

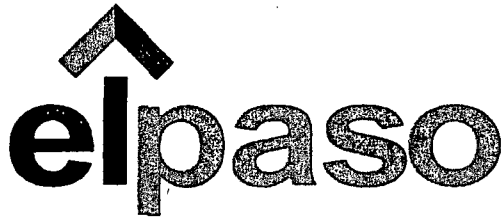
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El Paso Tennessee  
Pipeline Company

San Juan Basin Pit Program  
Groundwater Sites Project

Final 2006 Annual Report  
Federal Sites (Volume 1)

March 2007



**MWH**

1801 California Street, Suite 2900  
Denver, Colorado 80202

**2006 ANNUAL GROUNDWATER REPORT  
FEDERAL SITES VOLUME I**

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**EL PASO TENNESSEE PIPELINE COMPANY**

**MAR 06 2007**

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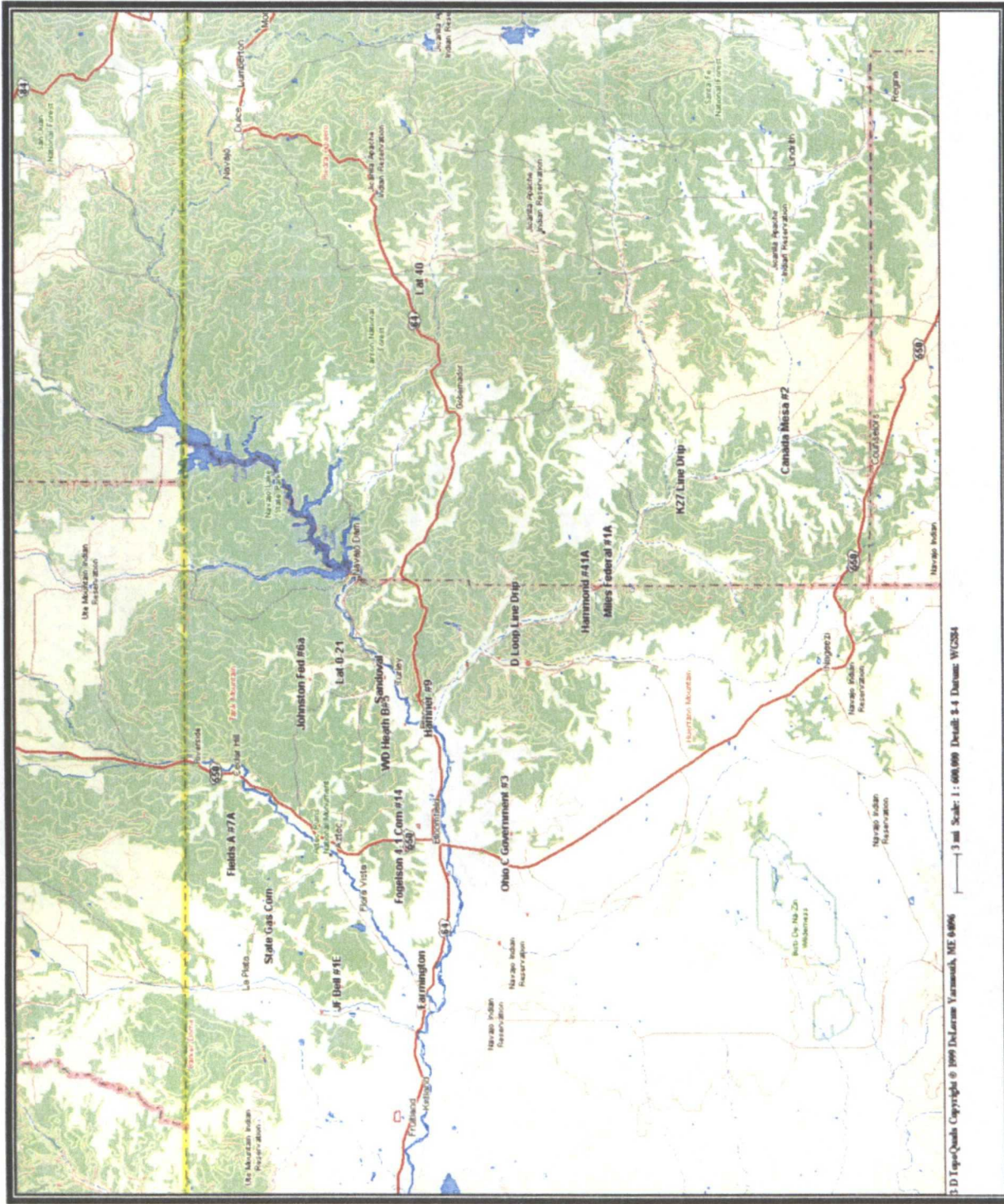
**TABLE OF CONTENTS**

