

**3R - 205**

**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**

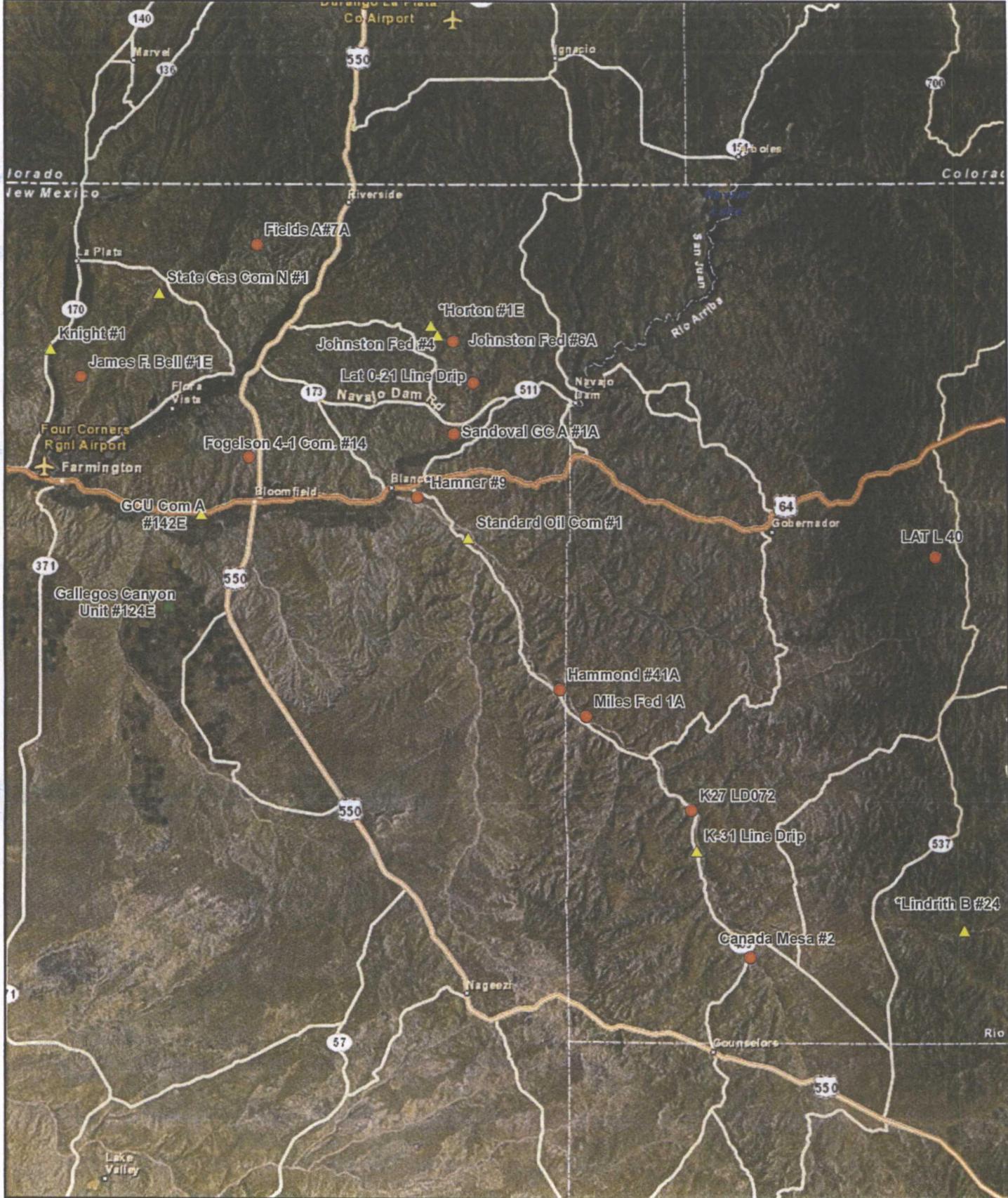
METER or LINE ID	NMOCD CASE NO.	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
03906	3RP-179-0	GCU Com A #142E	29N	12W	25	G
93388	3RP-192-0	*Horton #1E	31N	09W	28	H
70194	<del>3RP-201-0</del>	Johnston Fed #4	31N	09W	33	H
LD087	3RP-205-0	K-31 Line Drip	25N	06W	16	N
72556	<del>3RP-207-0</del>	Knight #1	30N	13W	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 NMOCD.



