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ANNUAL
MONITORING
REPORTS

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**2005 ANNUAL GROUNDWATER REPORT
FEDERAL SITES VOLUME I**

EL PASO TENNESSEE PIPELINE COMPANY MAR 17 2006

**Oil Conservation Division
Environmental Bureau**

TABLE OF CONTENTS

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT	
89961	Fields A#7A	32N	11W	34	E	3R170
89232	Johnston Fed #6A	31N	09W	35	F	3R202
94715	James F. Bell #1E	30N	13W	10	P	3R196
89620	Sandoval GC A #1A	30N	09W	35	C	3R235
LD151	Lat 0-21 Line Drip	30N	09W	12	O	3R213
73220	Fogelson 4-1 Com. #14	29N	11W	4	P	3R068
97213	Hamner #9	29N	09W	20	A	3R190
LD174	LAT L 40	28N	04W	13	H	3R212
89894	Hammond #41A	27N	08W	25	O	3R186
94810	Miles Fed 1A	26N	07W	5	F	3R223
LD072	K27 LD072	25N	06W	4	E	3R204?
87640	Canada Mesa #2	24N	06W	24	I	3R155

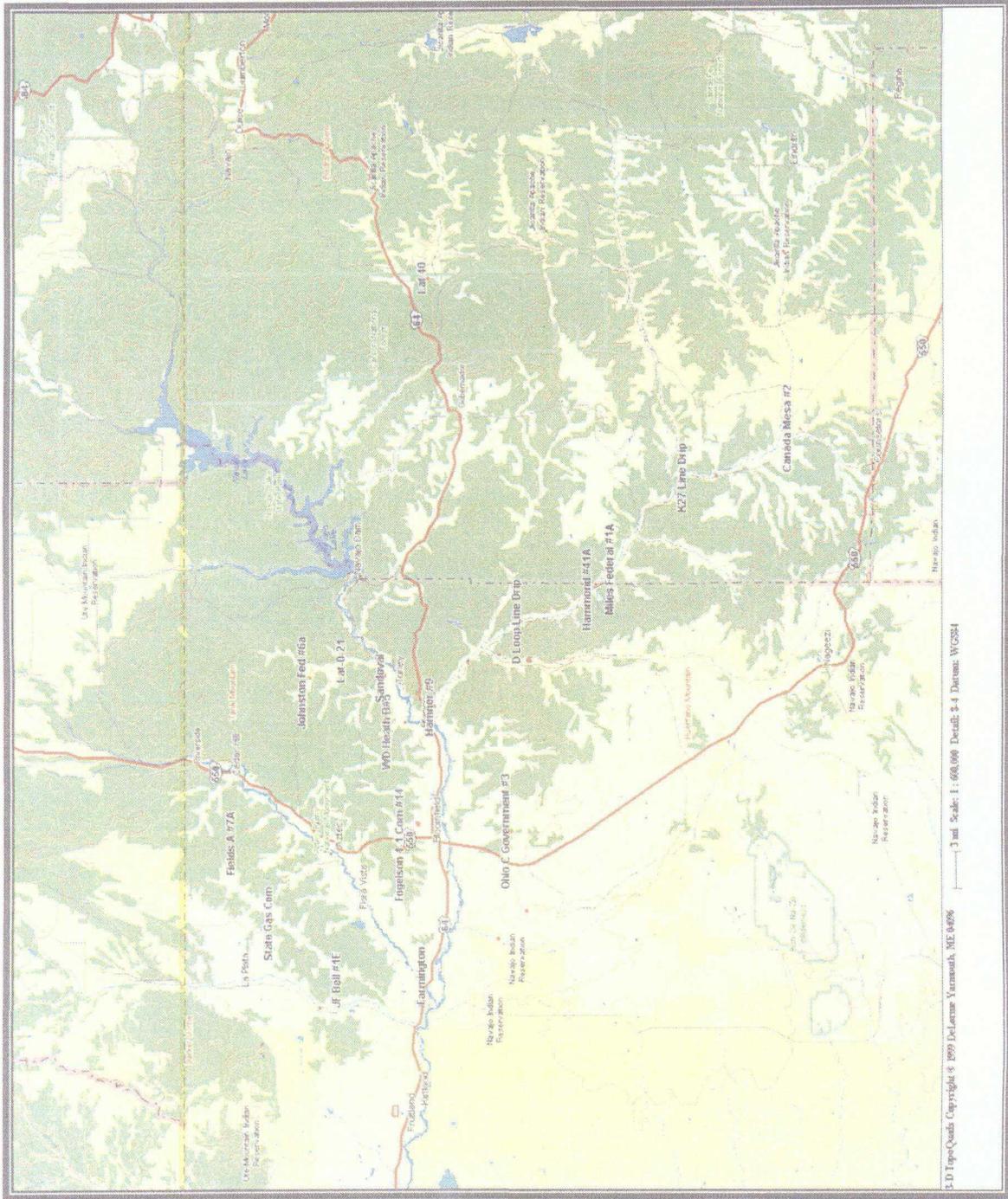


MWH
MONTGOMERY WATSON HARZA

LIST OF ACRONYMS

B	benzene
btoc	below top of casing
E	ethylbenzene
EPFS	El Paso Field Services
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

Federal Groundwater Site Map



3.0 TopoQuads Copyright © 1999 DeLorme, Vermont, ME 05496 3 mi. Scale: 1 : 600,000 Detail: 4 : 1 Datum: WGS84

EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT

3R190

Hamner #9
Meter Code: 97213

SITE DETAILS

Legal Description: Town: 29N Range: 9W Sec: 20 Unit: A
NMOCD Haz Ranking: 30 Land Type: Federal Operator: BP \ Amoco Production Company

PREVIOUS ACTIVITIES

Site Assessment: 5/94 Excavation: 5/94 Soil Boring: 8/95
