

**3R - 235**

**2010 AGWMR**

**03/02/2011**



BUILDING A BETTER WORLD

3R 235

March 2, 2011

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  
2010 Annual Reports**

RECEIVED OGD  
2011 MAR -4 P 12:24

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Tennessee Pipeline Company (EPTPC), is submitting the enclosed 2010 Annual Reports for each of EPTPC's 21 remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2010 sampling and product recovery data and include recommendations for 2011 activities at these sites.

The 2010 Annual Reports are divided into three volumes based on location type. The volumes are as follows:

<u>Volume</u>	<u>Location Type</u>
1	Federal Land
2	Non-Federal Land (Excl. Navajo Nation)
3	Navajo Nation

If you have any questions concerning the enclosed reports, please call either Ian Yanagisawa of EPTPC (713-420-7361) or myself (303-291-2276).

Sincerely,

Jed Smith  
Project Manager

encl.

cc: Bill Freeman – NNEPA, Shiprock, NM (Volume 3 Only)  
Bill Liese – BLM, Farmington, NM (Volume 1 Only)  
Brandon Powell – NMOCD, Aztec, NM (Volumes 1, 2, and 3)  
Ian Yanagisawa – EPTPC (Volumes 1, 2, and 3 - Electronic)



El Paso Tennessee  
Pipeline Company

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San Juan Basin Pit Program  
Groundwater Sites Project

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Final 2010 Annual Report  
Federal Sites (Volume 1)

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March 2011



**MWH**

1801 California Street, Suite 2900  
Denver, Colorado 80202

**2010 ANNUAL GROUNDWATER REPORT  
FEDERAL SITES VOLUME I  
EL PASO TENNESSEE PIPELINE COMPANY**

**TABLE OF CONTENTS**

<b>METER or LINE ID</b>	<b>NMOCD CASE NO.</b>	<b>SITE NAME</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>SECTION</b>	<b>UNIT</b>
87640	3RP-155-0	Canada Mesa #2	24N	06W	24	I
89961	3RP-170-0	Fields A#7A	32N	11W	34	E
73220	3RP-068-0	Fogelson 4-1 Com. #14	29N	11W	4	P
89894	3RP-186-0	Hammond #41A	27N	08W	25	O
97213	3RP-190-0	Hamner #9	29N	09W	20	A
94715	3RP-196-0	James F. Bell #1E	30N	13W	10	P
89232	3RP-202-0	Johnston Fed #6A	31N	09W	35	F
LD072	3RP-204-0	K27 LD072	25N	06W	4	E
LD174	3RP-212-0	LAT L 40	28N	04W	13	H
LD151	3RP-213-0	Lat 0-21 Line Drip	30N	09W	12	O
94810	3RP-223-0	Miles Fed 1A	26N	07W	5	F
89620	3RP-235-0	Sandoval GC A #1A	30N	09W	35	C

\* The Hamner #9 site was submitted for closure in January 2009 and is pending approval from NMOCD. There were no monitoring activities for this site in 2010.



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## **LIST OF ACRONYMS**

AMSL	above mean sea level
B	benzene
btoc	below top of casing
E	ethylbenzene
EPTPC	El Paso Tennessee Pipeline Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitor well
NMWQCC	New Mexico Water Quality Control Commission
T	toluene
TOC	top of casing
NA	not applicable
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
µg/L	micrograms per liter
X	total xylenes





# **LEGEND**

- Sites on Federal Land
- Sites on Navajo Nation Land
- ▲ Sites on State/Fee "Non-Federal" Lands

\*Closure Request Pending with the NMOCD.



0 2 4 6 8 Miles



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PROJECT: SAN JUAN RIVER BASIN

TITLE: Site Locations, February 2011

FIGURE:

**1**



**EPTPC GROUNDWATER SITES  
2010 ANNUAL GROUNDWATER REPORT**

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

**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 2010?</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 2010 ACTIVITIES**

**MW-1:** Annual groundwater sampling (November) and semiannual dissolved oxygen measurements (May/November) were performed during 2010. 3 fresh ORC socks were placed in the well following the annual sampling event.