PROJECT:	SAN JUAN RIVER BASIN	FIGURE: <b>1</b>
TITLE:	Site Locations	

## 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**

**K-31 Line Drip  
Meter Code: LD087**

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**SITE DETAILS**

**Legal Description:**                      **Town:** 25N                      **Range:** 6W                      **Sec:** 16                      **Unit:** N  
**NMOCD Haz Ranking:** 40                      **Land Type:** State                      **Operator:** Enterprise

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	7/94	<b>Excavation:</b>	8/94 (90 cy)	<b>Soil Boring:</b>	9/95
<b>Monitor Well:</b>	3/97	<b>Geoprobe:</b>	7/97	<b>Additional MWs:</b>	7/00
<b>Downgradient MWs:</b>	7/00; 12/06	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	6/97
<b>ORC Nutrient Injection:</b>	11/02	<b>Re-Excavation:</b>	11/95 (1786 cy)	<b>PSH Removal Initiated:</b>	NA
<b>Annual Initiated:</b>	6/99	<b>Quarterly Resumed:</b>	NA	<b>PSH Removal in 2011?</b>	No

**SUMMARY OF 2011 ACTIVITIES**

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

**MW-2:** Semiannual groundwater sampling (May and November) was performed during 2011.

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

**MW-4:** Semiannual groundwater sampling (May and November) was performed during 2011.

**MW-5:** Semiannual groundwater sampling (May and November) was performed during 2011.

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

**SITE MAP**

Site maps (May and November) are attached as Figures 1 and 2.

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**K-31 Line Drip  
Meter Code: LD087**

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**SUMMARY TABLES AND GRAPHS**

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figures 3 through 7.
- The 2011 laboratory reports are 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.

**ISOCONCENTRATION MAPS**

No isoconcentration maps were generated for this Site; however, the attached Site maps present the analytical data collected during 2011.

**RESULTS**

- The groundwater flow direction appears to be north-northwest.
- In 2011, MW-2 benzene concentrations were 12.1 µg/L in May, and 1.3 µg/L in November. The data set indicates that long-term attenuation is continuing and that benzene concentrations peak during the seasonal higher water table periods.
- The samples collected from downgradient monitoring well MW-4 had benzene concentrations of 11.4 µg/L in May, and was not detected in November 2011. All other BTEX components were well below their respective NMWQCC standards. As is the case with MW-2, the benzene concentration in MW-4 appears to peak when the water table is elevated.
- The samples collected from downgradient monitoring well MW-5 had benzene concentrations of 31.2 µg/L and 1.5 µg/L, in May and November 2011, respectively. All other BTEX components were well below their respective NMWQCC standards.

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**K-31 Line Drip  
Meter Code: LD087**

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**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 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, each monitor well ultimately requires additional monitoring. The remaining applicable standards are:

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

**RECOMMENDATIONS**

- Sampling at MW-1 has indicated BTEX concentrations are below detection limits for four consecutive quarters; however, EPCGP will continue to sample MW-1 semiannually.
- EPCGP will continue to sample MW-2 on a semiannual basis until BTEX concentrations meet the closure standards.
- Sampling at MW-3 has indicated BTEX concentrations below detection limits; however, EPCGP will sample this well semiannually.
- EPCGP recommends that downgradient monitoring wells MW-4 and MW-5 be sampled semiannually.

