

**3R - 223**

**2011 AGWMR**

**8/16/2012**



BUILDING A BETTER WORLD

August 16, 2012

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2012 AUG 20 A 10:48

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)



## **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



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**

**Miles Fed 1A  
Meter Code: 94810**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b>	26N	<b>Range:</b>	7W	<b>Sec:</b>	5	<b>Unit:</b>	F
<b>NMOCD Haz Ranking:</b>	40	<b>Land Type:</b>	Federal	<b>Operator:</b>	XTO			

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	5/94	<b>Excavation:</b>	6/94	<b>Soil Boring:</b>	9/95
<b>Monitor Well:</b>	9/95	<b>Geoprobe:</b>	2/97	<b>Additional MWs:</b>	10/99
<b>Downgradient MWs:</b>	10/99	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	NA
<b>ORC Nutrient Injection:</b>	NA	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	2/99
<b>Annual Initiated:</b>	10/99	<b>Quarterly Resumed:</b>	NA	<b>PSH Removal in 2011?</b>	Yes

**SUMMARY OF 2011 ACTIVITIES**

**MW-1:** Annual groundwater sampling (May) and quarterly product recovery were performed during 2011.

**MW-2:** Annual groundwater sampling (May) and quarterly water level monitoring were performed during 2011.

**MW-3:** Quarterly water level monitoring was performed during 2011.

**Site-Wide Activities:** The Site was inspected quarterly for hydrocarbon seeps. No seeps were detected.

**SITE MAP**

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

**SUMMARY TABLES AND GRAPHS**

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figures 2 through 4. Where applicable, static water level elevations were corrected for measurable thicknesses of free-product (specific gravity of 0.8).
- Historic free product recovery data are summarized on Table 2 and presented graphically in Figure 2.



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Miles Fed 1A  
Meter Code: 94810**

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- The 2011 laboratory report is presented in Attachment 1 (included on CD).
- 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. Spent product recovery socks were disposed of as non-hazardous solid waste.

**ISOCONCENTRATION MAPS**

No isoconcentration maps were prepared for this Site; however, the attached Site map presents the analytical data and potentiometric surface contours from the May 2011 sampling event.

**RESULTS**

- The groundwater flow direction at this Site is toward the northeast.
- At MW-1, a total of 0.37 gallons of free-product was recovered in 2011. The cumulative total free-product recovered to date is approximately 12.98 gallons.
- The benzene concentration in the MW-1 groundwater sample was 15.6 µg/L, above the NMWQCC standard. For the first time in the historical sampling events the concentration of total xylenes was below the standard at 254 µg/L. Toluene and ethylbenzene were detected, but were below their respective standards. Overall, it appears that benzene and toluene have attenuated since 1996 while ethylbenzene and total xylenes have remained at steady levels. This pattern fits with the expected natural attenuation based on relative solubility and volatility.
- BTEX constituents were not detected in the groundwater sample collected from MW-2. These results are consistent with the historical data for this well.
- MW-3 was not sampled in 2011. Sampling was discontinued based on the historical non-detect concentrations in the well, but will be sampled again prior to site closure.
- Site-wide decreases in BTEX concentrations provide evidence that natural attenuation is occurring at the Site. The residual free-product in the MW-1 area (i.e., beneath the former pit) appears to be highly weathered and of minimal thickness and saturation.



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Miles Fed 1A  
Meter Code: 94810**

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- No seeps along the well pad slopes were noted during 2011.