Monitor Well: 8/95 Geoprobe: 8/96 Additional MWs: 9/99
Downgradient MWs: 9/99 Replace MW: NA Quarterly Initiated: 11/96
ORC Nutrient Injection: 11/02 Re-Excavation: NA PSH Removal Initiated: NA
Annual Initiated: 8/00 Quarterly Resumed: NA

SUMMARY OF 2005 ACTIVITIES

MW-1: Quarterly groundwater sampling and water level monitoring were performed in May, August, and November 2005.

MW-2: Quarterly water level monitoring was performed in May, August, and November 2005.

MW-3: Quarterly water level monitoring was performed May, August, and November 2005. Natural attenuation evaluation parameters were sampled in November 2005.

Site-Wide Activities: The need for additional investigation was evaluated. A plan was developed to gather additional information to include natural attenuation potential and an additional monitoring well to assess the extent of contamination. Right of way permits and access grant applications for groundwater monitoring well installation were also prepared for submittal in 2006.

SITE MAP

Site maps (May, August, November, and showing the location of MW-4) are attached in Figures 1, 2, 3, and 4.

**EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT**

**Hamner #9
Meter Code: 97213**

SUMMARY TABLES AND GRAPHS

- Analytical data from 2005 are summarized in Table 1, and historic data are shown graphically on Figures 5 through 7.
- 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 2005.

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 maps present both the groundwater level and analytical data collected during 2005.