<b>METER or LINE ID</b>	<b>SITE NAME</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>SECTION</b>	<b>UNIT</b>
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**

**Canada Mesa #2  
Meter Code: 87640**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b>	24N	<b>Range:</b>	6W	<b>Sec:</b>	24	<b>Unit:</b>	I
<b>NMOCD Haz Ranking:</b>	40	<b>Land Type:</b>	Federal	<b>Operator:</b>	Merrion Oil & Gas Company			

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	7/94	<b>Excavation:</b>	8/94	<b>Soil Boring:</b>	8/95
<b>Monitor Well:</b>	8/95	<b>Geoprobe:</b>	NA	<b>Additional MWs:</b>	10/00
<b>Downgradient MWs:</b>	10/00	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	8/95
<b>ORC Nutrient Injection:</b>	NA	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	8/97
<b>Annual Initiated:</b>	11/00	<b>Quarterly Resumed:</b>	NA		

**SUMMARY OF 2006 ACTIVITIES**

**MW-1:** Quarterly free-product recovery was conducted at this well in 2006.

**MW-2:** Annual groundwater sampling was performed in December 2006. Quarterly water level monitoring was performed.

**MW-3:** Annual groundwater sampling was performed in December 2006. Quarterly water level monitoring was performed.

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

**SITE MAPS**

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

**SUMMARY TABLES AND GRAPHS**

- Groundwater analytical data for 2006 are included in Table 1, and historic data are also presented graphically in Figures 2 through 4.
- Free-product recovery data for 2006 from MW-1 are included in Table 2 and are presented graphically in Figure 5.

**EPTPC GROUNDWATER SITES  
2006 ANNUAL GROUNDWATER REPORT**

**Canada Mesa #2  
Meter Code: 87640**

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- Laboratory Reports are presented in Attachment 1 (included on CD).
- Field documentation is presented in Attachment 2 (included on CD).

**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. Free-product is stored in a 55 gallon drum and periodically picked up by Mesa Oil for recycling.

**ISOCONCENTRATION MAPS**

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

**CONCLUSIONS**

- The groundwater flow direction is generally to the east at this site.
- Approximately 2.55 gallons of free-product was recovered from MW-1 in 2006, bringing the cumulative total recovered to approximately 44.8 gallons.
- Benzene concentrations in MW-2 have been steadily decreasing from 3,200 µg/L in 2000 to 5.3 µg/L in December 2006.
- The benzene concentration in MW-3 increased from 482 µg/L in December 2005 to 679 µg/L in December 2006. Overall the concentration has decreased significantly from a high of 1,430 µg/L in 2002. Toluene, ethylbenzene and total xylenes concentrations were below standards.

**RECOMMENDATIONS**

- EPTPC will continue quarterly free-product recovery efforts at MW-1; however, the frequency of monitoring may be adjusted based on the amount of product recovered during the monitoring visits.
- EPTPC will continue sampling MW-2 and MW-3 on an annual basis.
- Once free-product recovery efforts are completed at MW-1, this well will be sampled on an annual basis until sample results approach closure criteria. All wells will then be scheduled for quarterly sampling until closure criteria are met.