**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 closure requirements at this site, the following conditions must be achieved:
  1. Recoverable free-product must be removed from the subsurface. Generally, this corresponds with an absence of measurable free-product in the monitor wells. Currently, product recovery efforts are required at MW-1.
  2. Groundwater contaminant concentrations in the monitor 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, monitor well MW-1 requires additional monitoring. The remaining applicable standards are:

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

**RECOMMENDATIONS**

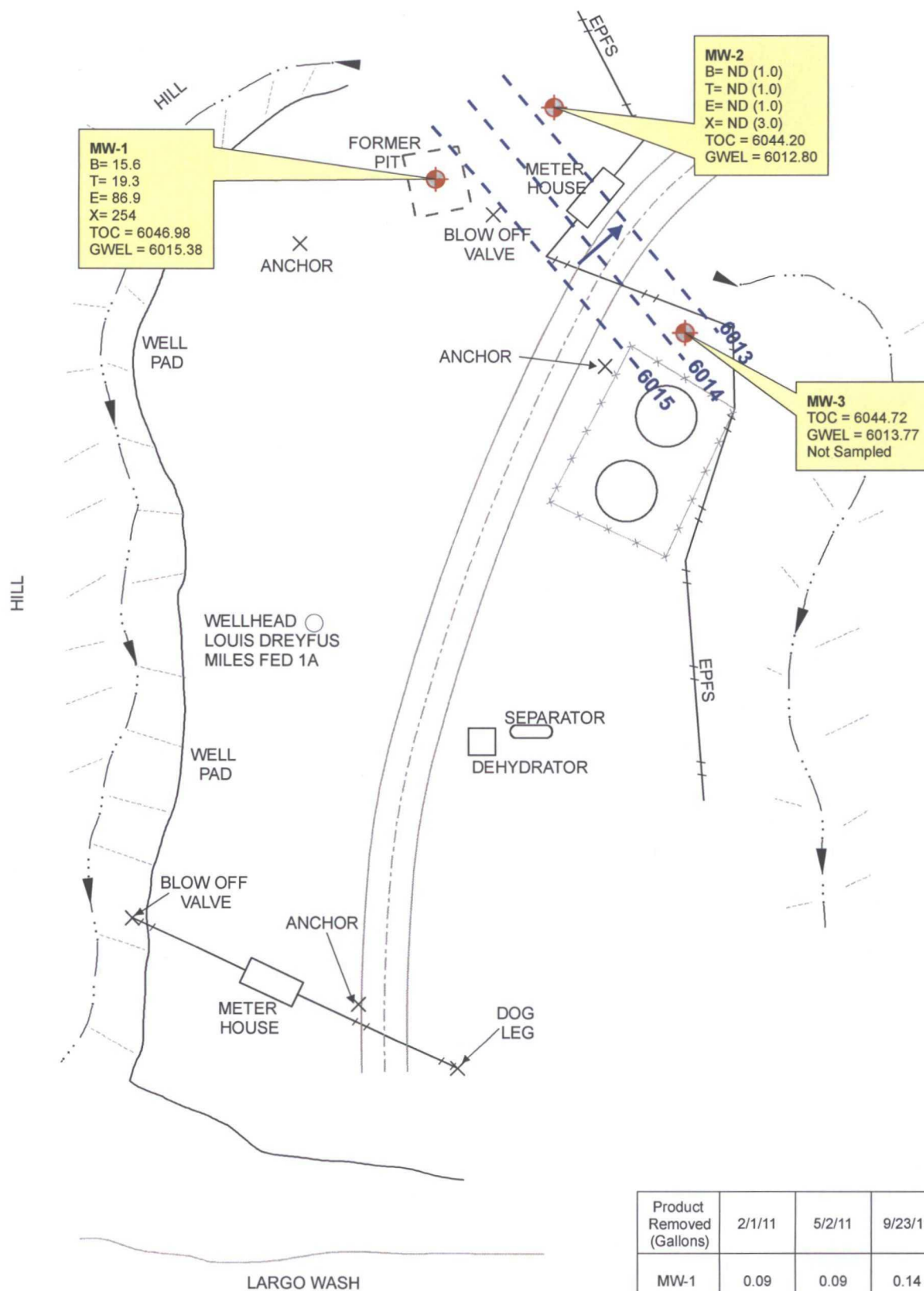
- On a quarterly basis, EPCGP will gauge water levels at the Site and inspect the well pad slopes for evidence of seeps. If free-product is observed, recovery activities will be re-initiated. If a seep is found, photographic documentation will be made and the seep will be sampled.
- EPCGP will continue quarterly free-product recovery at MW-1, and sampling will be conducted on an annual basis until sample results meet the closure criteria. The well will then be scheduled for quarterly sampling until closure criteria are met.
- MW-2 will be sampled annually in conjunction with MW-1. This well is located downgradient of MW-1 and provides valuable plume delineation data.

