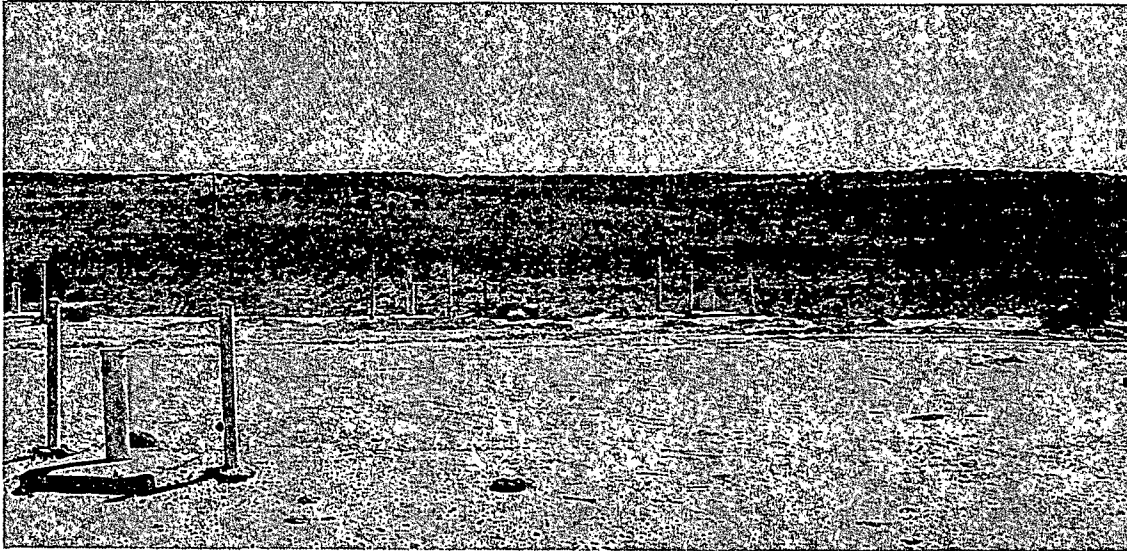


**3R - 239**

**2011 AGWMR**

**08/20/2012**



## **EL PASO CGP COMPANY**

1001 LOUISIANA STREET  
HOUSTON, TX 77002

### **2011 ANNUAL REPORT PIT GROUNDWATER REMEDIATION VOLUME 2: FEE/STATE LANDS**

AUGUST 2012



**MWH**

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

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**2011 ANNUAL GROUNDWATER REPORT  
NON-FEDERAL SITES VOLUME II**

**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>
03906	3RP-179-0	GCU Com A #142E	29N	12W	25	G
93388	3RP-192-0	*Horton #1E	31N	09W	28	H
70194	3RP-201-0	Johnston Fed #4	31N	09W	33	H
LD087	3RP-205-0	K-31 Line Drip	25N	06W	16	N
72556	3RP-207-0	Knight #1	30N	13W	5	A
94967	3RP-214-0	**Lindrith B #24	24N	03W	9	N
70445	3RP-074-0	Standard Oil Com #1	29N	09W	36	N
71669	3RP-239-0	State Gas Com N #1	31N	12W	16	H

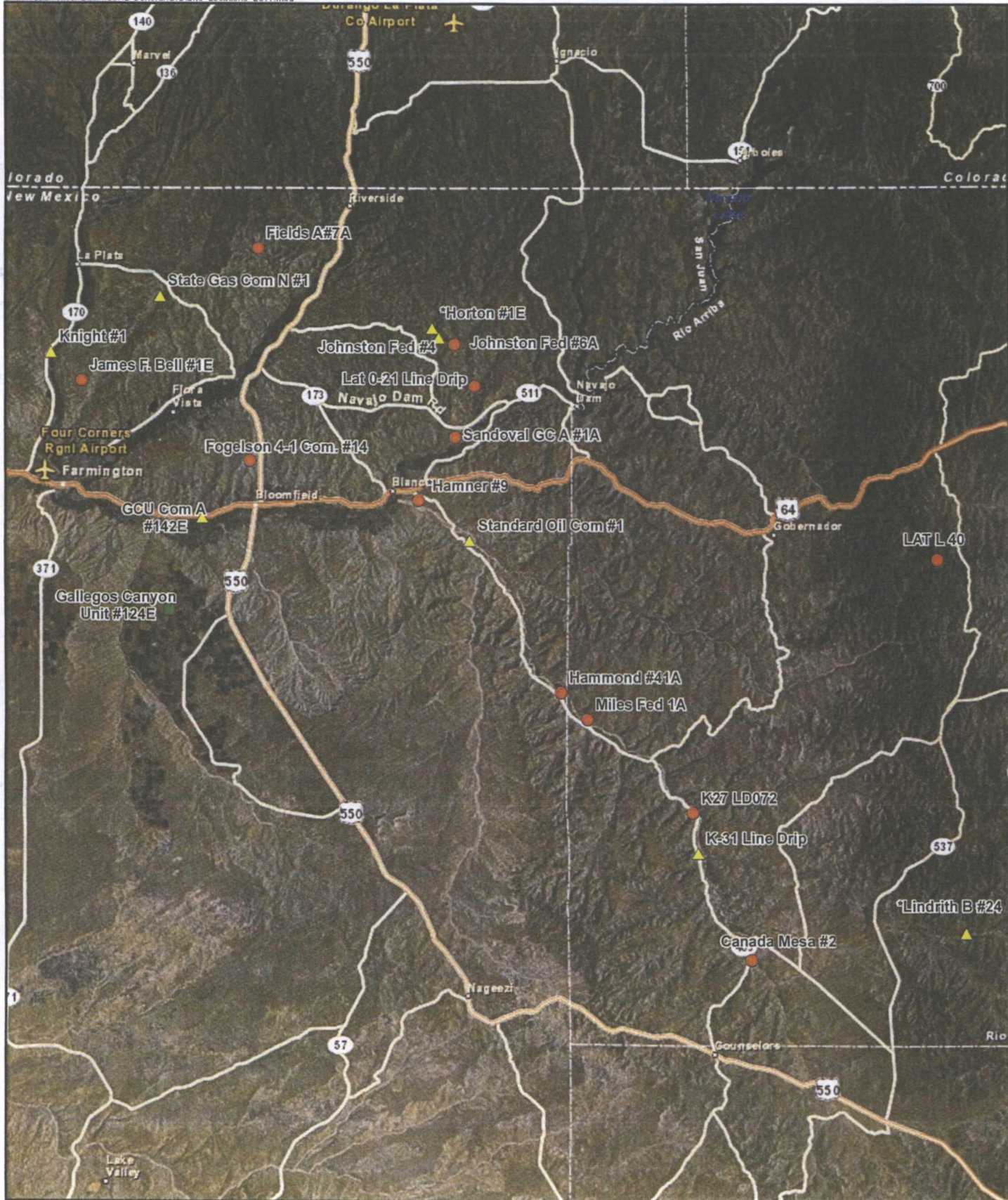
\*The Horton #1E site was submitted for closure in 2009 and is pending approval from NMOCD. There were no monitoring activities for this site in 2011.

\*\*The Lindrith B#24 site was submitted for closure in 2006 and is pending approval from NMOCD. There were no monitoring activities for this site in 2011.



**MWH**





**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

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**State Gas Com N #1  
Meter Code: 71669**

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**SITE DETAILS**

<b>Legal Description:</b>	<b>Town:</b> 31N	<b>Range:</b> 12W	<b>Sec:</b> 16	<b>Unit:</b> H
<b>NMOCD Haz Ranking:</b> 30	<b>Land Type:</b> State	<b>Operator:</b> XTO Energy		

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	3/94	<b>Excavation:</b>	5/94 (80 cy)	<b>Soil Boring:</b>	10/95
<b>Monitor Well:</b>	10/95	<b>Geoprobe:</b>	NA	<b>Additional MWs:</b>	11/06
<b>Downgradient MWs:</b>	11/95	<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>	7/97
<b>Annual Initiated:</b>	NA	<b>Quarterly Resumed:</b>	NA	<b>PSH Removal in 2011?</b>	Yes

**SUMMARY OF 2011 ACTIVITIES**

- MW-1:** Annual groundwater sampling (September) and quarterly product recovery were performed during 2011.
- MW-2:** Annual groundwater sampling (September) and as-needed product recovery were performed during 2011. Water levels were gauged quarterly.
- MW-3:** Annual groundwater sampling (September) and as-needed product recovery were performed during 2011. Water levels were gauged quarterly.
- MW-4:** Annual groundwater sampling (September) and quarterly water level monitoring were performed during 2011.
- MW-5:** Annual groundwater sampling (September) and quarterly product recovery were performed during 2011.
- MW-6:** Annual groundwater sampling (September) and quarterly product recovery were performed during 2011.
- MW-7:** Annual groundwater sampling (September) and quarterly product recovery were performed in 2011.
- MW-8:** This well has been dry since its installation in November 2006. The well was damaged during the summer of 2008.
- MW-9:** Annual groundwater sampling (September) and quarterly water level monitoring were performed during 2011.