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER  
CANADA MESA #2 (METER #87640)

Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
Canada Mesa #2	11/4/1996	MW-1	5520	8880	469	3920	34.42
Canada Mesa #2	2/5/1997	MW-1	3450	5200	214	1770	34.35
Canada Mesa #2	5/7/1997	MW-1	4650	8440	317	2580	34.24
Canada Mesa #2	11/16/2000	MW-2	3200	330	1200	1100	34.90
Canada Mesa #2	3/19/2002	MW-2	22	1	150	14	35.36
Canada Mesa #2	12/24/2002	MW-2	121	21	129	16.4	35.52
Canada Mesa #2	12/15/2003	MW-2	10	11.7	55.3	29.7	35.63
Canada Mesa #2	12/15/2004	MW-2	6.3	3.8	8	5.9	35.79
Canada Mesa #2	12/15/2005	MW-2	12.1	30.9	5.6	61.9	35.85
Canada Mesa #2	12/26/2006	MW-2	5.3	5	1.8	7.1	35.63
Canada Mesa #2	11/16/2000	MW-3	880	1300	420	3700	34.46
Canada Mesa #2	3/19/2002	MW-3	1100	29	360	3700	34.92
Canada Mesa #2	12/24/2002	MW-3	1430	95	483	2359	35.15
Canada Mesa #2	12/15/2003	MW-3	503	79.7	148	891	35.17
Canada Mesa #2	12/15/2004	MW-3	410	54.9	88.7	420	35.33
Canada Mesa #2	12/15/2005	MW-3	482	32.7	74.1	399	35.4
Canada Mesa #2	12/26/2006	MW-3	679	78.9	106	565	35.16



