

3R - 186

**ANNUAL
MONITORING
REPORT**

02/21/2005



Via Federal Express

February 21, 2005

Mr. Ed Martin
New Mexico Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87504

RE: 2004 Pit Project Annual Groundwater Report

Dear Mr. Martin:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 20 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

EPFS has organized the 20 Annual Reports (Volumes 1, 2 and 3) by land type. Volume 1 contains Annual Reports for sites found on Federal land. Volume 2 contains Non Federal land sites and Volume 3 contains one site on Navajo land. EPFS understands closure of groundwater sites on Navajo lands falls under jurisdiction of the Navajo Nation Environmental Protection Agency; however, the Navajo site report is included for your information.

If you have any questions concerning the enclosed reports, please call me at (719) 520-4433.

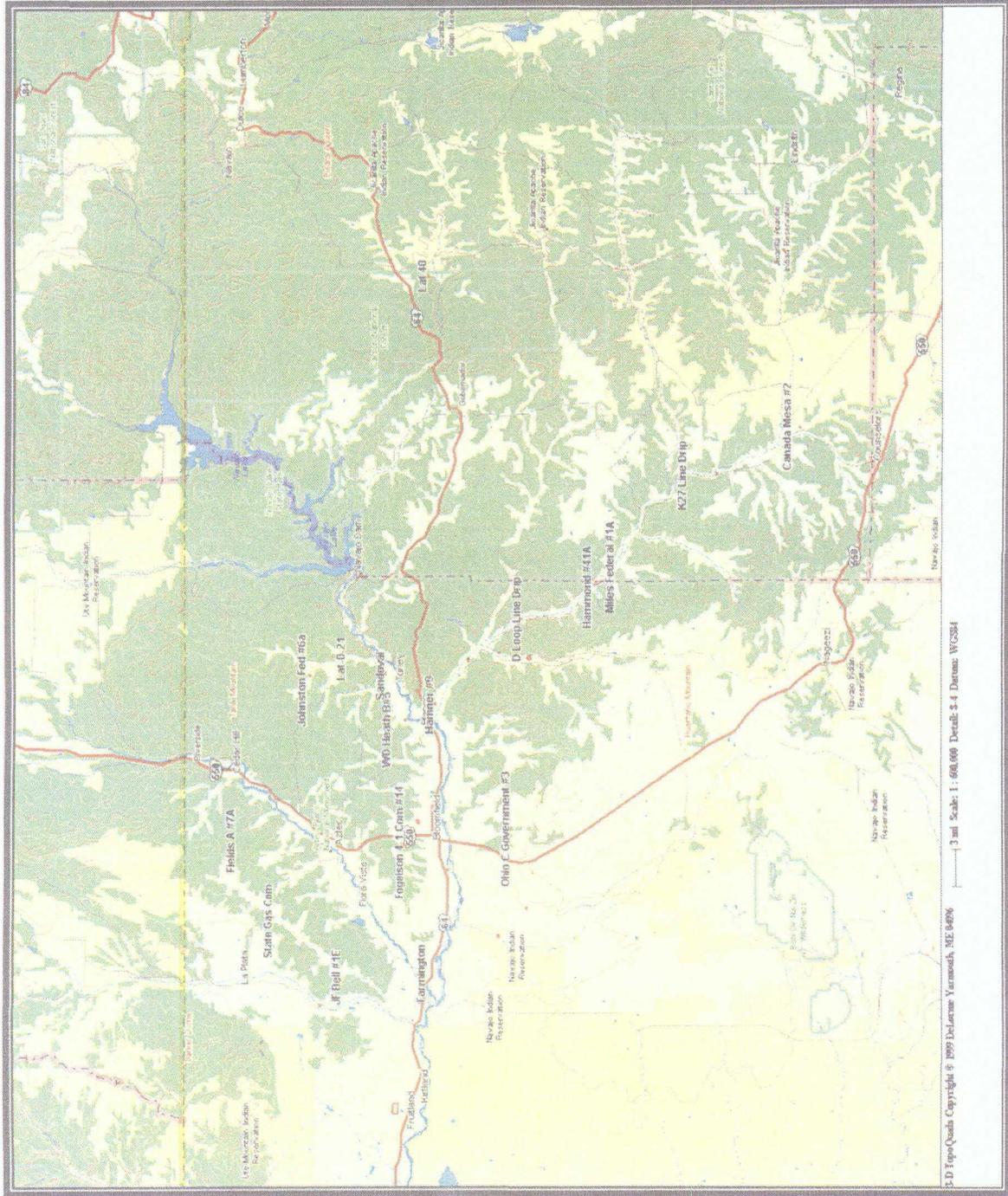
Sincerely,

A handwritten signature in black ink, appearing to read "Scott T. Pope".