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

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**State Gas Com N #1  
Meter Code: 71669**

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**SITE MAP**

A Site map (September) 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 9. 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 in Table 2 and presented graphically in Figures 2 through 8.
- 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 absorbent socks were disposed of as non-hazardous solid waste.

**ISOCONCENTRATION MAPS**

No isoconcentration maps were generated for this Site; however, the attached Site map presents the analytical data collected during the September 2011 annual sampling event.

**RESULTS**

- The groundwater flow direction at this Site trends toward the south.
- MW-1 contained measurable free-product in 2011. Approximately 0.22 gallons of free-product was recovered in 2011, bringing the historic total product recovery from this well to 80.08 gallons. Laboratory results from the annual groundwater sample collected from MW-1 indicated that BTEX concentrations remain elevated at this well. The benzene concentration was 12,300 µg/L. toluene (7,800 µg/L), ethylbenzene (907 µg/L), and total xylenes (7,750 µg/L) also exceeded their respective NMWQCC standards. As a long-term trend, the benzene and toluene concentrations appear to be gradually attenuating, while the ethylbenzene and xylenes appear to be stable.



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**State Gas Com N #1  
Meter Code: 71669**

- 
- Free-product was recovered from MW-2 during 2011. The volume recovered was 0.05 gallons, bringing the historic total recovery from this well to 134.59 gallons. Based on the September 2011 static gauging results, which did not indicate a measurable free-product thickness in MW-2, the remaining pore oil saturation near this well is minimal. The groundwater sample collected from MW-2 in September 2010 exhibited elevated BTEX concentrations above the NMWQCC standards. These results are consistent with those from previous sample events and correlate with the close proximity of residual product. Of the four BTEX constituents, toluene appears to be attenuating at the greatest rate.
  - Free-product was observed in MW-3 during 2011 for the first time since September 2005, when product recovery activities were suspended. The static thickness of product during September 2011 was only 0.02 feet. The total volume of product recovered in 2011 was 0.2 gallons, bringing the total historic volume recovered from this well to 49.40 gallons. In the 2011 groundwater sample, concentrations of benzene (18,500 µg/L), ethylbenzene (906 µg/L), and total xylenes (4,520 µg/L) exceeded their respective NMWQCC standards. These results are similar to historic sampling results at this well. Toluene is the only BTEX constituent that has significantly attenuated in this well.
  - Laboratory results from the annual groundwater sample collected from MW-4 indicate that BTEX concentrations remain elevated at this well. The concentrations of benzene (18,700 µg/L), toluene (12,500 µg/L), ethylbenzene (1,020 µg/L), and total xylenes (11,400 µg/L) all exceeded their respective standards. Free-product was last observed in MW-4 in 2009.
  - Approximately 0.59 gallons of free-product was recovered from MW-5 during 2011, bringing the historic total recovery to 1.08 gallons. During the September 2011 static gauging event, this well exhibited 0.40 feet of free-product. Laboratory results from the annual groundwater sample collected from MW-5 indicate that BTEX concentrations remain elevated at this well. The concentrations of benzene (20,600 µg/L), ethylbenzene (1,000 µg/L), and total xylenes (3,370 µg/L) exceeded their respective standards. The toluene, and total xylenes concentrations in this well appear to be gradually attenuating; the benzene and ethylbenzene concentrations remain stable near their historic levels.
  - Approximately 0.32 gallons of free-product was recovered from MW-6 during 2011, bringing the historic total recovery from this well to 7.76 gallons. During the September 2011 static gauging event, this well did not contain a measurable amount of free-product; therefore, pore oil saturations near this well are likely quite low. Laboratory results from the annual groundwater sample collected from MW-6 indicate that BTEX concentrations remain elevated at this well. The concentrations of benzene (5,590 µg/L), toluene (10,200 µg/L), ethylbenzene (991 µg/L), and total xylenes (8,670 µg/L) exceeded their respective standards. These results are generally similar to the BTEX concentrations exhibited during the previous sampling events.
-



**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**State Gas Com N #1  
Meter Code: 71669**

- Monitor well MW-7 has contained free-product since September 2008. Approximately 0.22 gallons of free-product was recovered from MW-7 during 2010, bringing the total recovery from this well to 0.87 gallons. During the November 2011 static gauging event, this well did not contain a measurable amount of free-product; therefore, pore oil saturations near this well are likely quite low. Laboratory results from the annual groundwater sample collected from MW-7 indicate that BTEX concentrations remain elevated at this well. The concentrations of benzene (9,280 µg/L), toluene (3,550 µg/L) and total xylenes (4,270 µg/L) exceeded their respective standards. The ethylbenzene concentration (725 µg/L) dropped below the standard (750 µg/L) for the first time since free-product appeared in this well.
- The annual sample from the downgradient well, MW-9, indicated that BTEX constituents were only present at trace levels near the laboratory reporting limits. These results are similar to those obtained in previous years, and this well appears to be clean, providing downgradient plume delineation.

**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, MW-3, MW-5, MW-6, and MW-7.
  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, all the active monitor wells require additional monitoring. The remaining applicable standards are:

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

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

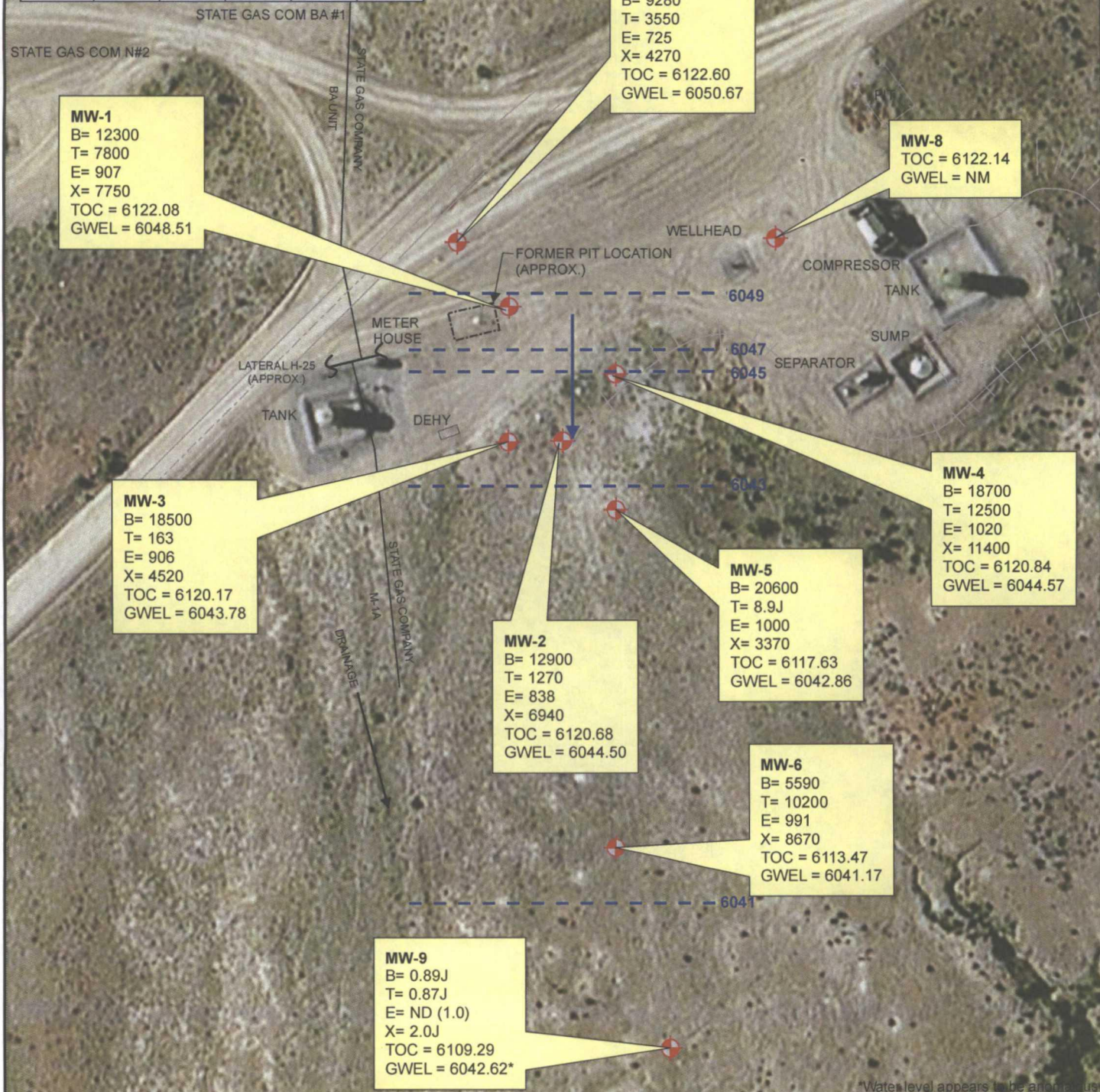
**State Gas Com N #1  
Meter Code: 71669**

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**RECOMMENDATIONS**

- EPCGP recommends annual groundwater sampling at all monitor wells.
- EPCGP recommends quarterly water level measurements at all monitor wells.
- EPCGP recommends continuing free-product recovery efforts, as needed, at monitor wells MW-1, MW-3, MW-5, MW-6, and MW-7 (and other wells as warranted based on the quarterly gauging results).
- EPCGP recommends that MW-8 be plugged and abandoned. This upgradient well has never yielded groundwater, and the surface completion has been damaged by operator activities.
- A review of the well file for the State Gas Com N#1 indicated that a blowdown pit was closed by the operator in 2005. The closure included excavation of the pit down to 30 feet bgs. One vertical soil boring was advanced in the former pit area; and this boring indicated hydrocarbon impacts continuing down through the generally sandy vadose zone to a depth of at least 47 feet bgs, where greater consolidation was encountered. Lateral splaying was not investigated at the time, and it is unknown whether or not the impacts from this blowdown pit may be contributing to the observed site groundwater impacts. EPCGP will continue to evaluate this site in 2012 and consider additional delineation with respect to this potential operator source. Simultaneously, EPCGP will be assessing corrective action alternatives for addressing the relatively widespread petroleum hydrocarbon impacts at this site. The results of this evaluation will be presented to the OCD in the 2012 annual report.