TABLE 2

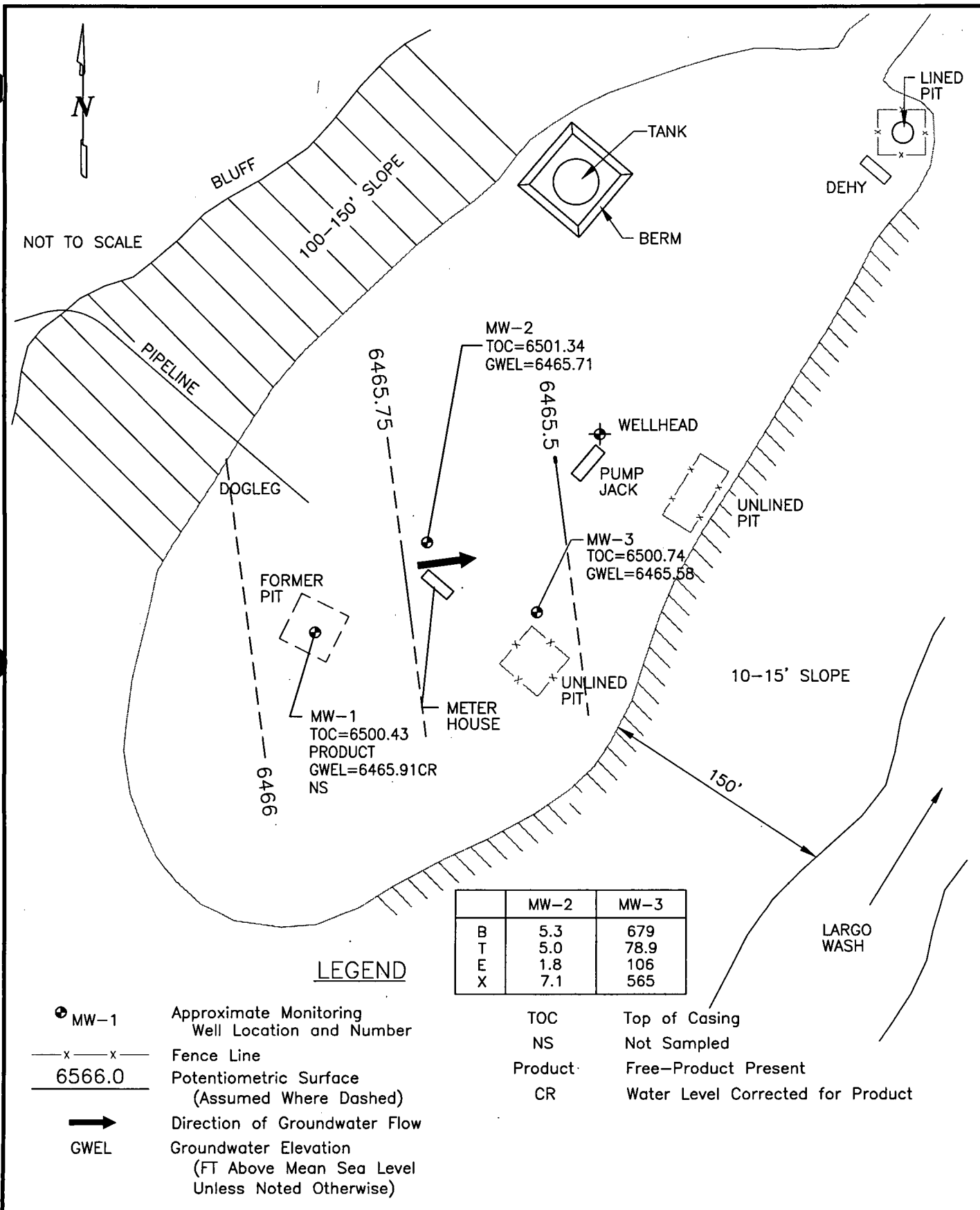
**SUMMARY OF FREE-PRODUCT REMOVAL DURING 2006  
CANADA MESA #2 (METER #87640)**

Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickness (feet)	Volume of Product Removed (gallons)	Cummulative Volume of Product Removed (gallons)
Canada Mesa #2	MW-1	10/6/00	33.82	34.11	0.29	0.50	27.23
Canada Mesa #2	MW-1	11/14/00	33.81	33.98	0.17	1.25	28.48
Canada Mesa #2	MW-1	1/3/01	33.83	33.96	0.13	1.00	29.48
Canada Mesa #2	MW-1	1/15/01	33.78	33.93	0.15	0.00	29.48
Canada Mesa #2	MW-1	1/22/01	33.81	33.81	0.00	0.25	29.73
Canada Mesa #2	MW-1	1/30/01	33.82	33.83	0.01	0.10	29.83
Canada Mesa #2	MW-1	2/13/01	33.8	33.8	0.00	0.25	30.08
Canada Mesa #2	MW-1	2/20/01	33.81	33.81	0.00	0.00	30.08
Canada Mesa #2	MW-1	2/28/01	33.81	33.81	0.00	0.00	30.08
Canada Mesa #2	MW-1	6/4/01	33.81	34.13	0.32	0.00	30.08
Canada Mesa #2	MW-1	7/3/01	33.96	34.09	0.13	1.00	31.08
Canada Mesa #2	MW-1	8/6/01	34.07	34.08	0.01	0.50	31.58
Canada Mesa #2	MW-1	8/20/01	34.09	34.1	0.01	0.50	32.08
Canada Mesa #2	MW-1	8/31/01	34.17	34.17	0.00	0.50	32.58
Canada Mesa #2	MW-1	9/14/01	34.13	34.14	0.01	2.02	34.6
Canada Mesa #2	MW-1	9/26/01	34.14	34.15	0.01	2.02	36.62
Canada Mesa #2	MW-1	10/2/01	34.15	34.17	0.02	0.00	36.62
Canada Mesa #2	MW-1	10/10/01	34.16	34.18	0.02	0.00	36.62
Canada Mesa #2	MW-1	12/5/01	34.25	34.26	0.01	0.02	36.64
Canada Mesa #2	MW-1	12/14/01	34.27	34.27	0.01	0.02	36.66
Canada Mesa #2	MW-1	12/21/01	34.24	34.24	0.00	0.00	36.66
Canada Mesa #2	MW-1	12/28/01	34.22	34.22	0.00	0.00	36.66
Canada Mesa #2	MW-1	1/2/02	34.23	34.23	0.00	0.00	36.66
Canada Mesa #2	MW-1	1/7/02	34.23	34.25	0.02	0.00	36.66
Canada Mesa #2	MW-1	1/23/02	34.37	34.42	0.05	0.01	36.67
Canada Mesa #2	MW-1	1/30/02	34.5	34.51	0.01	0.01	36.68
Canada Mesa #2	MW-1	2/7/02	34.49	34.5	0.01	0.00	36.68
Canada Mesa #2	MW-1	2/14/02	34.41	34.42	0.01	0.00	36.68
Canada Mesa #2	MW-1	2/20/02	34.99	35	0.01	0.00	36.68
Canada Mesa #2	MW-1	2/26/02	NA	34.25	0.00	0.00	36.68
Canada Mesa #2	MW-1	3/7/02	34.24	34.25	0.01	0.00	36.68
Canada Mesa #2	MW-1	3/12/02	34.24	34.25	0.01	0.00	36.68
Canada Mesa #2	MW-1	3/28/02	NA	34.27	0.00	0.01	36.69