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Miles Fed 1A  
Meter Code: 94810**

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- EPCGP is currently evaluating the potential for using passive soil venting at site in order to move toward closure.



PROJECT:

MILES FEDERAL #1A

TITLE:

Groundwater Potentiometric Surface Map,  
and BTEX Concentrations - May 9, 2011

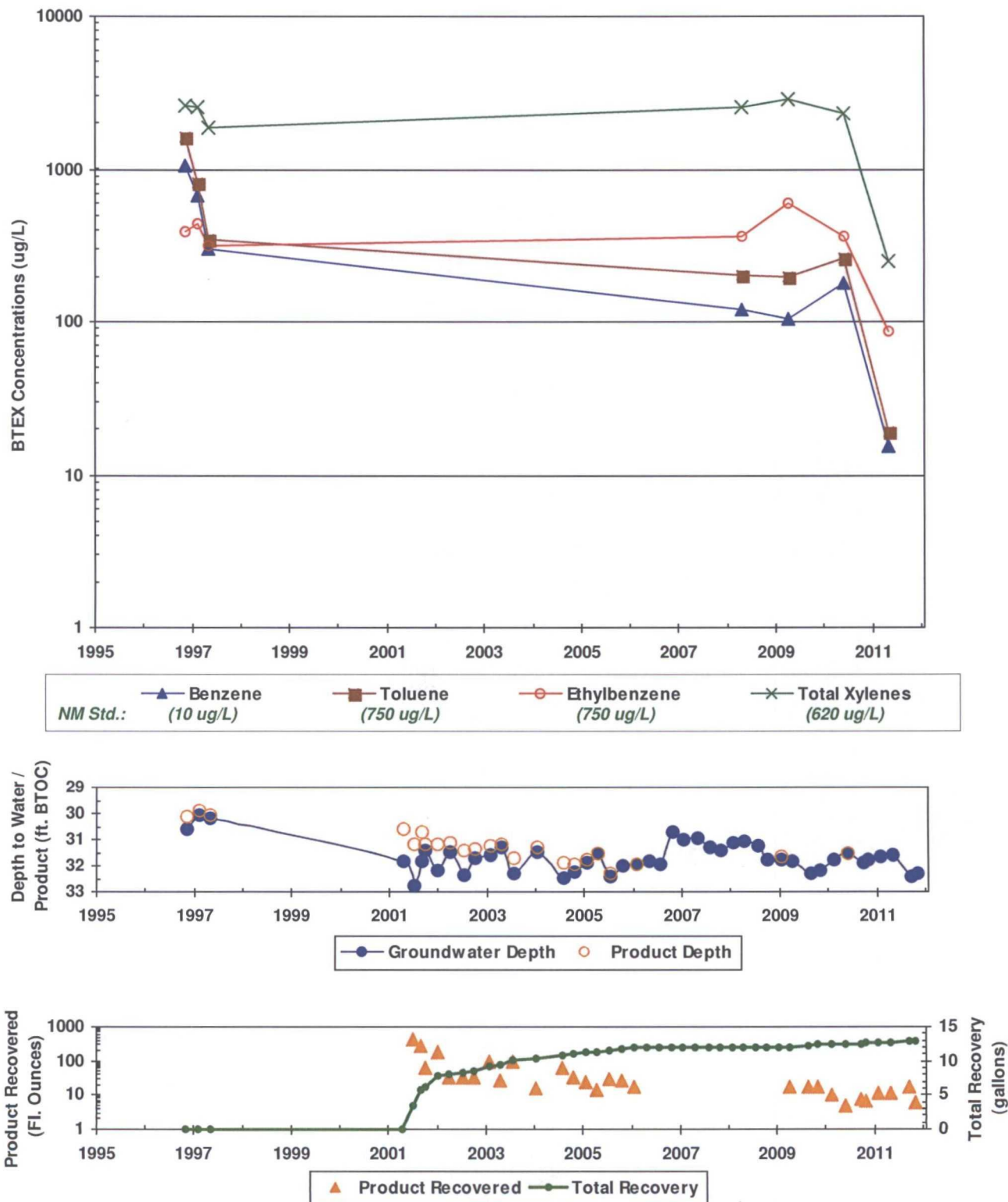
FIGURE:

1



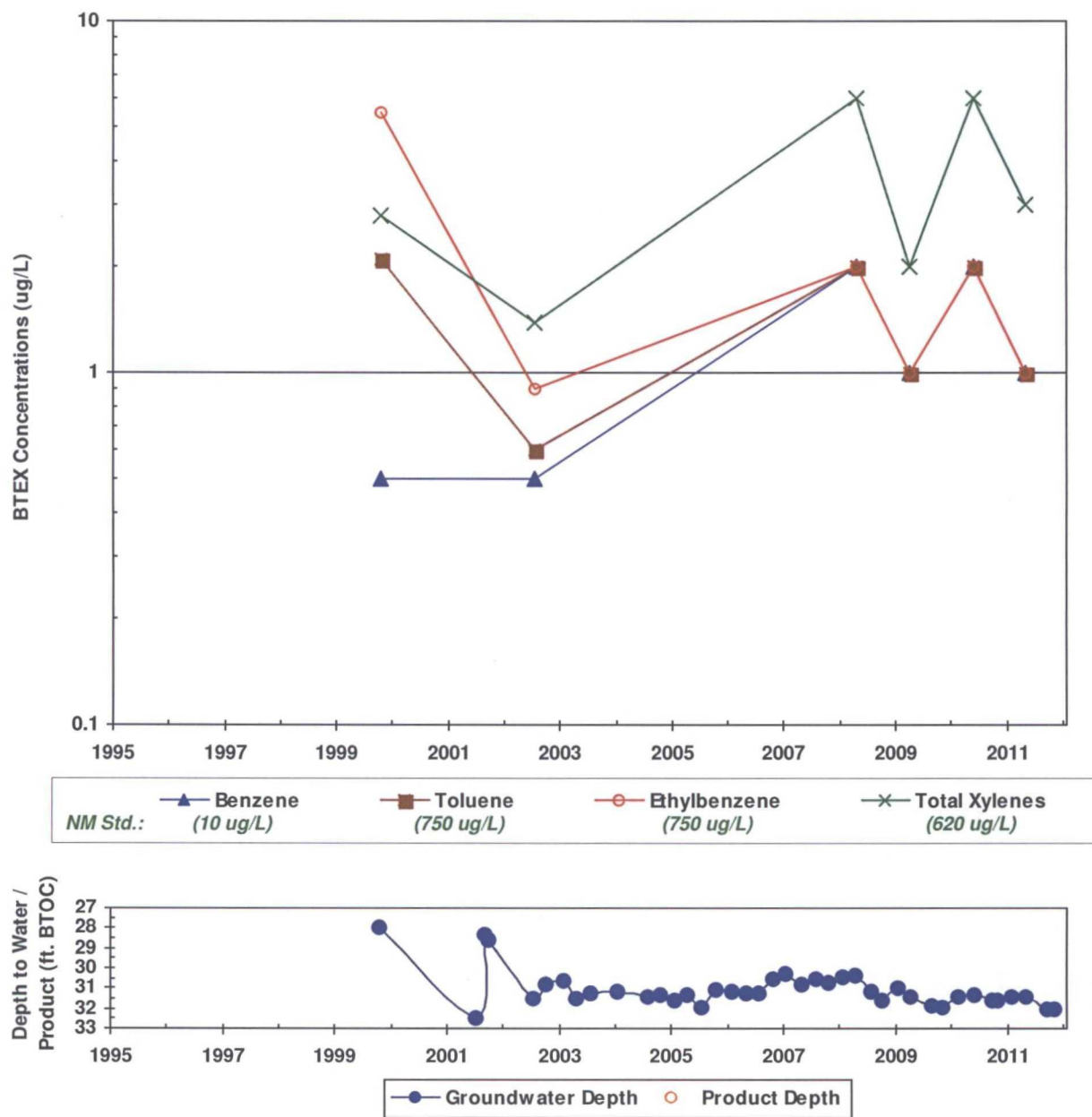
Not To Scale

**FIGURE 2**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**MILES