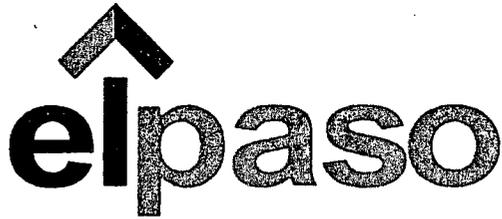


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Final 2006 Annual Report  
Federal Sites (Volume 1)

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2006 ANNUAL GROUNDWATER REPORT  
FEDERAL SITES VOLUME I

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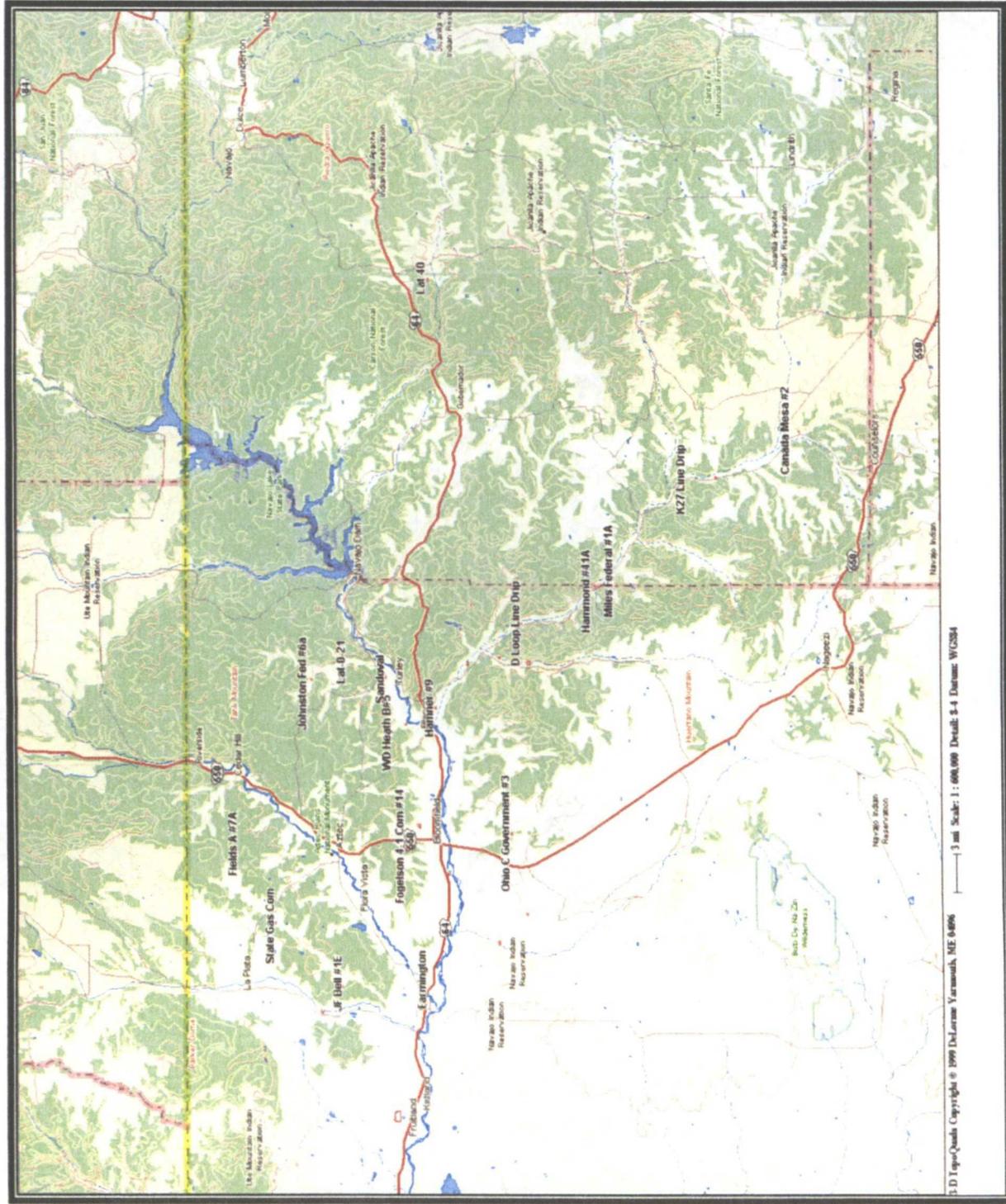
TABLE OF CONTENTS