CONCLUSIONS

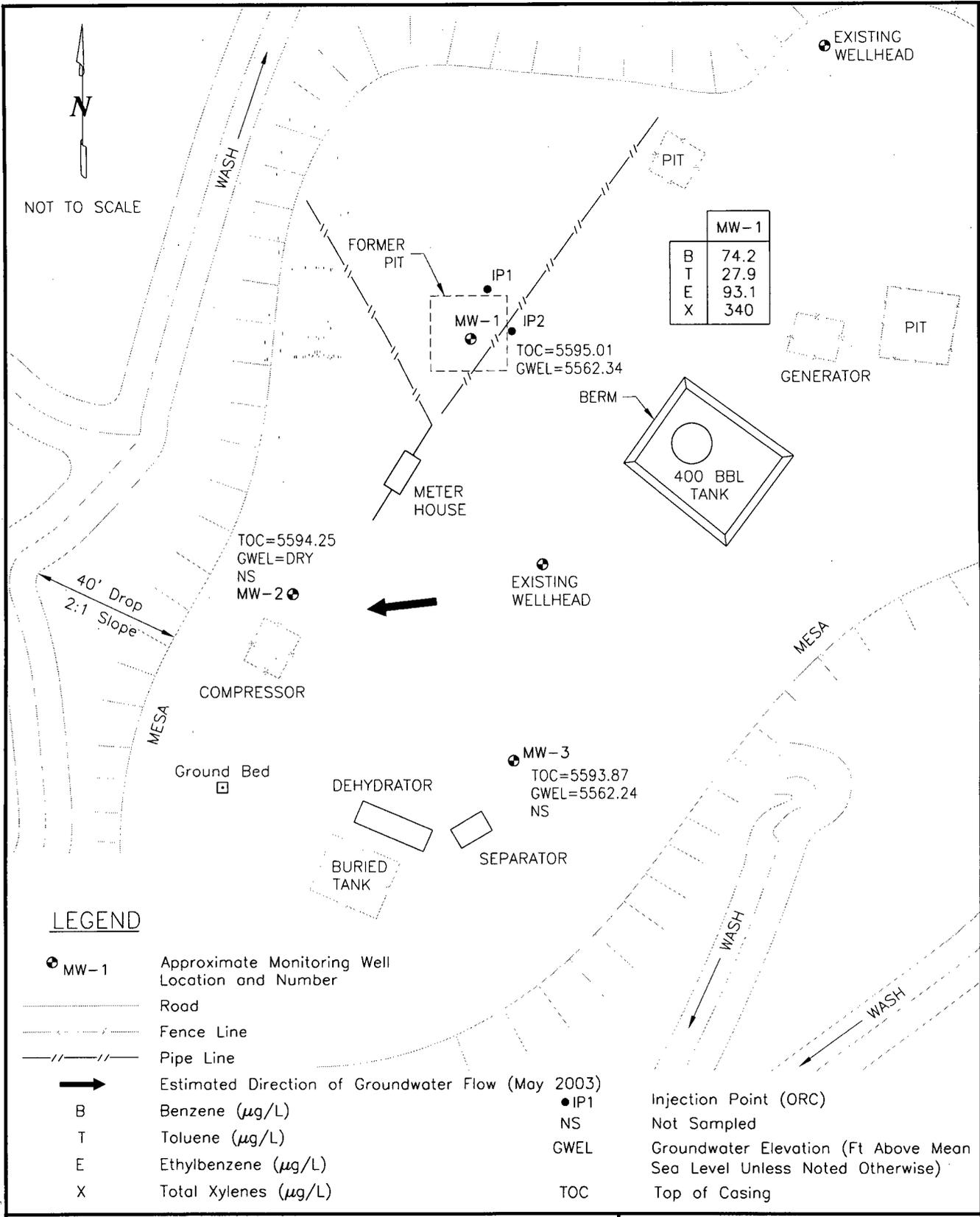
- The groundwater flow direction at this site is to the west, based on historic water level data from 2002 and 2003.
- Analytical results from samples collected at MW-1 indicate that benzene concentrations continued to decrease to concentrations of 74.0 µg/L, 28.6 µg/L, and 26.2 µg/L in May, August, and November 2005 respectively, down from a high concentration of 559 µg/L in 1996.
- Ethylbenzene, toluene, and total xylenes concentrations at MW-1 were below NMWQCC standards in 2005.
- In November 2002, oxygen releasing compound (ORC) slurry was injected into the subsurface near MW-1 (see maps for injection point locations). Following ORC injection in November 2002, the benzene concentrations in MW-1 have decreased from 72.5 µg/L in November 2002 to 26.2 µg/L in November 2005, indicating that enhanced natural attenuation is occurring in this location.
- MW-2 was dry during all three monitoring events in 2005.
- Results of the natural attenuation parameter sampling in November 2005 with a high concentration of sulfate (5,510 mg/L) indicate that conditions for natural attenuation are favorable at this site.

**EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT**

**Hamner #9
Meter Code: 97213**

RECOMMENDATIONS

- EPTPC will sample MW-1 quarterly. The well will continue to be sampled until BTEX concentrations are below NMWQCC standards for four, consecutive quarters, at which time this site will be submitted for closure.
- EPTPC will perform water level monitoring at MW-2 and MW-3, in conjunction with the sampling events at MW-1. Because four consecutive annual sampling events at MW-2 and MW-3 indicated BTEX concentrations below detection limits (1999 – 2002), EPTPC recommends that these wells be sampled at closure only.
- In order to assess the extent of contamination at the site and to verify groundwater flow direction, EPTPC will attempt to install monitoring well MW-1 downgradient of MW-1 (shown on Figure 4).
- If installation of MW-4 is successful, EPTPC will perform a slug test at this well to assess hydraulic conductivity. If installation of MW-4 is unsuccessful, MW-1 will be tested.

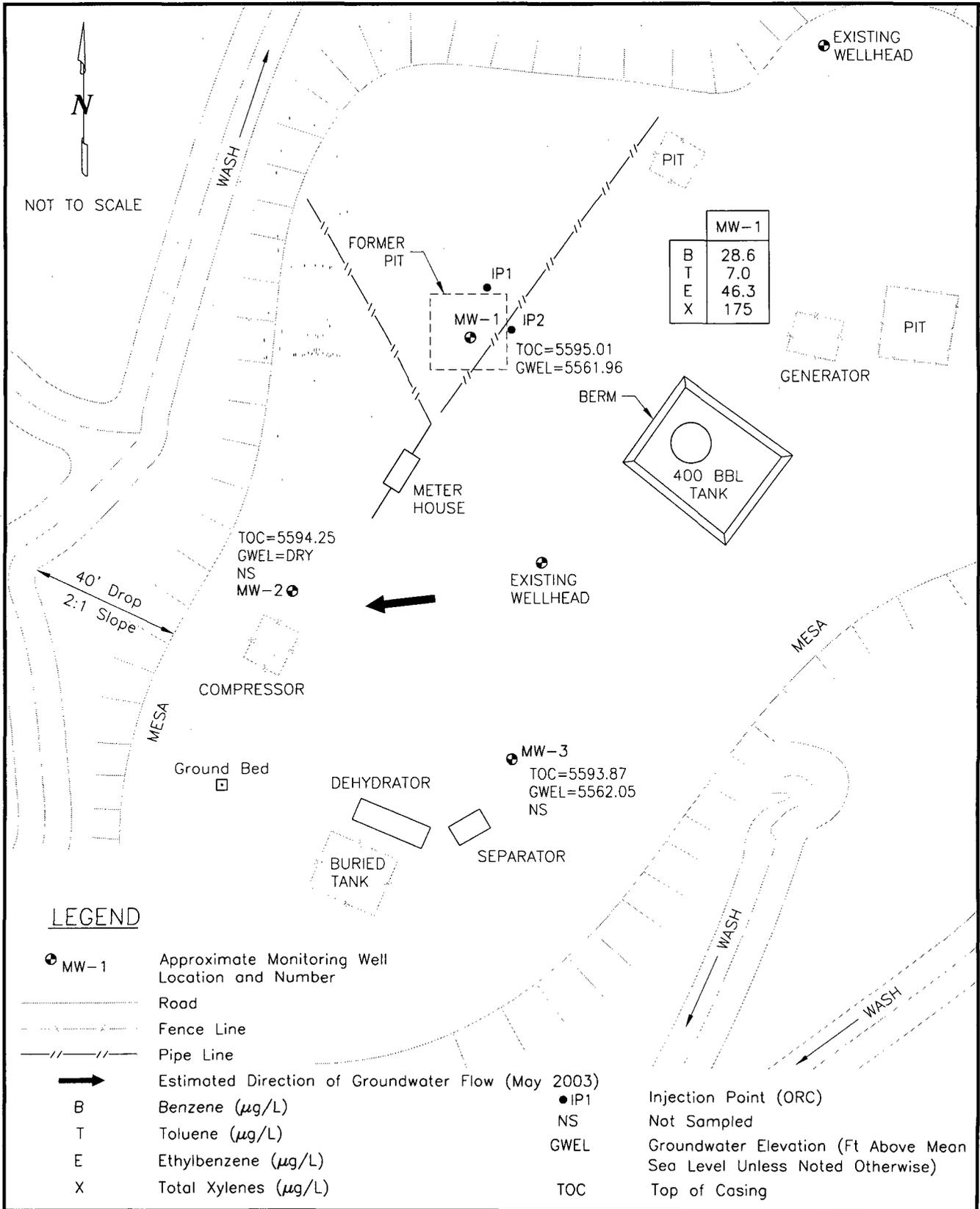


HAMNER #9, METER 97213
MAY 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

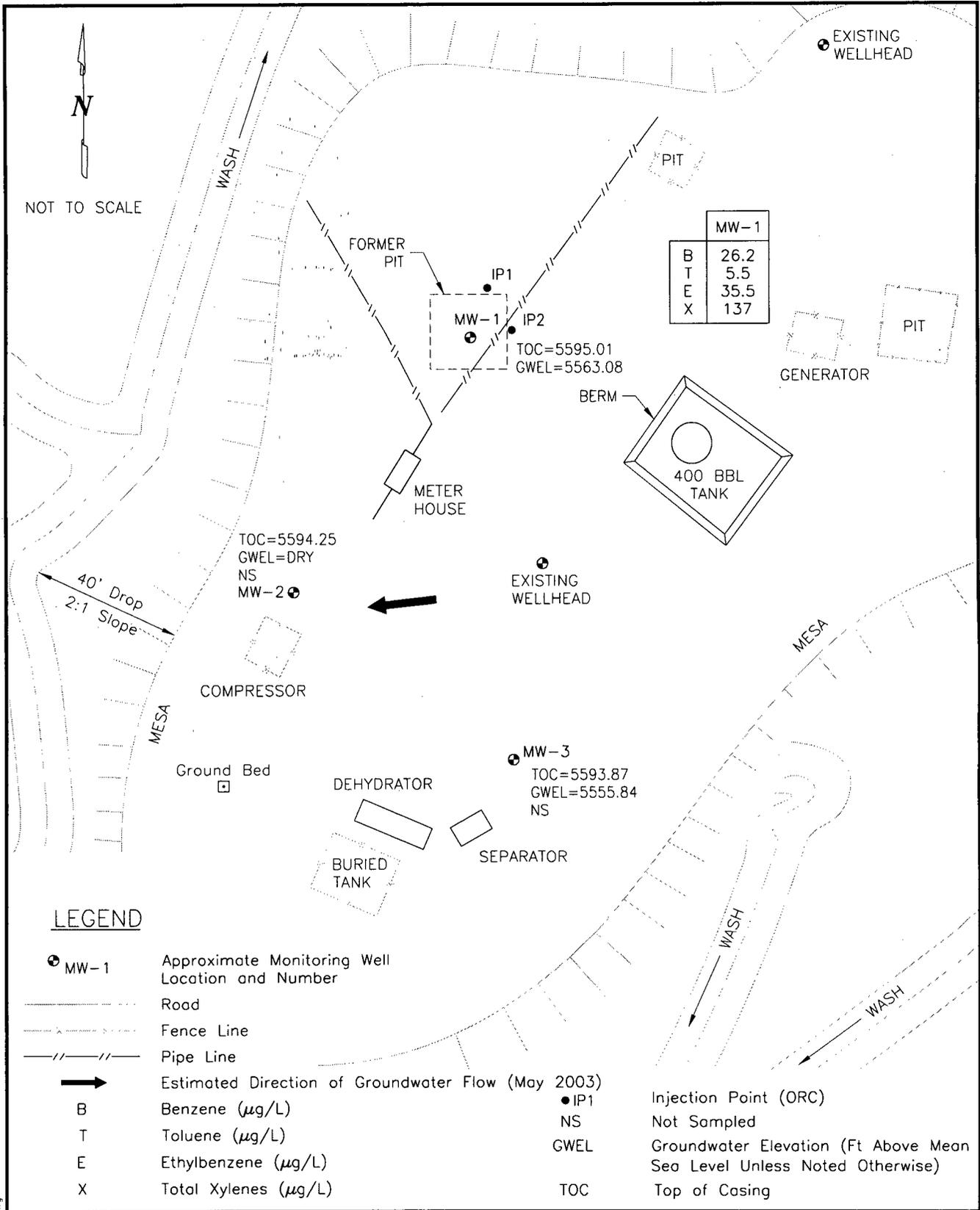
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HAMNER #9, METER 97213
AUGUST 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 2

