3R - 196

ANNUAL MONITORING REPORTS

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2005 ANNUAL GROUNDWATER REPORT
FEDERAL SITES VOLUME I

RECEIVED
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Oil Conservation Division
Environmental Bureau

EL PASO TENNESSEE PIPELINE COMPANY

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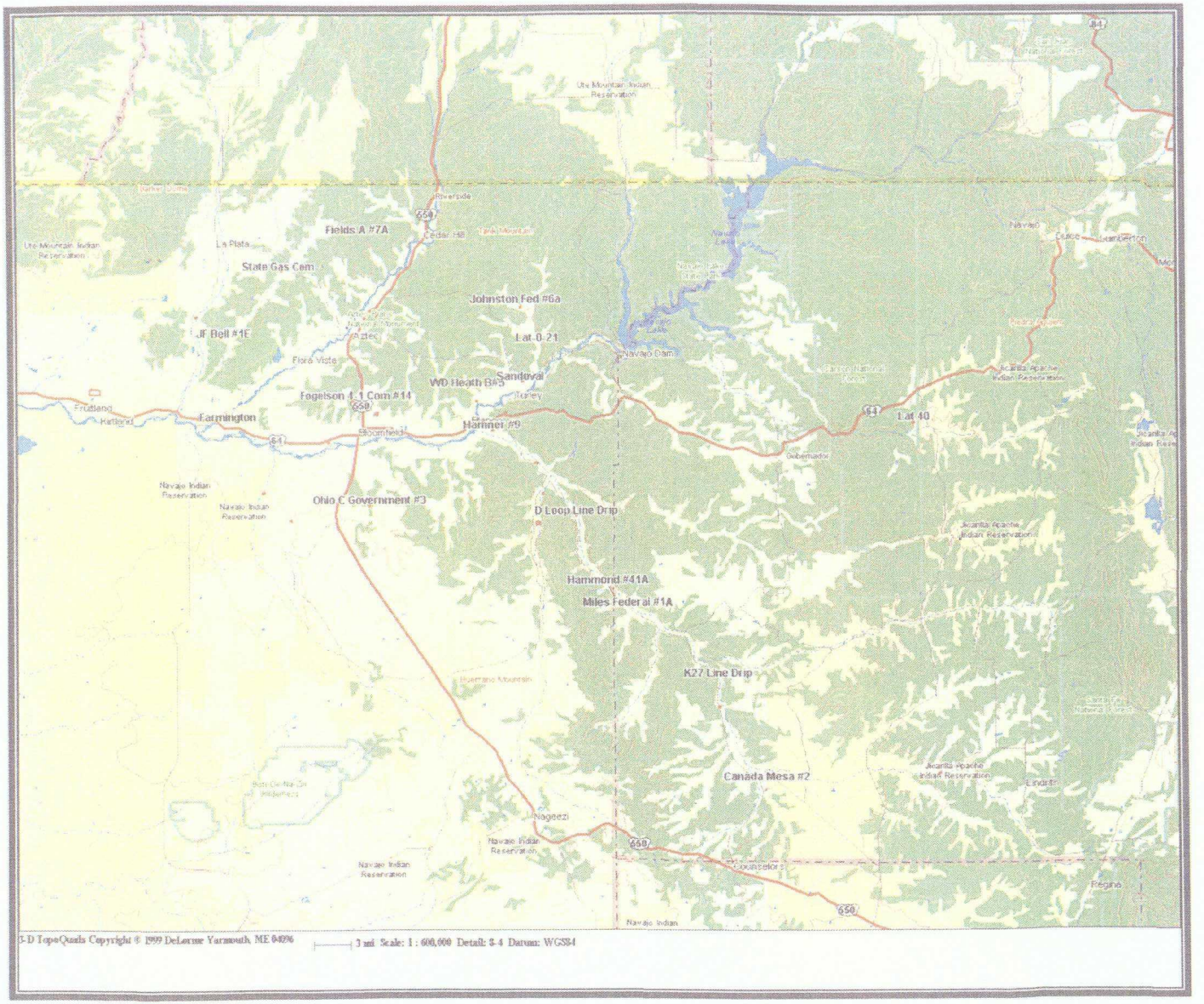
MWH
MONTGOMERY WATSON HARZA

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



EPTPC GROUNDWATER SITES
2005 ANNUAL GROUNDWATER REPORT

3R196

James F. Bell #1E
Meter Code: 94715

SITE DETAILS

Legal Description:	**Town:**	30N	**Range:**	13W	**Sec:**	10	**Unit:** P
NMOCD Haz Ranking:	40	**Land Type:**	Federal	**Operator:**	BP \ Amoco Production Company		

PREVIOUS ACTIVITIES

Site Assessment:	3/94	**Excavation:**	4/94	**Soil Boring:**	10/95
Monitor Well:	10/95	**Geoprobe:**	NA	**Additional MWs:**	6/99
Downgradient MWs:	11/95	**Replace MW:**	NA	**Quarterly Initiated:**	NA
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	7/97
Annual Initiated:	10/00	**Quarterly Resumed:**	NA		

* Additional downgradient monitoring wells were attempted in 1995 and in 1999; however, these borings were dry and wells were not installed.