FED 1A (METER #94810)**  
**MW-1**



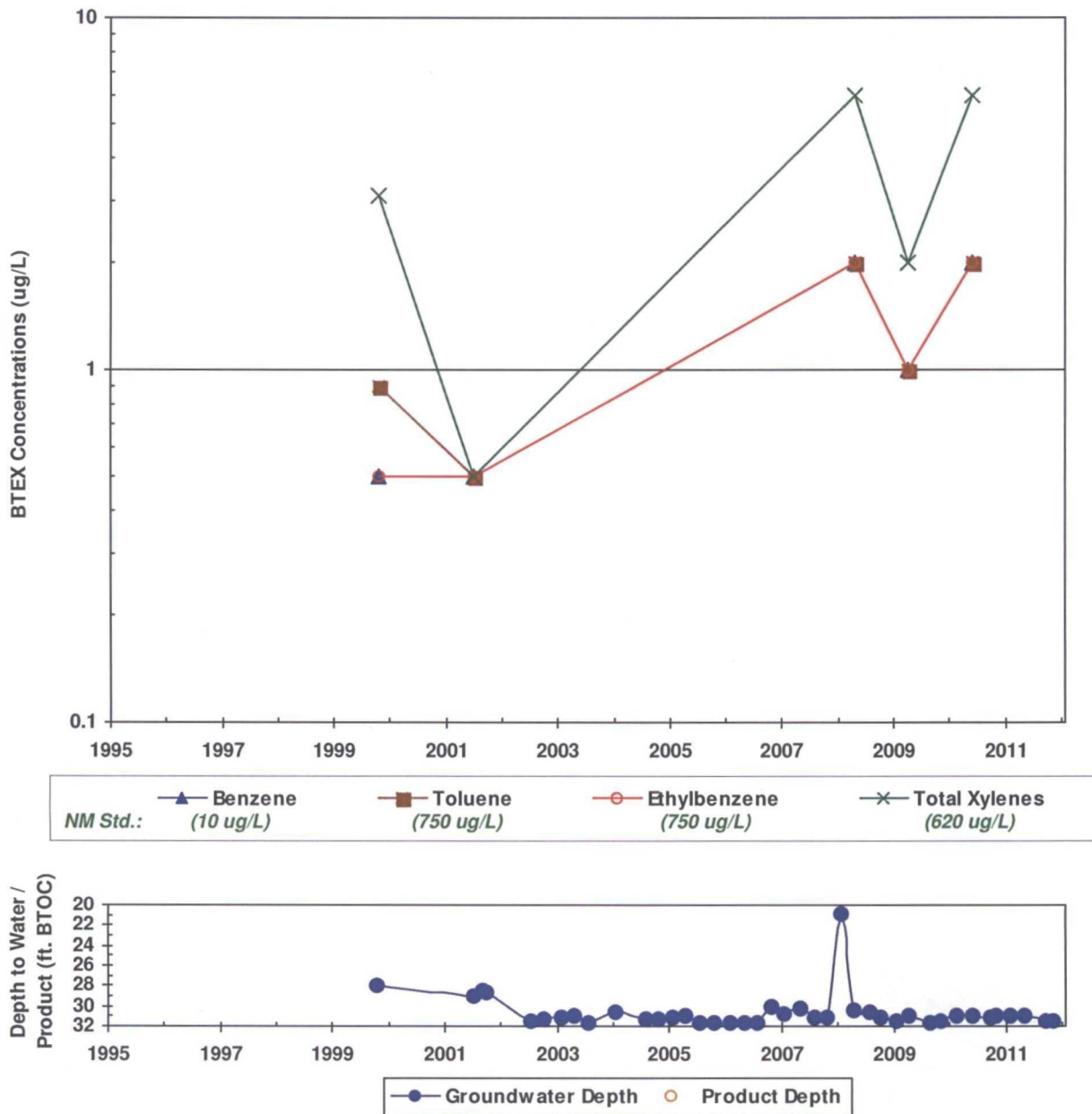
\*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