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL DURING 2006  
CANADA MESA #2 (METER #87640)

Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickness (feet)	Volume of Product Removed (gallons)	Cummulative Volume of Product Removed (gallons)
Canada Mesa #2	MW-1	4/3/02	NA	34.26	0.00	0.00	36.69
Canada Mesa #2	MW-1	4/25/02	NA	34.45	0.00	0.00	36.69
Canada Mesa #2	MW-1	5/21/02	NA	34.3	0.00	0.00	36.69
Canada Mesa #2	MW-1	6/10/02	NA	34.32	0.00	0.00	36.69
Canada Mesa #2	MW-1	9/23/02	NA	34.496	0.00	0.00	36.69
Canada Mesa #2	MW-1	12/24/02	NA	NA	0.00	0.00	36.69
Canada Mesa #2	MW-1	3/25/03	NA	34.5	0.00	0.00	36.69
Canada Mesa #2	MW-1	6/22/03	34.48	34.55	0.07	0.05	36.74
Canada Mesa #2	MW-1	9/15/03	34.65	34.97	0.32	0.05	36.79
Canada Mesa #2	MW-1	12/15/03	34.41	34.98	0.57	1.25	38.04
Canada Mesa #2	MW-1	3/17/04	34.24	34.8	0.56	0.50	38.54
Canada Mesa #2	MW-1	6/3/04	34.3	34.44	0.14	0.25	38.79
Canada Mesa #2	MW-1	9/13/04	34.64	35.3	0.66	1.00	39.79
Canada Mesa #2	MW-1	12/15/04	34.74	35.32	0.58	0.25	40.04
Canada Mesa #2	MW-1	3/22/05	34.36	35.01	0.65	0.64	40.68
Canada Mesa #2	MW-1	6/24/05	34.39	34.97	0.58	0.50	41.18
Canada Mesa #2	MW-1	9/14/05	34.6	35.65	1.05	0.30	41.48
Canada Mesa #2	MW-1	12/14/05	34.74	35.05	0.31	0.80	42.28
Canada Mesa #2	MW-1	3/28/06	34.59	35.14	0.55	0.80	43.08
Canada Mesa #2	MW-1	6/7/06	34.52	35.11	0.59	0.75	43.83
Canada Mesa #2	MW-1	9/29/06	34.85	35.14	0.29	0.00	43.83
Canada Mesa #2	MW-1	12/26/06	34.44	34.85	0.41	1.00	44.83



