

**3R - 235**

**ANNUAL  
MONITORING  
REPORT**

**04/02/2008**



**MWH**

**BUILDING A BETTER WORLD**

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April 2, 2008

Mr. Glenn von Gonten  
New Mexico Oil Conservation Division (NMOCD)  
1220 South St., Francis Drive  
Santa Fe, New Mexico 87505

**RE: El Paso Tennessee Pipeline Company Pit Groundwater Remediation Sites  
2007 Annual Reports**

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Tennessee Pipeline Company (EPTPC), is submitting the enclosed 2007 Annual Reports for each of EPTPC's 21 remaining San Juan River Basin pit groundwater remediation Sites. The reports present the 2007 sampling and product recovery data and include recommendations for 2008 activities at these Sites.

Copies of the reports for Sites located on Federal or Navajo lands are also being sent under separate cover to the Bureau of Land Management and the Navajo Nation Environmental Protection Agency.

If you have any questions concerning the enclosed reports, please call either Nancy Prince of EPTPC (719-520-4690) or me (303-291-2276).

Sincerely,

Jed Smith  
Project Manager

cc: Brandon Powell – NMOCD, Aztec, NM  
Nancy Prince – EPTPC  
MWH Project File

**2007 ANNUAL GROUNDWATER REPORT  
FEDERAL SITES VOLUME I  
EL PASO TENNESSEE PIPELINE COMPANY**

**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
70194	Johnston Fed #4	31N	09W	33	H	3R201



**EPTPC GROUNDWATER SITES  
2007 ANNUAL GROUNDWATER REPORT**

**3R 235**

**Sandoval GC A #1A  
Meter Code: 89620**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b> 30N	<b>Range:</b> 9W	<b>Sec:</b> 35	<b>Unit:</b> C
<b>NMOCD Haz Ranking:</b>	10	<b>Land Type:</b>	Federal	<b>Operator:</b> BP / Amoco Production Company

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	5/94	<b>Excavation:</b>	9/94 (50 cy)	<b>Soil Boring:</b>	5/95
<b>Monitor Well:</b>	5/95	<b>Geoprobe:</b>	NA*	<b>Additional MWs:</b>	NA*
<b>Downgradient MWs:</b>	NA	<b>Replace MW:</b>	8/97	<b>Quarterly Initiated:</b>	4/96
<b>ORC Nutrient Injection:</b>	10/01	<b>Re-Excavation:</b>	7/97 (504cy)	<b>PSH Removal Initiated:</b>	NA
<b>Annual Initiated:</b>	4/99	<b>Quarterly Resumed:</b>	NA	<b>PSH Removal in 2007?</b>	No

\*Downgradient monitoring wells were attempted in 1995, but met with drilling refusal. In 1997, geoprobe borings were attempted, but were again met with drilling refusal.

**SUMMARY OF 2007 ACTIVITIES**

**MW-1:** Annual groundwater sampling and dissolved oxygen measurements were conducted in November 2007. 3 fresh ORC socks were placed in the well.

**Site-Wide Activities:** No other activities were performed at this Site during 2007.

**SITE MAP**

A Site map (November) is attached in Figure 1.

**SUMMARY TABLES AND GRAPHS**

- Historic analytical data are included in Table 1 and presented graphically on Figure 2.
- The 2007 analytical report is presented in Attachment 1 (included on CD).
- Field documentation is presented in Attachment 2 (included on CD).

**EPTPC GROUNDWATER SITES  
2007 ANNUAL GROUNDWATER REPORT**

**Sandoval GC A #1A  
Meter Code: 89620**

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**GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS**

No subsurface activities were performed at this Site during 2007.

**DISPOSITION OF GENERATED WASTES**

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station. The spent oxygen-releasing socks were managed as non-hazardous solid waste.

