

**3R - 186**

**2011 AGWMR**

**8/16/2012**



**MWH**

**BUILDING A BETTER WORLD**

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2012 AUG 20 A 10:48

August 16, 2012

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

**RE: El Paso CGP Company Pit Groundwater Remediation Sites  
2011 Annual Reports**

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso CGP Company (EPCGP), is submitting the enclosed 2011 Annual Reports for 21 of its remaining San Juan River Basin pit groundwater remediation sites (several other sites are handled as different projects with different activity and reporting schedules). The reports present the 2011 sampling and product recovery data and include recommendations for future activities at these sites.

The 2011 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 Lands
2	Fee and State Lands
3	Navajo Nation Lands (1 Site Remains)

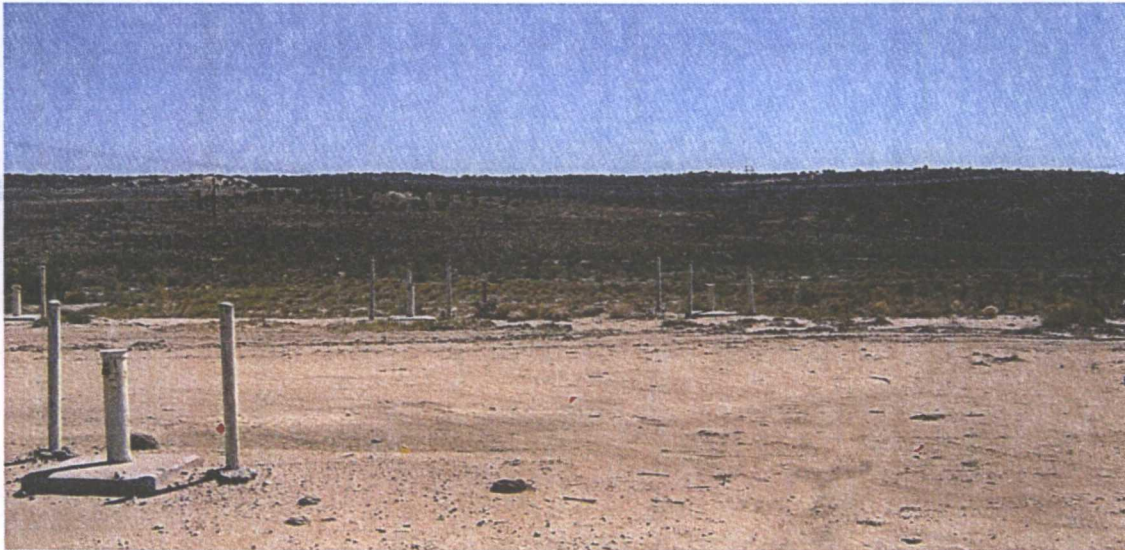
If you have any questions concerning the enclosed reports, please contact either Joe Wiley (representing EPCGP Company) at 713-420-3475 or me at 303-291-2276.

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)  
Joe Wiley – EPCGP Company (Volumes 1, 2, and 3 - Electronic)