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
89961	Fields A#7A	32N	11W	34	E
89232	Johnston Fed #6A	31N	09W	35	F
94715	James F. Bell #1E	30N	13W	10	P
89620	Sandoval GC A #1A	30N	09W	35	C
LD151	Lat 0-21 Line Drip	30N	09W	12	O
73220	Fogelson 4-1 Com. #14	29N	11W	4	P
97213	Hamner #9	29N	09W	20	A
LD174	LAT L 40	28N	04W	13	H
89894	Hammond #41A	27N	08W	25	O
94810	Miles Fed 1A	26N	07W	5	F
LD072	K27 LD072	25N	06W	4	E
87640	Canada Mesa #2	24N	06W	24	I
70194	Johnston Fed #4	31N	09W	33	H



MWH

# Federal Groundwater Site Map



## LIST OF ACRONYMS

B	benzene
btoc	below top of casing
E	ethylbenzene
EPTPC	El Paso Tennessee Pipeline Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitoring well
PSH	phase-separated hydrocarbons
NMWQCC	New Mexico Water Quality Control Commission
T	toluene
TOC	top of casing
NA	not applicable
NE	not established
NM	not measured
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
ppb	parts per billion
µg/L	micrograms per liter
X	total xylenes

**EPTPC GROUNDWATER SITES  
2006 ANNUAL GROUNDWATER REPORT**

**Fogelson 4-1 Com #14  
Meter Code: 73220**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b> 29N	<b>Range:</b> 11W	<b>Sec:</b> 4	<b>Unit:</b> P
<b>NMOCD Haz Ranking:</b> 10	<b>Land Type:</b>	Federal	<b>Operator:</b> Burlington Resources	

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	3/94	<b>Excavation:</b>	4/94 (65cy)	<b>Soil Boring:</b>	10/95
<b>Monitor Well:</b>	10/95	<b>Geoprobe:</b>	12/96	<b>Additional MWs:</b>	6/00
<b>Downgradient MWs:</b>	6/00	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	12/96
<b>ORC Nutrient Injection:</b>	8/01	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	NA
<b>Annual Initiated:</b>	6/98	<b>Quarterly Resumed:</b>	NA		

**SUMMARY OF 2006 ACTIVITIES**

**MW-1:** Annual groundwater sampling and dissolved oxygen measurements were collected in November 2006. Oxygen releasing compound (ORC) socks were replaced during November 2006.

**MW-2:** Annual water level monitoring was performed in November 2006.

**MW-3:** Annual water level monitoring was performed in November 2006.

**Site-Wide Activities:** No other activities were performed at this site during 2006.

**SITE MAPS**

A site map (November) is attached as Figure 1.

**SUMMARY TABLES AND GRAPHS**

- Analytical data from 2006 are included in Table 1, and historic data are presented graphically in Figures 2 through 4.
- The 2006 laboratory report is presented in Attachment 1 (included on CD).
- Field documentation is presented in Attachment 2 (included on CD).

**EPTPC GROUNDWATER SITES  
2006 ANNUAL GROUNDWATER REPORT**

**Fogelson 4-1 Com #14  
Meter Code: 73220**

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**GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS**

No subsurface activities were performed at this site during 2006.

**DISPOSITION OF GENERATED WASTES**

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station.

**ISOCONCENTRATION MAPS**

No isoconcentration maps were prepared for this site; however, the attached site map presents both water level and analytical data collected during 2006.

**CONCLUSIONS**

- The groundwater flow direction generally is to the west.
- The benzene concentration in MW-1 continued to decrease from 401 µg/L in 2003, to 206 µg/L in 2006, but increased slightly from 174 µg/L in 2005 and remained above NMWQCC standards. Historically, benzene concentrations in MW-1 have decreased significantly from 1,520 µg/L in 1995, when sampling was initiated.
- The dissolved oxygen concentration in MW-1 was 0.67 mg/L in November, indicating either that oxygen from the ORC socks was being utilized in the process of enhanced natural biodegradation or that the socks were due for replacement.
- Long-term decreasing BTEX concentrations at the site indicate that natural attenuation is occurring.