**Site-Wide Activities:** No other activities were performed at this Site during 2010.

**SITE MAP**

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

**SUMMARY TABLES AND GRAPHS**

- Historic analytical and water level data are summarized in Table 1 and presented graphically on Figure 2.
- The 2010 laboratory report is presented in Attachment 1 (included on CD).
- The 2010 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 2010.

**EPTPC GROUNDWATER SITES  
2010 ANNUAL GROUNDWATER REPORT**

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

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**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 2010.

**RESULTS**

- Regional groundwater flow is estimated to be toward the south, toward the San Juan River (approximately 1 mile away).
- The benzene concentration in MW-1 decreased in 2010 to 54.0 µg/L, from a previous year result of 88.4 µg/L in 2009. As a long-term trend, the benzene concentrations continue to decrease from the historic high concentration of 10,400 µg/L in 1996.
- The dissolved oxygen in MW-1 was approximately 6.5 mg/L on November 1, 2010, when the ORC<sup>®</sup> socks were removed for the upcoming sampling event. The dissolved oxygen results indicated that sufficient oxygen was present year-round for natural aerobic biodegradation to proceed un-impeded.
- 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.

**REMAINING CLOSURE REQUIREMENTS**

- This site is being managed per the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered During Pit Closure Activities" (El Paso Natural Gas Company / El Paso Field Services Company, 1995). This remediation plan was conditionally approved by the New Mexico Oil Conservation Division (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso's program methods.
- In order to meet the remaining closure requirements at this site, the following condition must be achieved: groundwater contaminant concentrations in the monitor well must meet the NMWQCC standards for at least 4 consecutive quarters. Alternatively, concentrations must be reduced to below background levels; however, there are no established background concentrations for the remaining constituents of concern. Currently, MW-1 requires additional monitoring. The remaining applicable standards are:



**EPTPC GROUNDWATER SITES  
2010 ANNUAL GROUNDWATER REPORT**

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

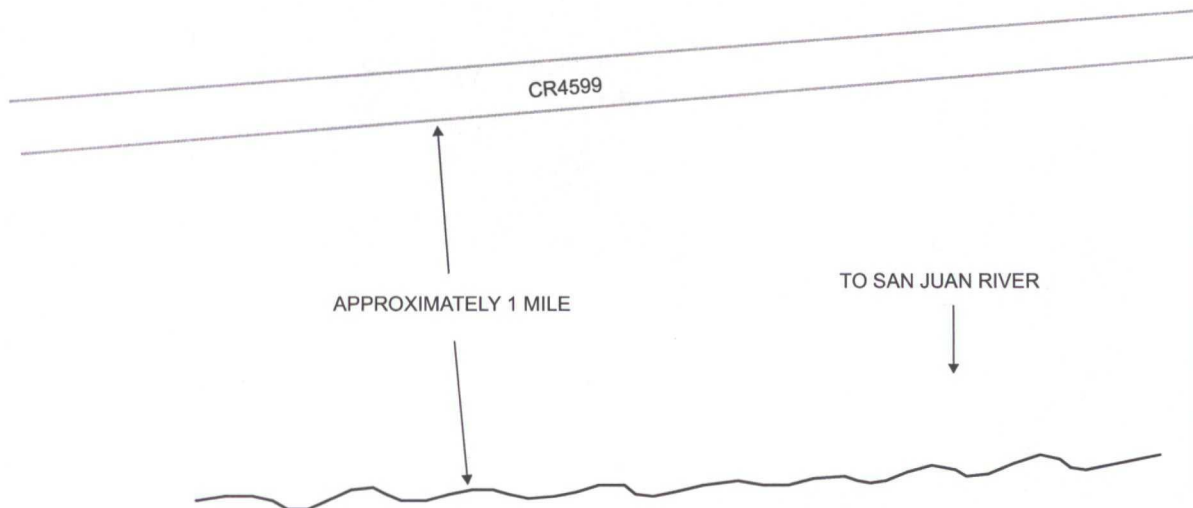
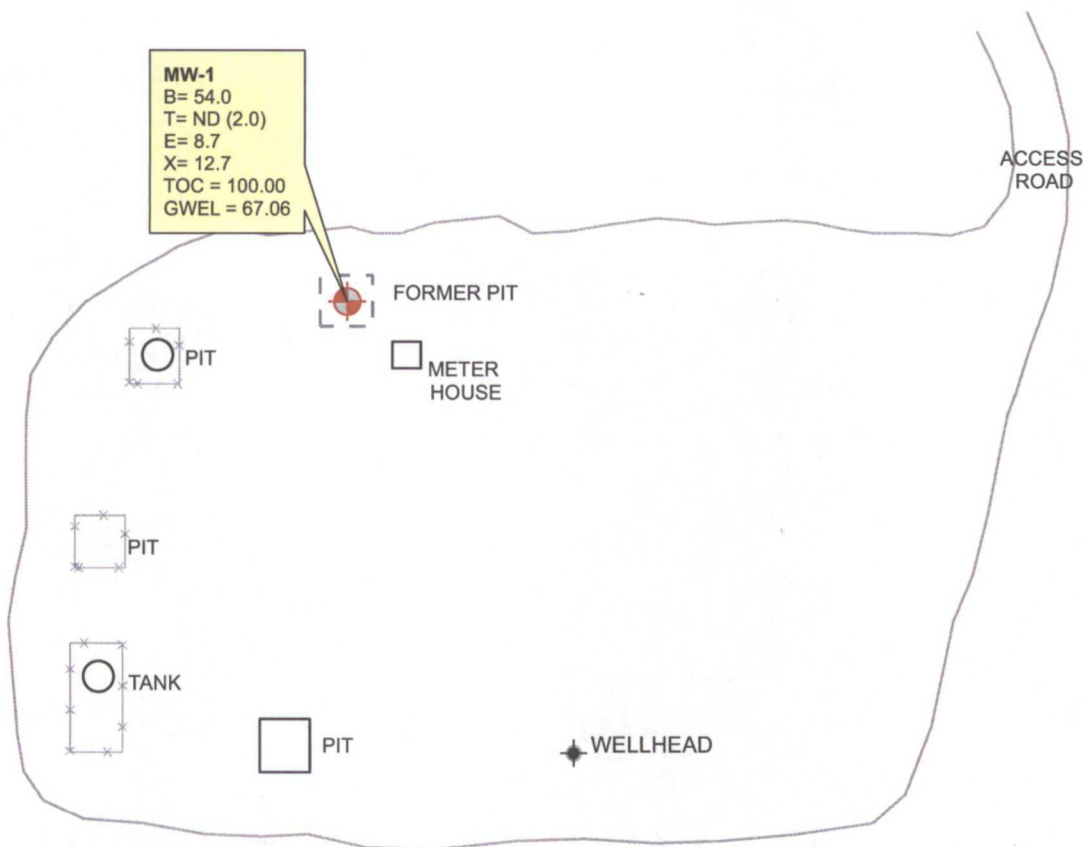
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Constituent	NMWQCC GW Standard (µg/L)
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylenes	620

**RECOMMENDATIONS**

- EPTPC will continue annual groundwater sampling and dissolved oxygen measurements at MW-1. Once benzene concentrations meet the NMWQCC benzene standard of 10 µg/L, sampling will be conducted on a quarterly basis.
- EPTPC will continue to inspect the ORC socks installed in MW-1 and will replace them annually.