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**EL PASO CGP COMPANY**

1001 LOUISIANA STREET  
HOUSTON, TX 77002

**2011 ANNUAL REPORT  
PIT GROUNDWATER REMEDIATION  
VOLUME 1: SITES ON FEDERAL LANDS**

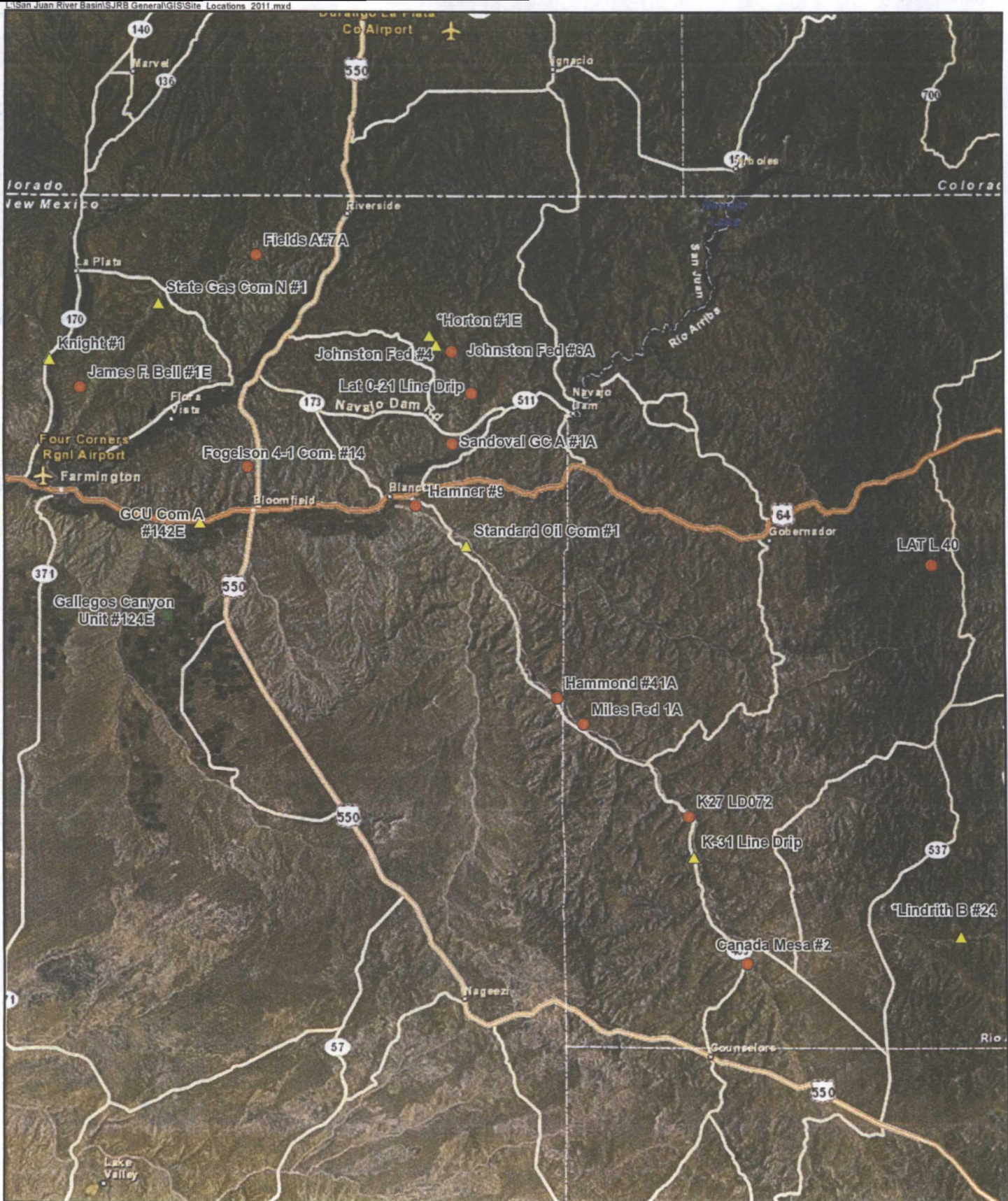
AUGUST 2012



**MWH**

1801 California Street  
Suite 2900  
Denver, Colorado 80202  
303 291 2222





# **LEGEND**

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

\*Closure Request Pending with the NMOC.



PROJECT: SAN JUAN RIVER BASIN

TITLE: Site Locations

FIGURE:

1

## **LIST OF ACRONYMS**

AMSL	above mean sea level
BTEX	benzene, toluene, ethylbenzene, xylenes
btoc	below top of casing
EPCGP	El Paso CGP Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitoring well
NMWQCC	New Mexico Water Quality Control Commission
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

**2011 ANNUAL GROUNDWATER REPORT  
FEDERAL SITES VOLUME I**

**EL PASO CGP 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 2011.



**MWH**

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Hammond #41A  
Meter Code: 89894**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b> 27N	<b>Range:</b> 8W	<b>Sec:</b> 25	<b>Unit:</b> O
<b>NMOCD Haz Ranking:</b> 40	<b>Land Type:</b>	<b>Federal</b>	<b>Operator:</b>	<b>M&amp;G Drilling Company</b>

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	6/94	<b>Excavation:</b>	7/94	<b>Soil Boring:</b>	7/95
<b>Monitor Well:</b>	5/97	<b>Geoprobe:</b>	11/96	<b>Additional MWs:</b>	9/99
<b>Downgradient MWs:</b>	9/99	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	6/97
<b>ORC Nutrient Injection:</b>	7/98	<b>Re-Excavation:</b>	5/97	<b>PSH Removal Initiated:</b>	NA
<b>Annual Initiated:</b>	9/99	<b>Quarterly Resumed:</b>	NA	<b>PSH Removal in 2011?</b>	No

**SUMMARY OF 2011 ACTIVITIES**

**MW-1:** Semiannual water level monitoring (February and September) was performed during 2011.

**MW-2:** Semiannual water level monitoring (February and September) was performed during 2011.

**MW-3:** Semiannual water level monitoring (February and September) was performed during 2011.

**TMW-1:** Semiannual groundwater sampling (February and September) was performed during 2011.

**Site-Wide Activities:** No other activities were performed at this Site during 2011.

**SITE MAPS**

Site maps (February and September) are attached as Figures 1 and 2.

**SUMMARY TABLES AND GRAPHS**

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figures 3 through 6.
- The 2011 laboratory reports are presented in Attachment 1 (included on CD).



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Hammond #41A  
Meter Code: 89894**

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- The 2011 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 2011.

**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 2011.

**RESULTS**

- Groundwater flow at the Site is generally to the northwest.
- The low-level (i.e., close to or below the NMWQCC standards) BTEX concentrations remain steady in TMW-1. Benzene concentrations at TMW-1 were 11.8 µg/L and non-detect in February and September 2011, respectively. Toluene, ethylbenzene, and total xylenes concentrations were below their respective standards during each sampling event in 2011.
- As of 2002, wells MW-1, MW-2 and MW-3 have met four consecutive quarters of BTEX concentrations below NMWQCC standards. TMW-1 was installed in 2003, as requested by NMOCD.