**RECOMMENDATION**

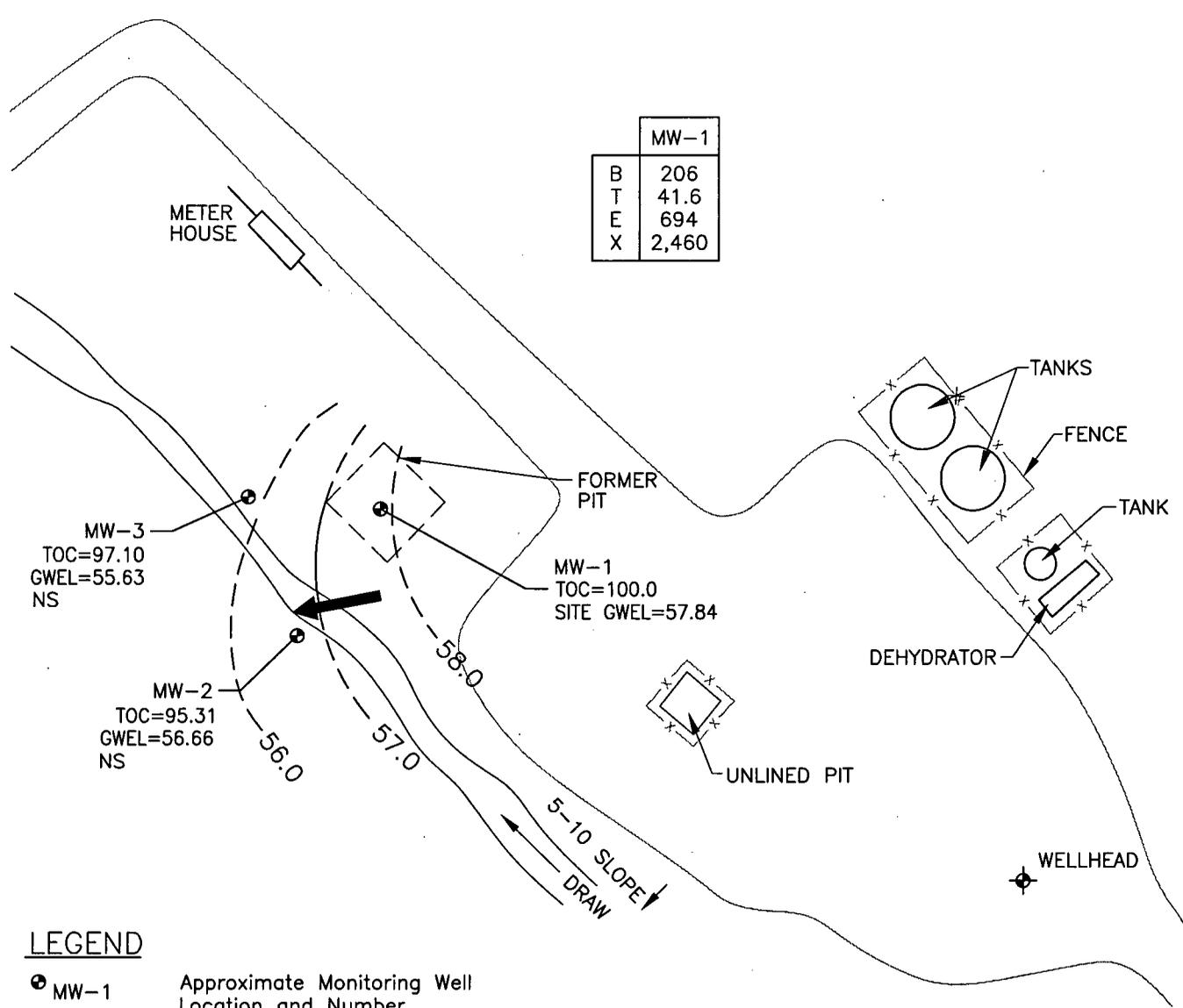
- EPTPC will continue the use of ORC socks in MW-1 to enhance biodegradation of dissolved-phase contaminants. The ORC socks will continue to be replaced annually.
- In order to assess the effectiveness of the ORC socks in MW-1, EPTPC will conduct semi-annual groundwater sampling at MW-1. ORC sock use will be re-evaluated based on these results.
- EPTPC will measure the dissolved oxygen concentrations in MW-2 and MW-3 in conjunction with semi-annual sampling at MW-1 to assess the effectiveness of the ORC socks in MW-1.
- Because BTEX sampling at MW-2 and MW-3 have historically indicated concentrations less than closure criteria, EPTPC recommends that these wells not be sampled until closure.