**FIGURE 3**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**MILES FED 1A (METER #94810)**  
**MW-2**





**FIGURE 4**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**MILES FED 1A (METER #94810)**  
**MW-3**



**TABLE 1**  
**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER**  
**MILES FED 1A (METER #94810)**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
<b>NMWQCC GW Std.:</b>		<b>10</b>	<b>750</b>	<b>750</b>	<b>620</b>		
<b>MW-1</b>	11/5/1996	<b>1050</b>	<b>1630</b>	391	<b>2620</b>	30.58	6016.78
<b>MW-1</b>	2/7/1997	<b>671</b>	<b>809</b>	439	<b>2550</b>	30.05	6017.04
<b>MW-1</b>	5/6/1997	<b>300</b>	350	320	<b>1880</b>	30.18	6016.91
<b>MW-1</b>	4/17/2008	<b>122</b>	203	369	<b>2550</b>	31.04	6015.94
<b>MW-1</b>	4/6/2009	<b>104</b>	199	596	<b>2870</b>	31.82	6015.16
<b>MW-1</b>	6/2/2010	<b>180</b>	266	370	<b>2320</b>	31.53	6015.47
<b>MW-1</b>	5/9/2011	<b>15.6</b>	19.3	86.9	254	31.60	6015.38
<b>MW-2</b>	10/15/1999	<0.5	2.1	5.5	2.8	27.97	6016.23
<b>MW-2</b>	7/15/2002	<0.5	0.6	0.9	1.4	31.46	6012.74
<b>MW-2</b>	4/17/2008	<2.0	<2.0	<2.0	<6.0	30.36	6013.84
<b>MW-2</b>	4/6/2009	<1.0	<1.0	<1.0	<2.0	31.40	6012.80
<b>MW-2</b>	6/2/2010	<2.0	<2.0	<2.0	<6.0	31.33	6012.87
<b>MW-2</b>	5/9/2011	<1.0	<1.0	<1.0	<3.0	31.40	6012.80
<b>MW-3</b>	10/15/1999	<0.5	0.9	<0.5	3.1	27.92	6016.80
<b>MW-3</b>	7/3/2001	<0.5	<0.5	<0.5	<0.5	28.97	6015.75
<b>MW-3</b>	4/17/2008	<2.0	<2.0	<2.0	<6.0	30.36	6014.36
<b>MW-3</b>	4/6/2009	<1.0	<1.0	<1.0	<2.0	30.93	6013.79
<b>MW-3</b>	6/2/2010	<2.0	<2.0	<2.0	<6.0	30.88	6013.84