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Federal Express**
Mr. Bill Liesse, BLM - w / enclosures (federal sites only), **Federal Express**
Dr. Ted Helfgott, Enterprise - w / enclosures (Enterprise sites only), **Federal Express**
Groundwater Pit File w / o enclosures
Pam Anderson - MWH, w / o enclosures
Inside Pocket of Each Volume of Report

Federal Groundwater Site Map



3R186

**EPFS GROUNDWATER SITES
2004 ANNUAL GROUNDWATER REPORT**

**Hammond #41A
Meter Code: 89894**

SITE DETAILS

| | | | | |
|------------------------------|-------------------|------------------|------------------|----------------------|
| Legal Description: | Town: 27N | Range: 8W | Sec: 25 | Unit: O |
| NMOCD Haz Ranking: 40 | Land Type: | Federal | Operator: | R&G Drilling Company |

PREVIOUS ACTIVITIES

| | | | | | |
|--------------------------------|------|---------------------------|-------|-------------------------------|------|
| Site Assessment: | 6/94 | Excavation: | 7/94 | Soil Boring: | 7/95 |
| Monitor Well: | 5/97 | Geoprobe: | 11/96 | Additional MWs: | 9/99 |
| Downgradient MWs: | 9/99 | Replace MW: | NA | Quarterly Initiated: | 6/97 |
| ORC Nutrient Injection: | 7/98 | Re-Excavation: | 5/97 | PSH Removal Initiated: | NA |
| Annual Initiated: | 9/99 | Quarterly Resumed: | NA | | |

SUMMARY OF 2004 ACTIVITIES

TMW-1: Quarterly sampling of TMW-1 was performed in February, May, August and November 2004. TMW-1 was completed as a permanent monitoring well with a steel surface casing and locking cap in February 2004.

SITE MAPS

Site maps (February, May, August and November) are attached as Figures 1 through 4.

SUMMARY TABLES AND GRAPHS

- Analytical data from TMW-1 are summarized in Table 1, and historic data for all wells are presented graphically in Figures 5 through 8.
- Laboratory reports are presented in Attachment 1.
- Field documentation is presented in Attachment 2.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2004.

**EPFS GROUNDWATER SITES
2004 ANNUAL GROUNDWATER REPORT**

**Hammond #41A
Meter Code: 89894**

DISPOSITION OF GENERATED WASTES

No wastes were generated at this site during 2004.

ISOCONCENTRATION MAPS

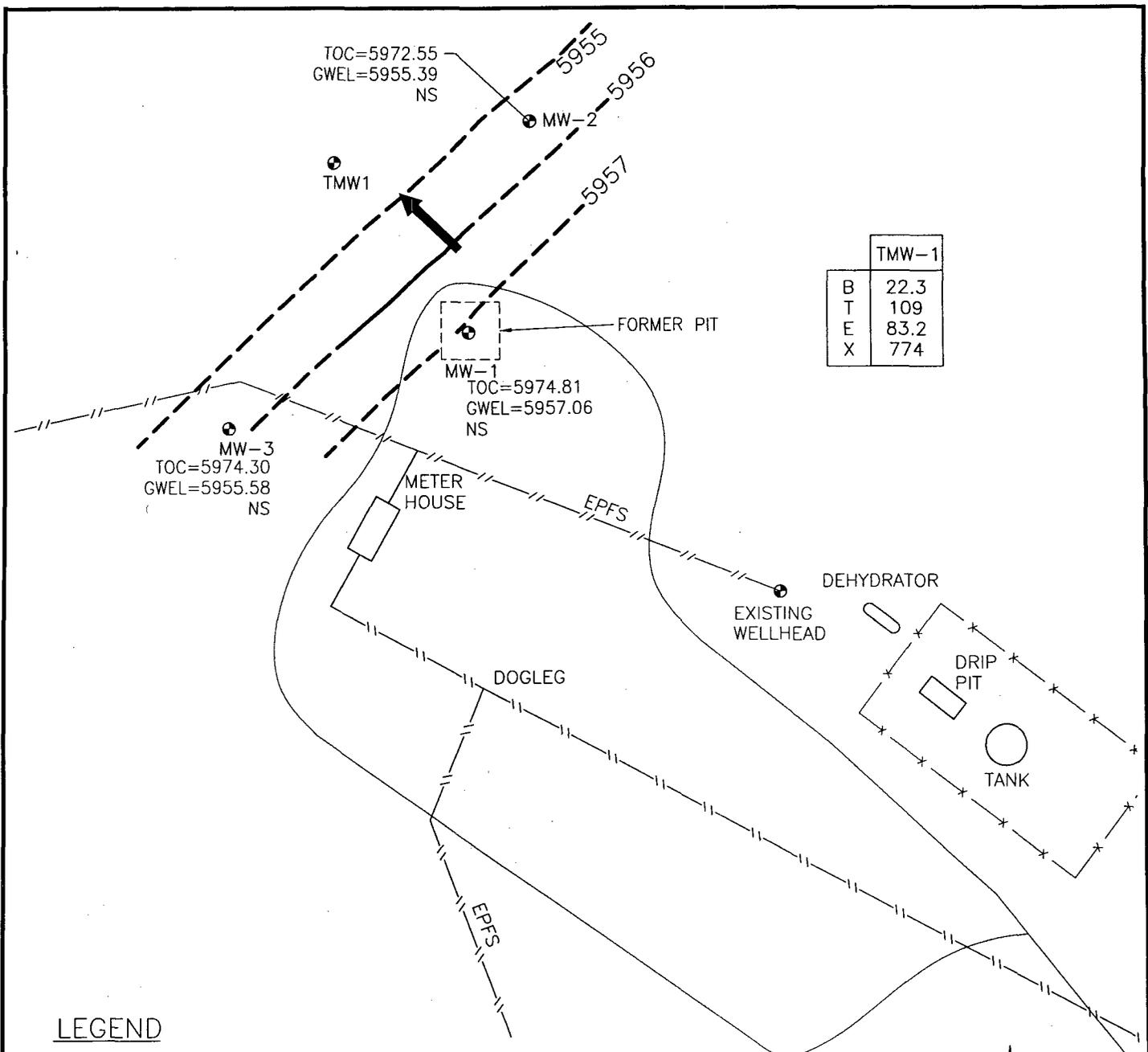
No isoconcentration maps were prepared for this site, however, the attached site maps present both the water level and analytical data collected during 2004.

