# 3R - 068

# ANNUAL MONITORING REPORT

# 02/21/2005

elpaso

**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.

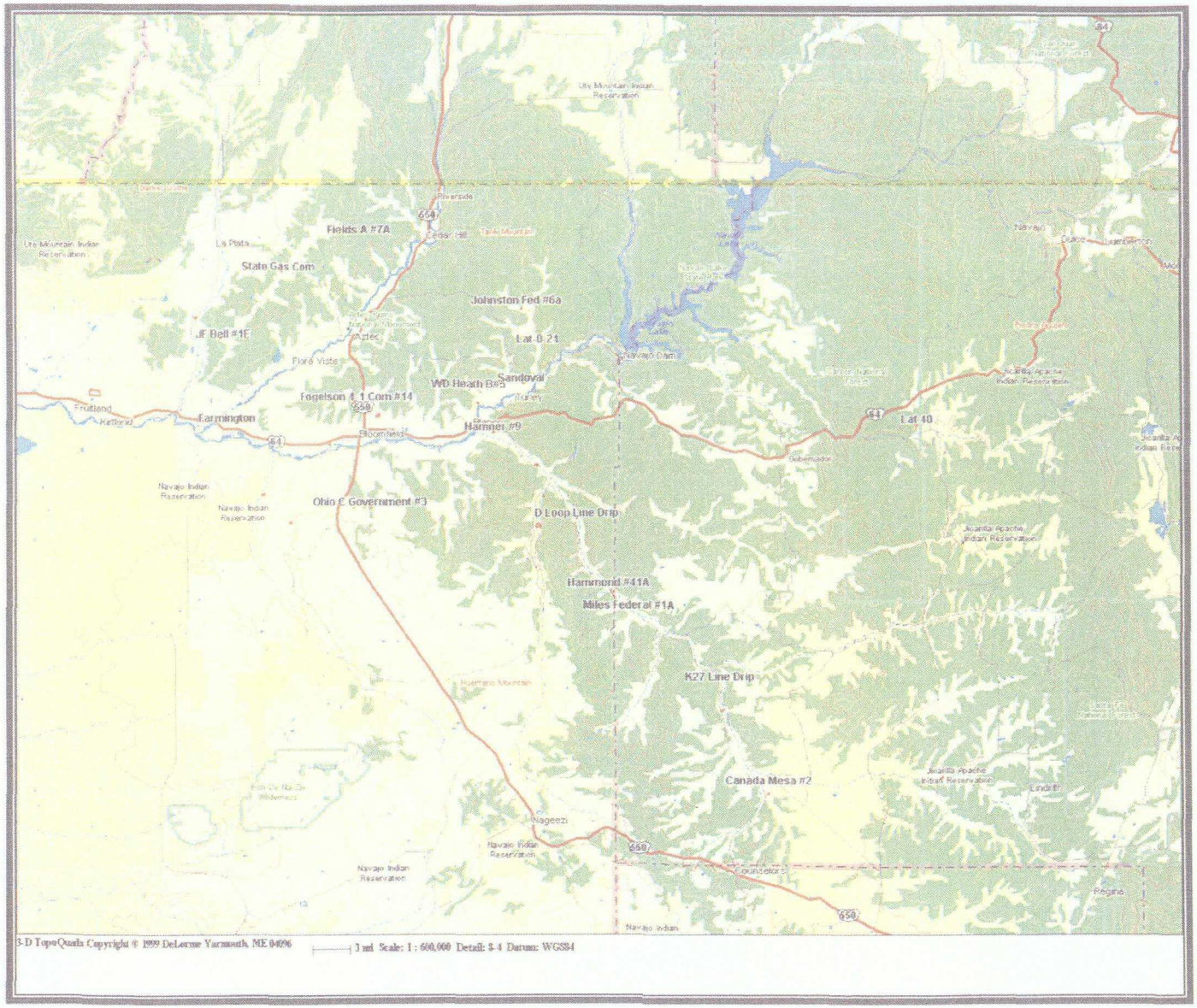
If you have any questions concerning the enclosed reports, please call me at (719) 520-4433.

Sincerely,

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



3R068

# EPFS GROUNDWATER SITES
# 2004 ANNUAL GROUNDWATER REPORT

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

## SITE DETAILS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Legal Description:** | **Town:** | 29N | **Range:** | 11W | **Sec:** | 4 | **Unit:** P |
| **NMOCD Haz Ranking:** | 10 | **Land Type:** | Federal | **Operator:** | Burlington Resources | | |

## PREVIOUS ACTIVITIES

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

## SUMMARY OF 2004 ACTIVITIES

**MW-1:** Annual groundwater sampling and dissolved oxygen measurements were collected in November 2004. Oxygen releasing compound (ORC) socks were replaced during November 2004.