SUMMARY OF 2005 ACTIVITIES

MW-1: Monthly free-product recovery activities and quarterly static water level monitoring were performed during 2005.

MW-2: Annual groundwater sampling was performed in June 2005. Quarterly static water level monitoring was performed during 2005.

MW-3: Monthly free-product recovery activities were performed during 2005. Quarterly static water level monitoring was performed during 2005. An annual groundwater sample was collected in June 2005.

MW-4: Quarterly static water level monitoring was performed during 2005.

Site-Wide Activities: A technology review and data assessment to evaluate free-product removal was performed in 2005.

SITE MAP

A site map (June) is attached in Figure 1.

James F. Bell #1E
Meter Code: 94715

SUMMARY TABLES AND GRAPHS

- Analytical data for 2005 are summarized in Table 1, and historic data are presented graphically in Figures 2 through 5.
- Free-product recovery data for 2005 are summarized in Table 2, and historic data are presented graphically in Figures 6 and 7.
- The laboratory report is 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. Phase separated hydrocarbons are stored in a 55 gallon drum and are 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 the potentiometric surface and analytical data collected during 2005.

CONCLUSIONS

- Based on water level data collected between 1997 and 2005, the hydraulic gradient is relatively flat across the site and groundwater flow may vary over time and space. The current monitoring wells do not appear to be located directly downgradient of MW-1 and the former pit location; however, they have clearly been affected by hydrocarbon contamination. These wells should continue to be monitored. In 1995, borings were attempted to the east and north of the pit that did not encounter water. Therefore, it was concluded that the extent of contaminated groundwater has been physically defined by the dry holes, providing evidence that groundwater contamination is limited to a perched, discontinuous zone.
- Free-product recovery efforts at MW-1 resulted in removal of approximately 5.46 gallons of free-phase hydrocarbons during 2005 bringing the cumulative total volume recovered to approximately 785 gallons. Free-product removal in 2004 totaled 13 gallons, compared to 5.46 gallons in 2005, demonstrating that product accumulation is decreasing.

- Free-product recovery efforts at MW-3 did not result in the removal of any free-phase hydrocarbons during 2005, keeping the cumulative total volume recovered to approximately 103 gallons. Free-product removal in 2004 totaled less than 0.01 gallons, compared to no free product recovery in 2005, indicating that product removal is complete. The well was redeveloped in February 2005.

- Free-product thickness and recovery has been steadily decreasing over time in both MW-1 and MW-3. There has been no measurable free-product in MW-3 since January 2004.

- Based on the technology review and free-product removal data for this site, it was concluded that the current free-product removal techniques (active free-product removal in MW-1, and monitoring at MW-3) are the most efficient and effective product removal methods at this time.

- BTEX concentrations in MW-3 in 2005 were above NMWQCC standards for benzene (2,260 µg/L), toluene (1,090 µg/L), ethylbenzene (1,920 µg/L), and total xylenes (24,800 µg/L). However, all BTEX concentrations have decreased since sampling was initiated in 1996 (benzene 4,210 µg/L, toluene 19,200 µg/L, ethylbenzene 11,700 µg/L, and total xylenes 1,140 µg/L).

- BTEX concentrations in MW-2 were below detection limits in 2005. BTEX concentrations in MW-2 have been steadily decreasing since 2000.