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES  
FOGELSON 4-1 COM #14 (METER #73220)

Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet btoc)
Fogelson 4-1 Com. #14	11/6/1995	MW-1	1520	1050	907	9180	39.99
Fogelson 4-1 Com. #14	12/6/1996	MW-1	1110	388	713	7730	40.74
Fogelson 4-1 Com. #14	3/10/1997	MW-1	1240	318	850	9050	41.23
Fogelson 4-1 Com. #14	6/6/1997	MW-1	1080	268	747	7700	41.44
Fogelson 4-1 Com. #14	3/30/1998	MW-1	1070	522	789	8430	41.08
Fogelson 4-1 Com. #14	6/4/1998	MW-1	1090	627	837	8880	41.02
Fogelson 4-1 Com. #14	6/15/1999	MW-1	1000	550	770	7800	41.88
Fogelson 4-1 Com. #14	6/19/2000	MW-1	790	280	1100	9300	40.17
Fogelson 4-1 Com. #14	10/2/2000	MW-1	580	600	950	8000	40.22
Fogelson 4-1 Com. #14	12/5/2000	MW-1	420	610	770	6000	40.09
Fogelson 4-1 Com. #14	5/30/2001	MW-1	340	470	710	4800	40.54
Fogelson 4-1 Com. #14	11/26/2001	MW-1	420	330	760	3400	41.00
Fogelson 4-1 Com. #14	5/15/2002	MW-1	430	230	900	6000	41.37
Fogelson 4-1 Com. #14	11/4/2002	MW-1	625	370	862	5210	41.90
Fogelson 4-1 Com. #14	5/21/2003	MW-1	339	296	723	4730	41.57
Fogelson 4-1 Com. #14	11/15/2003	MW-1	401	308	755	4700	41.00
Fogelson 4-1 Com. #14	11/16/2004	MW-1	185	59.9	550	2800	40.10
Fogelson 4-1 Com. #14	11/8/2005	MW-1	174	34.3	675	2440	40.68
Fogelson 4-1 Com. #14	11/8/2006	MW-1	206	41.6	694	2460	40.20
Fogelson 4-1 Com. #14	7/27/2000	MW-2	1	1	8.8	1	38.25
Fogelson 4-1 Com. #14	5/30/2001	MW-2	1	1	7.5	1	3817.00
Fogelson 4-1 Com. #14	5/15/2002	MW-2	1	1	2	1	38.56
Fogelson 4-1 Com. #14	7/27/2000	MW-3	27	35	170	520	41.21
Fogelson 4-1 Com. #14	5/30/2001	MW-3	1.3	1	40	2.8	40.77
Fogelson 4-1 Com. #14	5/15/2002	MW-3	0.64	1	17	1.2	4114.00
Fogelson 4-1 Com. #14	5/21/2003	MW-3	1	1	18.2	1	41.71

	MW-1
B	206
T	41.6
E	694
X	2,460



**LEGEND**

- ⊙ MW-1      Approximate Monitoring Well Location and Number
- NS          Not Sampled
- x-x-x-      Fence Line
- 56.0        Potentiometric Surface (Assumed Where Dashed)
- ➔          Direction of Groundwater Flow (Estimated)
- B          Benzene (μg/L)
- T          Toluene (μg/L)
- E          Ethylbenzene (μg/L)
- X          Total Xylenes (μg/L)
- GWEL      Groundwater Elevation (Relative Elevation)
- TOC        Top of Casing
- <          Not Detected. Value Shown is Reporting Limit.

