

3R - 192

**ANNUAL  
MONITORING  
REPORTS**

**DATE:**

3/2006

**2005 ANNUAL GROUNDWATER REPORT RECEIVED**  
**NON-FEDERAL SITES VOLUME II**

**EL PASO TENNESSEE PIPELINE COMPANY** MAR 17 2006

Oil Conservation Division  
**TABLE OF CONTENTS** Environmental Bureau

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
71669	State Gas Com N #1	31N	12W	16	H
70194	Johnston Fed #4	31N	09W	33	H
93388	Horton #1E	31N	09W	28	H
72556	Knight #1	30N	13W	5	A
03906	GCU Com A #142E	29N	12W	25	G
70445	Standard Oil Com #1	29N	09W	36	N
LD087	K-31 Line Drip	25N	06W	16	N
94967	*Lindrith B #24	24N	03W	9	N

3R 239

3R 201

3R 192

3R 207

3R 197

3R 238

3R 205

3R 214

\* Lindrith B#24 Site has been submitted for closure, and is pending approval from NMOCD.



**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

[illegible]

3-D TypeQuads Copyright © 1999 DeLuxe Yarns, Inc. ME 04096  
1 inch Scale: 1 = 600,000 Detail 2.4 Darnat: WGSN4  
(12" x 20" E-2025)

**EPTPC GROUNDWATER SITES  
2005 ANNUAL GROUNDWATER REPORT**

3R192

**Horton #1E  
Meter Code: 93388**

---

---

**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b> 31N	<b>Range:</b> 9W	<b>Sec:</b> 28	<b>Unit:</b> H
<b>NMOCD Haz Ranking:</b>	40	<b>Land Type:</b> Fee	<b>Operator:</b> BP \ Amoco Production Company	

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	8/94	<b>Excavation:</b>	9/94 (50 cy)	<b>Soil Boring:</b>	8/95
<b>Monitor Well:</b>	8/95	<b>Geoprobe:</b>	NA	<b>Additional MWs:</b>	10/99
<b>Downgradient MWs:</b>	10/99	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	12/96
<b>ORC Nutrient Injection:</b>	NA	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	NA
<b>Annual Initiated:</b>	10/99	<b>Quarterly Resumed:</b>	NA		

**SUMMARY OF 2005 ACTIVITIES**

**MW-1:** Quarterly groundwater sampling, dissolved oxygen measurements, and water level measurements were performed in 2005.

**MW-2:** Quarterly water level measurements were performed in 2005.

**MW-3:** Quarterly water level measurements were performed in 2005.

**Site-Wide Activities:** No other activities were performed at this site during 2005.

**SITE MAPS**

Site maps are attached as Figures 1 through 4.

**SUMMARY TABLES AND GRAPHS**

- Analytical data from 2005 are summarized in Table 1, and historic data are presented graphically in Figures 5 through 7.
- Laboratory reports are presented in Attachment 1 (included on CD).
- Field documentation is presented in Attachment 2 (included on CD).