**MW-2:** Annual water level monitoring was performed in November 2004.

**MW-3:** Annual water level monitoring was performed in November 2004.

**Site-Wide Activities:** No other activities were performed at this site during 2004.

## SITE MAPS

Site map (November) is attached as Figure 1.

## SUMMARY TABLES AND GRAPHS

- Analytical data from 2004 are summarized in Table 1, and historic data are presented graphically in Figures 2 through 4.
- 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.

## DISPOSITION OF GENERATED WASTES

No wastes were generated at this site during 2004.

## ISOCONCENTRATION MAPS

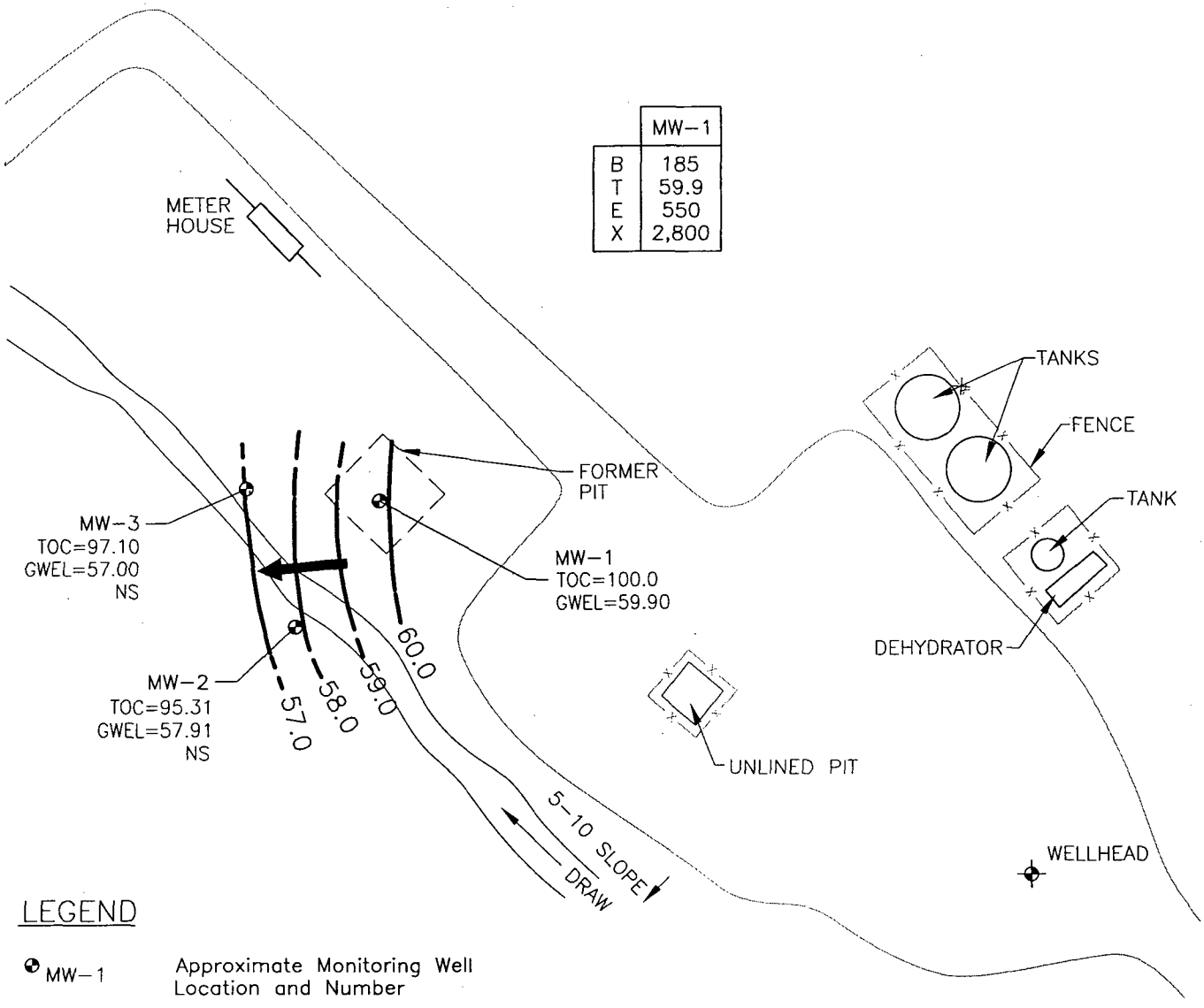
No isoconcentration maps were prepared for this site, however, the attached site maps present both water level and analytical data collected during 2004.