NOT TO SCALE

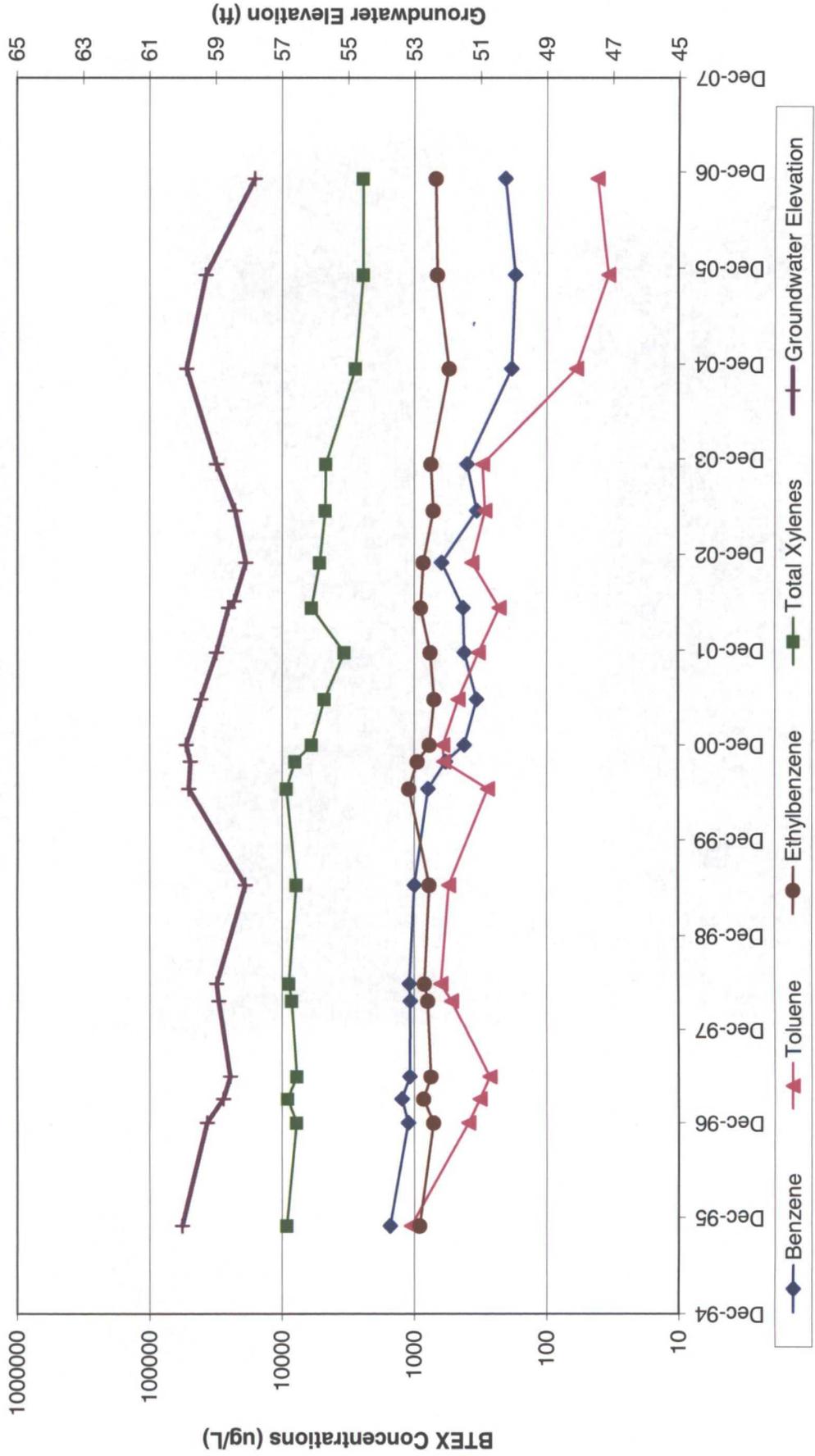
Fig1\_fogelson\_November2006.dwg

FOGELSON 4-1 COM #14, METER 73220  