**EPTPC GROUNDWATER SITES  
2005 ANNUAL GROUNDWATER REPORT**

**Horton #1E  
Meter Code: 93388**

---

**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**

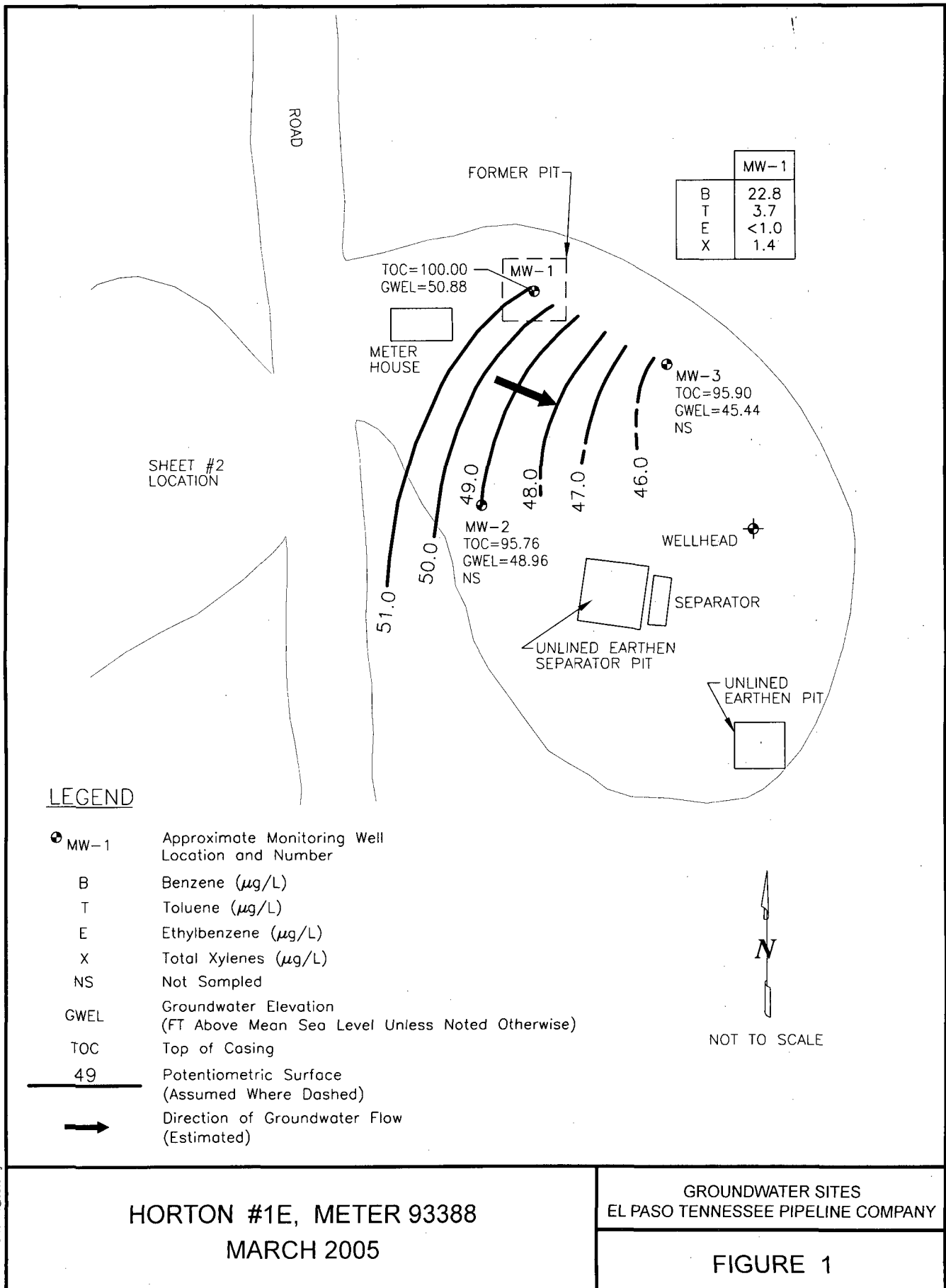
No isoconcentration maps were prepared for this site, however, the attached site maps present both the water level and analytical data collected during 2005.