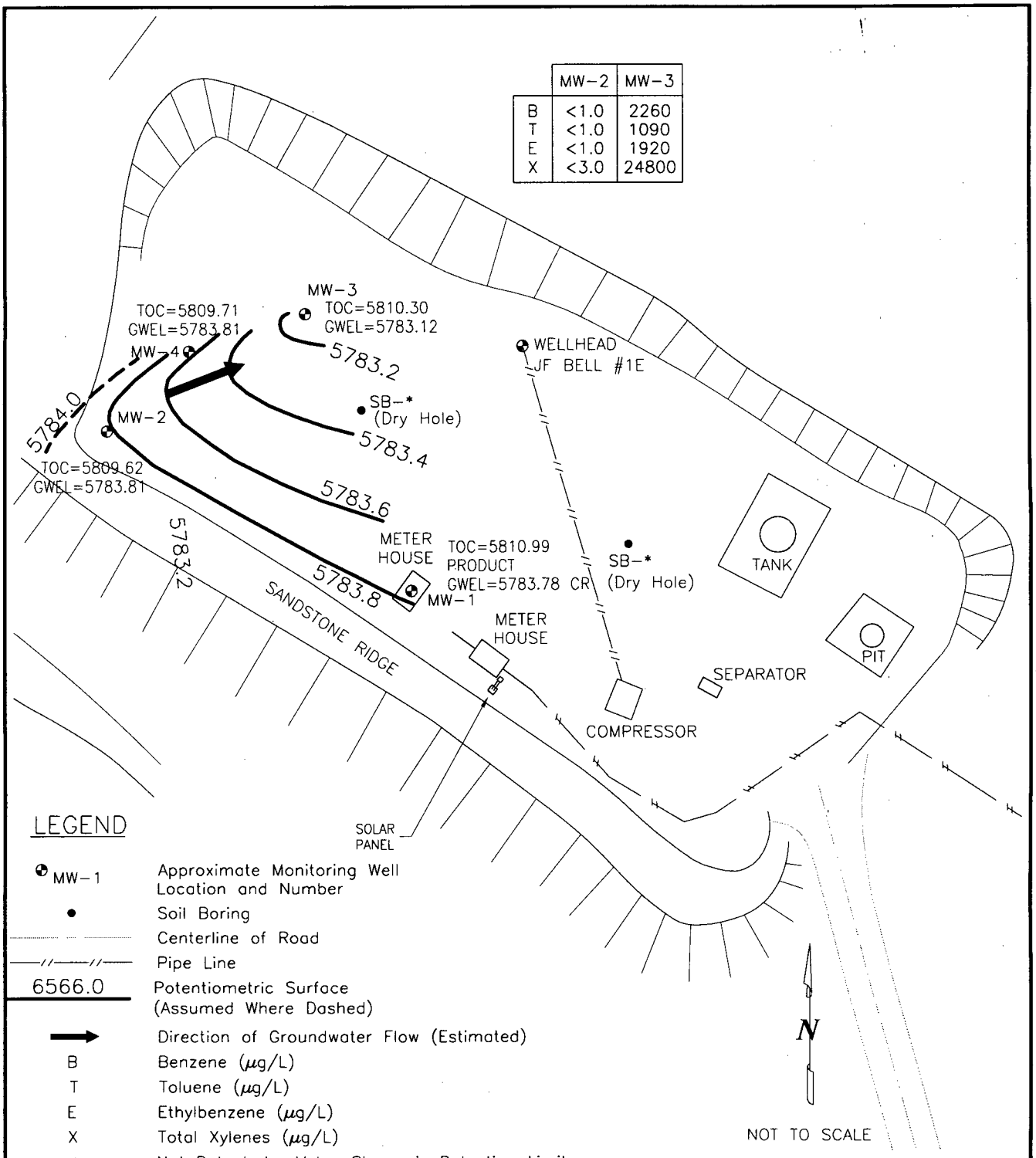
RECOMMENDATIONS

- EPTPC will continue monthly free-product recovery efforts at well MW-1; however, the frequency of monitoring will be adjusted based on the amount of product recovered during the monitoring visits.

- Once free-product recovery efforts are complete at MW-1, this well will be sampled on an annual basis until sample results approach closure criteria. The well will then be scheduled for quarterly sampling until closure criteria are met.

- EPTPC will continue annual groundwater sample collection and quarterly water level monitoring at MW-2 and MW-3.

- Because historic data collected at MW-4 indicate concentrations of BTEX constituents below analytical detection limits, EPTPC will not sample this well until the site closure samples are collected. Water level monitoring will continue on a quarterly basis.



LEGEND

MW-1	Approximate Monitoring Well Location and Number
•	Soil Boring
.....	Centerline of Road
——//——//——	Pipe 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)
<	Not Detected. Value Shown is Detection Limit.
NS	Not Sampled
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
TOC	Top of Casing
Product	Free-Product Present
CR	Water Level Corrected for Product

jfbell1e6_05.dwg

JAMES F. BELL #1E, METER 94715
JUNE 2005

GROUNDWATER SITES
EL PASO TENNESSEE PIPELINE COMPANY

FIGURE 1

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES
JAMES F BELL #1E (METER #94715)

