENE	20.1	PPB	10	D		
ETHYL BENZENE	149	PPB	10	D		
TOTAL XYLENES	138	PPB	10	D		
TOTAL BTEX	1010	PPB				

The Surrogate Recovery was at 101 % 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: _____

4/23/97



6-3-97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970265
DATE SAMPLED:	04/10/97
TIME SAMPLED (Hrs):	1641
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	89232
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Johnson Federal #6A MW-4

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	8.1	Units	04/18/97
Alkalinity as CO ₃	0	PPM	04/18/97
Alkalinity as HCO ₃	385	PPM	04/18/97
Calcium as Ca	518	PPM	04/19/97
Magnesium as Mg	55	PPM	04/19/97
Total Hardness as CaCO ₃	1,519	PPM	04/19/97
Chloride as Cl	22	PPM	04/11/97
Sulfate as SO ₄	1,560	PPM	04/11/97
Fluoride as F	0.7	PPM	04/18/97
Nitrate as NO ₃ -N	<0.1	PPM	04/11/97
Nitrite as NO ₂ -N	<0.1	PPM	04/11/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/19/97
Phosphate as PO ₄	0.1	PPM	04/11/97
Potassium as K	1.0	PPM	04/19/97
Sodium as Na	173	PPM	04/19/97
Total Dissolved Solids	2,650	PPM	04/19/97
Calculated TDS	2,519	PPM	04/19/97
Conductivity	2,990	umhos/cm	04/11/97
Anion/Cation %	2.0%	%, < 5.0 Accepted	04/21/97

Remarks:

Reported By: mh

Approved By: John Latch

Date: 4/23/97



Well Number 14W-1
Meter Code 89733

Site Name JOHNSTON FEDERAL #A

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

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

Initial Depth of Well (feet) 57.20
Initial Depth to Water (feet) 32.31
Height of Water Column in Well (feet) 12.89

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		8.5	25.6
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal
KUTZ SEPARATOR

[illegible]

Comments
1.11' OF FREE FLOATING HYDROCARBON. STRONG HYDROCARBON SMELL.

Developer's Signature Kennie Bird Date 4-10-97 Reviewer Jhu-Jah Date 4/17/97



Well Number NW-2
Meter Code 89232

Site Name JOHNSTON FEDERAL #6A

☒	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

☐ Other _____

Initial Depth of Well (feet) 46.90
Initial Depth to Water (feet) 37.58
Height of Water Column in Well (feet) 9.32

Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.2	187.5
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal
KUTZ SEPARATOR

[illegible]

Comments

Developer's Signature Dennis Bird Date 4-10-97 Reviewer John Funder Date 4/17/97



Well Number NW-3
Meter Code 89232

Site Name JOHNSTON FEDERAL #8A

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 47.70
Initial Depth to Water (feet) 37.29
Height of Water Column in Well (feet) 10.41

Diameter (Inches): Well 4 Gravel Pack.

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.9	29.6
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal
KUTZ SEPARATOR

Water Removal Data

[illegible]

Comments:

Developer's Signature Bernie Bied Date 4-10-97 Reviewer John Feller Date 4/17/97



Well Number 11W-4
Meter Code 89232

Site Name **JEHUSTON FEDERAL #819**

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

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

Initial Depth of Well (feet) 54.00
Initial Depth to Water (feet) 37.47
Height of Water Column in Well (feet) 12.53

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		8.3	24.8
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal

KUTZ SEPARATOR

[illegible]

Developer's Signature Donna Birch

Date 4-10-97

John Stock Date 4/17/97