**ISOCONCENTRATION MAPS**

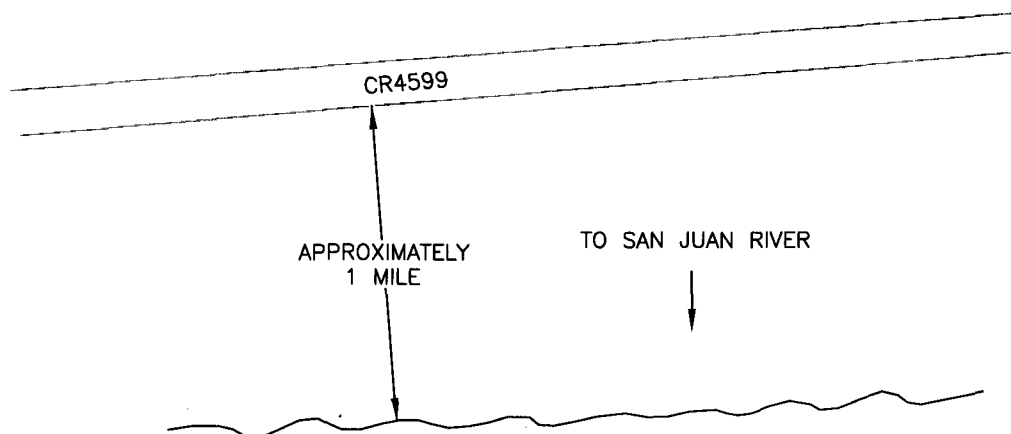
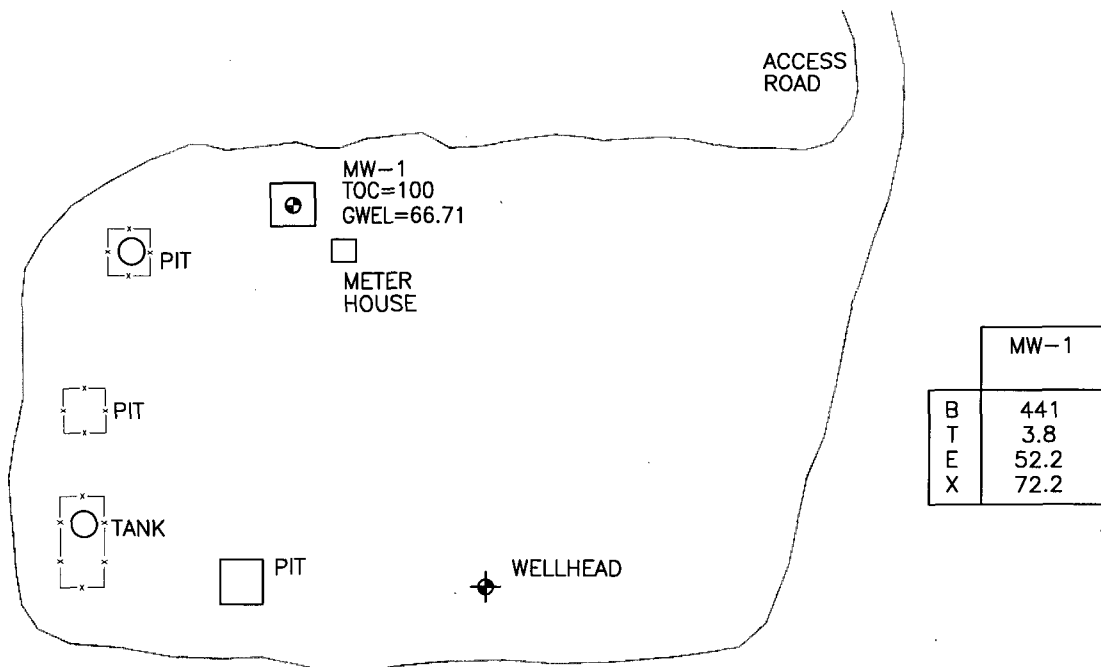
No isoconcentration maps were prepared for this Site; however, the attached Site map presents the analytical data collected during 2007.

**CONCLUSIONS**

- Regional groundwater flow is estimated to be toward the south.
- The dissolved oxygen concentration in MW-1 was 2.75 mg/L in November, indicating that sufficient oxygen is present for natural aerobic biodegradation to proceed uninhibited.
- The benzene concentration in MW-1 increased in 2007 to 441 µg/L, from a previous year result of 198 µg/L in 2005. As a long-term trend, the benzene concentrations continue to decrease from the historic high concentration of 10,400 µg/L in 1996.
- Previous attempts to install downgradient monitoring wells in December 1995 resulted in drilling refusal. Therefore, additional wells are not considered to be feasible at this Site.

**RECOMMENDATIONS**

- EPTPC will continue annual groundwater sampling (including dissolved oxygen measurements) at MW-1.
- EPTPC will continue to inspect the ORC socks installed in MW-1 and will replace them annually.