**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 monitoring wells 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, TMW-1 requires additional monitoring. The remaining applicable standards are:



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Hammond #41A  
Meter Code: 89894**

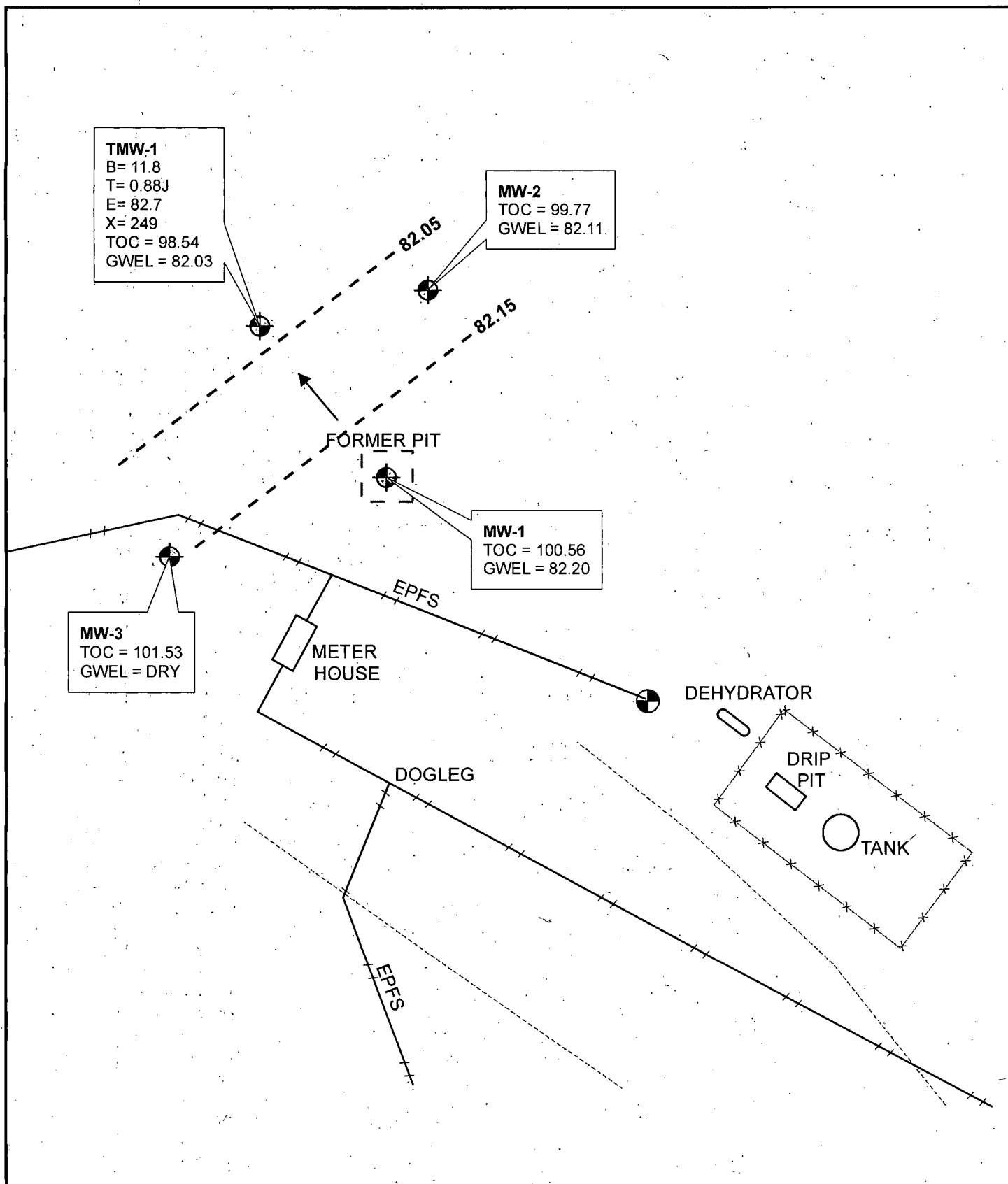
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<b>Constituent</b>	<b>NMWQCC GW Standard (µg/L)</b>
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylenes	620

**RECOMMENDATIONS**

- EPCGP recommends conducting semiannual sampling of TMW-1 until BTEX concentrations fall beneath their respective NMWQCC closure standards. At that time, quarterly sampling will be conducted until four clean quarters have been observed and the Site can be submitted for closure.
- Historic sample results indicate that MW-1, MW-2, and MW-3 have achieved closure standards; however, these wells will be gauged and sampled along with TMW-1.



### LEGEND

- MW-1 Existing Monitoring / Observation Well
- Groundwater Flow Direction
- 1275- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. \*)
- \* = Elevations in feet relative to a 100 ft benchmark.