CANADA MESA #2, METER 87640  
DECEMBER 2006

GROUNDWATER SITES  
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

FIGURE 2  
HISTORIC BTX CONCENTRATIONS AND GROUNDWATER ELEVATIONS  
CANADA MESA #2  
MW-1

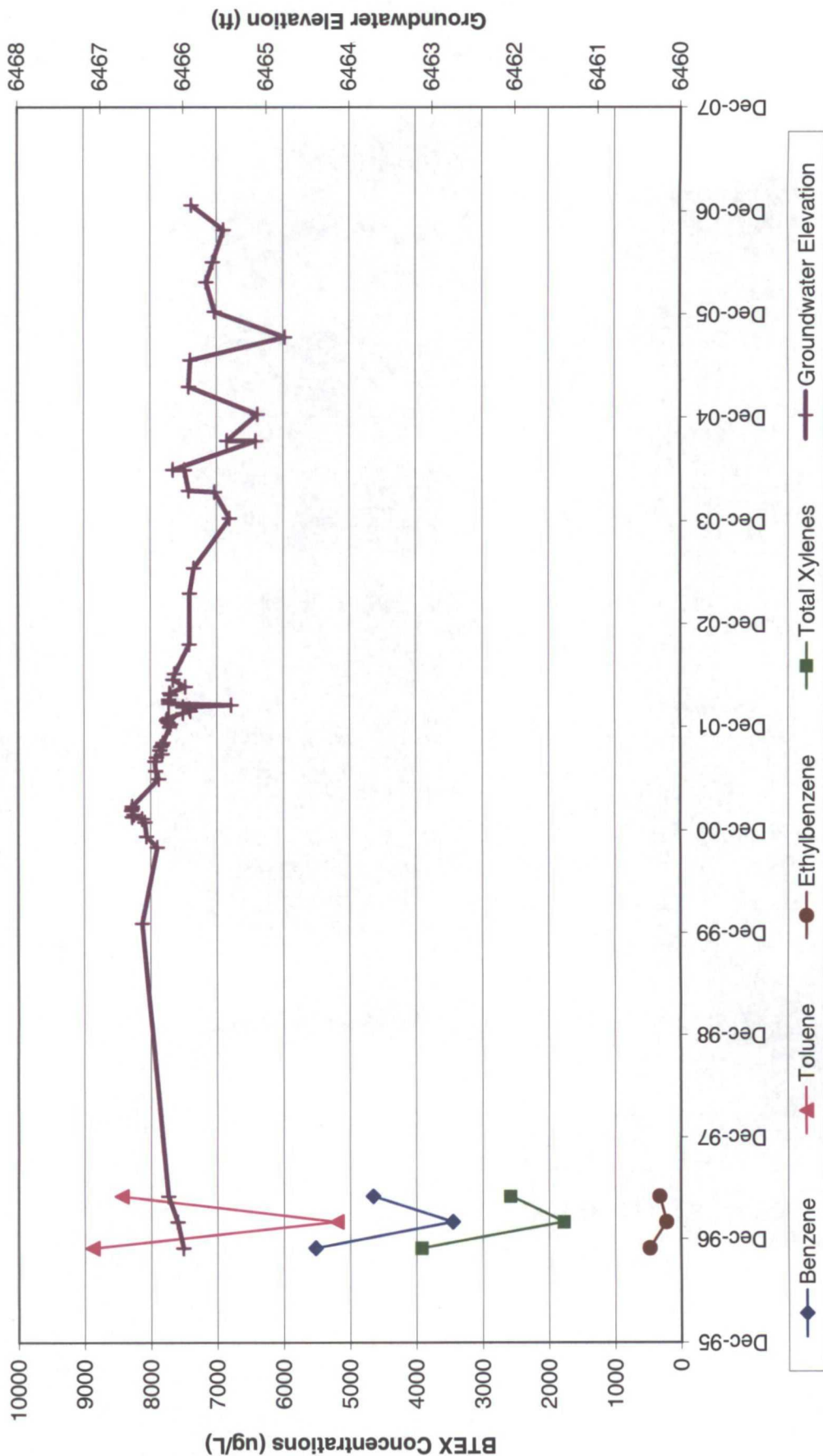


FIGURE 3  
HISTORIC BTX CONCENTRATIONS AND GROUNDWATER ELEVATIONS  
CANADA MESA #2  
MW-2

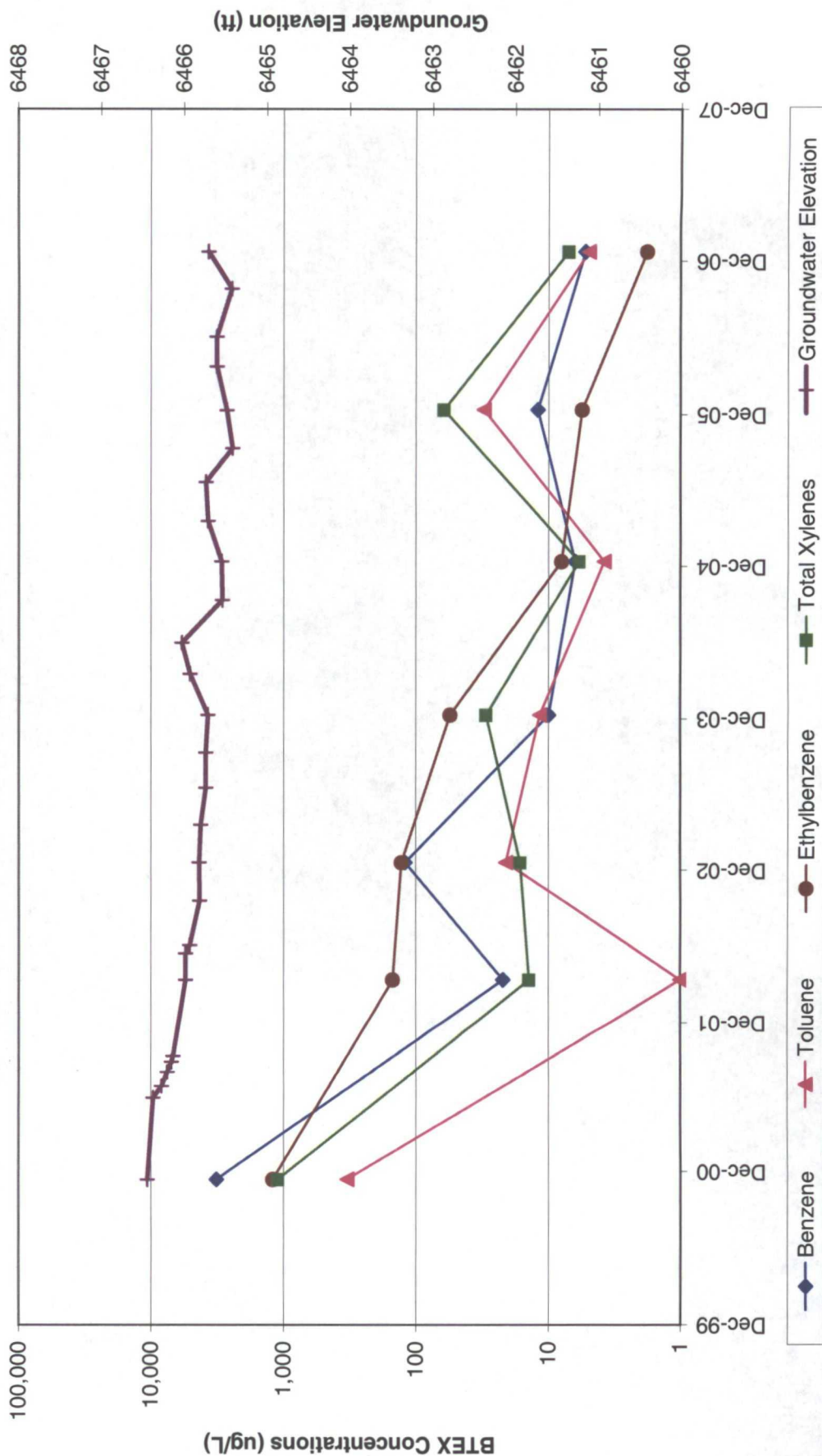