## CONCLUSIONS

- The groundwater flow direction is to the west.
- The benzene concentration in MW-1 continued to decrease from 401 µg/L in 2003, to 185 µg/L in 2004, but remained above 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 1.1 mg/L in November, indicating that oxygen from the ORC socks was being used up in the process of enhanced natural biodegradation, and that the socks were due for replacement.
- Decreasing BTEX concentrations at the site indicate that enhanced natural attenuation is occurring.

## RECOMMENDATION

- EPFS 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.
- EPFS will continue annual groundwater sampling at MW-1 until BTEX concentrations approach closure criteria. Sampling will then continue on a quarterly basis until closure criteria are met.
- Because BTEX sampling at MW-2 and MW-3 have historically indicated concentrations less than closure criteria, EPFS recommends that these wells not be sampled until closure.




## LEGEND

| | |
|---|---|
| MW-1 | Approximate Monitoring Well Location and Number |
| x x | Fence Line |
| 6566.0 | 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 |
| NS | Not Sampled |

N

NOT TO SCALE

fogels1_04.dwg

FOGELSON 4-1 COM #14, METER 73220
NOVEMBER 2004

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

## TABLE 1

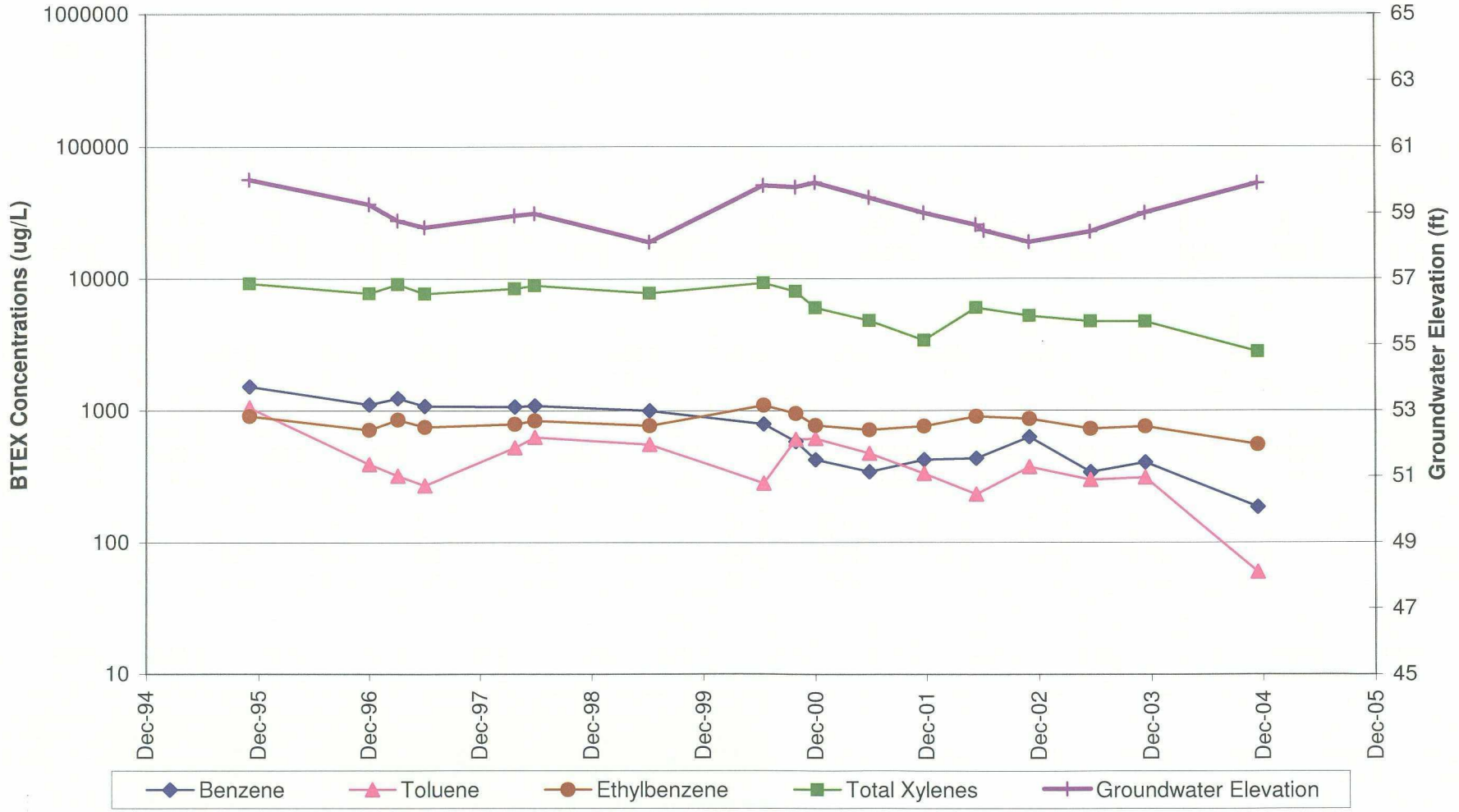
### SUMMARY OF BTEX COMPOUNDS IN 2004 GROUNDWATER SAMPLES
### FOGELSON 4-1 COM #14 (METER #73220)