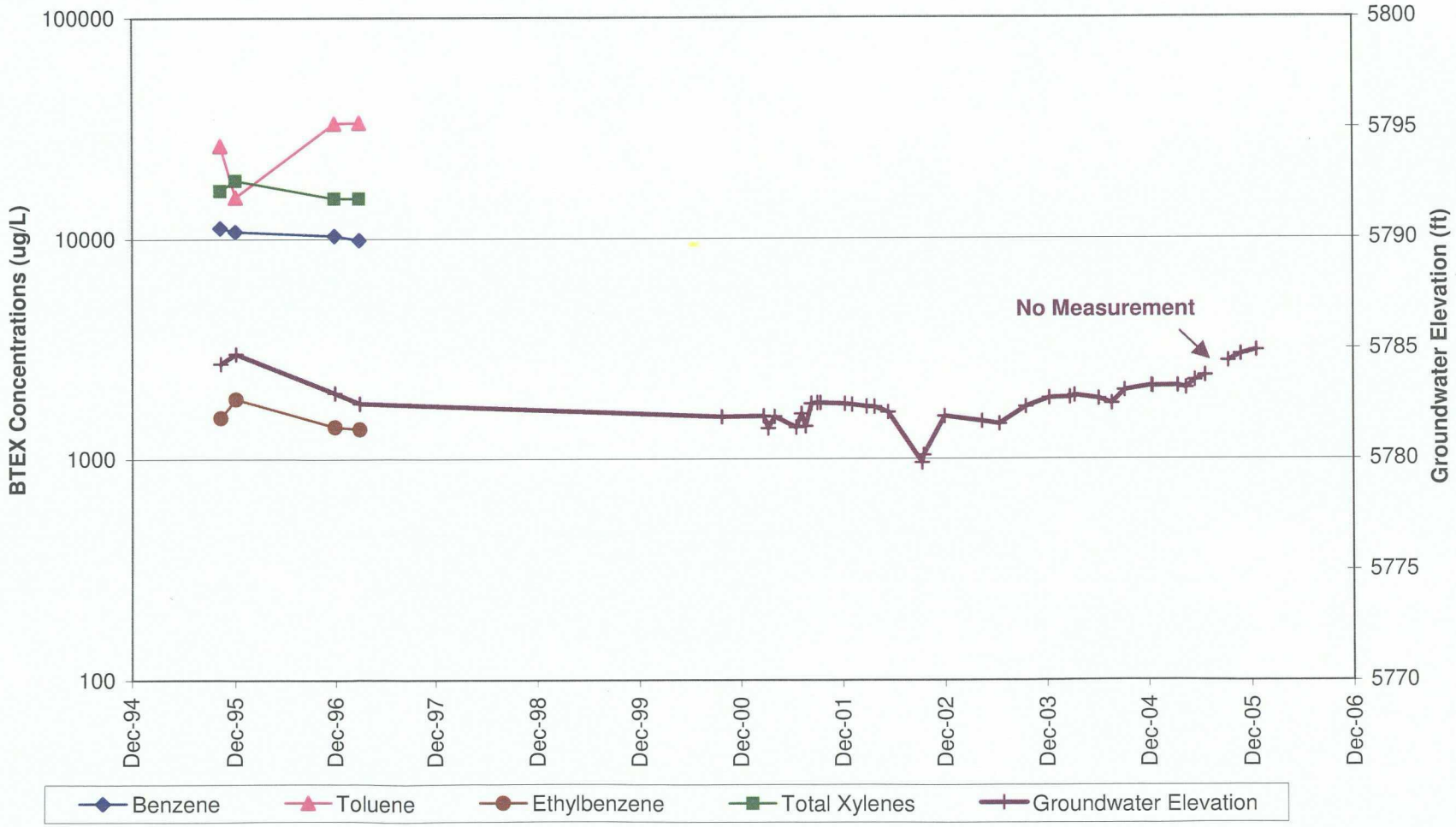
Site Name	Sample Date	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
James F. Bell #1E	6/23/2005	MW-2	1	1	1	2	25.81
James F. Bell #1E	6/23/2005	MW-3	2260	1090	1920	24800	27.19

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL DURING 2005
JAMES F BELL #1E (METER #94715)