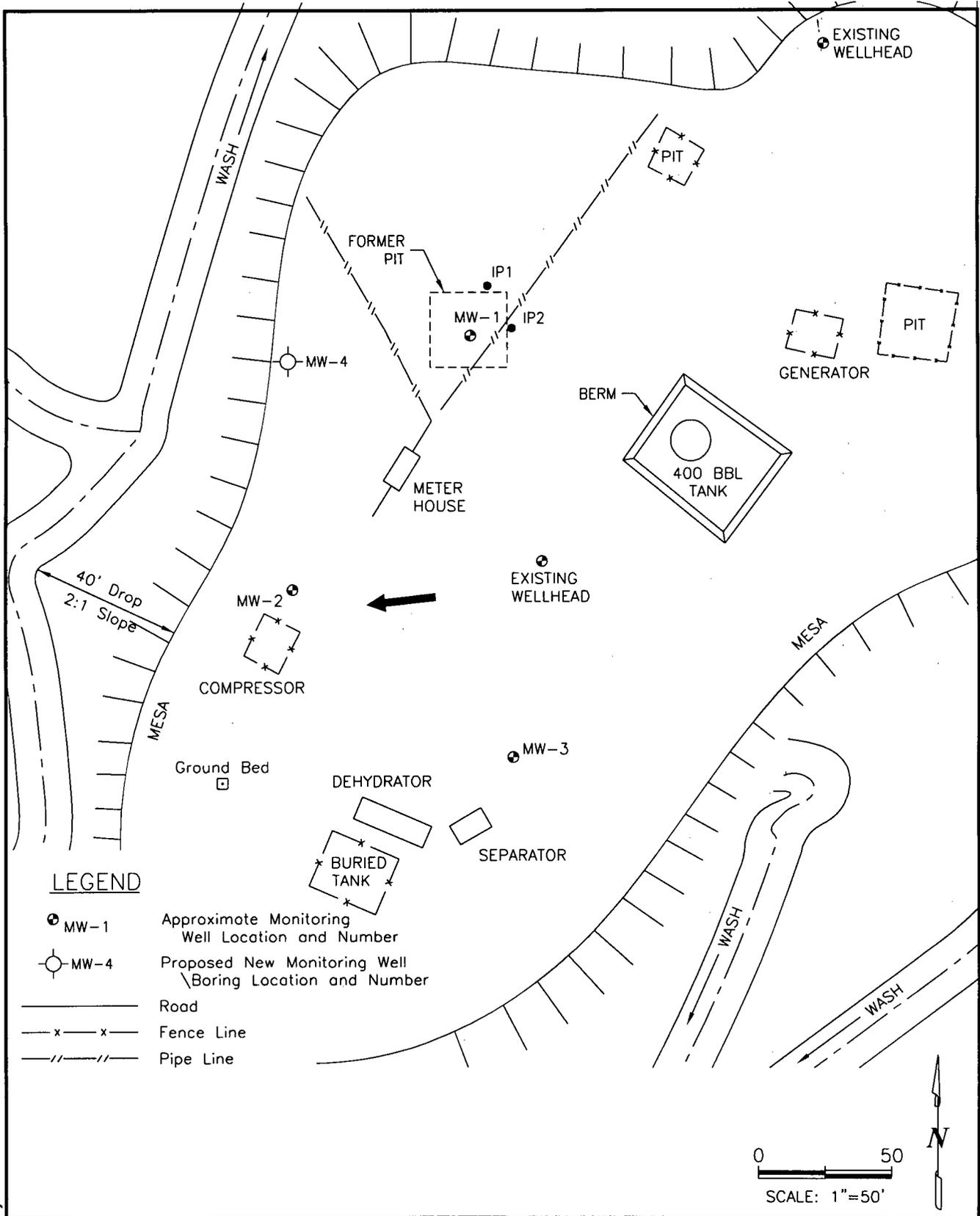


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HAMNER #9, METER 97213
NOVEMBER 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 3



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HAMNER #9, METER 97213
 PROPOSED NEW MONITORING WELL LOCATION

GROUNDWATER SITES
 EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 4

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES
 HAMNER #9 (METER #97213)

Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft btoc)
Hamner #9	5/18/2005	MW-1	74	27.9	93.1	340	32.67
Hamner #9	8/23/2005	MW-1	28.6	7	46.3	175	33.05
Hamner #9	11/8/2005	MW-1	26.2	5.5	35.5	137	32.93

FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMNER #9
MW-1

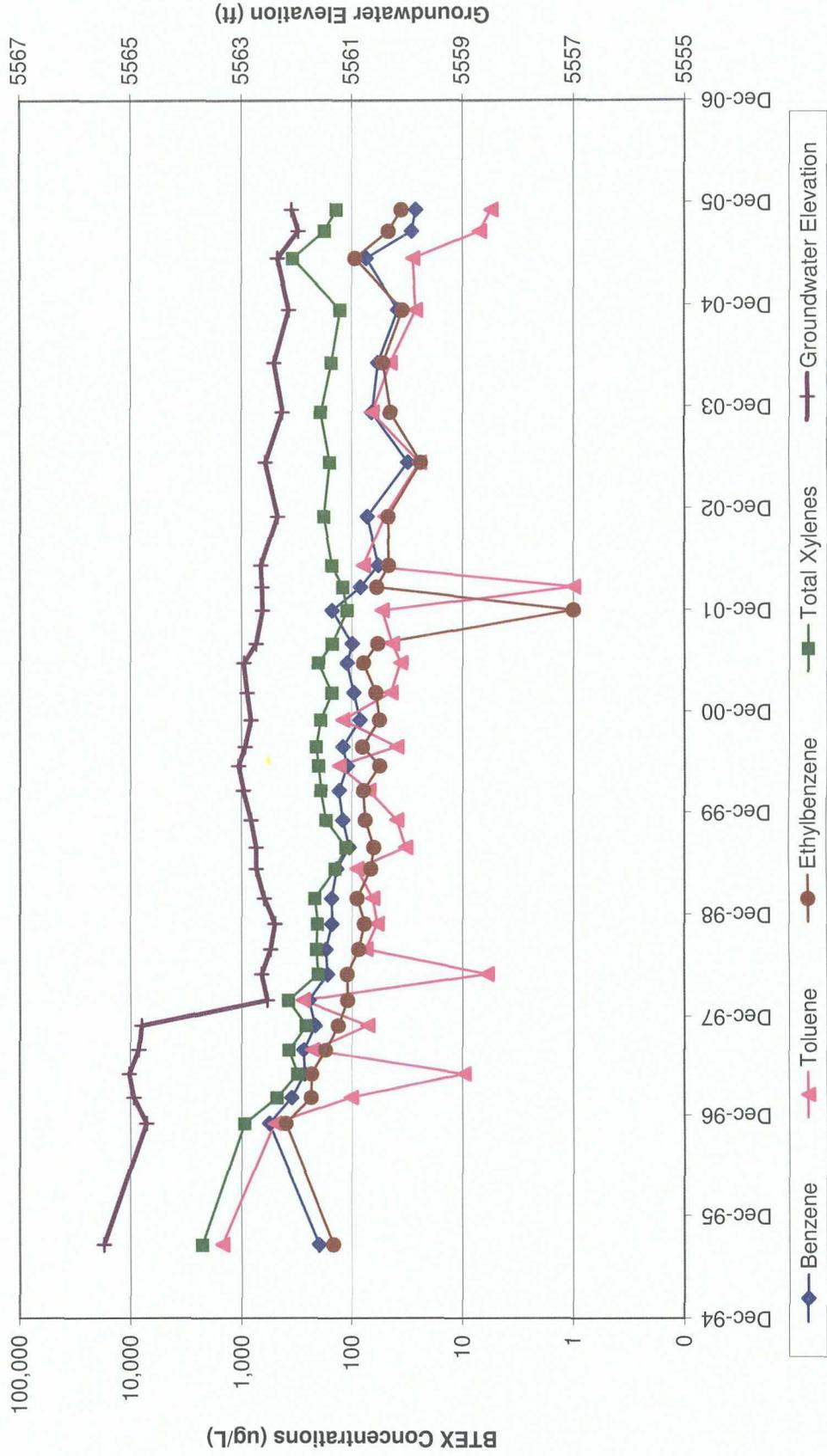


FIGURE 6
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMNER #9
MW-2

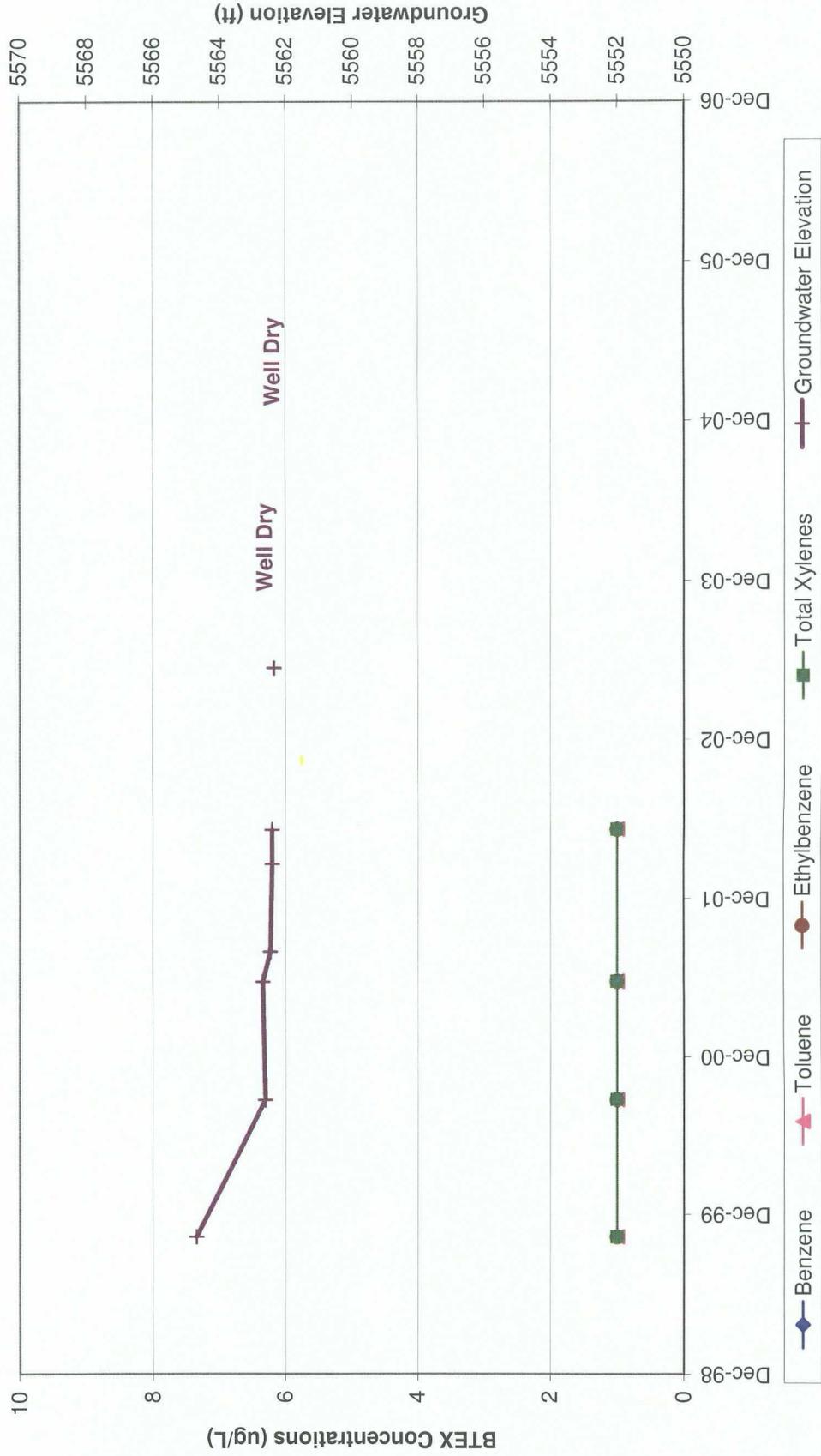


FIGURE 7
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMNER #9
MW-3