0 10 20 40 Feet



PROJECT:

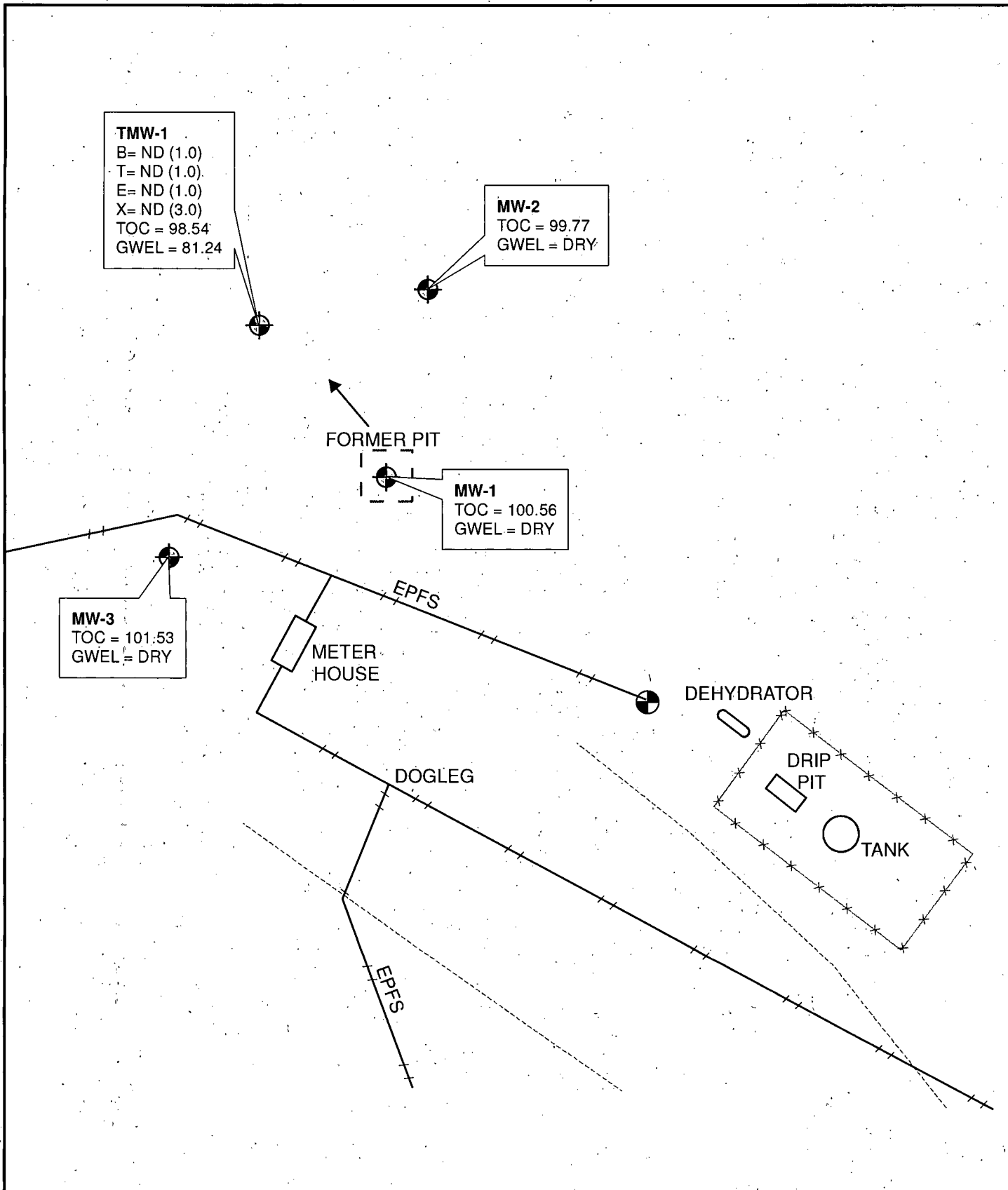
HAMMOND #41A

TITLE:

Groundwater Potentiometric Surface Map,  
and BTEX Concentrations - February 1, 2011

FIGURE:

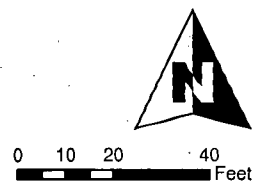
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### LEGEND

**MW-1** Existing Monitoring / Observation Well  
 Historic Groundwater Flow Direction  
**ND** Not Detected; Reporting Limit Shown In Parenthesis

**B** Benzene (ug/L)  
**T** Toluene (ug/L)  
**E** Ethylbenzene (ug/L)  
**X** Total Xylenes (ug/L)  
**TOC** Top of Casing (ft. AMSL)  
**GWEL** Groundwater Elevation (ft. \*)  
 \* = Elevations in feet relative to a 100 ft benchmark.