CONCLUSIONS

- Groundwater flow at the site is consistently to the northwest.
- Benzene and total xylenes concentrations were above standards in TMW-1 in samples collected in February and May of 2004. All BTEX concentrations were below standards August 2004. Benzene was above the standard in November 2004.
- Wells MW-1, MW-2 and MW-3 have met four consecutive quarters of BTEX concentrations below NMWQCC standards by 2002. TMW-1 was installed in 2003, as requested by NMOCD.

RECOMMENDATIONS

- EPFS recommends continued quarterly sampling of TMW-1 until four consecutive quarters of BTEX concentrations below standards have been achieved, at which time the site will be submitted for closure.
- Because historic samples have indicated that these wells have achieved closure standards, MW-1, MW-2 and MW-3 will be sampled again only at final closure.
- Once closure has been granted, all monitoring wells will be plugged and abandoned in accordance with the approved well abandonment plan.

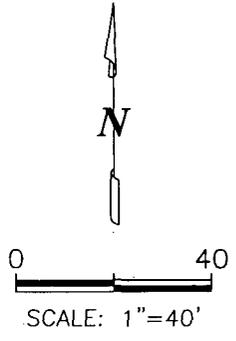


| | |
|-------|------|
| TMW-1 | |
| B | 22.3 |
| T | 109 |
| E | 83.2 |
| X | 774 |

LEGEND

- MW-1 Approximate Monitoring Well Location and Number
- Road
- Fence Line
- Pipe Line
- 6566.0 Potentiometric Surface (Assumed Where Dashed)
- Direction of Groundwater Flow
- GWEL Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
- TOC Top of Casing

- B Benzene ($\mu\text{g/L}$)
- T Toluene ($\mu\text{g/L}$)
- E Ethylbenzene ($\mu\text{g/L}$)
- X Total Xylenes ($\mu\text{g/L}$)
- NS Not Sampled