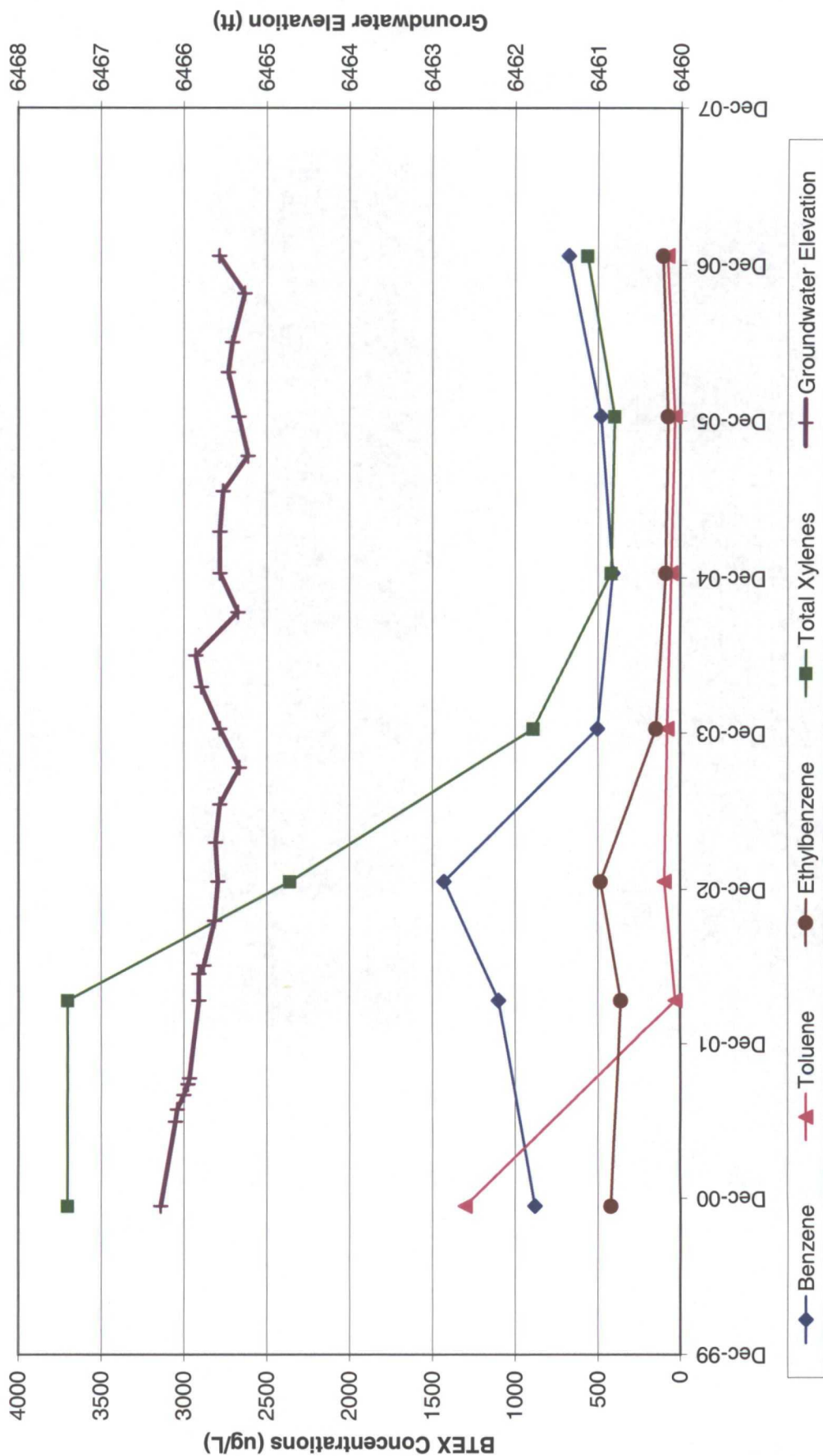


FIGURE 4  
HISTORIC BTX CONCENTRATIONS AND GROUNDWATER ELEVATIONS  
CANADA MESA #2  
MW-3





**FIGURE 5**  
**HISTORIC FREE-PRODUCT RECOVERY**  
**CANADA MESA #2**  
**MW-1**