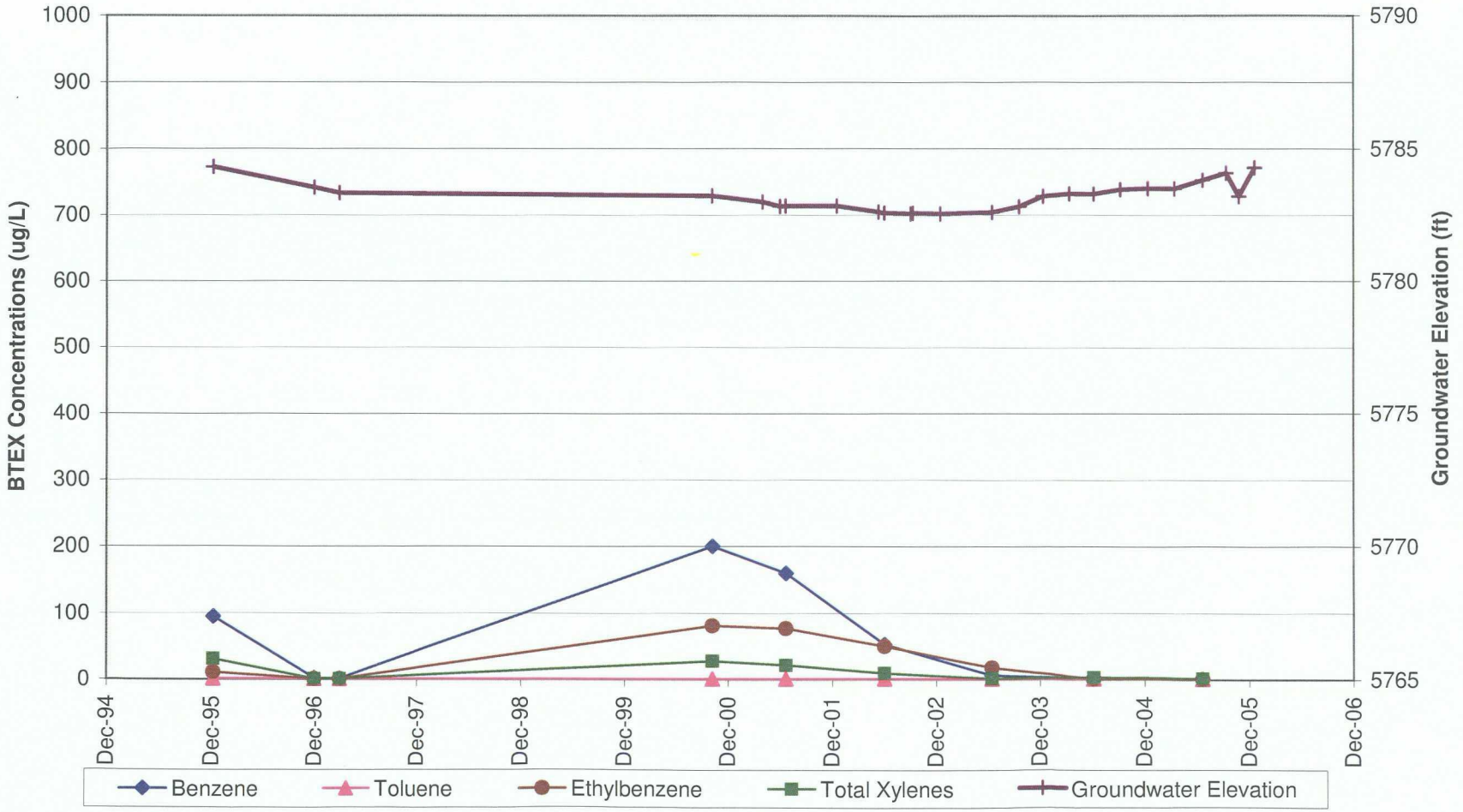
Site Name	Monitoring Well	Removal Date	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Product Thickness (feet)	Volume Removed (gallons)	Cumulative Volume of Product Removed (gallons)
James F. Bell #1E	MW-1	1/17/05				0.58	780.203
James F. Bell #1E	MW-1	2/15/05				0.58	780.783
James F. Bell #1E	MW-1	3/16/05				0.59	781.373
James F. Bell #1E	MW-1	3/17/05	27.65	27.83	0.18	0	781.373
James F. Bell #1E	MW-1	4/15/05	27.72	28.03	0.31	0.22	781.593
James F. Bell #1E	MW-1	5/17/05	27.35	27.78	0.43	0.36	781.953
James F. Bell #1E	MW-1	6/17/05				2.15	784.103
James F. Bell #1E	MW-1	6/23/05	27.21	27.23	0.02	0	784.103
James F. Bell #1E	MW-1	7/19/05				0	784.103
James F. Bell #1E	MW-1	8/22/05				0.1	784.203
James F. Bell #1E	MW-1	9/12/05	26.52	26.56	0.045	0.88	785.083
James F. Bell #1E	MW-3	1/17/05		27.78	0	0	102.5866
James F. Bell #1E	MW-3	2/15/05		27.75	0	0	102.5866
James F. Bell #1E	MW-3	3/16/05		27.72	0	0	102.5866
James F. Bell #1E	MW-3	3/17/05		37.69	0	0	102.5866
James F. Bell #1E	MW-3	4/15/05		27.69	0	0	102.5866
James F. Bell #1E	MW-3	5/17/05		27.38	0	0	102.5866
James F. Bell #1E	MW-3	6/23/05		27.185	0	0	102.5866
James F. Bell #1E	MW-3	7/19/05		27.065	0	0	102.5866
James F. Bell #1E	MW-3	8/22/05		26.87	0	0	102.5866

FIGURE 2
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JAMES F BELL #1E
MW-1