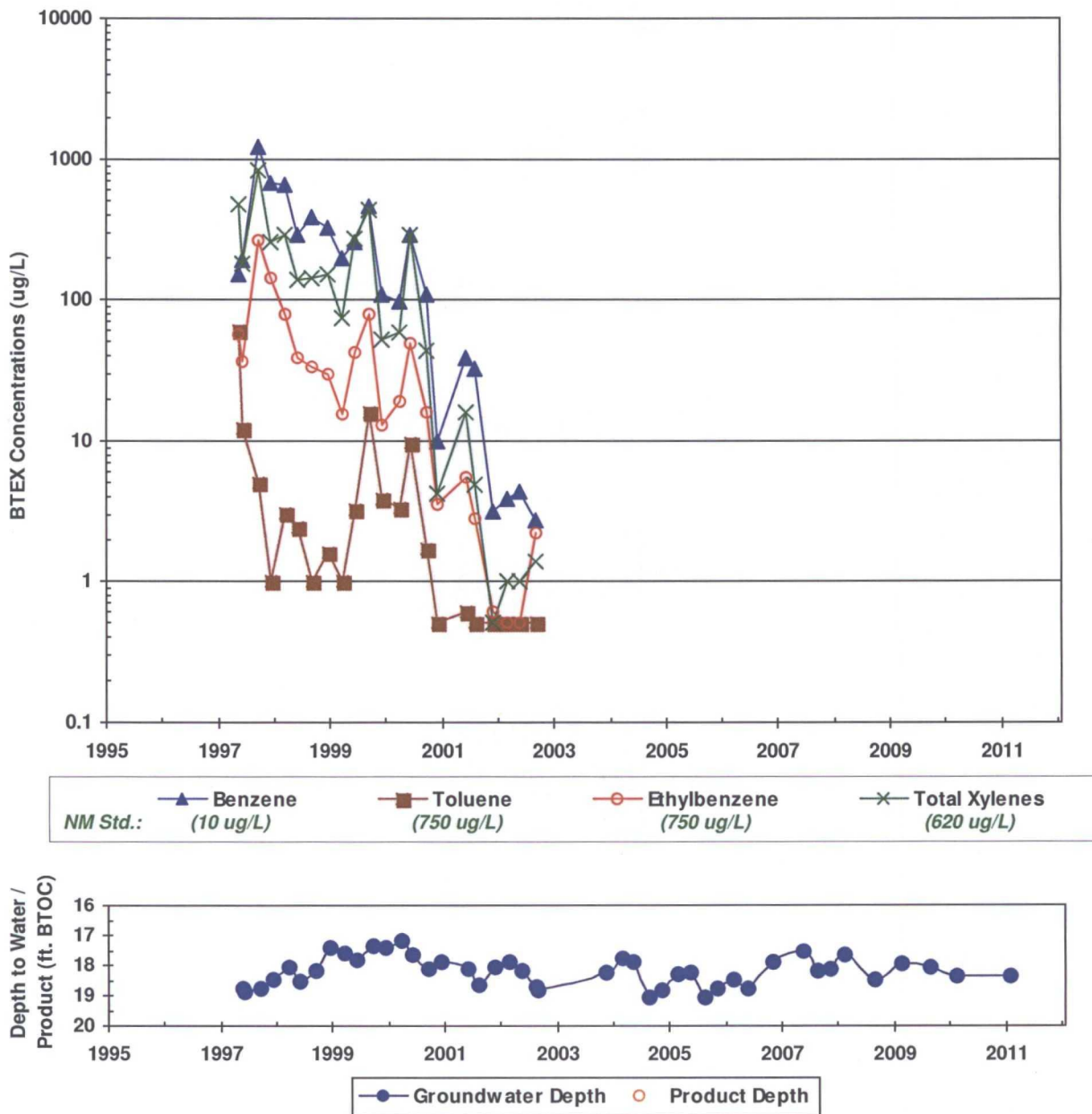
PROJECT: HAMMOND #41A

TITLE: Groundwater Potentiometric Surface Map,  
 and BTEX Concentrations - September 23, 2011

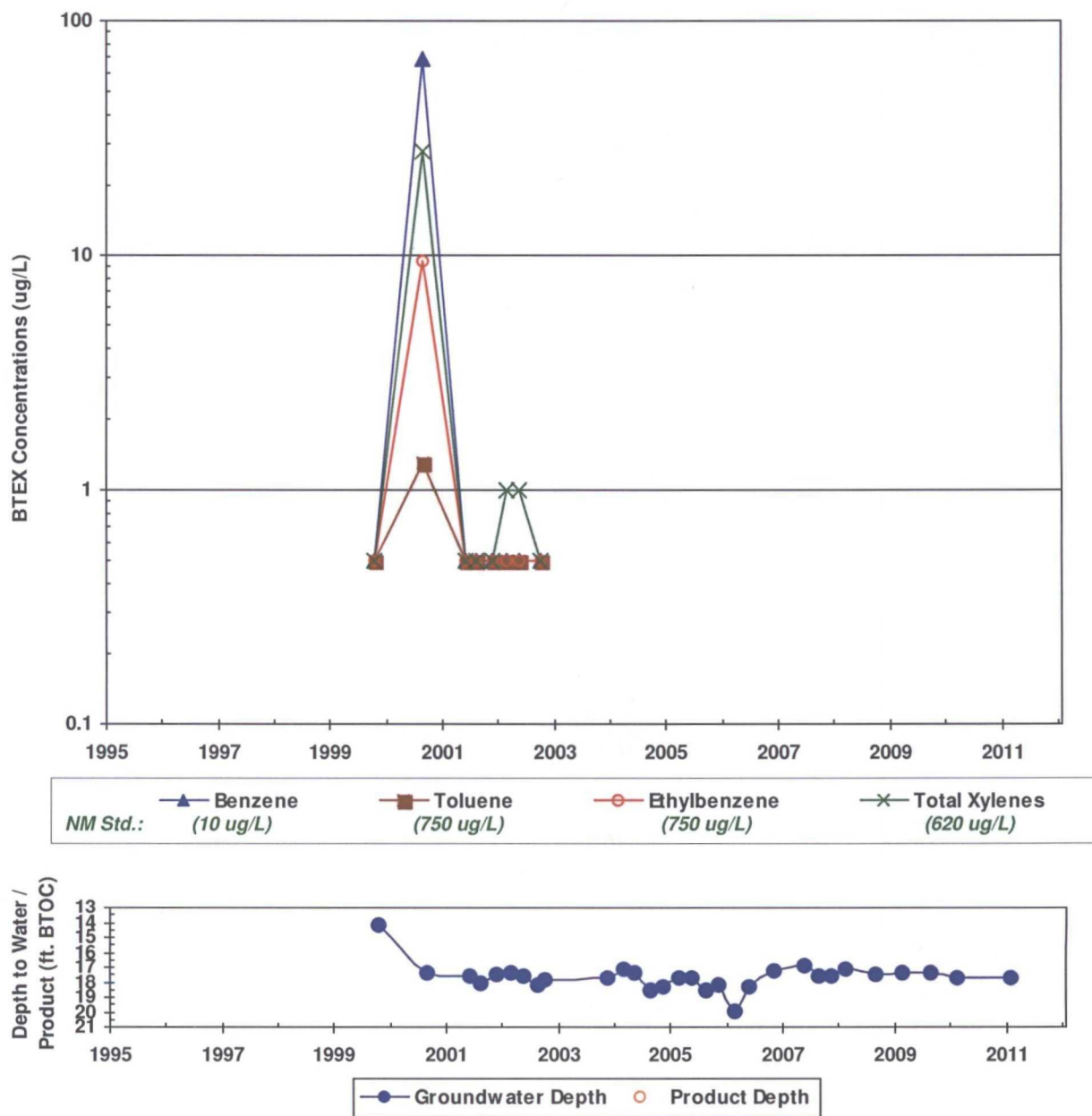
FIGURE:

2

**FIGURE 3**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**HAMMOND #41A (METER #89894)**  
**MW-1**

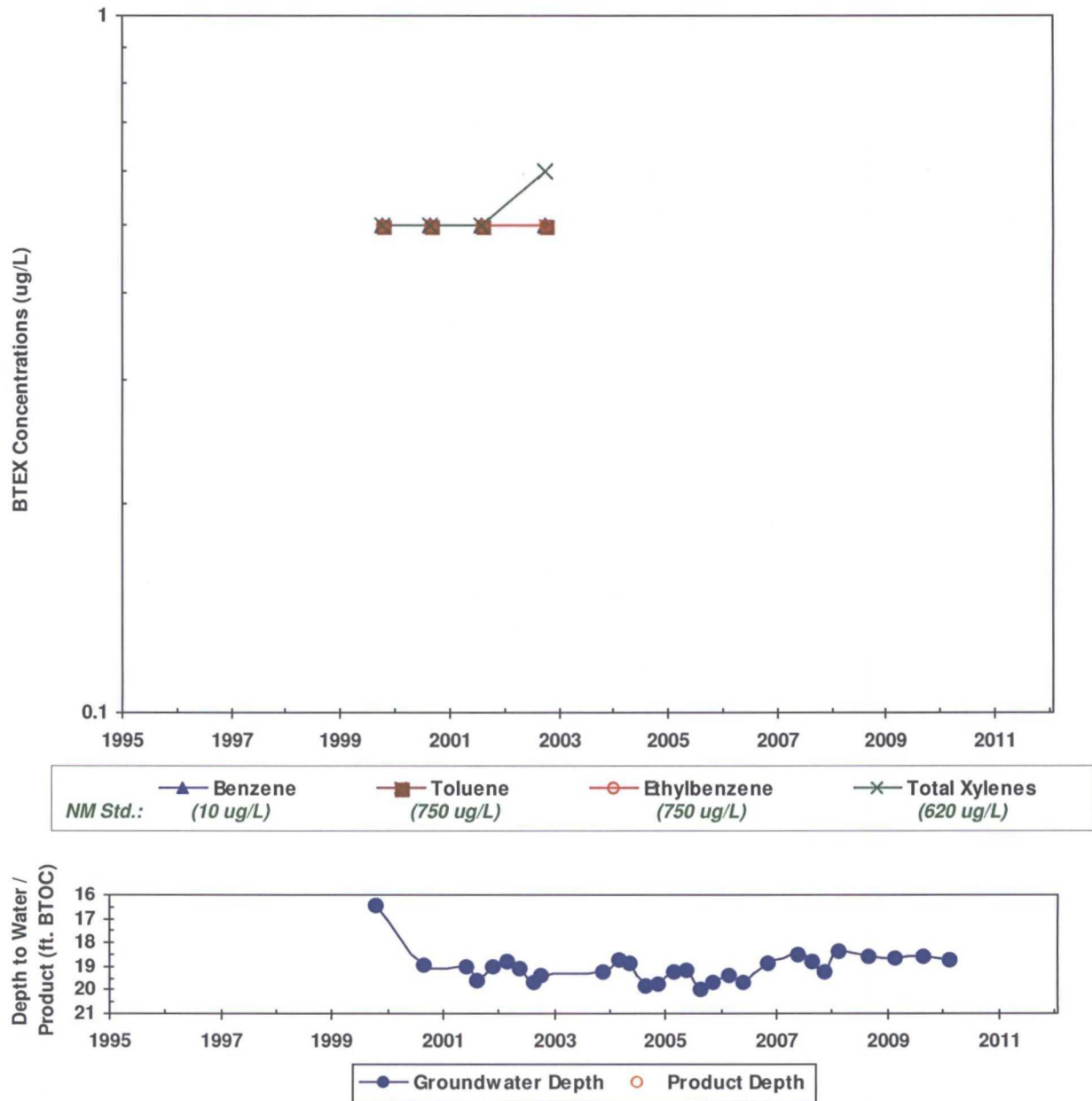


**FIGURE 4**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**HAMMOND #41A (METER #89894)**  
**MW-2**

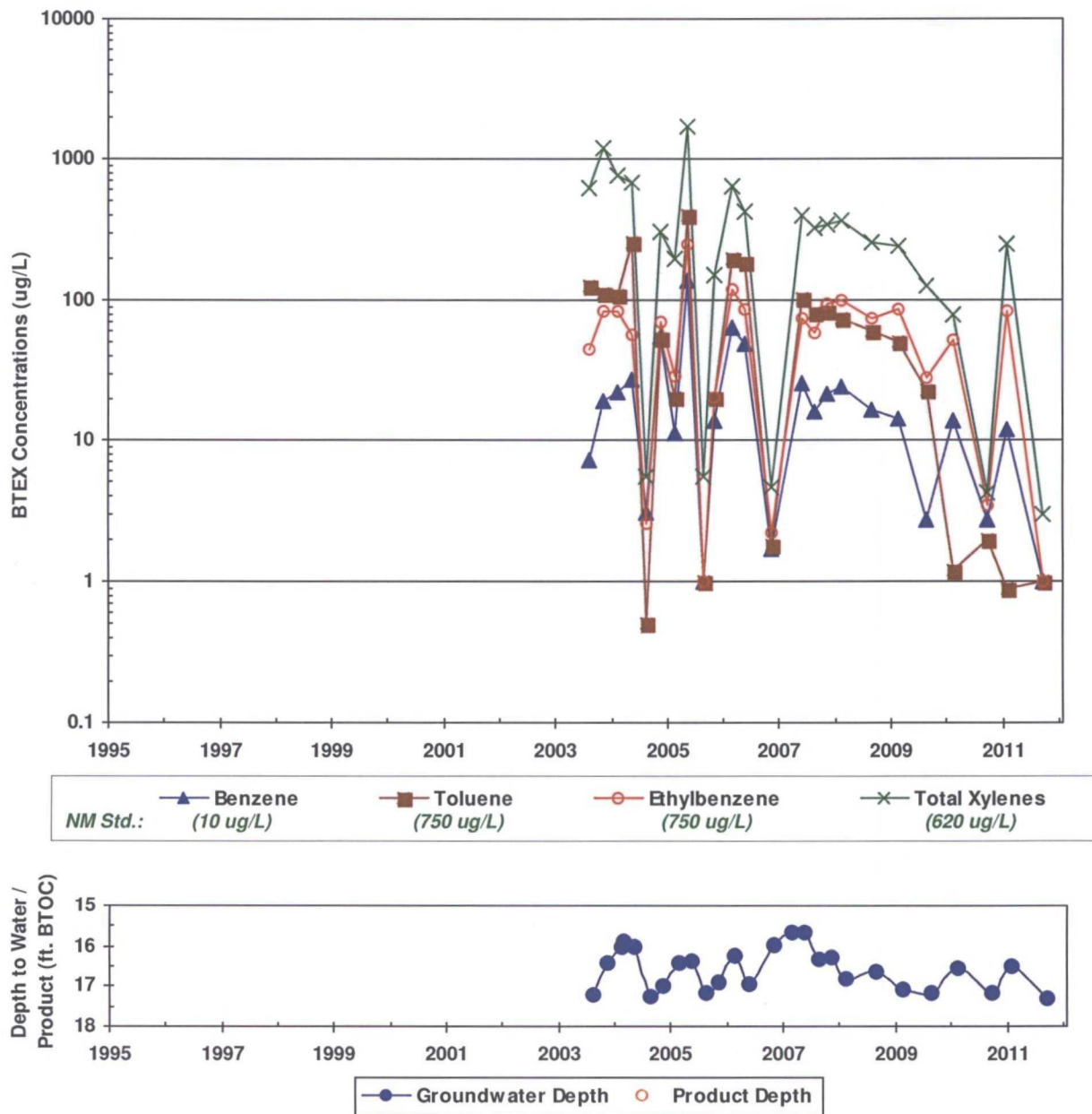




**FIGURE 5**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**HAMMOND #41A (METER #89894)**  
**MW-3**



**FIGURE 6**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**HAMMOND #41A (METER #89894)**  
**TMW-1**



**TABLE 1**  
**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER**  
**HAMMOND #41A (METER #89894)**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (Feet*)
NMWQCC GW Std.:		10	750	750	620		
MW-1	5/21/1997	150	60.1	56.7	484	18.79	81.77
MW-1	6/9/1997	190	12.3	36.9	181	18.89	81.67
MW-1	9/17/1997	1230	<5.0	263	830	18.79	81.77
MW-1	12/9/1997	685	<1.0	141	261	18.47	82.09
MW-1	3/20/1998	662	3.06	78.7	292	18.05	82.51
MW-1	6/4/1998	286	2.43	38.4	140	18.54	82.02
MW-1	9/10/1998	391	<1.0	34.0	144	18.19	82.37
MW-1	12/17/1998	330	1.6	30	150	17.42	83.14
MW-1	3/23/1999	197	<1.0	15.8	74.1	17.56	83.00
MW-1	6/11/1999	260	3.3	42.0	270	17.80	82.76
MW-1	9/20/1999	460	16	78.0	440	17.36	83.20
MW-1	12/9/1999	110	3.9	13.0	53	17.42	83.14