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Knight #1  
Meter Code: 72556**

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**SITE DETAILS**

**Legal Description:**                      **Town:** 30N      **Range:** 13W                      **Sec:** 5                      **Unit:** A  
**NMOCD Haz Ranking:** 30      **Land Type:** Fee                      **Operator:** Fuller Production (Well P&A'd)

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	1/95	<b>Excavation:</b>	1/95 (60 cy)	<b>Soil Boring:</b>	10/95
<b>Monitor Well:</b>	10/95	<b>Geoprobe:</b>	1/97	<b>Additional MWs:</b>	11/00
<b>Downgradient MWs:</b>	12/95	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	4/96
<b>ORC Nutrient Injection:</b>	11/96	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	9/01
<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 water level monitoring were performed in 2011.

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

**MW-3:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2011.

**MW-4:** Annual groundwater sampling (September) and quarterly product recovery / water level monitoring were performed during 2011.

**MW-5:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2011.

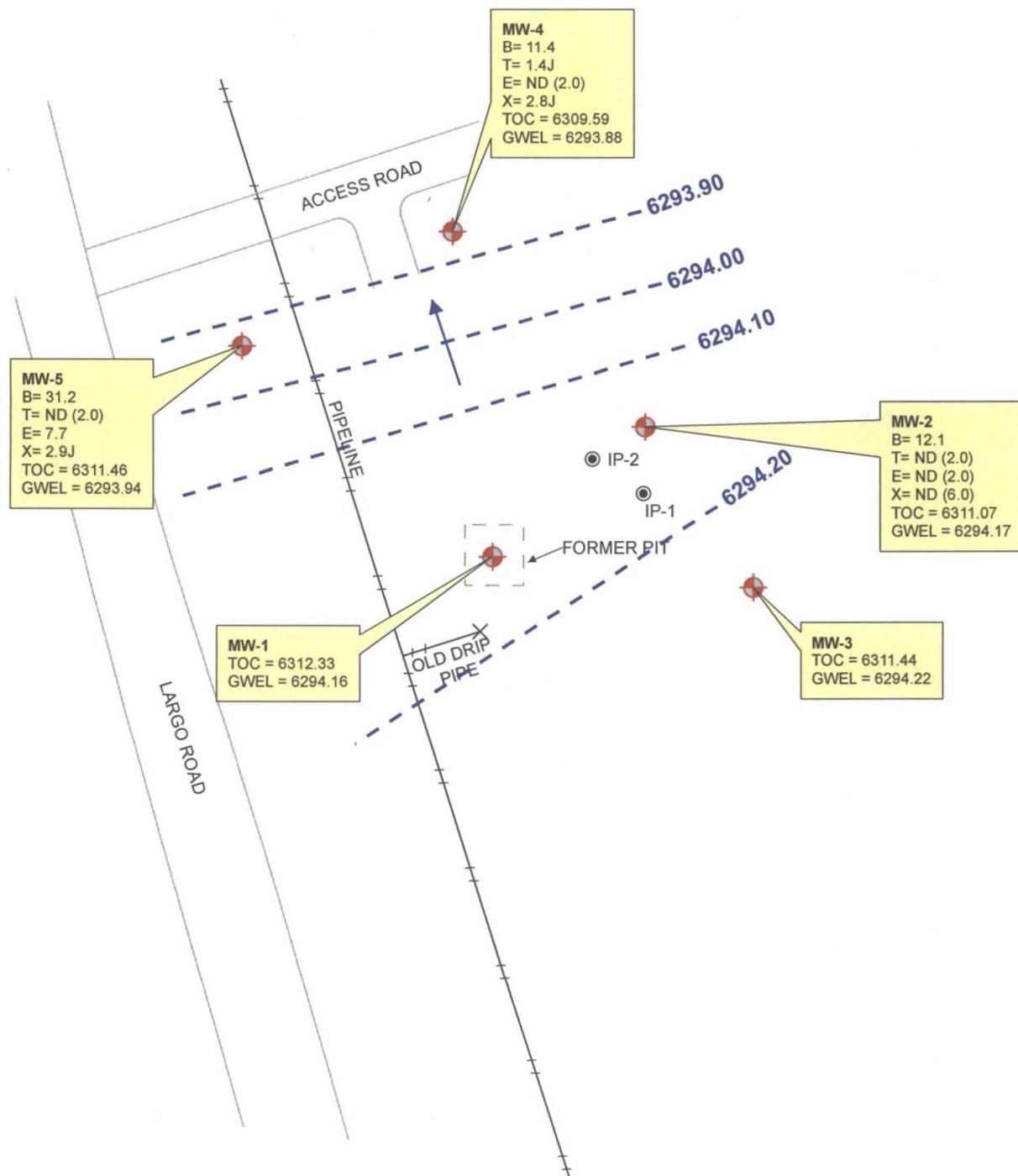
**Site-Wide Activities:** No other activities were performed at this Site during 2011.