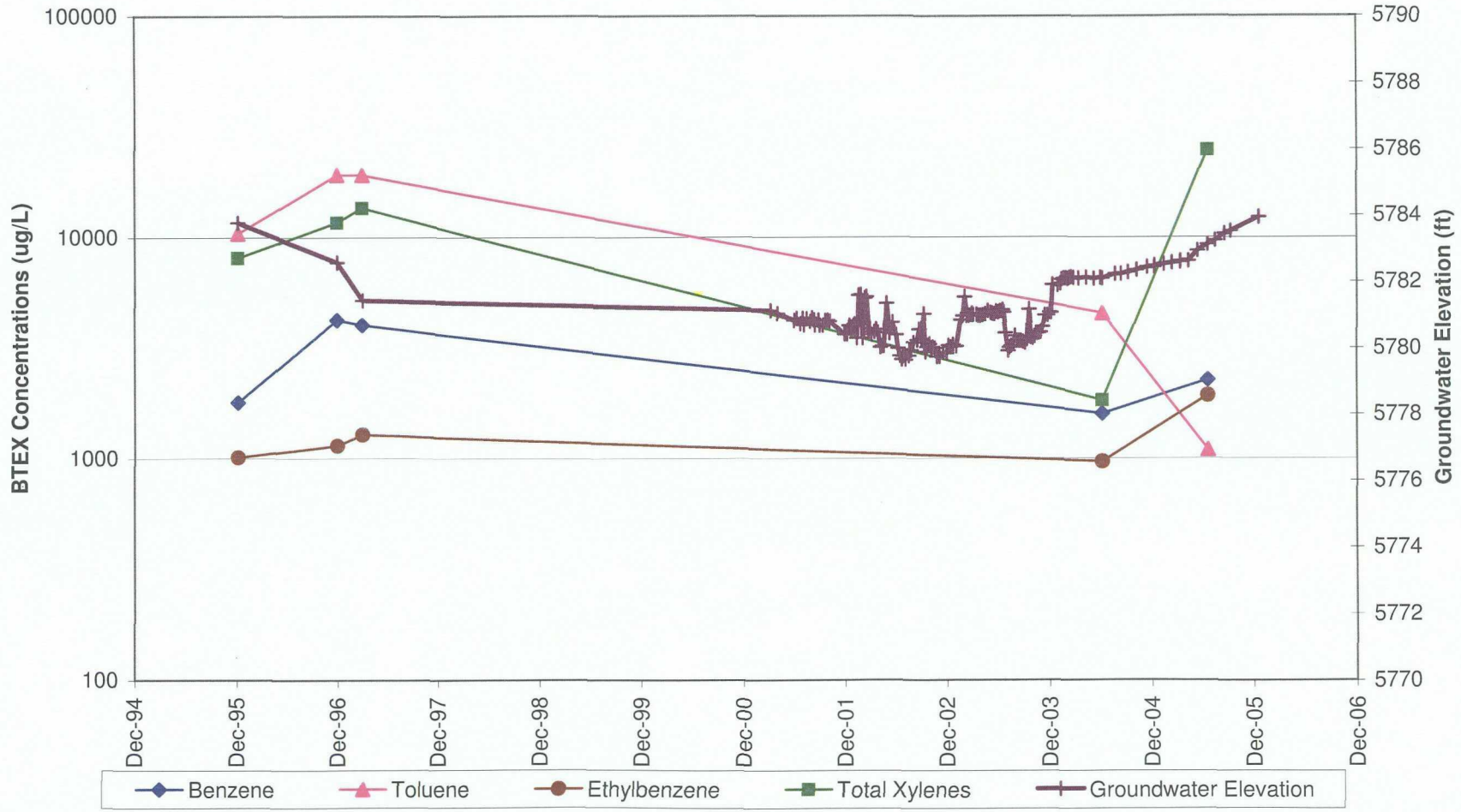
2005 JF Bell 1E.xls,JFBell MW1

FIGURE 3
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JAMES F BELL #1E
MW-2