Product Removed (Gallons)	2/2/11	5/4/11	9/22/11	9/29/11	11/11/11
MW-01	0.12		0.05		0.06
MW-02	0.05				
MW-03			0.04	0.01	0.15
MW-05	0.13	0.13	0.13	0.01	0.18
MW-06	0.05	0.05	0.09	0.01	0.11
MW-07	0.08	0.09	0.06		



### LEGEND

MW-1 Existing Monitoring / Observation Well

Groundwater Flow Direction

—6045— 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. AMSL)

J Result Flagged as Estimated

0 20 40 60 80 Feet



PROJECT: STATE GAS COM N #1

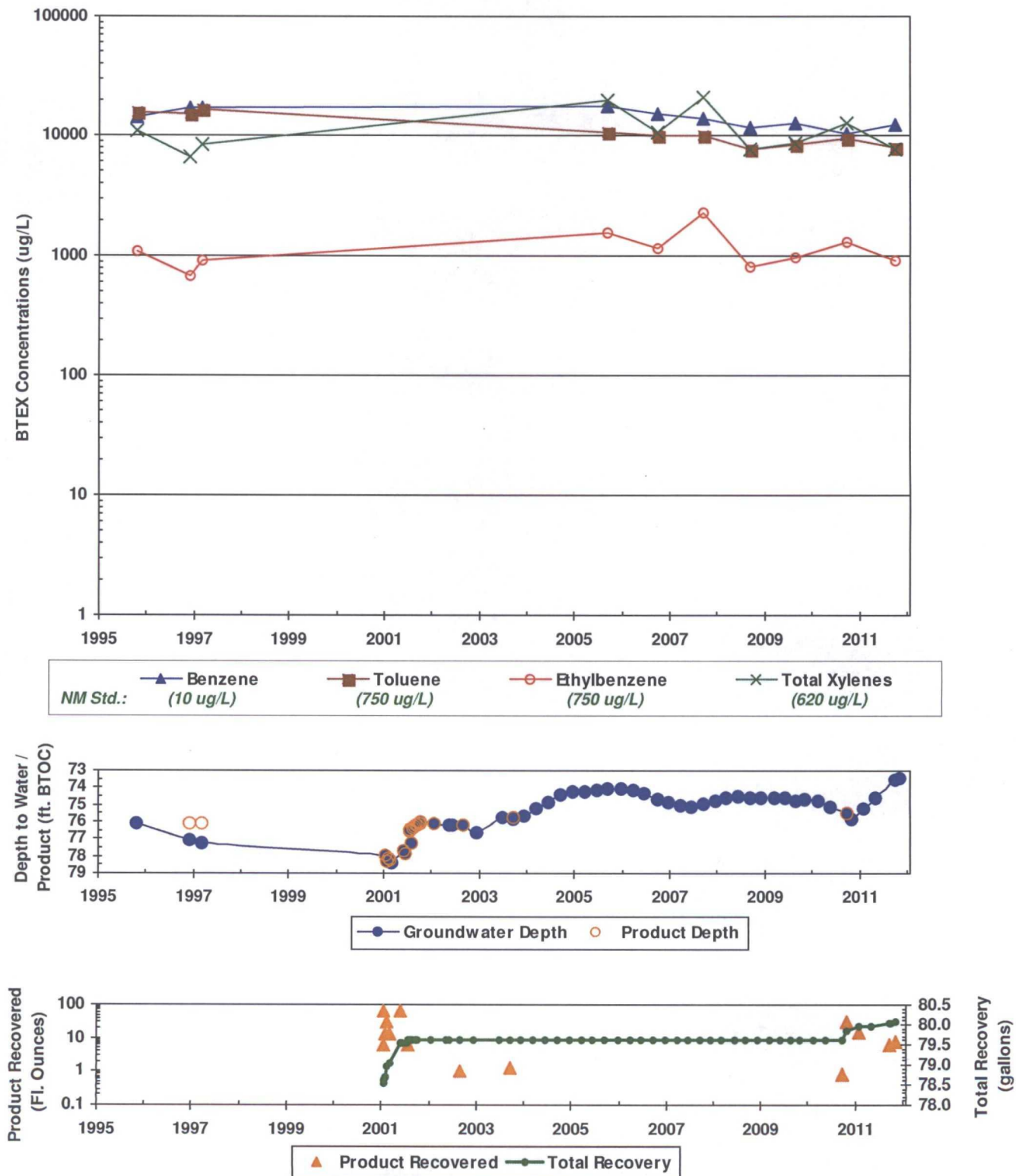
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and BTEX Concentrations - September 29, 2011

FIGURE:

1

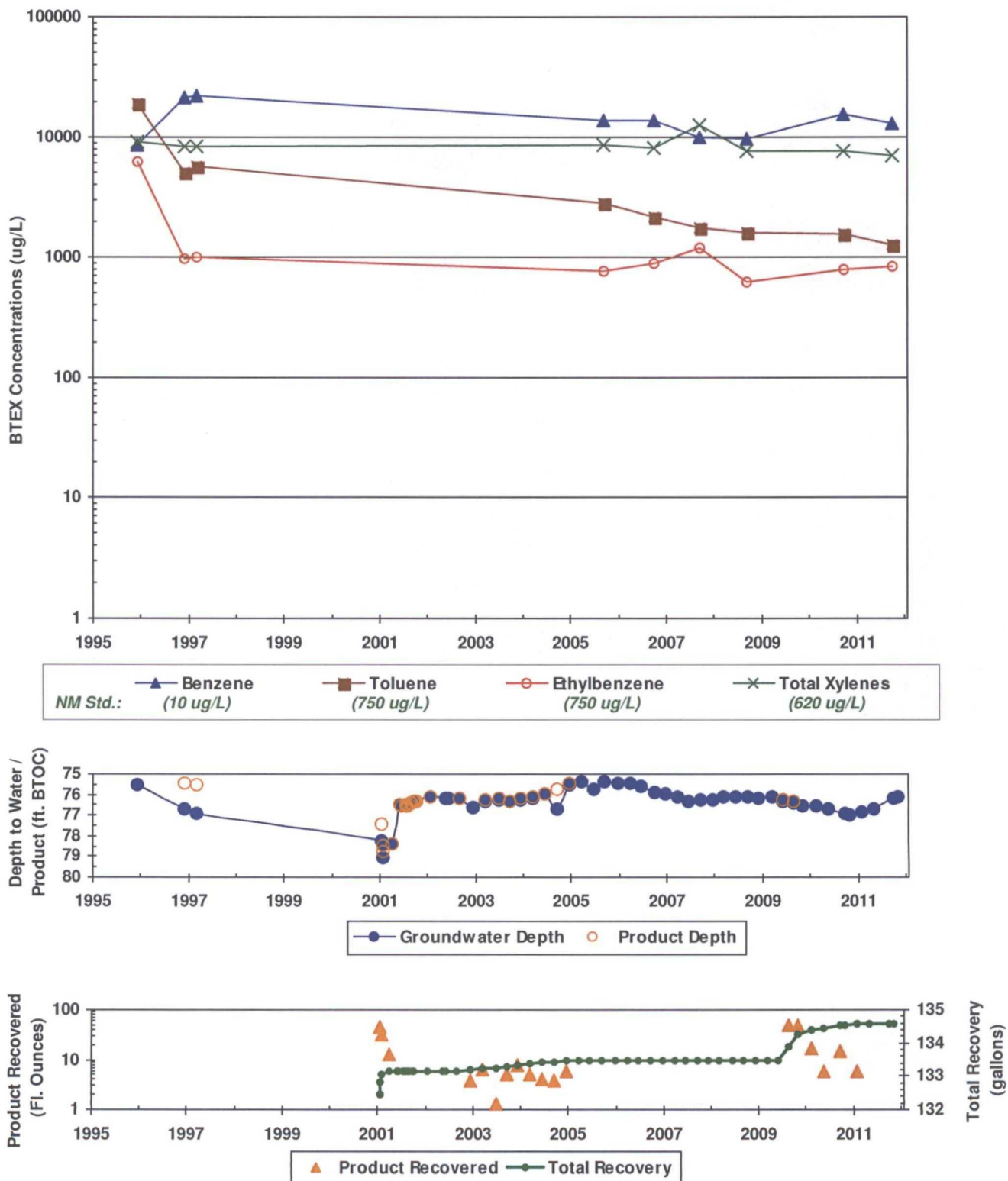


**FIGURE 2**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-1**



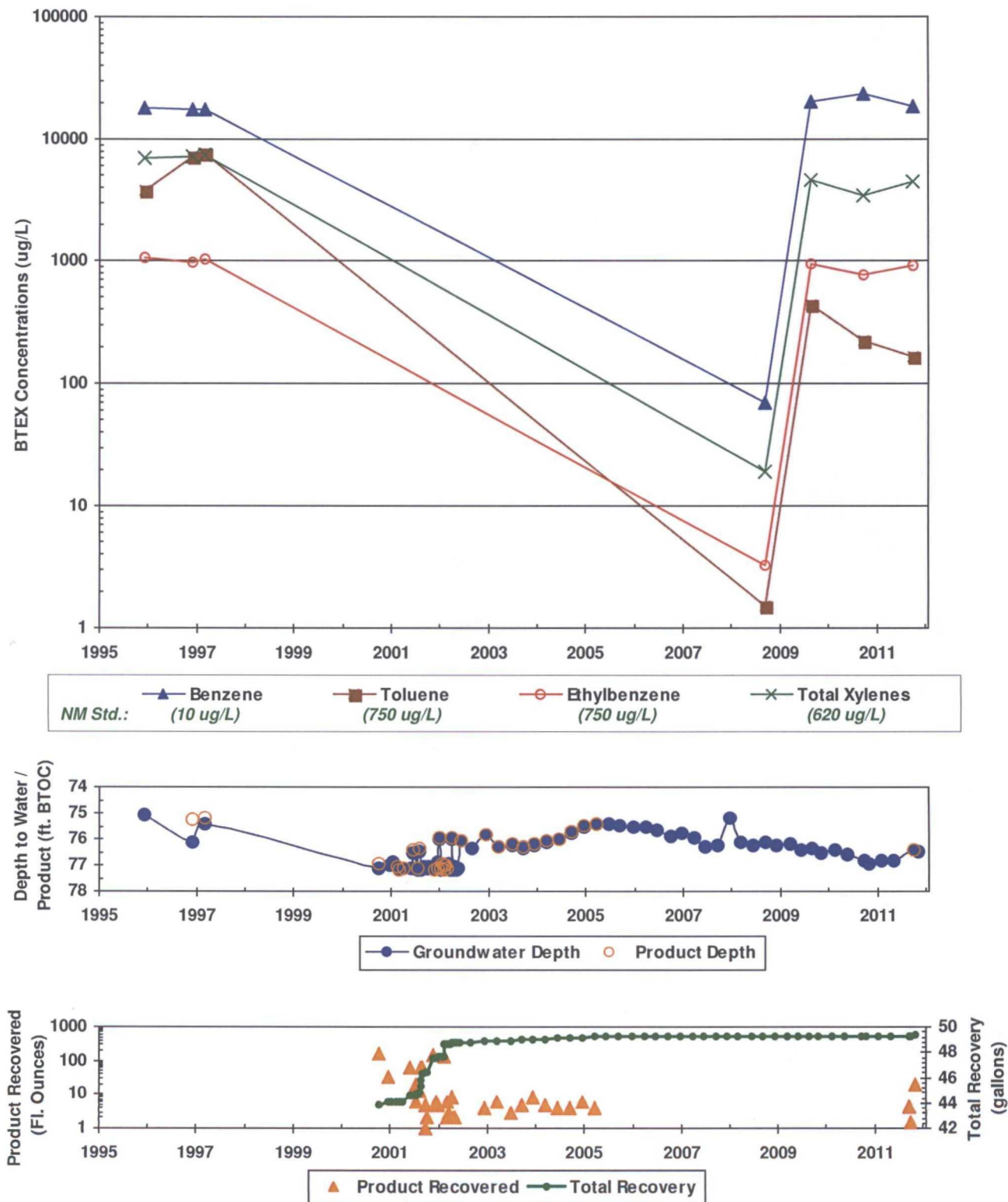
\*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

**FIGURE 3**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-2**



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

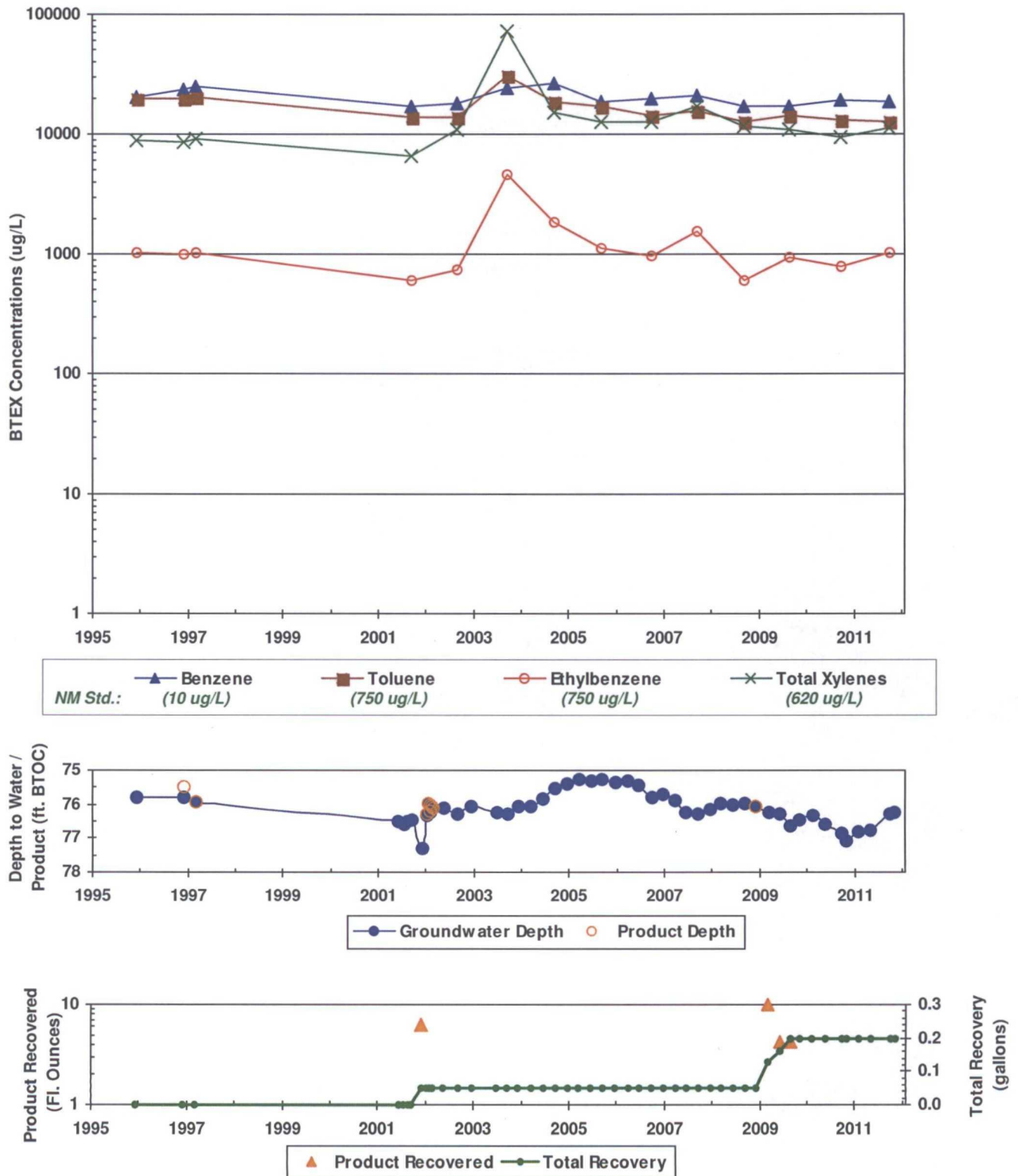
**FIGURE 4**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-3**