**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 6.



**LEGEND**

- MW-1 Existing Monitoring / Observation Well
- Groundwater Flow Direction
- 5486 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



Not To Scale

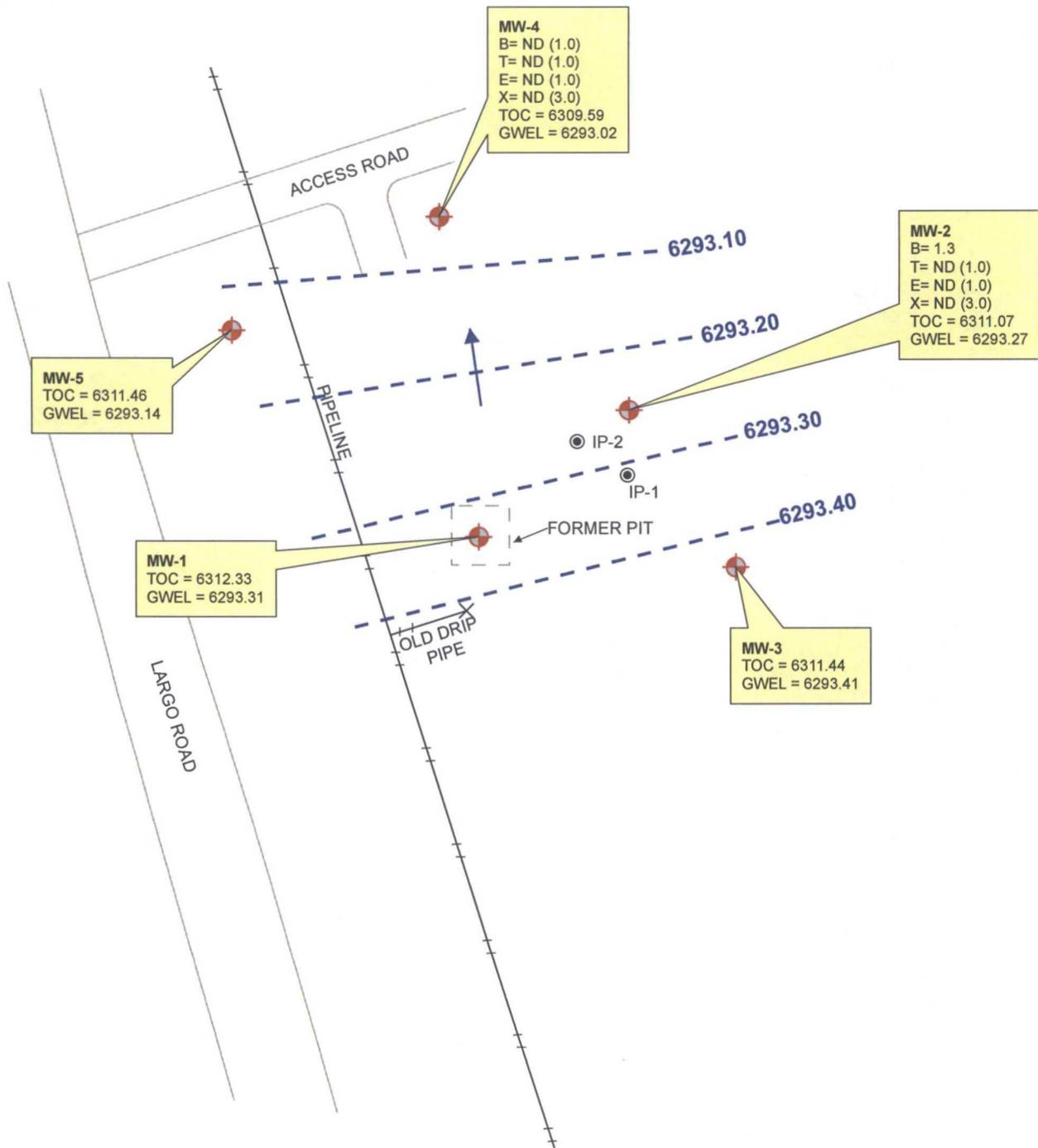


PROJECT: K-31 LINE DRIP

FIGURE:

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

1



**LEGEND**

- MW-1 Existing Monitoring / Observation Well
- Groundwater Flow Direction
- 5486- 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