**CONCLUSIONS**

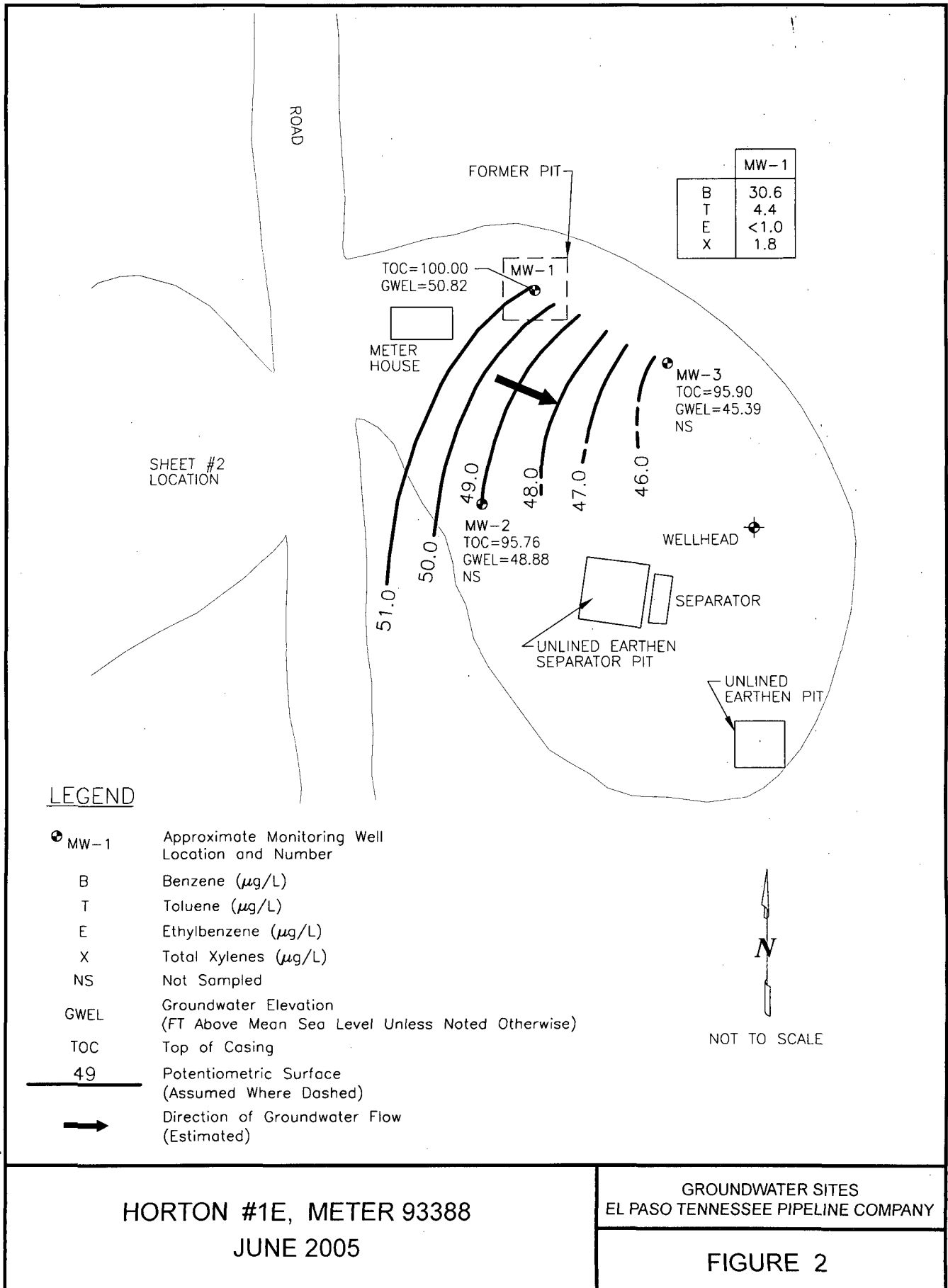
- The groundwater flow direction at this site trends toward the southeast.
- Dissolved oxygen concentrations in MW-1 decreased from 4.52 mg/L to 0.46 mg/L between March and December, indicating that the ORC is providing oxygen to enhance natural biodegradation and that the oxygen is being consumed in the process.
- Benzene concentrations in MW-1 decreased from historic levels near 100 µg/L to 22.8 µg/L and 8.8 µg/L in March and December, respectively. This drop is likely attributable to addition of ORC socks into the well in October 2003.
- ORC socks were removed from MW-1 during the March site visit for performance evaluation. Since benzene concentrations have continued to decrease, the socks have not been replaced in the well.