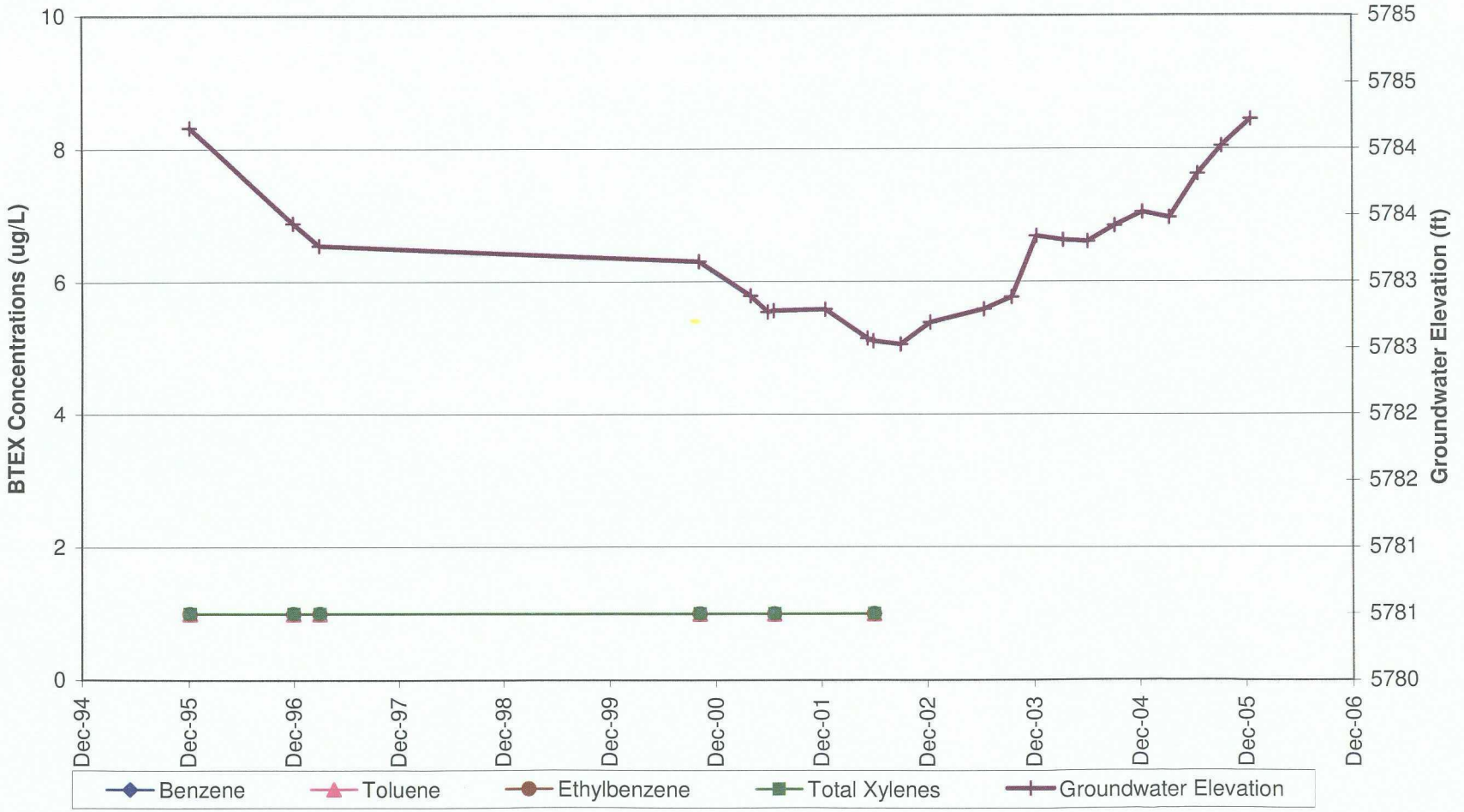
2005 JF Bell 1E.xls,JFBell MW2

FIGURE 4
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JAMES F BELL #1E
MW-3



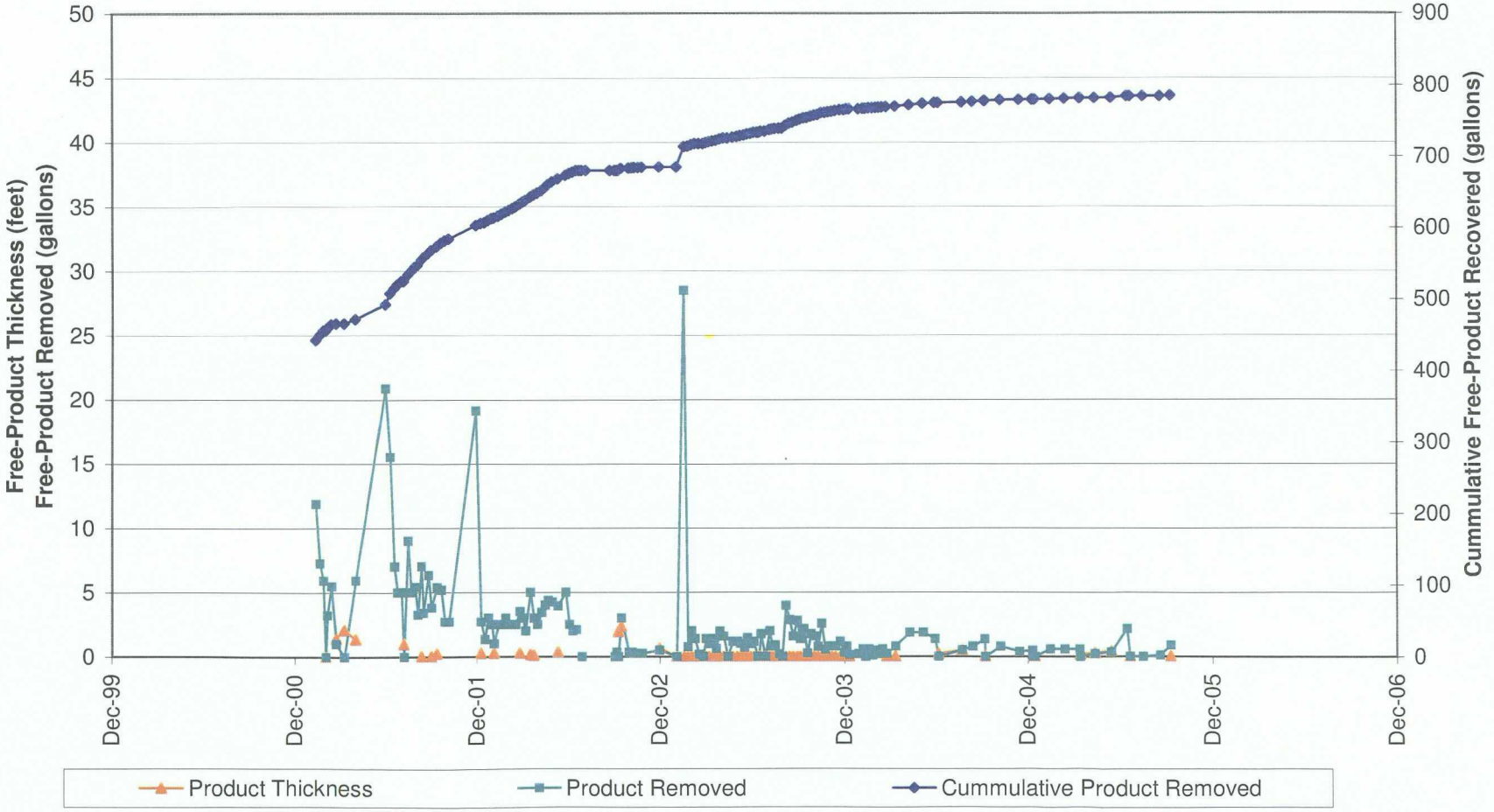
2005 JF Bell 1E.xls,JFBell MW3

FIGURE 5
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS
JAMES F BELL #1E
MW-4