**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

**TABLE 2**  
**SUMMARY OF FREE-PRODUCT REMOVAL**  
**MILES FED 1A (METER #94810)**

Monitor Well	Removal Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (feet)	Volume Removed (gallons)	Cumulative Removal (gallons)	Corrected GW Elevation (ft AMSL)
MW-1	11/5/1996	30.10	30.58	0.48	--	0.00	6016.78
MW-1	2/7/1997	29.91	30.05	0.14	--	0.00	6017.04
MW-1	5/6/1997	30.04	30.18	0.14	--	0.00	6016.91
MW-1	4/11/2001	30.61	31.81	1.20	--	0.00	6016.13
MW-1	7/3/2001	31.18	32.76	1.58	3.50	3.50	6015.48
MW-1	9/4/2001	30.68	31.80	1.12	2.25	5.75	6016.08
MW-1	10/1/2001	31.16	31.41	0.25	0.50	6.25	6015.77
MW-1	1/2/2002	31.20	32.17	0.97	1.50	7.75	6015.59
MW-1	4/1/2002	31.09	31.45	0.36	0.25	8.00	6015.82
MW-1	7/15/2002	31.43	32.35	0.92	0.25	8.25	6015.37
MW-1	10/8/2002	31.33	31.73	0.40	0.25	8.50	6015.57
MW-1	1/27/2003	31.21	31.59	0.38	0.75	9.25	6015.69
MW-1	4/26/2003	31.16	31.30	0.14	0.20	9.45	6015.79
MW-1	7/17/2003	31.73	32.31	0.58	0.75	10.20	6015.13
MW-1	1/19/2004	31.32	31.49	0.17	0.13	10.33	6015.63
MW-1	7/27/2004	31.89	32.47	0.58	0.50	10.83	6014.97
MW-1	10/20/2004	31.95	32.24	0.29	0.27	11.10	6014.97
MW-1	1/25/2005	31.75	31.91	0.16	0.19	11.29	6015.20
MW-1	4/14/2005	31.52	31.52	0.00	0.11	11.40	6015.46
MW-1	7/19/2005	32.32	32.43	0.11	0.23	11.63	6014.64
MW-1	10/21/2005	--	32.02	0.00	0.21	11.84	6014.96
MW-1	1/23/2006	31.92	31.93	0.01	0.14	11.98	6015.06
MW-1	1/16/2009	31.66	31.74	0.08	--	11.98	6015.30
MW-1	4/6/2009	--	31.82	0.00	0.13	12.11	6015.16
MW-1	8/25/2009	--	32.30	0.00	0.13	12.25	6014.68
MW-1	11/2/2009	--	32.20	0.00	0.13	12.38	6014.78
MW-1	2/16/2010	--	31.74	0.00	0.08	12.46	6015.24
MW-1	5/24/2010	NA	NA	NA	0.04	12.50	NA
MW-1	6/2/2010	31.50	31.53	0.03	--	12.50	6015.47
MW-1	9/27/2010	--	31.89	0.00	0.06	12.55	6015.09
MW-1	11/1/2010	--	31.76	0.00	0.05	12.61	6015.22
MW-1	2/1/2011	--	31.63	0.00	0.09	12.70	6015.35
MW-1	5/2/2011	NA	NA	NA	0.09	12.80	NA
MW-1	9/23/2011	--	32.40	0.00	0.14	12.94	6014.58



**TABLE 2**

**SUMMARY OF FREE-PRODUCT REMOVAL  
MILES FED 1A (METER #94810)**

<b>Monitor Well</b>	<b>Removal Date</b>	<b>Depth to Product (ft BTOC)</b>	<b>Depth to Water (ft BTOC)</b>	<b>Product Thickness (feet)</b>	<b>Volume Removed (gallons)</b>	<b>Cumulative Removal (gallons)</b>	<b>Corrected GW Elevation (ft AMSL)</b>
<b>MW-1</b>	11/2/2011	--	32.27	0.00	0.05	12.98	6014.71

**Notes:**

"--" indicates either that product was not measurably detected or that product was not recovered.

"NA" indicates that the respective data point is not available.

Groundwater elevations may not be static due to removal of equipment. Corrections for product thickness utilize SG of 0.8.