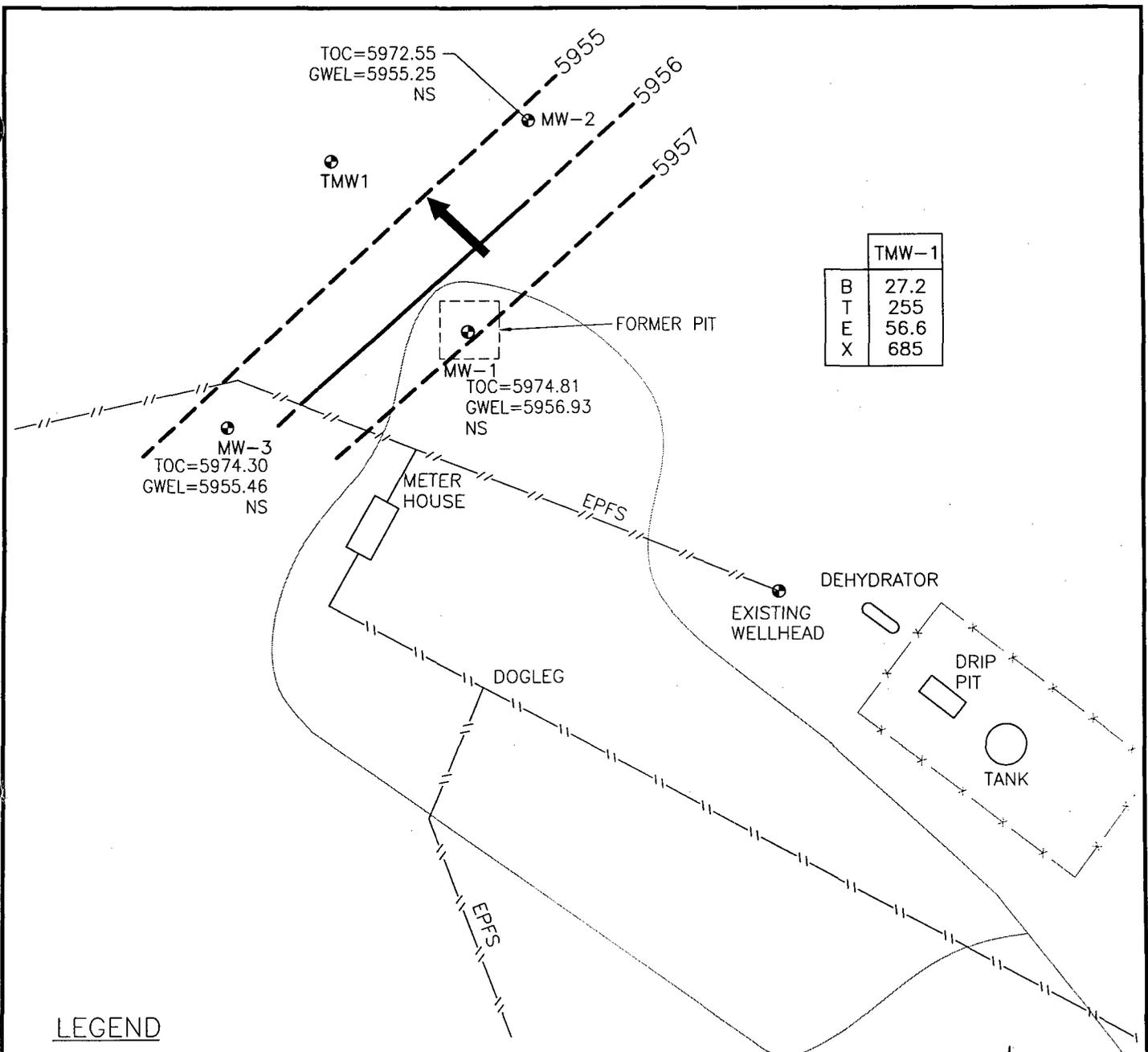


HAMMOND #41 A, METER 89894
 FEBRUARY 2004

GROUNDWATER SITES
 EL PASO FIELD SERVICES

FIGURE 1

hammond41a_04.dwg

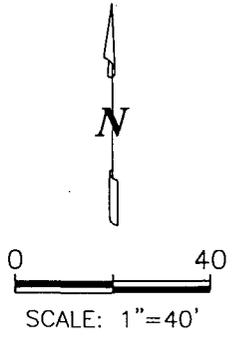


| TMW-1 | |
|-------|------|
| B | 27.2 |
| T | 255 |
| E | 56.6 |
| X | 685 |

LEGEND

- ⊙ MW-1 Approximate Monitoring Well Location and Number
- Road
- x-x-x- Fence Line
- //-/- Pipe Line
- 6566.0 Potentiometric Surface (Assumed Where Dashed)
- ➔ Direction of Groundwater Flow
- GWEL Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
- TOC Top of Casing

- B Benzene ($\mu\text{g/L}$)
- T Toluene ($\mu\text{g/L}$)
- E Ethylbenzene ($\mu\text{g/L}$)
- X Total Xylenes ($\mu\text{g/L}$)
- NS Not Sampled