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

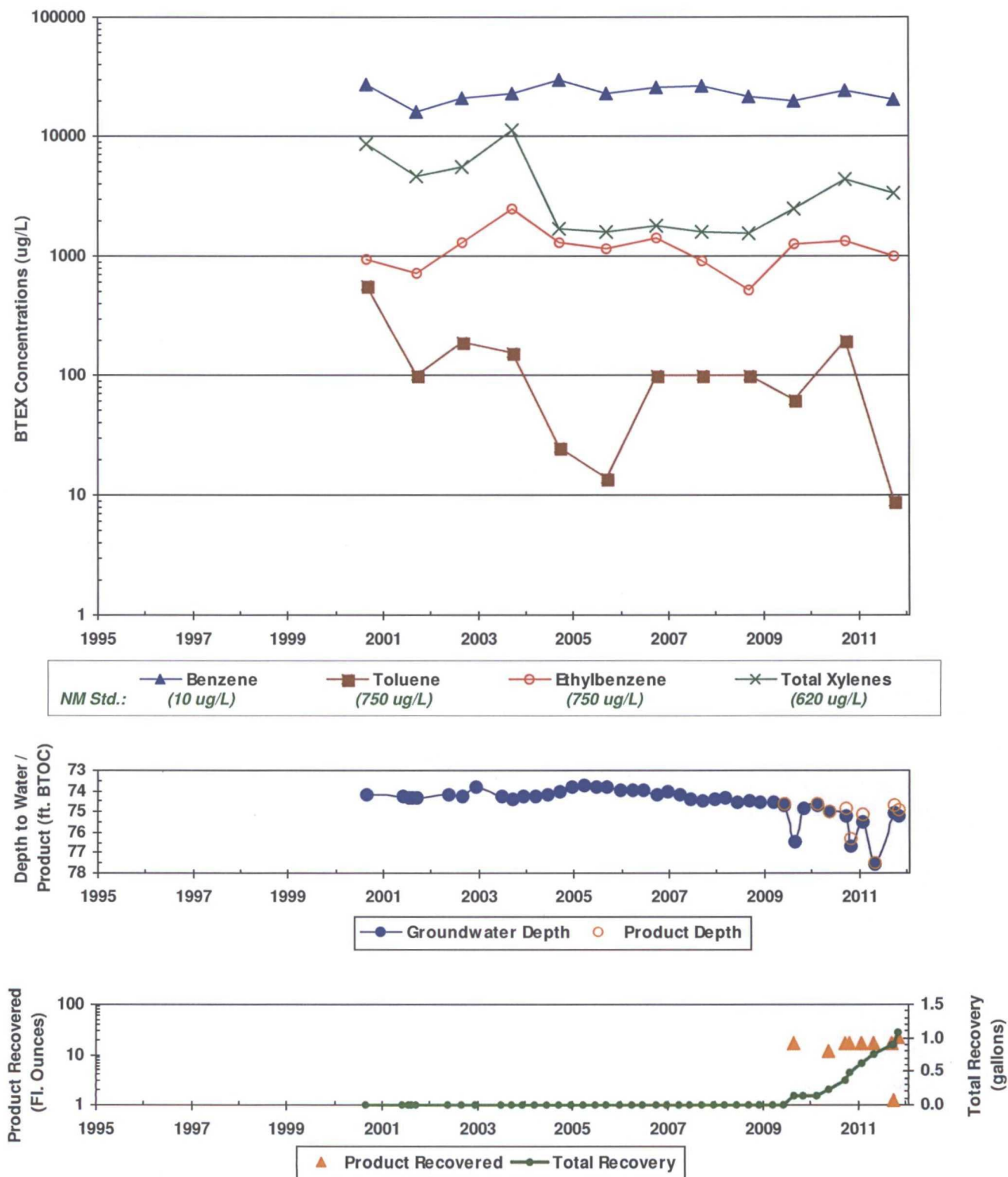


**FIGURE 5**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-4**



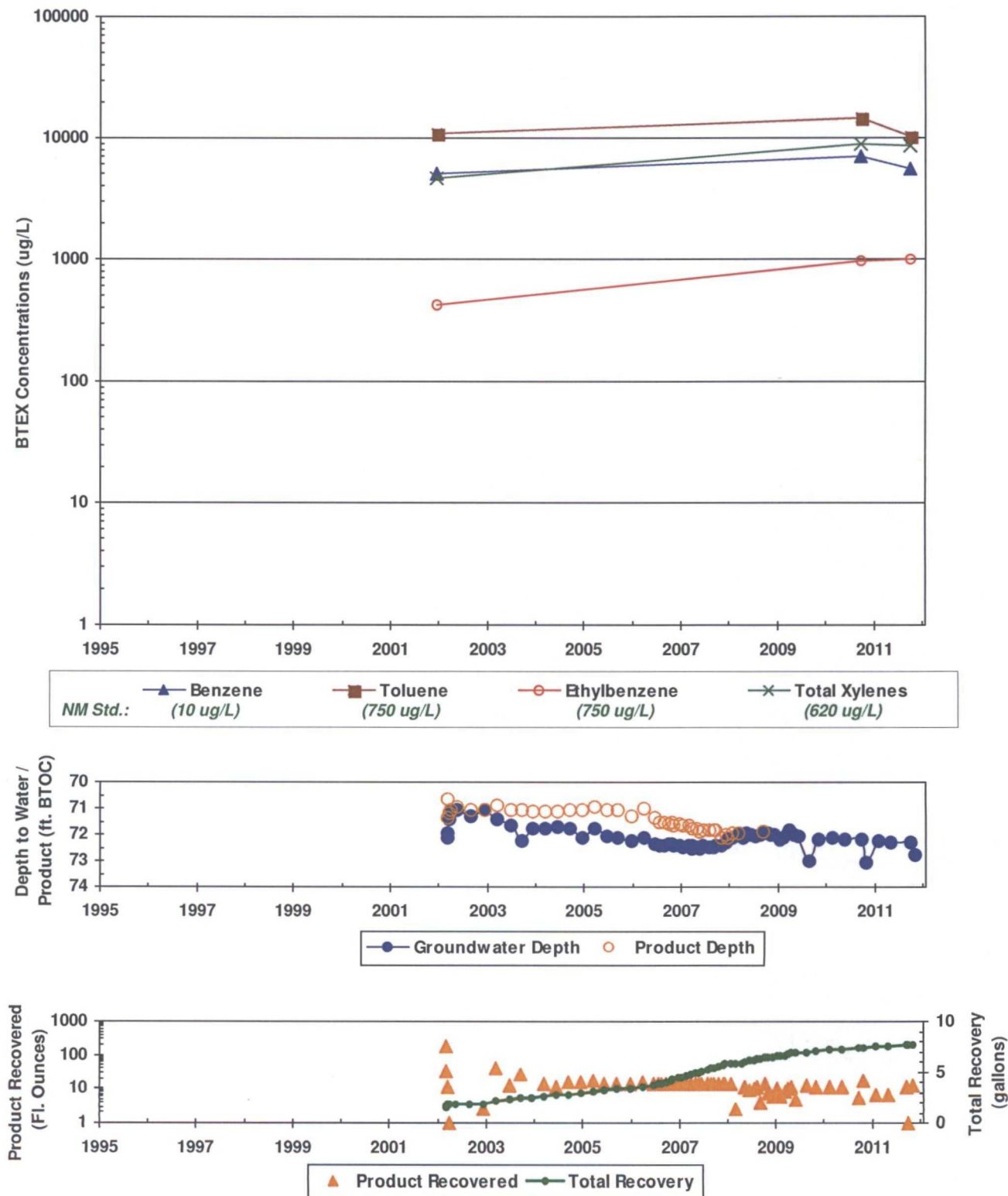
\*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

**FIGURE 6**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-5**



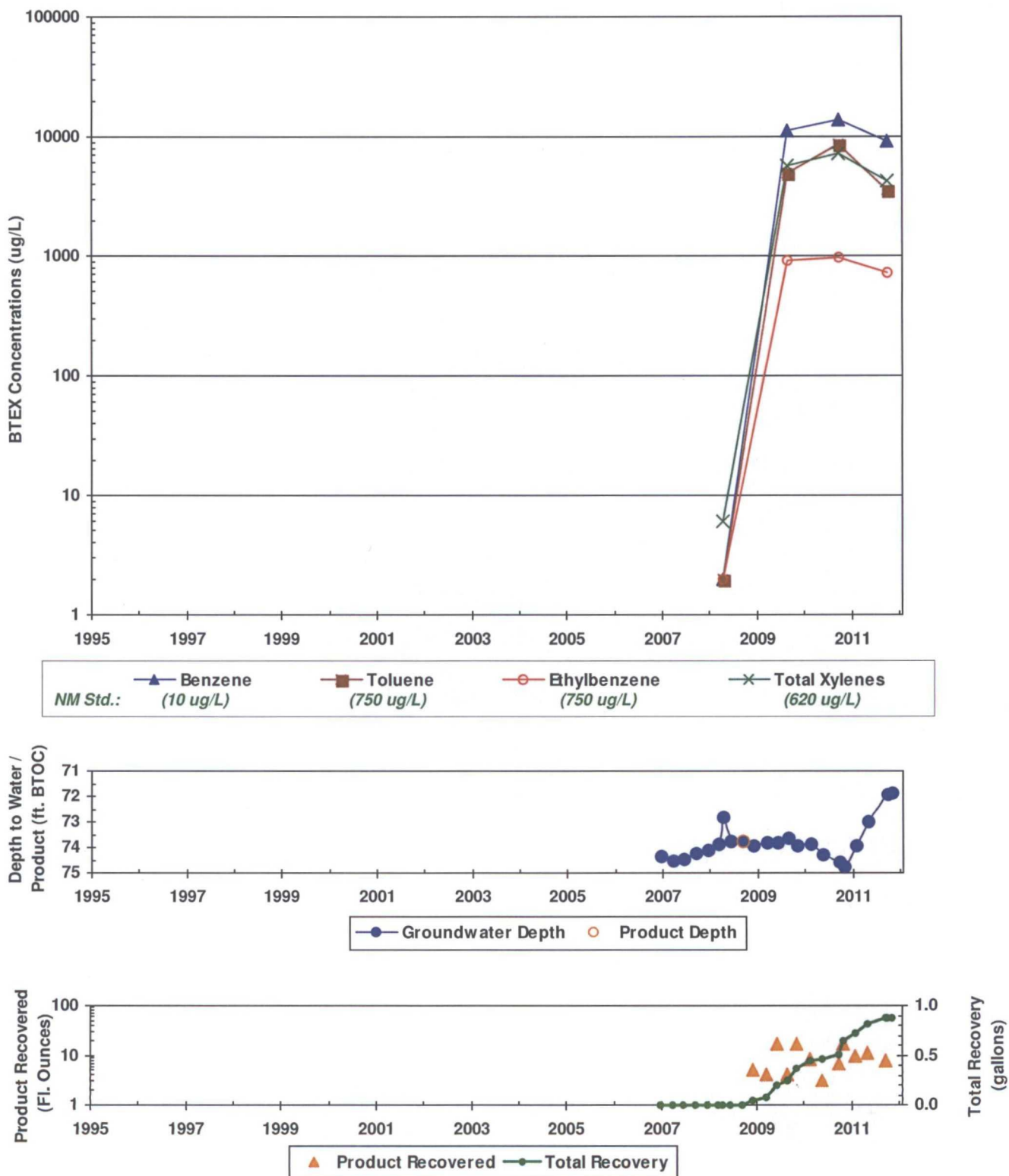
\*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.