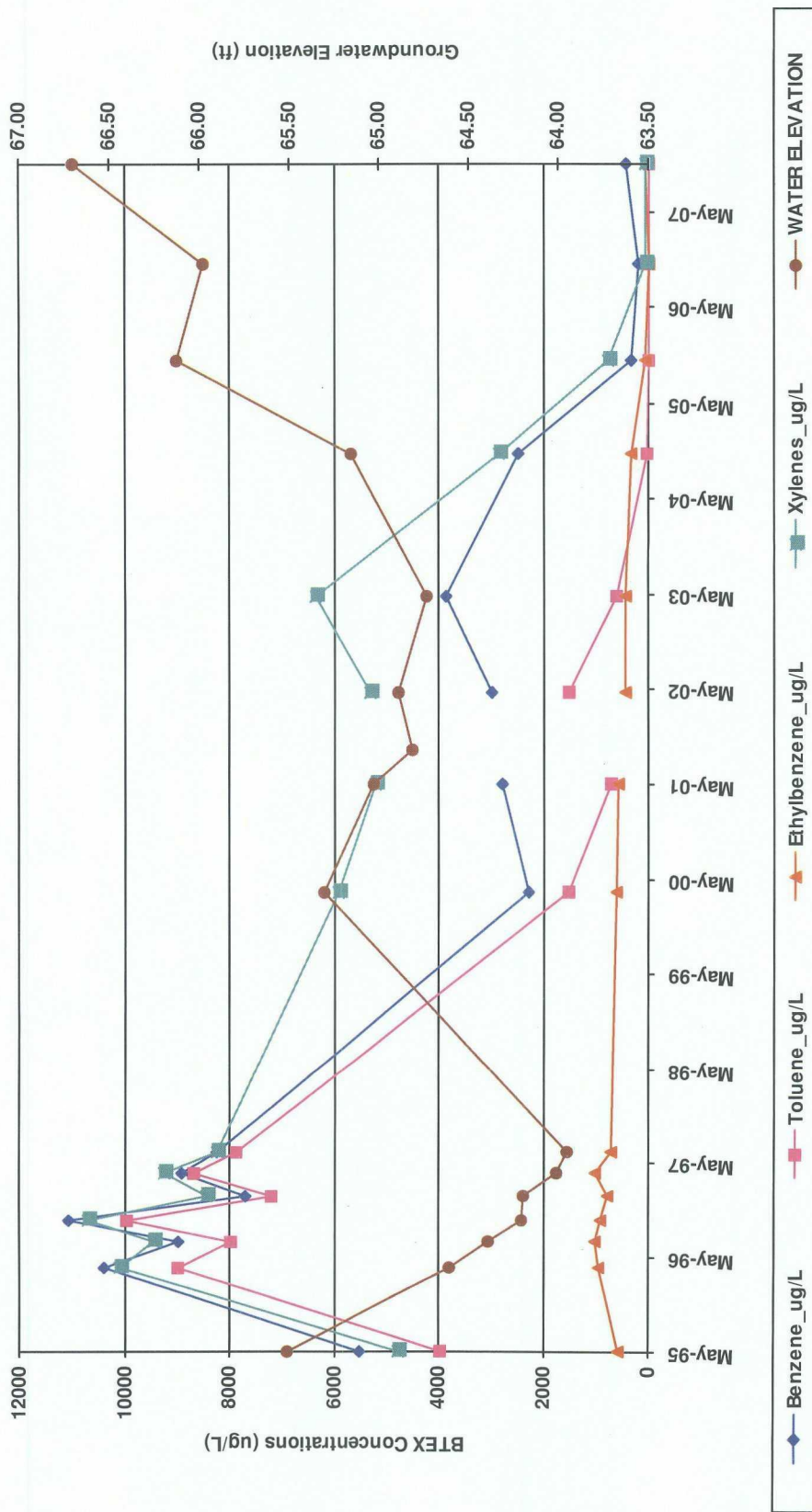
# LEGEND

- ⊕ MW-1 Approximate Monitoring Well Location and Number
- GWEL Groundwater Elevation (Relative)
- 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 ( $\mu\text{g/L}$ )