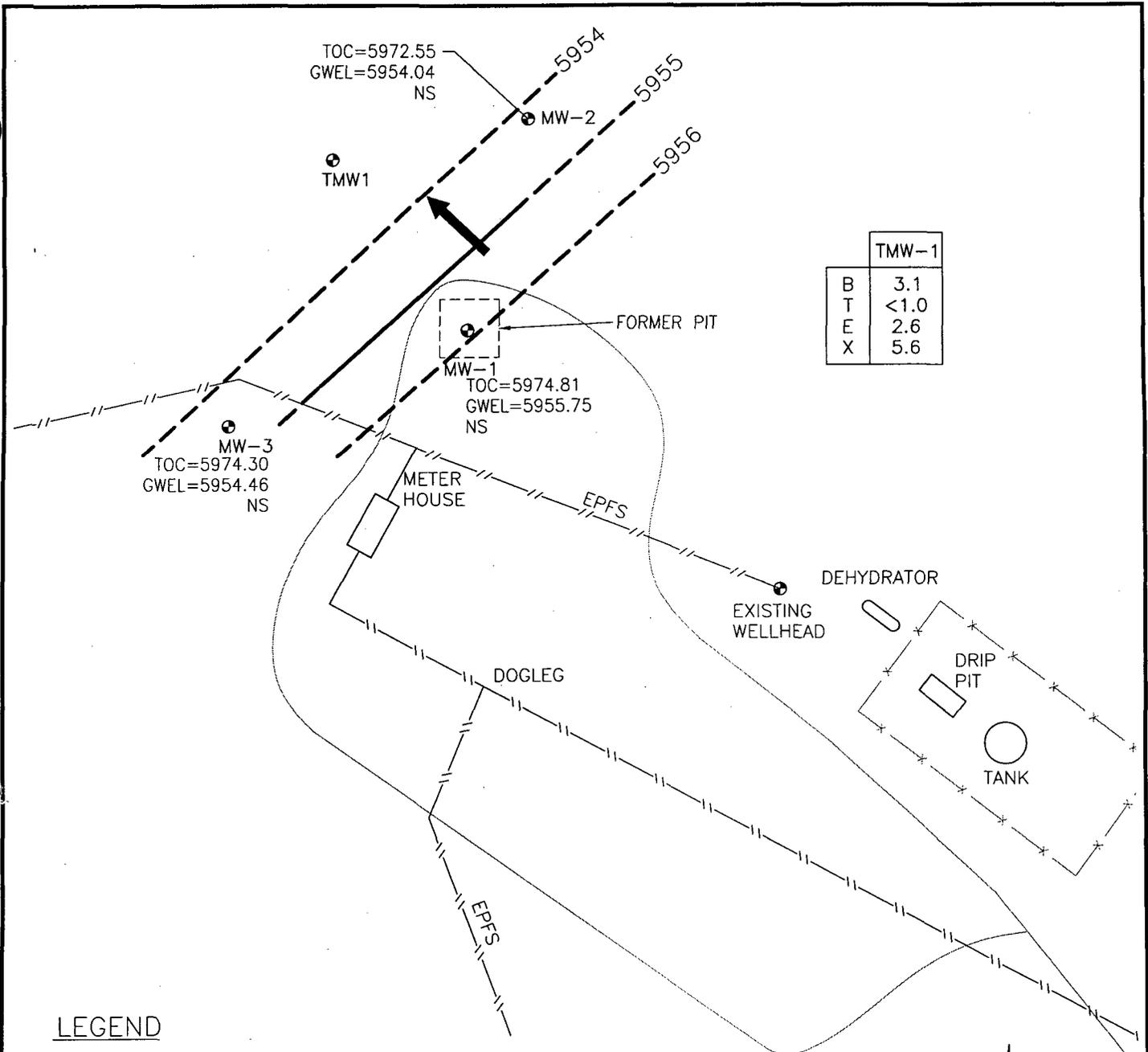


HAMMOND #41 A, METER 89894
MAY 2004

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2

hammond_5_04.dwg

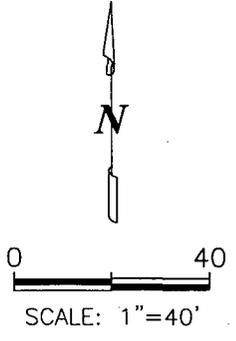


| | |
|-------|------|
| TMW-1 | |
| B | 3.1 |
| T | <1.0 |
| E | 2.6 |
| X | 5.6 |

LEGEND

- MW-1 Approximate Monitoring Well Location and Number
- Road
- x-x-x- Fence Line
- //--//-- Pipe Line
- 6566.0 Potentiometric Surface (Assumed Where Dashed)
- Direction of Groundwater Flow
- GWEL Groundwater Elevation (Feet Above Mean Sea Level Unless Noted Otherwise)
- TOC Top of Casing

- B Benzene (µg/L)
- T Toluene (µg/L)
- E Ethylbenzene (µg/L)
- X Total Xylenes (µg/L)
- NS Not Sampled