| Site Name | Monitoring Well | Sample Date | Benzene (ug/L) | Toluene (ug/L) | Ethylbenzene (ug/L) | Total Xylenes (ug/L) | Depth to Water (ft btoc) |
|---|---|---|---|---|---|---|---|
| **Fogelson 4-1 Com. #14** | MW-1 | 11/16/2004 | 185 | 59.9 | 550 | 2,800 | 40.1 |

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

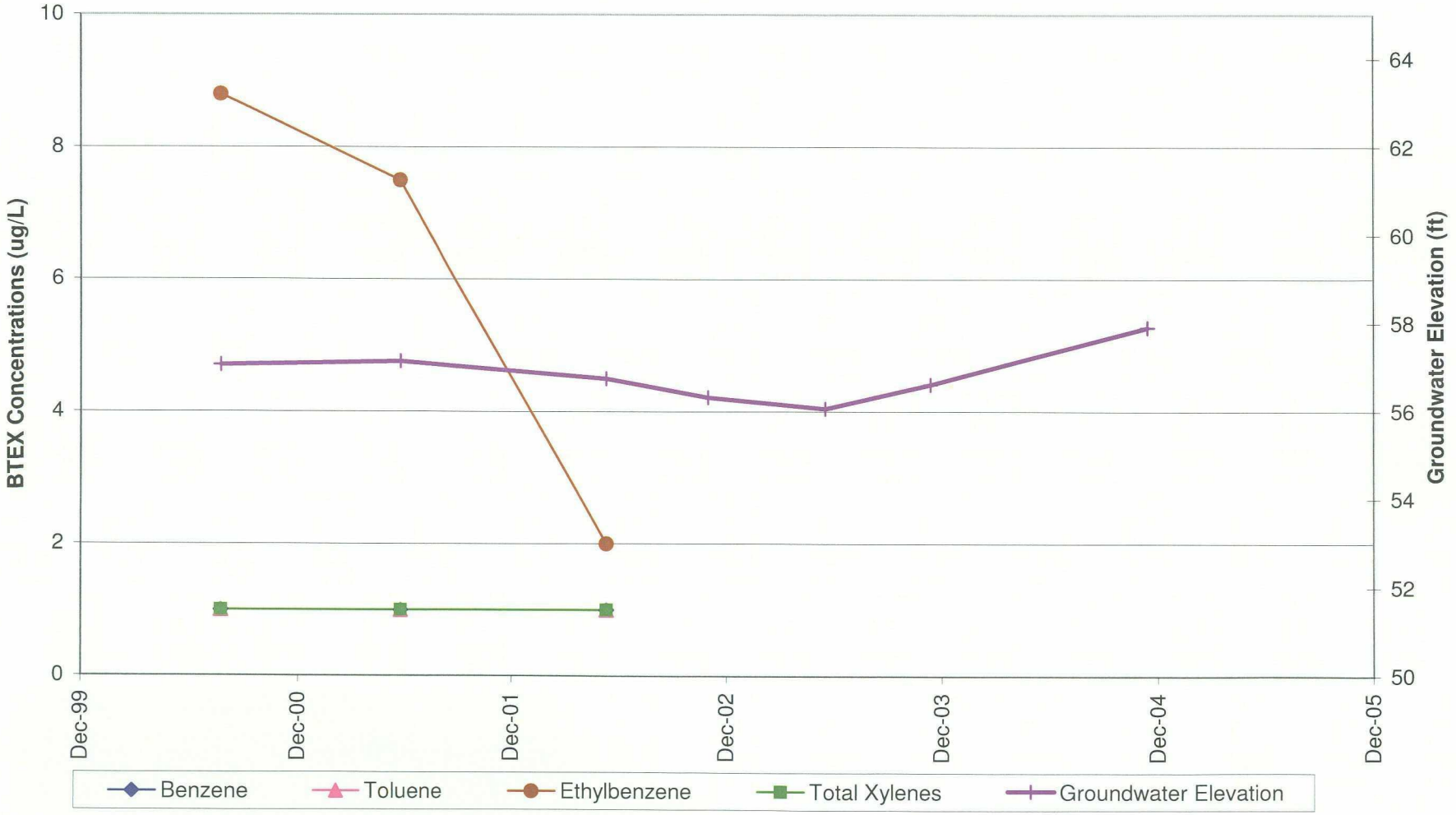
J = Value estimated

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



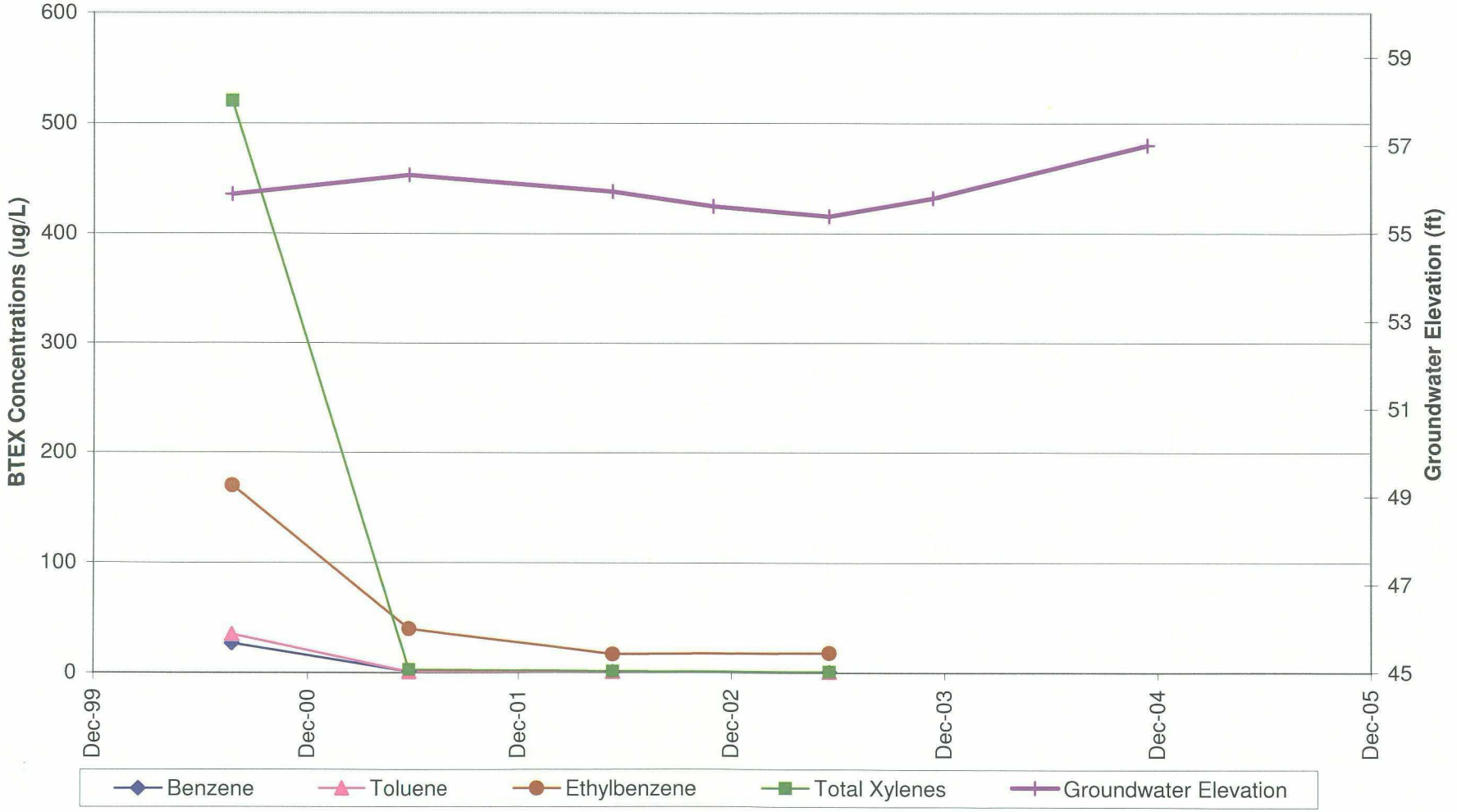

2004 Fogelson.xls,Fogl MW1

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




2004 Fogelson.xls,Fogl MW2

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




2004 Fogelson.xls,Fogl MW3