Not To Scale

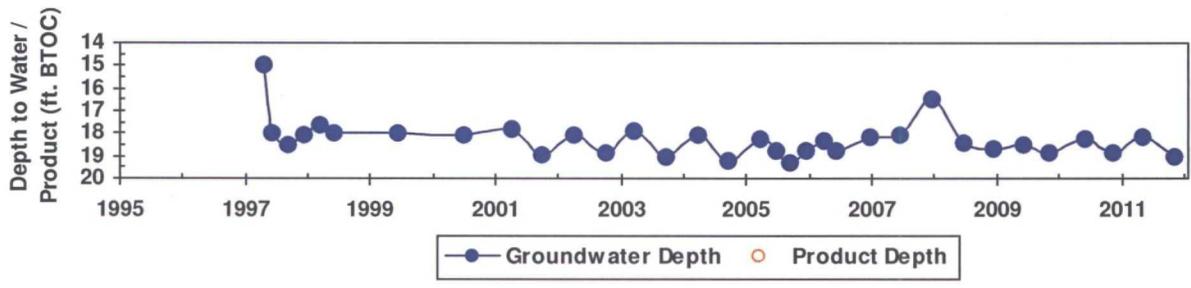
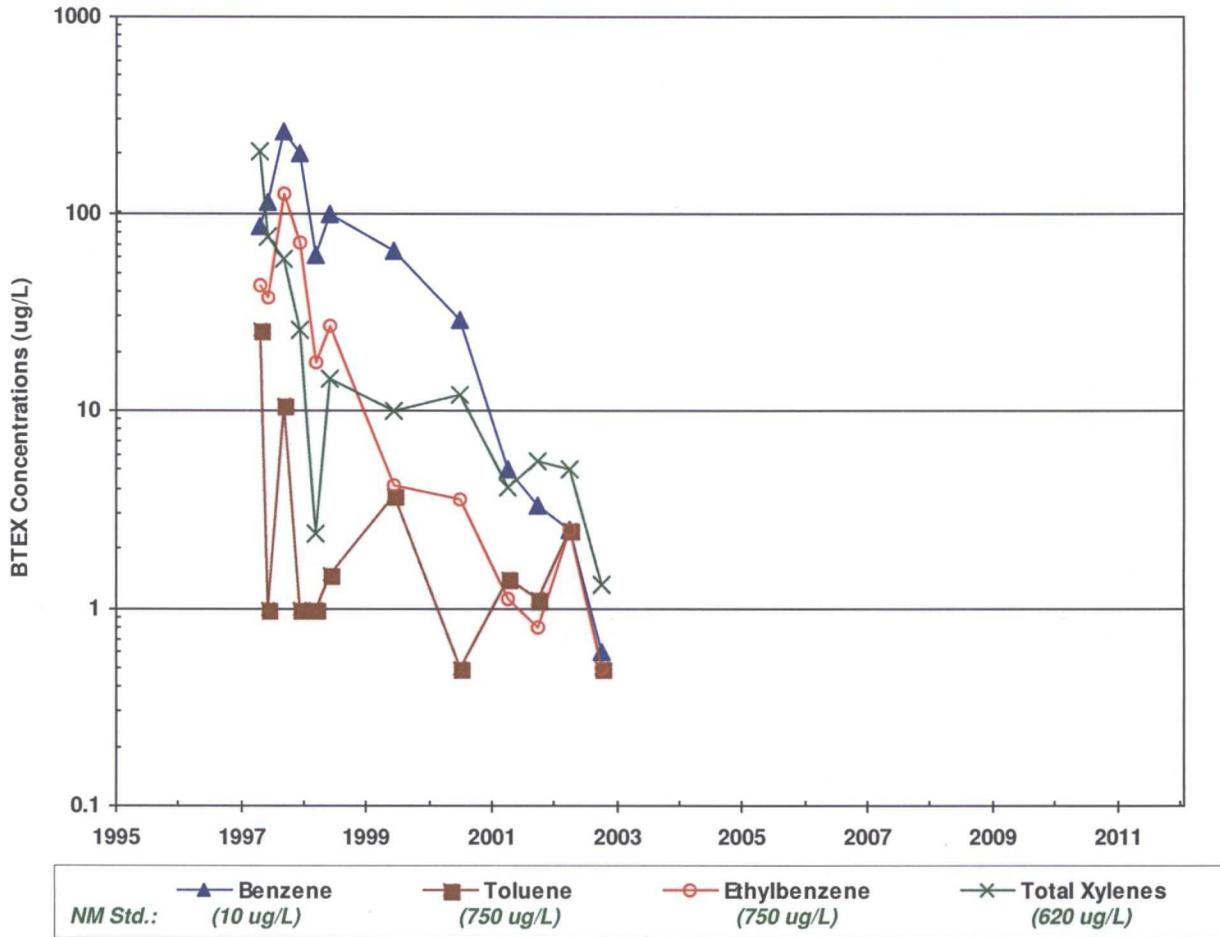