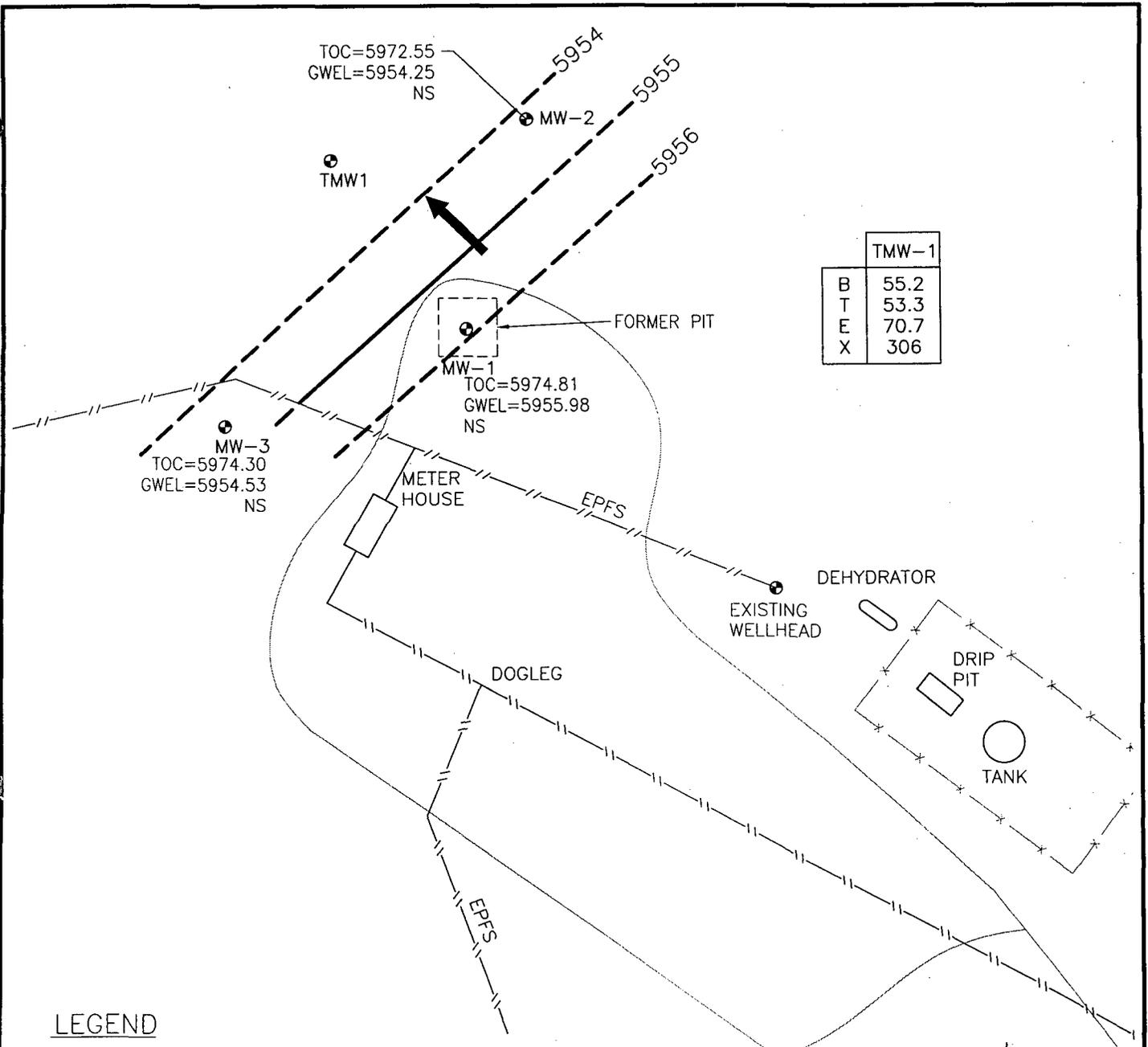


HAMMOND #41 A, METER 89894
AUGUST 2004

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 3

hammond_B_04.dwg

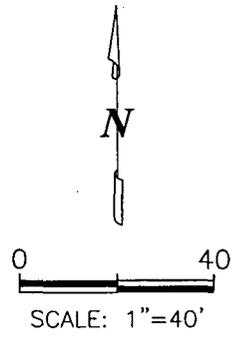


| TMW-1 | |
|-------|------|
| B | 55.2 |
| T | 53.3 |
| E | 70.7 |
| X | 306 |

LEGEND

- ⊕ MW-1 Approximate Monitoring Well Location and Number
- Road
- - - - - Fence Line
- / - / - Pipe Line
- 6566.0 Potentiometric Surface (Assumed Where Dashed)
- ➔ Direction of Groundwater Flow
- GWEL Groundwater Elevation (Feet Above Mean Sea Level Unless Noted Otherwise)
- TOC Top of Casing

- B Benzene ($\mu\text{g/L}$)
- T Toluene ($\mu\text{g/L}$)
- E Ethylbenzene ($\mu\text{g/L}$)
- X Total Xylenes ($\mu\text{g/L}$)
- NS Not Sampled



HAMMOND #41 A, METER 89894
NOVEMBER 2004

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 4

hamm..._11_04.dwg

TABLE 1
SUMMARY OF BTEX COMPOUNDS IN 2004 GROUNDWATER SAMPLES
HAMMOND #41A (METER #89894)

| Site Name | Monitoring Well | Sample Date | Benzene (ug/L) | Toluene (ug/L) | Ethylbenzene (ug/L) | Total Xylenes (ug/L) | Depth to Water (ft btoc) |
|---------------------|-----------------|-------------|-------------------|-------------------|------------------------|-------------------------|-----------------------------|
| Hammond #41A | TMW1 | 2/17/2004 | 22.3 | 109 | 83.2 | 774 | 16.01 |
| Hammond #41A | TMW1 | 5/11/2004 | 27.2 | 255 | 56.6 | 685 | 16.03 |
| Hammond #41A | TMW1 | 8/19/2004 | 3.1 | < 1.0 | 2.6 | 5.6 | 17.24 |
| Hammond #41A | TMW1 | 11/18/2004 | 55.2 | 53.3 | 70.7 | 306 | 17.00 |

< = Analyte not detected at Method Detection Limit (MDL). Value shown is MDL.