**FIGURE 7**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-6**



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

**FIGURE 8**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-7**



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

**FIGURE 9**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**STATE GAS COM N #1 (METER #71669)**  
**MW-9**

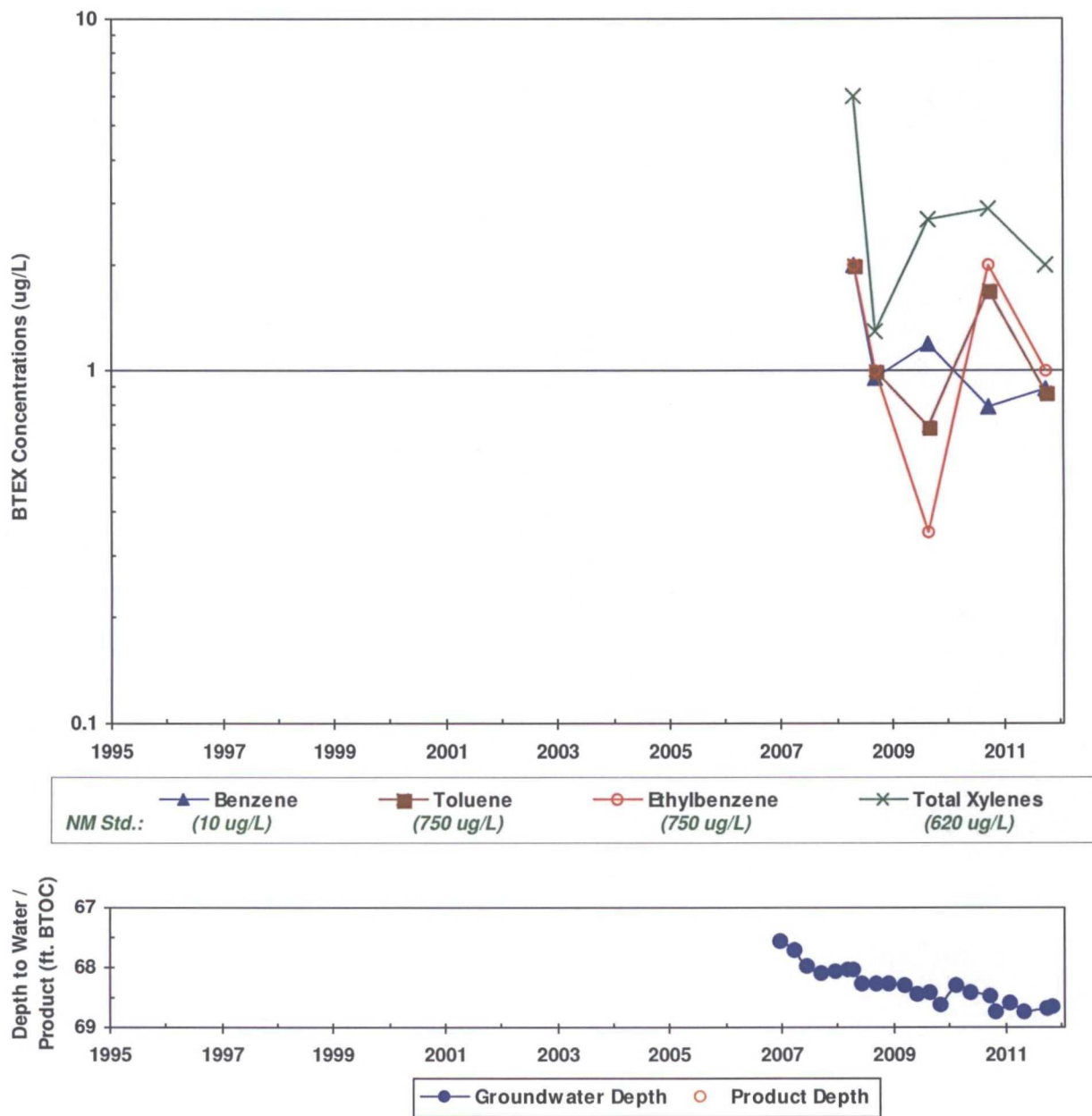




TABLE 1

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER  
STATE GAS COM N #1 (METER #71669)**

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)
NMWQCC GW Std.:		10	750	750	620		
MW-1	10/17/1995	14200	15600	1090	11000	76.08	6046.00
MW-1	12/3/1996	17200	15200	673	6670	77.02	6045.80
MW-1	3/7/1997	16900	16600	904	8420	77.20	6045.74
MW-1	9/15/2005	17300	10700	1560	19600	74.09	6047.99
MW-1	9/27/2006	15100	9990	1150	10700	74.65	6047.43
MW-1	9/18/2007	13800	10100	2260	21200	74.92	6047.16
MW-1	9/8/2008	11700	7560	815	7740	74.55	6047.53
MW-1	8/26/2009	12600	8470	973	8670	74.76	6047.32
MW-1	9/29/2010	10300	9470	1320	12500	75.45	6046.65
MW-1	9/29/2011	12300	7800	907	7750	73.57	6048.51
MW-2	12/7/1995	8540	18900	6230	9240	75.50	6045.18
MW-2	12/3/1996	21700	5000	967	8310	76.66	6044.99
MW-2	3/7/1997	22100	5680	992	8360	76.88	6044.90
MW-2	9/15/2005	13700	2770	762	8610	75.38	6045.30
MW-2	9/27/2006	13800	2150	880	8130	75.85	6044.83
MW-2	9/18/2007	10100	1730	1200	12700	76.24	6044.44
MW-2	9/8/2008	9780	1610	617	7670	76.10	6044.58
MW-2	9/29/2010	15600	1570	779	7730	76.88	6043.80
MW-2	9/29/2011	12900	1270	838	6940	76.18	6044.50
MW-3	12/7/1995	18000	3760	1050	7070	75.03	6045.14
MW-3	12/3/1996	17700	7310	983	7200	76.10	6044.74
MW-3	3/7/1997	17700	7780	1020	7550	75.42	6044.93
MW-3	9/8/2008	70.3	1.5	3.3	19.1	76.14	6044.03
MW-3	8/26/2009	20100	434	936	4690	76.38	6043.79
MW-3	9/29/2010	23600	219J	771	3480	76.80	6043.37
MW-3	9/29/2011	18500	163	906	4520	76.41	6043.78
MW-4	12/7/1995	20300	19600	1040	8880	75.81	6045.03
MW-4	12/3/1996	23600	19600	1000	8600	75.80	6045.30
MW-4	3/7/1997	24800	20100	1040	9080	75.92	6044.92
MW-4	9/10/2001	17000	14000	610	6700	76.45	6044.39
MW-4	9/4/2002	17800	13900	750	10870	76.28	6044.56
MW-4	9/14/2003	24000	30800	4670	73200	76.28	6044.56
MW-4	9/16/2004	26300	18500	1870	15200	75.54	6045.30
MW-4	9/15/2005	18600	16900	1120	12800	75.26	6045.58