**RECOMMENDATIONS**

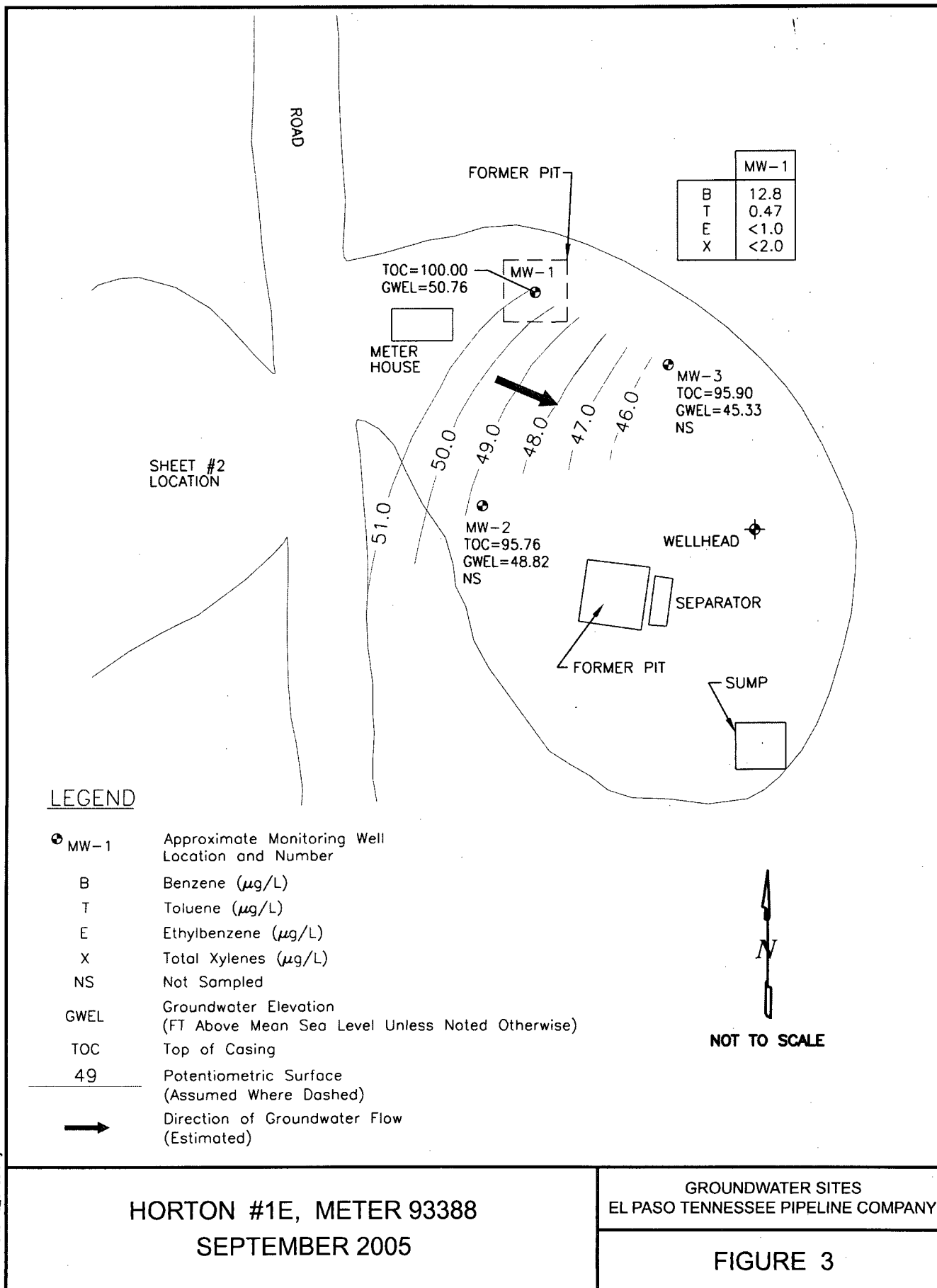
- Continue quarterly groundwater sampling (March, June, September and December) of MW-1. Replacement of the ORC will be evaluated based on the results of these sampling events.
- Because sample results dating back to 1999 indicate that BTEX concentrations in samples collected from MW-2 and MW-3 have been below detection limits, EPTPC recommends that these wells not be sampled until closure samples are scheduled.
- EPTPC recommends that water level measurements be collected from MW-2 and MW-3, in conjunction with sampling at MW-1.