NOVEMBER 2006

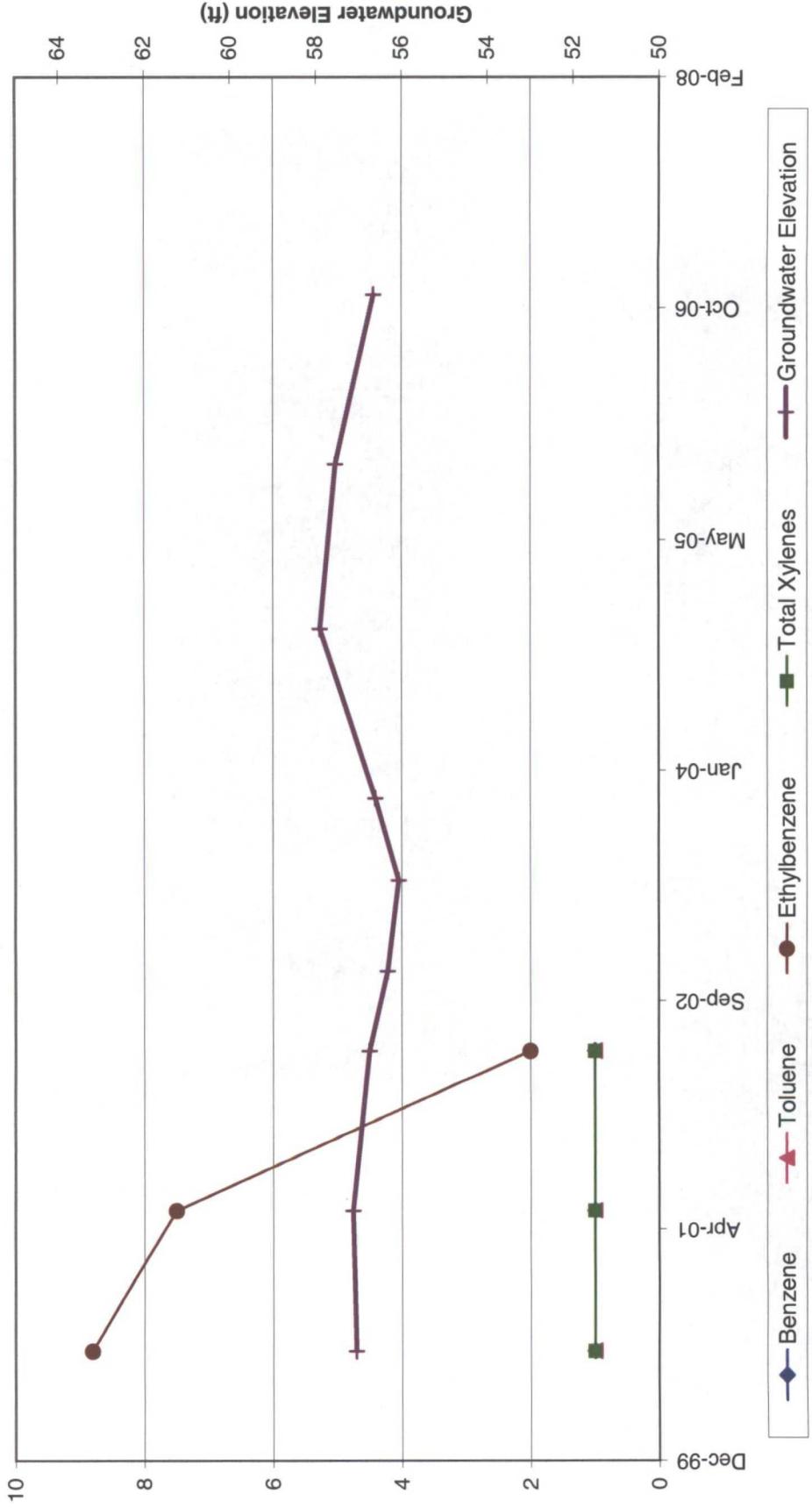
GROUNDWATER SITES  
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