TABLE 1

**Notes:**

Page 2



TABLE 2

**SUMMARY OF FREE-PRODUCT REMOVAL  
STATE GAS COM N #1 (METER #71669)**

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	12/3/1996	76.09	77.02	0.93	□□	□□	6045.80
MW-1	3/7/1997	76.12	77.20	1.08	□□	□□	6045.74
MW-1	1/16/2001	77.95	77.96	0.01	0.50	78.55	6044.13
MW-1	1/24/2001	78.27	78.28	0.01	0.05	78.60	6043.81
MW-1	1/31/2001	78.15	78.16	0.01	0.10	78.70	6043.93
MW-1	2/19/2001	78.18	78.19	0.01	0.25	78.95	6043.90
MW-1	3/5/2001	□□	78.34	78.34	0.10	79.05	6106.41
MW-1	6/5/2001	77.71	77.71	0.00	0.50	79.55	6044.37
MW-1	6/15/2001	77.83	77.83	0.00	□□	79.55	6044.25
MW-1	7/13/2001	76.51	76.52	0.01	□□	79.55	6045.57
MW-1	7/20/2001	76.46	76.47	0.01	□□	79.55	6045.62
MW-1	8/1/2001	77.22	77.22	0.00	0.05	79.60	6044.86
MW-1	8/8/2001	76.37	76.37	0.00	□□	79.60	6045.71
MW-1	8/16/2001	76.35	76.35	0.00	□□	79.60	6045.73
MW-1	8/20/2001	76.28	76.28	0.00	□□	79.60	6045.80
MW-1	9/5/2001	76.20	76.20	0.00	□□	79.60	6045.88
MW-1	9/19/2001	76.14	76.14	0.00	□□	79.60	6045.94
MW-1	9/26/2001	76.09	76.09	0.00	□□	79.60	6045.99
MW-1	10/3/2001	76.06	76.06	0.00	□□	79.60	6046.02
MW-1	10/11/2001	76.04	76.04	0.00	□□	79.60	6046.04
MW-1	1/23/2002	76.07	76.08	0.01	□□	79.60	6046.01
MW-1	9/4/2002	76.20	76.21	0.01	0.01	79.61	6045.88
MW-1	9/14/2003	75.77	75.79	0.02	0.01	79.62	6046.31
MW-1	9/29/2010	75.43	75.45	0.02	0.01	79.62	6046.65
MW-1	11/2/2010	□□	75.82	0.00	0.23	79.86	6046.26
MW-1	2/2/2011	□□	75.24	0.00	0.12	79.98	6046.84
MW-1	9/22/2011	□□	□□	□□	0.05	80.02	□□
MW-1	11/11/2011	□□	73.46	0.00	0.06	80.08	6048.62
MW-2	12/3/1996	75.45	76.66	1.21	□□	□□	6044.99
MW-2	3/7/1997	75.51	76.88	1.37	□□	□□	6044.90
MW-2	1/16/2001	77.43	78.26	0.83	□□	132.46	6043.08
MW-2	1/24/2001	78.72	79.06	0.34	0.35	132.81	6041.89
MW-2	1/30/2001	78.44	78.45	0.01	0.25	133.06	6042.24
MW-2	4/2/2001	78.36	78.36	0.00	0.10	133.16	6042.32



**TABLE 2**  
**SUMMARY OF FREE-PRODUCT REMOVAL**  
**STATE GAS COM N #1 (METER #71669)**

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-2	6/5/2001	76.46	76.46	0.00	0.00	133.16	6044.22
MW-2	6/15/2001	76.54	76.54	0.00	0.00	133.16	6044.14
MW-2	7/13/2001	76.56	76.56	0.00	0.00	133.16	6044.12
MW-2	7/20/2001	76.48	76.48	0.00	0.00	133.16	6044.20
MW-2	8/1/2001	76.51	76.51	0.00	0.00	133.16	6044.17
MW-2	8/8/2001	76.50	76.50	0.00	0.00	133.16	6044.18
MW-2	8/16/2001	76.46	76.46	0.00	0.00	133.16	6044.22
MW-2	8/20/2001	76.43	76.43	0.00	0.00	133.16	6044.25
MW-2	9/5/2001	76.38	76.38	0.00	0.00	133.16	6044.30
MW-2	9/19/2001	76.34	76.34	0.00	0.00	133.16	6044.34
MW-2	9/26/2001	76.35	76.35	0.00	0.00	133.16	6044.33
MW-2	10/3/2001	76.31	76.31	0.00	0.00	133.16	6044.37
MW-2	10/11/2001	76.29	76.29	0.00	0.00	133.16	6044.39
MW-2	1/23/2002	76.07	76.08	0.01	0.00	133.16	6044.61
MW-2	9/4/2002	76.20	76.21	0.01	0.00	133.16	6044.48
MW-2	12/17/2002	0.00	76.63	0.00	0.03	133.19	6044.05
MW-2	3/20/2003	76.28	76.32	0.04	0.05	133.24	6044.39
MW-2	6/26/2003	76.19	76.22	0.03	0.01	133.25	6044.48
MW-2	9/14/2003	76.31	76.35	0.04	0.04	133.29	6044.36
MW-2	12/9/2003	76.15	76.22	0.07	0.06	133.35	6044.52
MW-2	3/15/2004	76.07	76.14	0.07	0.04	133.39	6044.60
MW-2	6/17/2004	75.93	75.98	0.05	0.03	133.42	6044.74
MW-2	9/16/2004	75.72	76.66	0.94	0.03	133.45	6044.77
MW-2	12/20/2004	75.46	75.50	0.04	0.05	133.50	6045.21
MW-2	6/3/2009	76.24	76.35	0.11	0.00	133.50	6044.42
MW-2	8/25/2009	0.00	0.00	0.00	0.38	133.87	0.00
MW-2	8/26/2009	76.36	76.43	0.07	0.00	133.87	6044.31
MW-2	11/5/2009	0.00	76.58	0.00	0.38	134.25	6044.10
MW-2	2/11/2010	0.00	76.52	0.00	0.13	134.38	6044.16
MW-2	5/21/2010	0.00	76.70	0.00	0.05	134.43	6043.98
MW-2	9/22/2010	0.00	0.00	0.00	0.12	134.55	0.00
MW-2	2/2/2011	0.00	76.83	0.00	0.05	134.59	6043.85
MW-3	12/3/1996	75.26	76.10	0.84	0.00	0.00	6044.74
MW-3	3/7/1997	75.19	75.42	0.23	0.00	0.00	6044.93



TABLE 2

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STATE GAS COM N #1 (METER #71669)**

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-3	10/3/2000	76.97	77.12	0.15	1.25	43.80	6043.17
MW-3	12/20/2000	77.00	77.00	0.00	0.25	44.05	6043.17
MW-3	2/19/2001	77.06	77.08	0.02	0.00	44.05	6043.11
MW-3	3/5/2001	77.17	77.20	0.03	0.00	44.05	6042.99
MW-3	4/2/2001	77.09	77.11	0.02	0.00	44.05	6043.08
MW-3	6/5/2001	77.11	77.11	0.00	0.50	44.55	6043.06
MW-3	6/15/2001	76.44	76.50	0.06	0.00	44.55	6043.72
MW-3	7/13/2001	77.14	77.17	0.03	0.05	44.60	6043.02
MW-3	7/20/2001	77.13	77.14	0.01	0.15	44.75	6043.04
MW-3	8/1/2001	76.38	76.47	0.09	0.00	44.75	6043.77
MW-3	8/8/2001	77.15	77.15	0.00	0.10	44.85	6043.02
MW-3	8/16/2001	77.15	77.15	0.00	0.50	45.35	6043.02
MW-3	8/20/2001	77.13	77.13	0.00	0.50	45.85	6043.04
MW-3	9/5/2001	77.08	77.08	0.00	0.50	46.35	6043.09
MW-3	9/19/2001	77.11	77.11	0.00	0.04	46.39	6043.06
MW-3	9/26/2001	77.10	77.10	0.00	0.01	46.40	6043.07
MW-3	10/3/2001	77.08	77.08	0.00	0.02	46.41	6043.09
MW-3	11/21/2001	77.15	77.18	0.03	1.10	47.51	6043.01
MW-3	12/13/2001	77.10	77.12	0.02	0.05	47.56	6043.07
MW-3	12/21/2001	76.88	76.88	0.00	0.04	47.60	6043.29
MW-3	12/28/2001	75.97	75.99	0.02	0.00	47.60	6044.20
MW-3	1/7/2002	77.14	77.15	0.01	0.00	47.60	6043.03
MW-3	1/23/2002	76.93	76.94	0.01	0.00	47.60	6043.24
MW-3	1/31/2002	77.00	77.01	0.01	0.00	47.60	6043.17
MW-3	2/7/2002	77.16	77.17	0.01	0.00	47.60	6043.01
MW-3	2/14/2002	77.02	77.03	0.01	1.00	48.60	6043.15
MW-3	2/20/2002	77.11	77.12	0.01	0.00	48.60	6043.06
MW-3	3/6/2002	76.97	76.97	0.00	0.02	48.62	6043.20
MW-3	3/11/2002	76.94	76.94	0.00	0.05	48.67	6043.23
MW-3	3/21/2002	77.15	77.15	0.00	0.02	48.69	6043.02
MW-3	4/3/2002	75.95	75.99	0.04	0.00	48.69	6044.21
MW-3	4/12/2002	77.15	77.15	0.00	0.06	48.75	6043.02
MW-3	4/19/2002	77.09	77.09	0.00	0.02	48.77	6043.08
MW-3	4/25/2002	77.08	77.08	0.00	0.02	48.78	6043.09