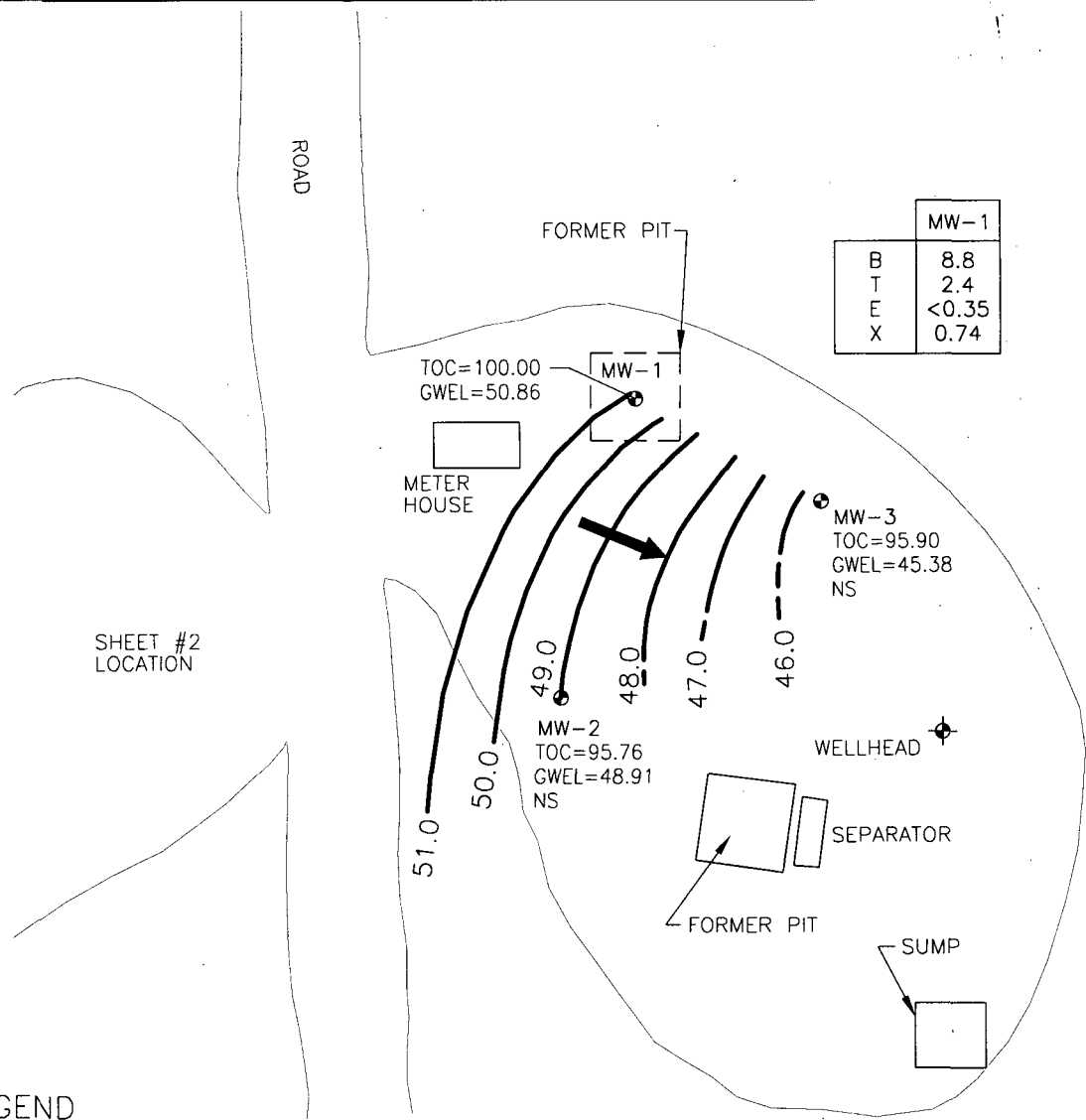
horton1e\_05.dwg





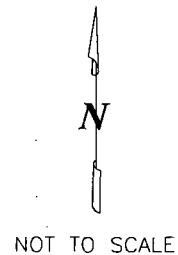


horton1e\_6-05.dwg



### LEGEND

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



HORTON #1E, METER 93388  
DECEMBER 2005

GROUNDWATER SITES  
EL PASO TENNESSEE PIPELINE COMPANY

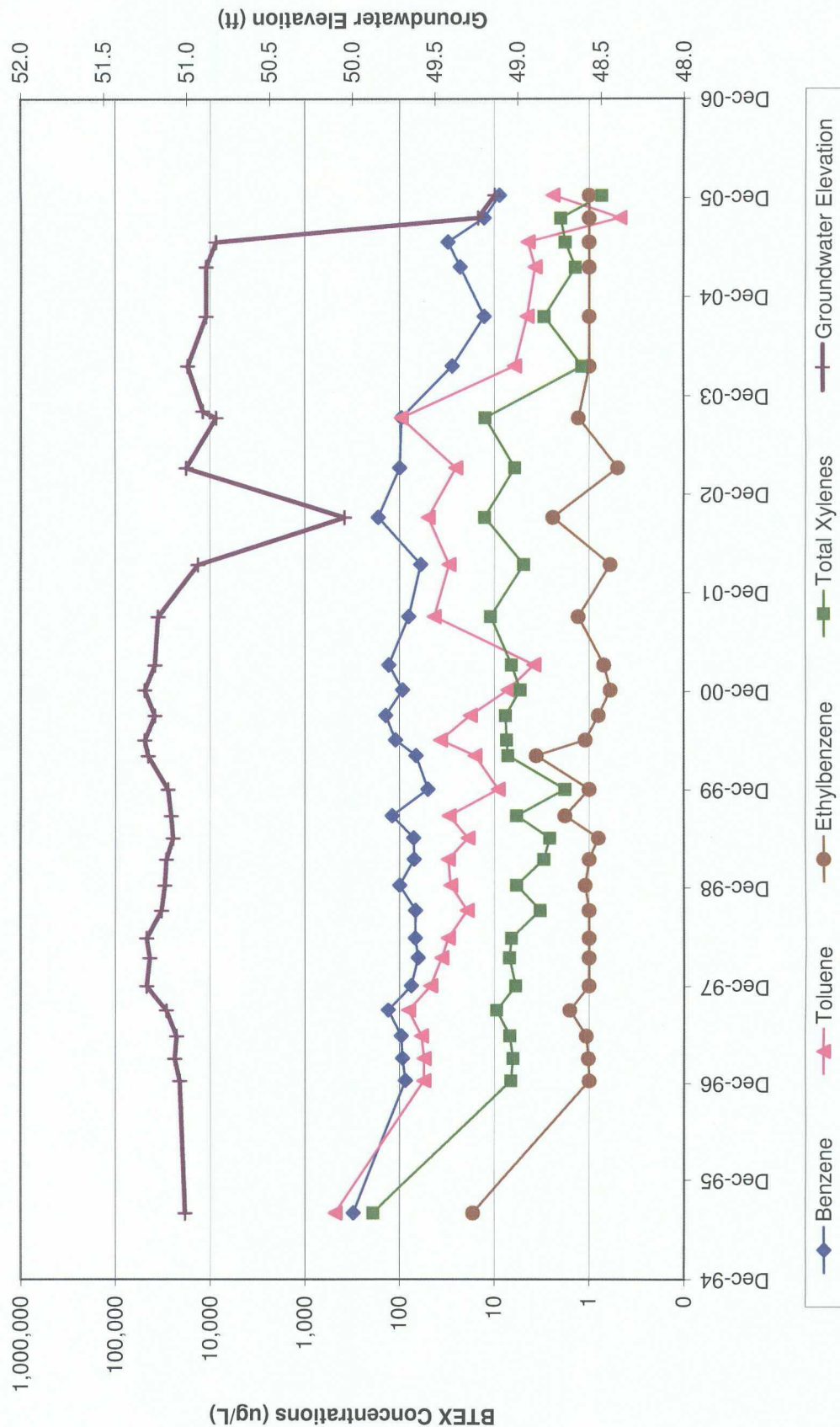
FIGURE 4

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN 2005 GROUNDWATER SAMPLES  
HORTON #1E (METER #93388)

Site Name	Sample Date	MW#	Monitoring Well	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
Horton #1E	3/23/2005	1	MW-1	22.8	3.7	1	1.4	49.12
Horton #1E	6/23/2005	1	MW-1	30.6	4.4	1	1.8	49.18
Horton #1E	9/20/2005	1	MW-1	12.8	0.47	1	2	49.24
Horton #1E	12/14/2005	1	MW-1	8.8	2.4	1	0.74	49.14