**MW-1**  
 B= 54.0  
 T= ND (2.0)  
 E= 8.7  
 X= 12.7  
 TOC = 100.00  
 GWEL = 67.06



### LEGEND

**MW-4** Existing Monitoring / Observation Well

**PZ-01** Abandoned Monitoring Well

Groundwater Flow Direction

Potentiometric Surface Contour (Inferred Where Dashed)

**B** Benzene (ug/L)

**T** Toluene (ug/L)

**E** Ethylbenzene (ug/L)

**X** Total Xylenes (ug/L)

**TOC** Top of Casing (ft. \*)

**GWEL** Groundwater Elevation (ft. \*)

\* = Elevations in feet relative to a 100 ft benchmark.



Not To Scale



**MWH**



PROJECT:

SANDOVAL GC A#1A

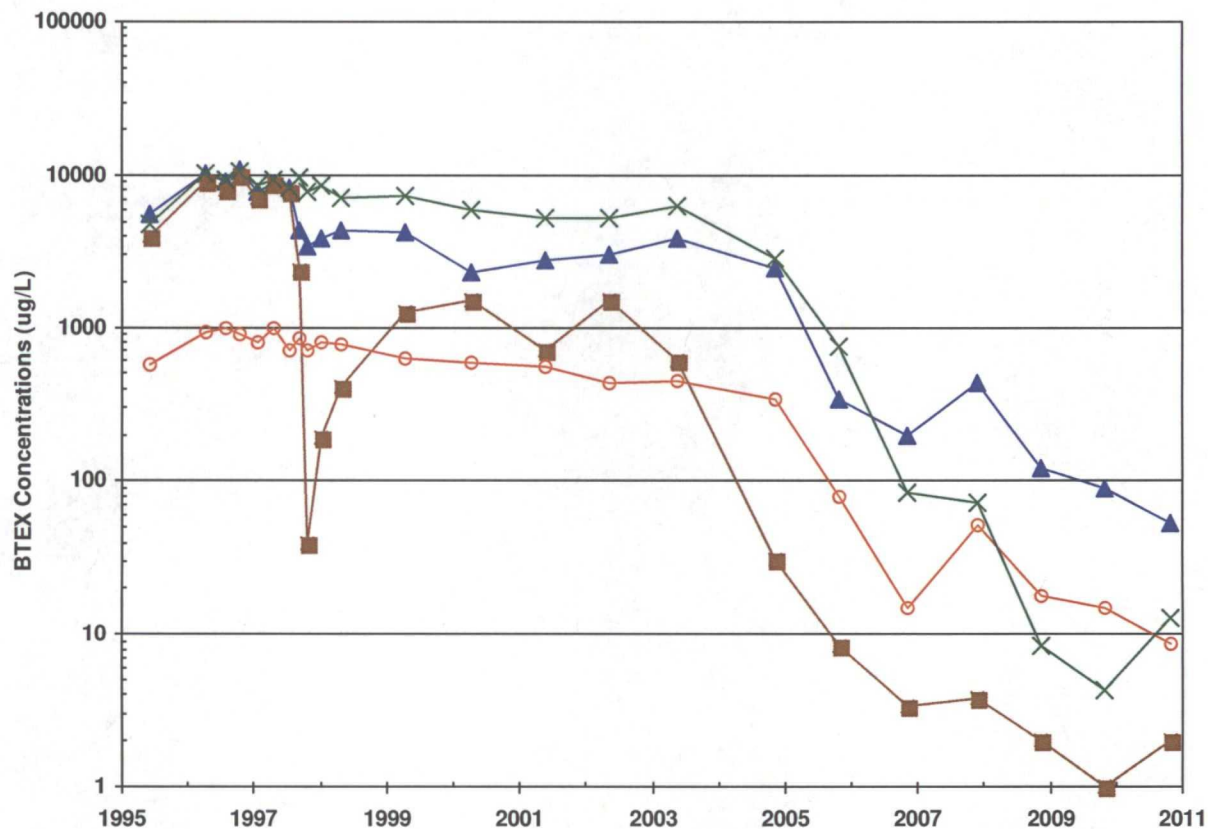
TITLE:

Groundwater Potentiometric Surface Map,  
and BTEX Concentrations - November 9, 2010

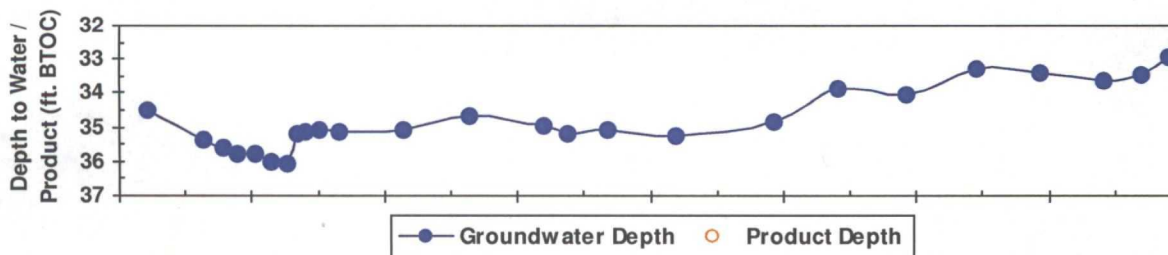
FIGURE:

1

**FIGURE 2**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**SANDOVAL GC A #1A (METER #89620)**  
**MW01**



▲ Benzene	■ Toluene	○ Ethylbenzene	× Total Xylenes
NM Std.: (10 ug/L)	(750 ug/L)	(750 ug/L)	(620 ug/L)



● Groundwater Depth	○ Product Depth
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TABLE 1

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

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (Feet*)
NMWQCC GW Std.:		10	750	750	620		
MW01	5/30/1995	5500	3980	579	4780	34.49	65.51
MW01	4/12/1996	10400	8960	925	10100	35.39	64.61
MW01	7/26/1996	8980	7980	1000	9430	35.61	64.39
MW01	10/18/1996	11050	9960	900	10700	35.79	64.21
MW01	1/21/1997	7700	7210	787	8430	35.80	64.20
MW01	4/16/1997	8900	8680	996	9250	35.99	64.01
MW01	7/11/1997	8240	7850	709	8230	36.05	63.95
MW01	9/4/1997	4420	2370	850	9660	35.18	64.82
MW01	10/22/1997	3460	39.6	714	7690	35.14	64.86
MW01	1/6/1998	3850	194	795	8570	35.10	64.90
MW01	4/23/1998	4330	406	783	7220	35.15	64.85
MW01	4/19/1999	4300	1260	629	7440	35.10	64.90
MW01	4/13/2000	2300	1500	590	5900	34.70	65.30
MW01	5/30/2001	2800	710	560	5200	34.97	65.03
MW01	5/16/2002	3000	1500	440	5300	35.11	64.89
MW01	5/21/2003	3850	601	443	6360	35.26	64.74
MW01	11/16/2004	2490	30.9	346	2860	34.84	65.16
MW01	11/8/2005	338	8.5	80.1	757	33.87	66.13
MW01	11/8/2006	198	3.4	14.9	83.6	34.02	65.98
MW01	11/29/2007	441	3.8	52.2	72.2	33.29	66.71
MW01	11/18/2008	120	<2.0	17.9	8.3	33.41	66.59
MW01	11/4/2009	88.4	<1.0	14.8	4.3	33.64	66.36
MW01	11/9/2010	54.0	<2.0	8.7	12.7	32.94	67.06

**Notes:**

Results shown in bold typeface exceed their respective New Mexico Water Quality Control Commission standards.

"J" = result is qualified as estimated. See laboratory report and/or supplemental data validation report for further detail.

"<" = analyte was not detected at the indicated reporting limit.

Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.