NOT TO SCALE

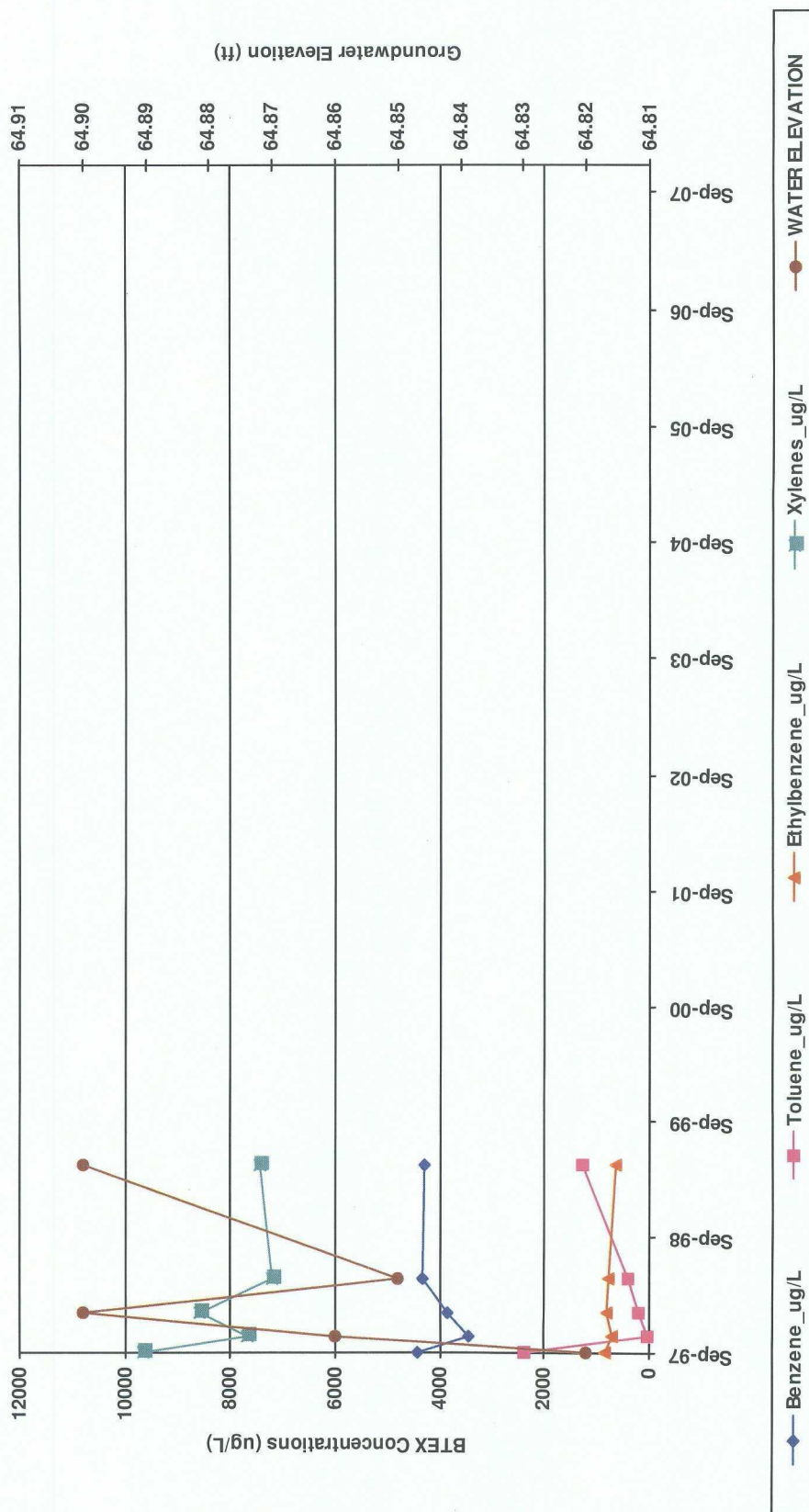
				<b>EL PASO TENNESSEE PIPELINE COMPANY</b> SANDOVAL GAS COM A #1A, METER 89620	
0 Issued for Report	11/07 REV. DATE	D. Wade DESIGN BY	N. Day DRAWN BY	J. Smith REVIEWED AND SIGNED BY	<b>GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS AND BTEX CONCENTRATIONS</b> NOVEMBER 2007
PROJECT No.: 1005521.0601		AutoCAD FILE: SANDOVALGAS		SCALE: As Shown	
FIGURE No: 1					

FIGURE 2  
SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES  
SANDOVAL GC A #1A (METER #89620)  
MW01



Note: Non Detects are represented by a value of 1.

FIGURE 3  
SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES  
SANDOVAL GC A #1A (METER #89620)  
R01



Note: Non Detects are represented by a value of 1.



TABLE 1

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES  
SANDOVAL GC A #1A (METER #89620)**

Monitoring Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)
<b>MW01</b>	5/30/1995	5500	3980	579	4780	34.49
	4/12/1996	10400	8960	925	10100	35.39
	7/26/1996	8980	7980	1000	9430	35.61
	10/18/1996	11050	9960	900	10700	35.79
	1/21/1997	7700	7210	787	8430	35.80
	4/16/1997	8900	8680	996	9250	35.99
	7/11/1997	8240	7850	709	8230	36.05
	4/13/2000	2300	1500	590	5900	34.70
	5/30/2001	2800	710	560	5200	34.97
	5/16/2002	3000	1500	440	5300	35.11
	5/21/2003	3850	601	443	6360	35.26
	11/16/2004	2490	30.9	346	2860	34.84
	11/8/2005	338	8.5	80.1	757	33.87
	11/8/2006	198	3.4	14.9	83.6	34.02
	11/29/2007	441	3.8	52.2	72.2	33.29
<b>R01</b>	9/4/1997	4420	2370	850	9660	35.18
	10/22/1997	3460	39.6	714	7690	35.14
	1/6/1998	3850	194	795	8570	35.10
	4/23/1998	4330	406	783	7220	35.15
	4/19/1999	4300	1260	629	7440	35.10

Note: Non Detects are represented by a value of 1.