**FIGURE 5**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**HORTON #1E**  
**MW-1**



**FIGURE 6**  
**HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS**  
**HORTON #1E**  
**MW-2**

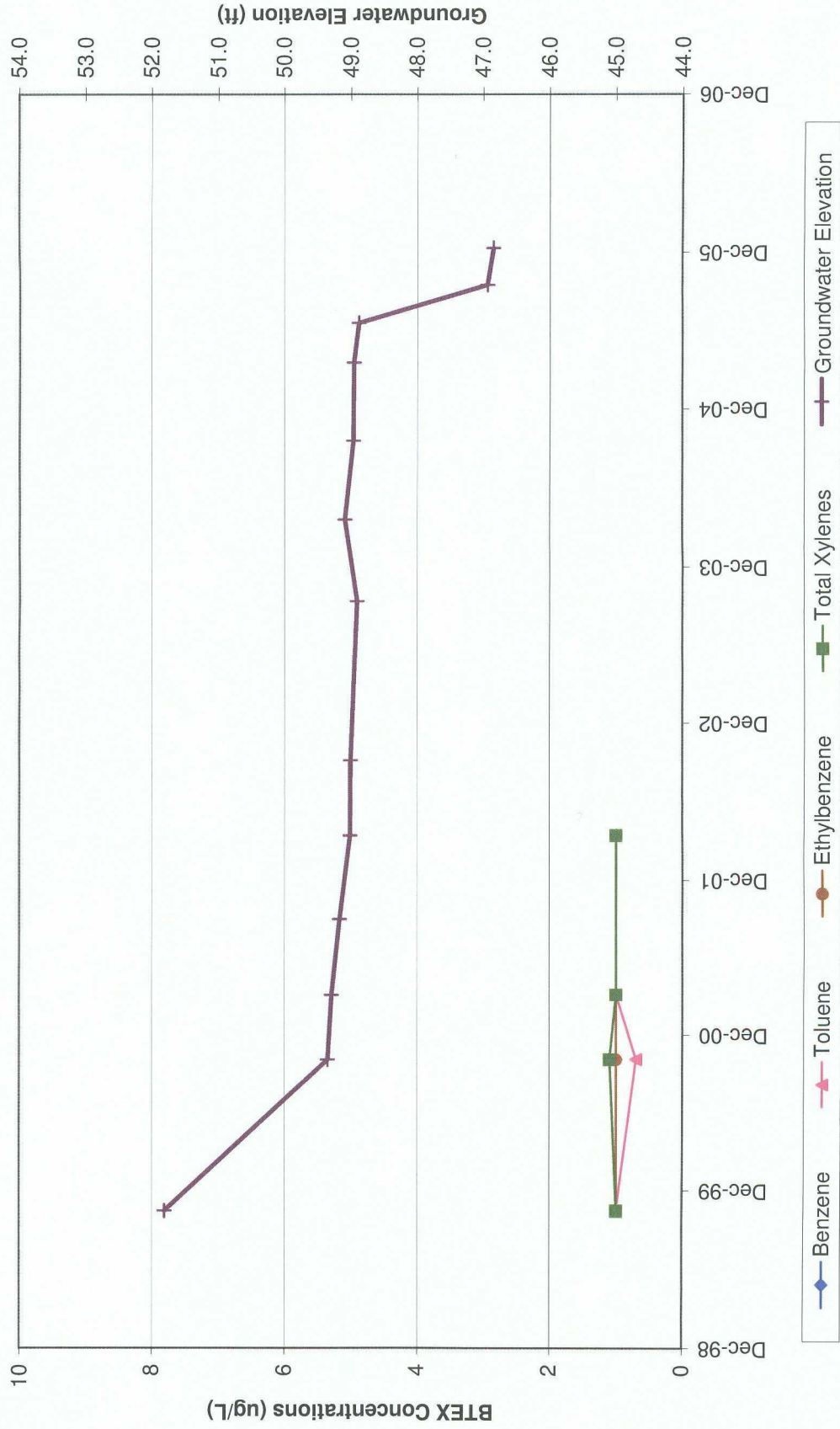


FIGURE 7  
HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS  
HORTON #1E  
MW-3