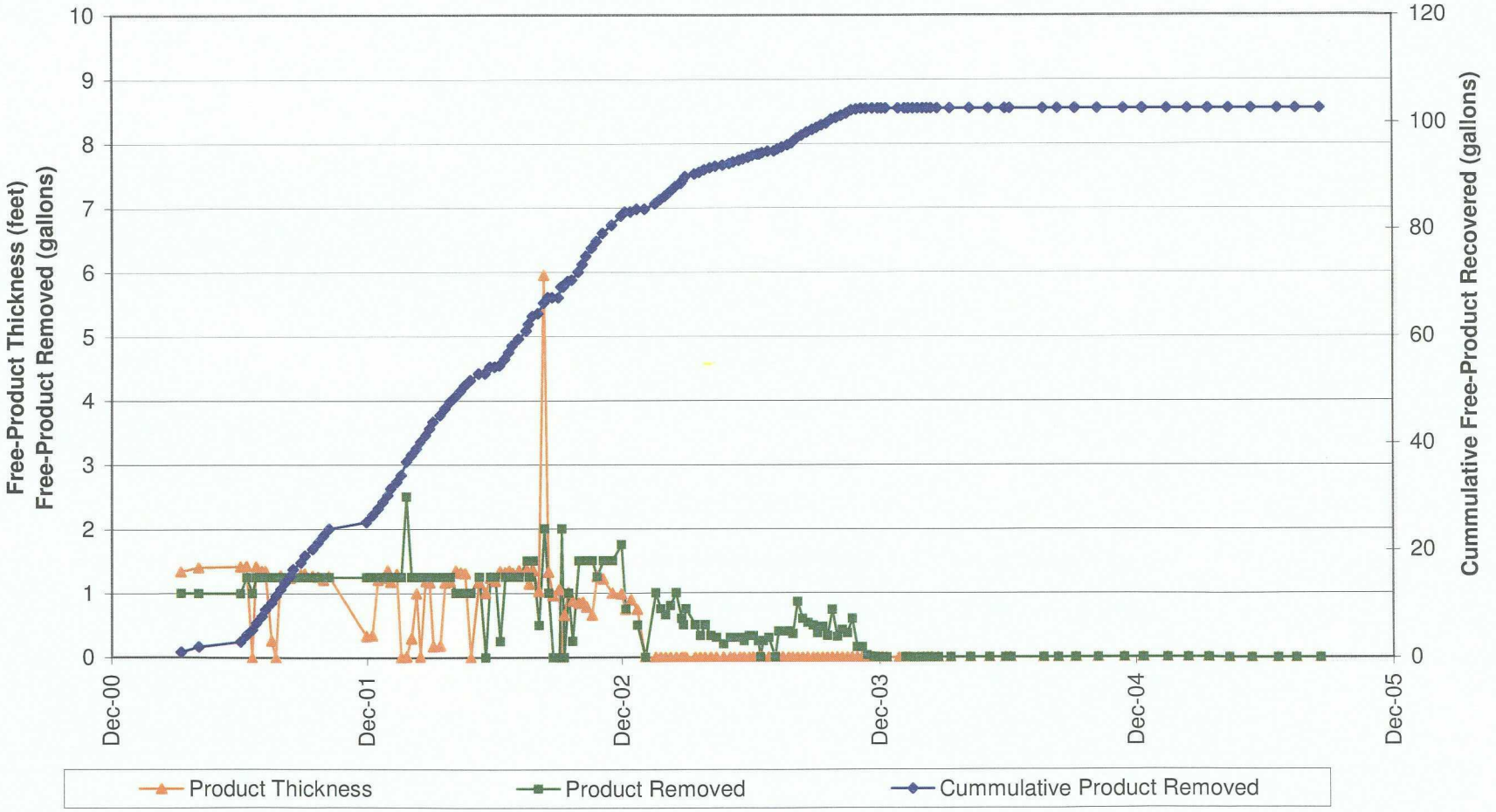
2005 JF Bell 1E.xls,JFBell MW4

FIGURE 6
HISTORIC FREE-PRODUCT RECOVERY
JAMES F BELL #1E
MW-1



2005 JF Bell 1E.xls, JFBell PR1

FIGURE 7
HISTORIC FREE-PRODUCT RECOVERY
JAMES F BELL #1E
MW-3



2005 JF Bell 1E.xls, JFBell PR3