J = Value estimated

FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMMOND #41A
TMW-1

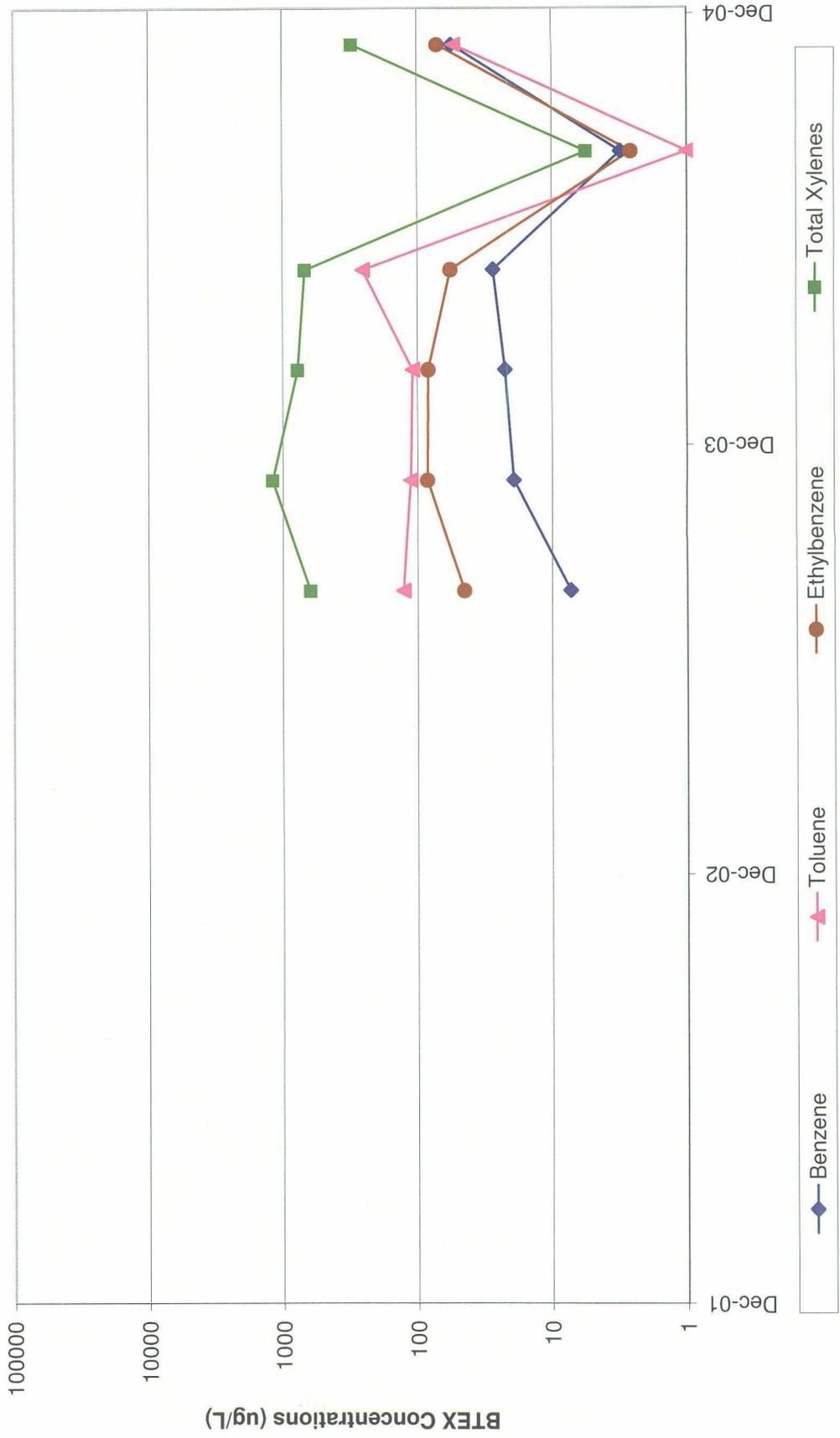


FIGURE 6
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMMOND #41A
MW-1