**FIGURE 2**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**FOGELSON 4-1 COM #14**  
**MW-1**

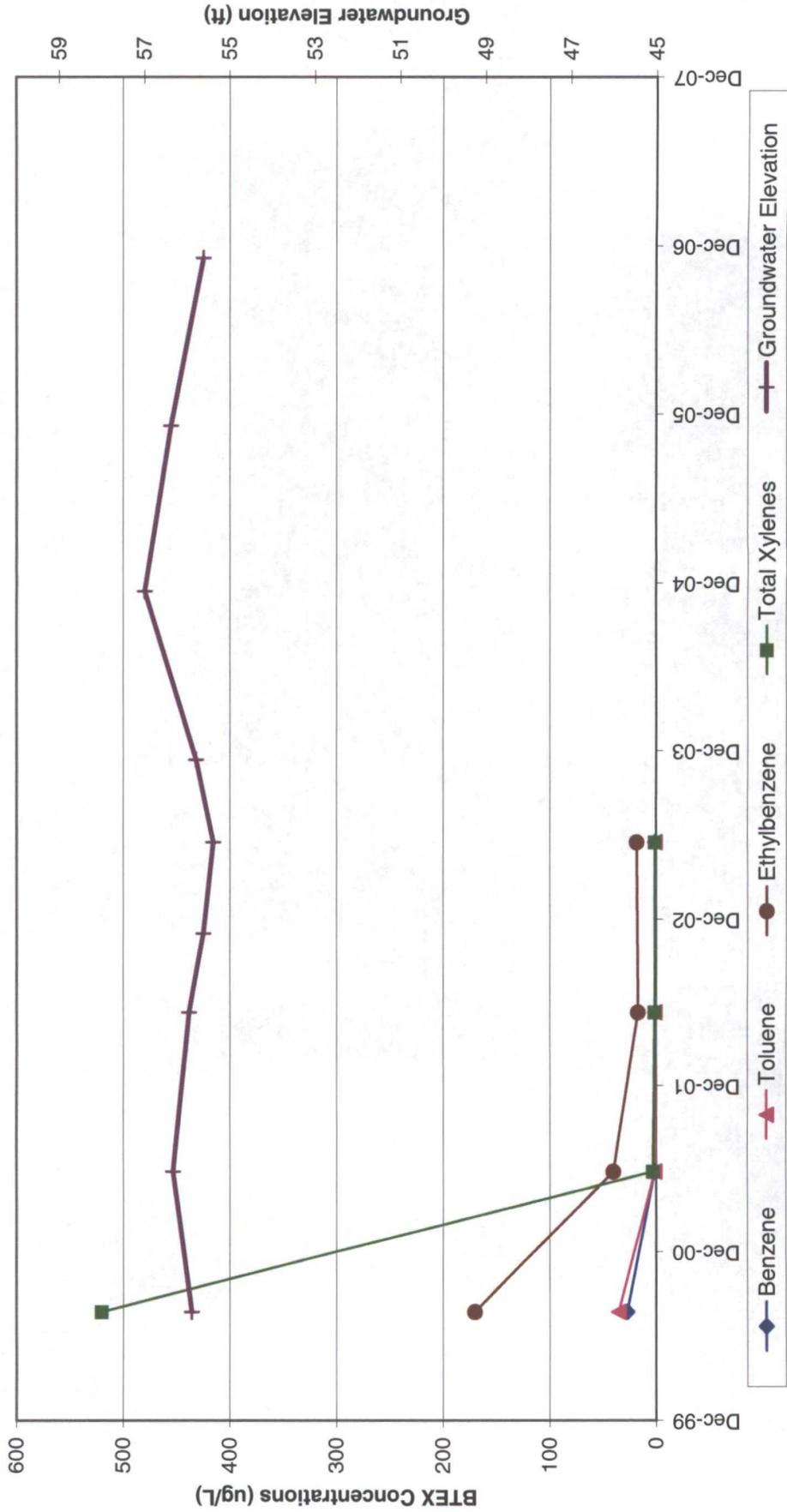


**FIGURE 3**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**FOGELSON 4-1 COM #14**  
**MW-2**



Note: A value of 1 indicated parameter not detected.

**FIGURE 4**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**FOGELSON 4-1 COM #14**  
**MW-3**



Note: A value of 1 indicated parameter not detected.