TABLE 2

**SUMMARY OF FREE-PRODUCT REMOVAL  
STATE GAS COM N #1 (METER #71669)**

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-3	5/3/2002	□□	77.18	0.00	0.02	48.80	6042.99
MW-3	5/10/2002	□□	77.12	0.00	0.02	48.81	6043.05
MW-3	6/7/2002	76.03	76.07	0.04	□□	48.81	6044.13
MW-3	12/17/2002	75.81	75.85	0.04	0.03	48.85	6044.35
MW-3	3/20/2003	76.28	76.32	0.04	0.05	48.90	6043.88
MW-3	6/26/2003	76.19	76.22	0.03	0.02	48.92	6043.97
MW-3	9/14/2003	76.31	76.36	0.05	0.04	48.96	6043.85
MW-3	12/9/2003	76.15	76.22	0.07	0.06	49.02	6044.01
MW-3	3/15/2004	76.07	76.13	0.06	0.04	49.06	6044.09
MW-3	6/17/2004	75.98	76.02	0.04	0.03	49.09	6044.18
MW-3	9/16/2004	75.72	75.75	0.03	0.03	49.12	6044.44
MW-3	12/20/2004	75.46	75.50	0.04	0.05	49.17	6044.70
MW-3	3/17/2005	75.39	75.43	0.04	0.03	49.20	6044.77
MW-3	9/22/2011	□□	□□	□□	0.04	49.24	□□
MW-3	9/29/2011	76.39	76.41	0.02	0.01	49.25	6043.78
MW-3	11/11/2011	□□	76.49	0.00	0.15	49.40	6043.68
MW-4	12/3/1996	75.48	75.80	0.32	□□	0.00	6045.30
MW-4	3/7/1997	75.92	75.92	0.00	□□	0.00	6044.92
MW-4	12/4/2001	□□	77.29	0.00	0.05	0.05	6043.55
MW-4	1/7/2002	76.30	76.31	0.01	□□	0.05	6044.54
MW-4	1/23/2002	75.95	75.96	0.01	□□	0.05	6044.89
MW-4	1/31/2002	76.01	76.02	0.01	□□	0.05	6044.83
MW-4	2/7/2002	76.21	76.22	0.01	□□	0.05	6044.63
MW-4	2/14/2002	76.05	76.06	0.01	□□	0.05	6044.79
MW-4	2/20/2002	76.09	76.10	0.01	□□	0.05	6044.75
MW-4	12/3/2008	76.04	76.08	0.04	□□	0.05	6044.79
MW-4	3/10/2009	□□	76.23	0.00	0.08	0.13	6044.61
MW-4	6/3/2009	□□	76.30	0.00	0.03	0.16	6044.54
MW-4	8/25/2009	□□	□□	□□	0.03	0.20	□□
MW-5	6/3/2009	74.65	74.67	0.02	□□	0.00	6042.98
MW-5	8/25/2009	□□	□□	□□	0.13	0.13	□□
MW-5	2/11/2010	74.64	74.66	0.02	□□	0.13	6042.99
MW-5	5/21/2010	74.95	75.00	0.05	0.09	0.23	6042.67
MW-5	9/22/2010	□□	□□	□□	0.13	0.36	□□



**TABLE 2**  
**SUMMARY OF FREE-PRODUCT REMOVAL**  
**STATE GAS COM N #1 (METER #71669)**

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-5	9/29/2010	74.84	75.20	0.36	0.00	0.36	6042.72
MW-5	11/2/2010	76.32	76.67	0.35	0.13	0.49	6041.24
MW-5	2/2/2011	75.16	75.53	0.37	0.13	0.63	6042.40
MW-5	5/4/2011	77.50	77.53	0.03	0.13	0.76	6040.12
MW-5	9/22/2011	0.00	0.00	0.00	0.13	0.89	0.00
MW-5	9/29/2011	74.69	75.09	0.40	0.01	0.90	6042.86
MW-5	11/11/2011	74.90	75.18	0.28	0.18	1.08	6042.67
MW-6	3/6/2002	70.64	72.09	1.45	1.50	1.50	6042.54
MW-6	3/11/2002	71.38	71.95	0.57	0.25	1.75	6041.98
MW-6	3/21/2002	71.17	71.44	0.27	0.09	1.84	6042.25
MW-6	4/3/2002	71.04	71.06	0.02	0.01	1.85	6042.43
MW-6	5/17/2002	70.97	71.04	0.07	0.00	1.85	6042.49
MW-6	9/4/2002	71.05	71.28	0.23	0.00	1.85	6042.37
MW-6	12/17/2002	71.03	71.06	0.03	0.02	1.87	6042.43
MW-6	3/20/2003	70.90	71.43	0.53	0.33	2.20	6042.46
MW-6	6/26/2003	71.04	71.66	0.62	0.10	2.30	6042.31
MW-6	9/14/2003	71.04	72.25	1.21	0.20	2.50	6042.19
MW-6	12/9/2003	71.10	71.75	0.65	0.00	2.50	6042.24
MW-6	3/15/2004	71.11	71.74	0.63	0.11	2.61	6042.23
MW-6	6/17/2004	71.11	71.68	0.57	0.09	2.71	6042.25
MW-6	9/16/2004	71.05	71.79	0.74	0.12	2.83	6042.27
MW-6	12/20/2004	71.05	72.09	1.04	0.13	2.95	6042.21
MW-6	3/17/2005	70.96	71.79	0.83	0.14	3.09	6042.34
MW-6	6/17/2005	71.05	72.05	1.00	0.12	3.21	6042.22
MW-6	9/15/2005	71.04	72.14	1.10	0.12	3.33	6042.21
MW-6	12/22/2005	71.30	72.22	0.92	0.12	3.44	6041.99
MW-6	3/27/2006	71.02	72.10	1.08	0.13	3.57	6042.23
MW-6	6/19/2006	71.34	72.33	0.99	0.12	3.69	6041.93
MW-6	7/21/2006	71.54	72.44	0.90	0.12	3.80	6041.75
MW-6	8/24/2006	71.54	72.42	0.88	0.12	3.92	6041.75
MW-6	9/27/2006	71.57	72.37	0.80	0.12	4.04	6041.74
MW-6	10/22/2006	71.53	72.35	0.82	0.12	4.15	6041.78
MW-6	11/7/2006	71.66	72.43	0.77	0.12	4.27	6041.66
MW-6	12/20/2006	71.60	72.41	0.81	0.12	4.39	6041.71



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MW-6	1/16/2007	71.62	72.45	0.83	0.12	4.51	6041.68
MW-6	2/26/2007	71.65	72.41	0.76	0.12	4.62	6041.67
MW-6	3/26/2007	71.76	72.50	0.74	0.12	4.74	6041.56
MW-6	4/30/2007	71.77	72.49	0.72	0.12	4.86	6041.56
MW-6	5/24/2007	71.91	72.50	0.59	0.12	4.97	6041.44
MW-6	6/14/2007	71.83	72.42	0.59	0.12	5.09	6041.52
MW-6	7/31/2007	71.83	72.49	0.66	0.12	5.21	6041.51
MW-6	8/29/2007	71.82	72.47	0.65	0.12	5.33	6041.52
MW-6	9/18/2007	71.82	72.43	0.61	0.12	5.44	6041.53
MW-6	10/31/2007	72.12	72.40	0.28	0.12	5.56	6041.29
MW-6	11/30/2007	72.02	72.27	0.25	0.12	5.68	6041.40
MW-6	12/17/2007	72.11	72.18	0.07	0.12	5.80	6041.35
MW-6	1/23/2008	71.96	72.13	0.17	0.11	5.91	6041.48
MW-6	3/5/2008	71.94	71.95	0.01	0.02	5.93	6041.53
MW-6	5/8/2008	□□	71.94	0.00	0.09	6.02	6041.53
MW-6	6/12/2008	□□	72.02	0.00	0.07	6.09	6041.45
MW-6	7/17/2008	□□	72.07	0.00	0.08	6.17	6041.40
MW-6	8/12/2008	□□	72.02	0.00	0.09	6.26	6041.45
MW-6	9/8/2008	71.91	71.92	0.01	0.03	6.28	6041.56
MW-6	10/9/2008	□□	71.97	0.00	0.11	6.40	6041.50
MW-6	11/7/2008	□□	71.98	0.00	0.06	6.46	6041.49
MW-6	12/3/2008	□□	72.00	0.00	0.05	6.51	6041.47
MW-6	1/16/2009	□□	72.15	0.00	0.08	6.58	6041.32
MW-6	2/6/2009	□□	72.09	0.00	0.05	6.63	6041.38
MW-6	3/10/2009	□□	71.92	0.00	0.06	6.69	6041.55
MW-6	4/1/2009	□□	71.84	0.00	0.08	6.77	6041.63
MW-6	5/1/2009	□□	72.00	0.00	0.09	6.86	6041.47
MW-6	6/3/2009	□□	72.06	0.00	0.04	6.90	6041.41
MW-6	8/25/2009	□□	□□	□□	0.10	7.00	□□
MW-6	11/5/2009	□□	72.18	0.00	0.09	7.08	6041.29
MW-6	2/11/2010	□□	72.13	0.00	0.09	7.18	6041.34
MW-6	5/21/2010	□□	72.20	0.00	0.09	7.27	6041.27
MW-6	9/22/2010	□□	□□	□□	0.04	7.31	□□
MW-6	11/2/2010	□□	73.07	0.00	0.13	7.44	6040.40

## SUMMARY OF FREE-PRODUCT REMOVAL STATE GAS COM N #1 (METER #71669)

**Notes:**

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