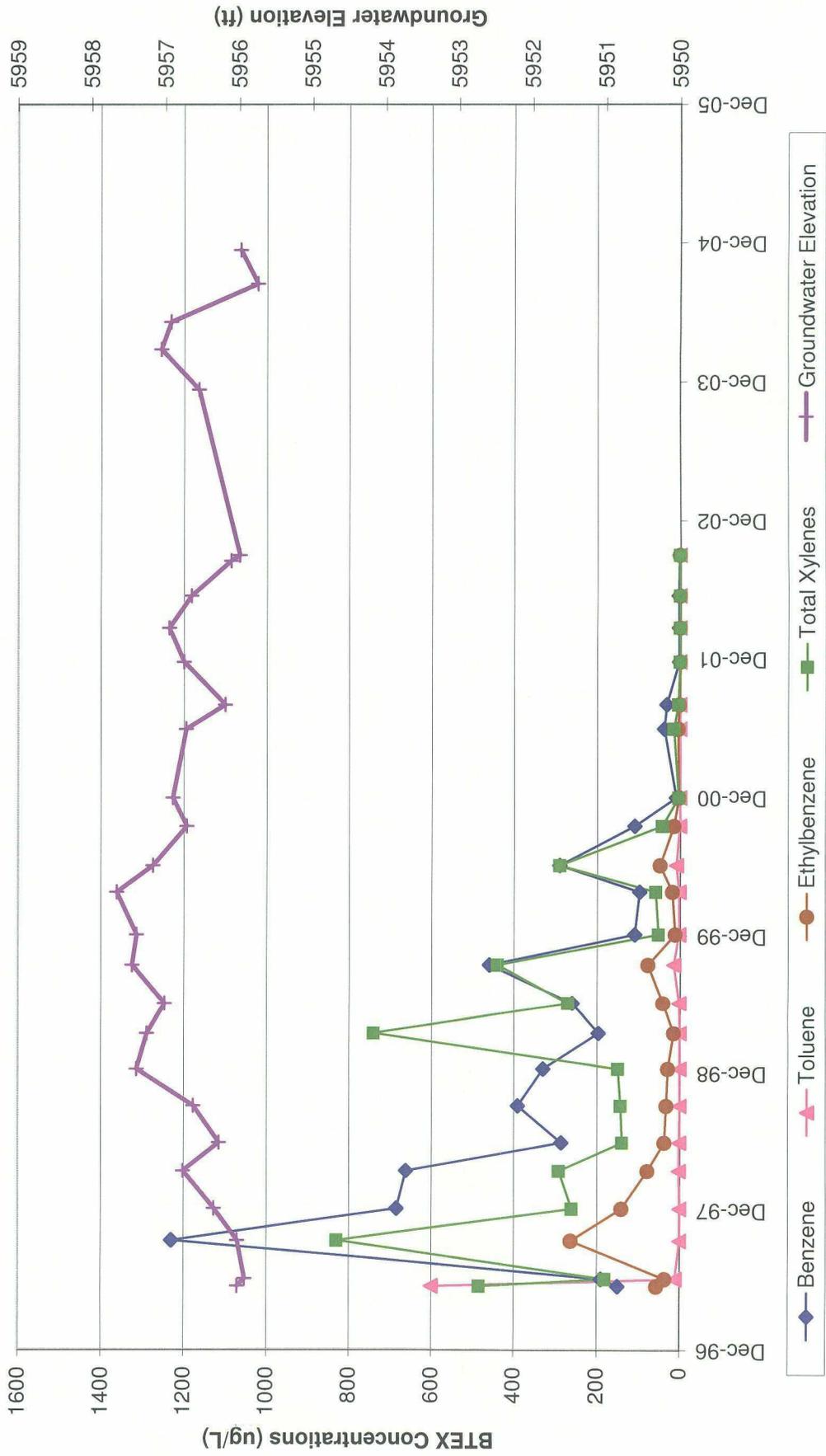


FIGURE 7
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMMOND #41A
MW-2

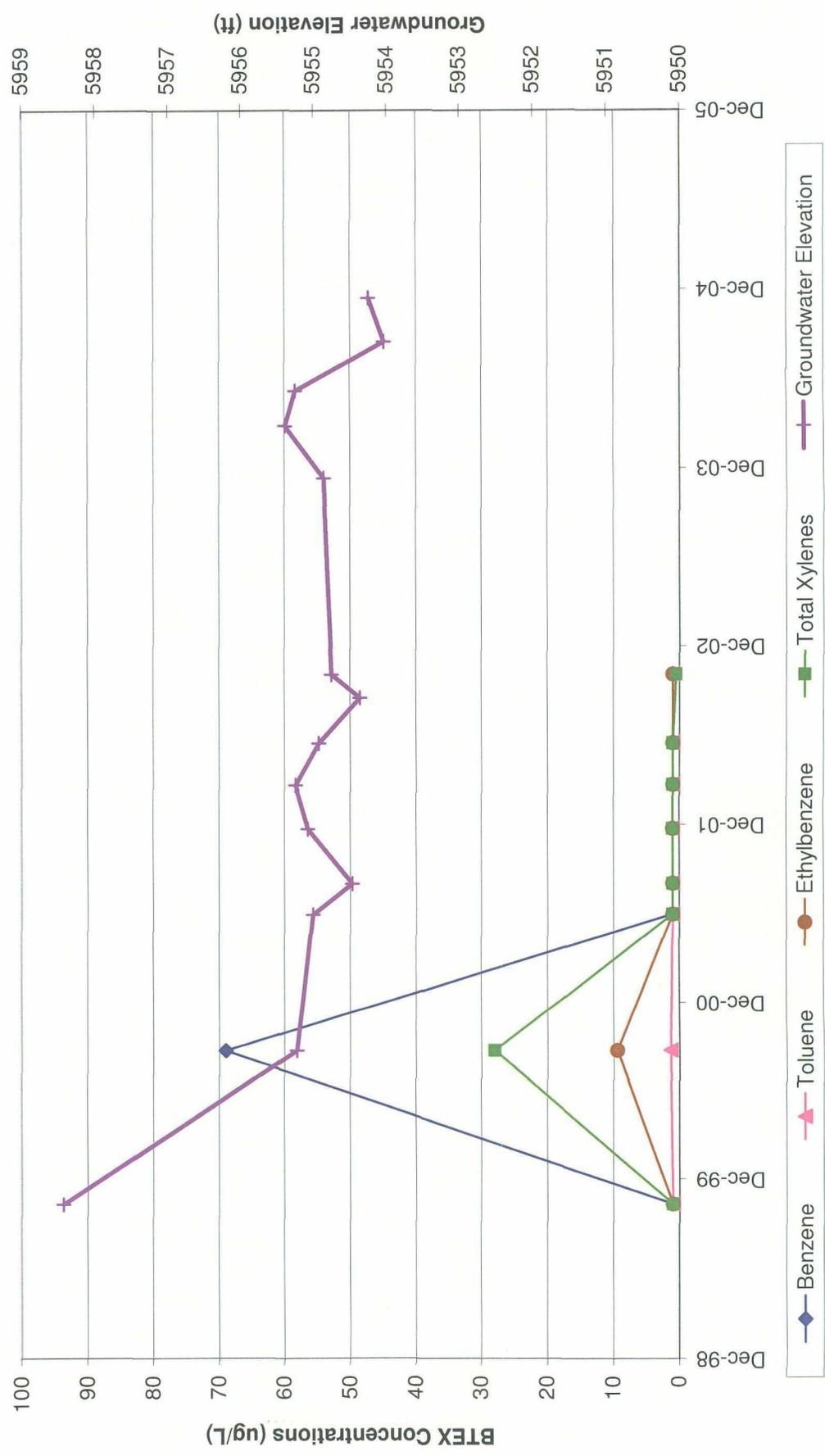


FIGURE 8
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
HAMMOND #41A
MW-3