MW-1	3/31/2000	98	3.4	19.0	59	17.15	83.41
MW-1	6/9/2000	290	9.7	49.0	290	17.64	82.92
MW-1	9/21/2000	110	1.7	16.0	44	18.10	82.46
MW-1	12/5/2000	10	<0.5	3.6	4.3	17.91	82.65
MW-1	6/4/2001	39	0.6	5.5	16	18.09	82.47
MW-1	8/7/2001	33	<0.5	2.8	4.9	18.62	81.94
MW-1	11/27/2001	3.2	<0.5	0.6	<0.5	18.06	82.50
MW-1	2/25/2002	3.9	<0.5	0.5	<1.0	17.86	82.70
MW-1	5/21/2002	4.4	<0.5	<0.5	<1.0	18.16	82.40
MW-1	9/5/2002	2.7	0.5	2.2	1.4	18.82	81.74
MW-2	10/15/1999	<0.5	<0.5	<0.5	<0.5	14.12	85.65
MW-2	8/28/2000	69	1.3	9.4	28	17.32	82.45
MW-2	6/4/2001	<0.5	<0.5	<0.5	<0.5	17.54	82.23
MW-2	8/7/2001	<0.5	<0.5	<0.5	<0.5	18.08	81.69
MW-2	11/27/2001	<0.5	<0.5	<0.5	<0.5	17.47	82.30
MW-2	2/25/2002	<0.5	<0.5	<0.5	<1.0	17.30	82.47
MW-2	5/21/2002	<0.5	<0.5	<0.5	<1.0	17.62	82.15
MW-2	10/8/2002	<0.5	<0.5	<0.5	0.5	17.80	81.97
MW-3	10/15/1999	<0.5	<0.5	<0.5	<0.5	16.43	85.10
MW-3	8/28/2000	<0.5	<0.5	<0.5	<0.5	18.96	82.57
MW-3	8/7/2001	<0.5	<0.5	<0.5	<0.5	19.58	81.95
MW-3	10/8/2002	<0.5	<0.5	<0.5	0.6	19.38	82.15



**TABLE 1**  
**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER**  
**HAMMOND #41A (METER #89894)**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (Feet*)
NMWQCC GW Std.:		10	750	750	620		
TMW-1	8/13/2003	7.3	128	44.8	625	17.22	81.32
TMW-1	11/15/2003	19.2	113	84.6	1200	16.40	82.14
TMW-1	2/17/2004	22.3	109	83.2	774	16.01	82.53
TMW-1	5/11/2004	27.2	255	56.6	685	16.03	82.51
TMW-1	8/19/2004	3.1	<0.5	2.6	5.6	17.24	81.30
TMW-1	11/16/2004	55.2	53.3	70.7	306	17.00	81.54
TMW-1	2/21/2005	11.2	20.2	28.9	196	16.43	82.11
TMW-1	5/18/2005	140	398	252	1710	16.35	82.19
TMW-1	8/23/2005	<1.0	<1.0	<1.0	5.6	17.18	81.36
TMW-1	11/8/2005	13.9	20.1	20.1	149	16.91	81.63
TMW-1	2/23/2006	64.2	195	118	641	16.23	82.31
TMW-1	5/23/2006	49.2	188	85.1	429	16.92	81.62
TMW-1	11/8/2006	1.7	1.8	2.2	4.7	15.97	82.57
TMW-1	5/24/2007	25.8	103	74.3	399	15.66	82.88
TMW-1	8/21/2007	15.9	81.0	59.6	322	16.33	82.21
TMW-1	11/13/2007	21.7	83.0	93.4	343	16.30	82.24
TMW-1	2/12/2008	24.2	74.5	99.1	362	16.81	81.73
TMW-1	8/26/2008	16.7	60.6	74.7	258	16.62	81.92
TMW-1	2/17/2009	14.3	50.6	85.3	246	17.06	81.48
TMW-1	8/25/2009	2.7	23.1	28.3	127	17.17	81.37
TMW-1	2/16/2010	13.8	1.2	52.9	79.9	16.55	81.99
TMW-1	9/27/2010	2.7	<2.0	3.5	4.2J	17.15	81.39
TMW-1	2/1/2011	11.8	0.88J	82.7	249	16.51	82.03
TMW-1	9/23/2011	<1.0	<1.0	<1.0	<3.0	17.30	81.24

**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 (some historic data were reported at the detection limit).

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

\*This site has a benchmark elevation of 100 feet rather than mean sea level.