PROJECT: K-31 LINE DRIP

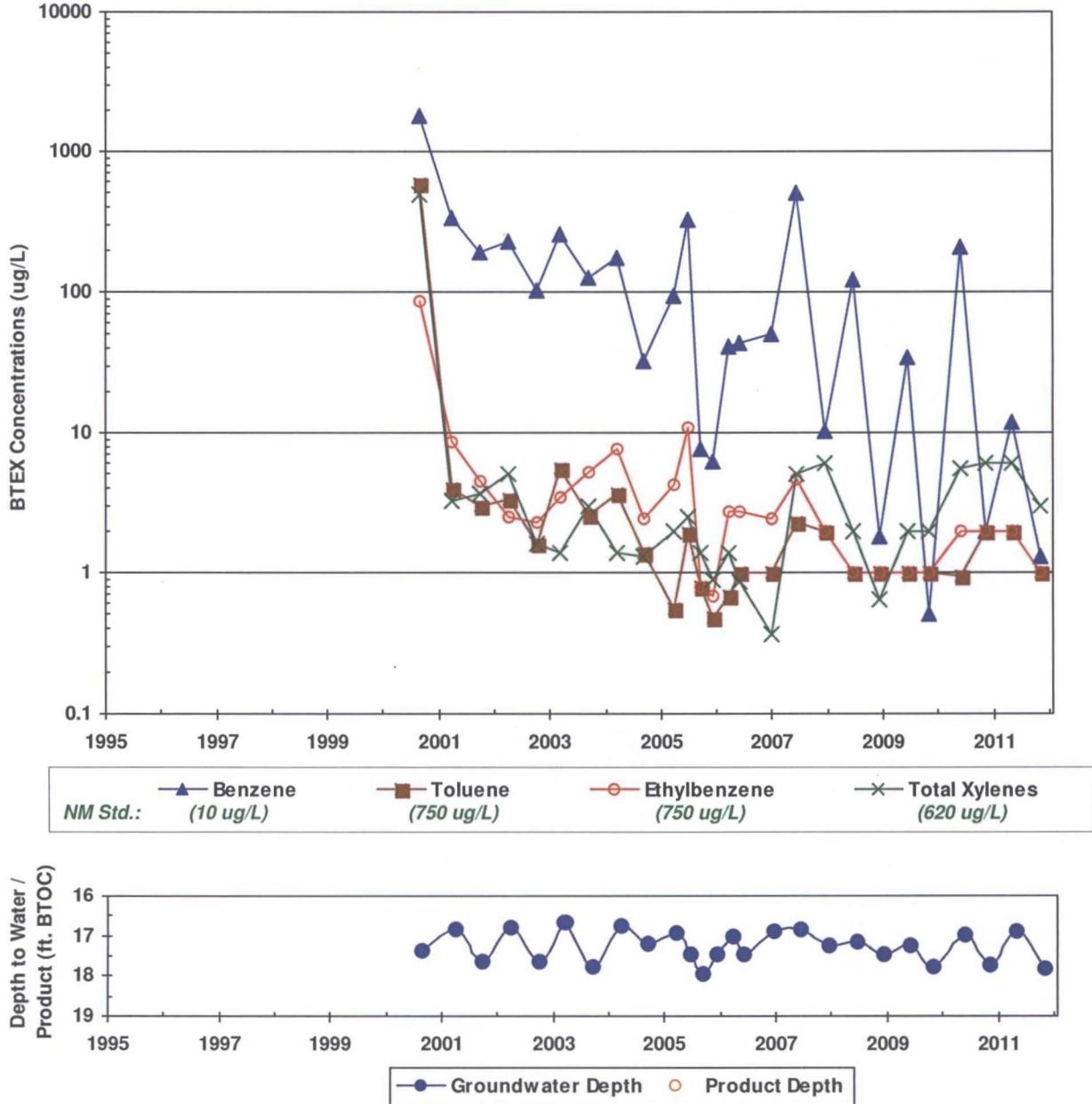
TITLE: Groundwater Potentiometric Surface Map,  
and BTEX Concentrations - November 10, 2011

FIGURE:  
**2**

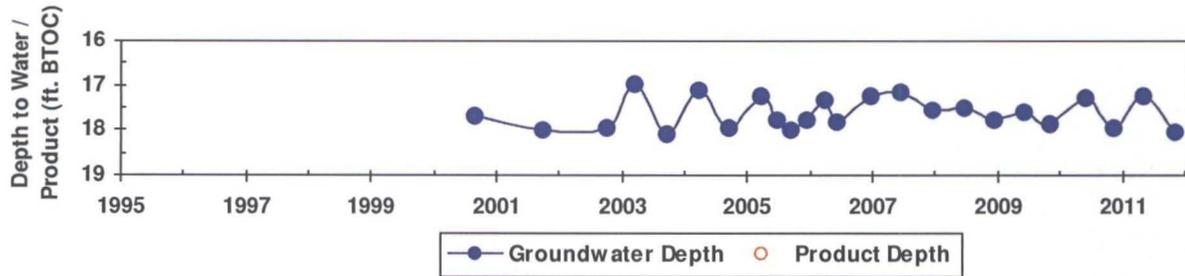
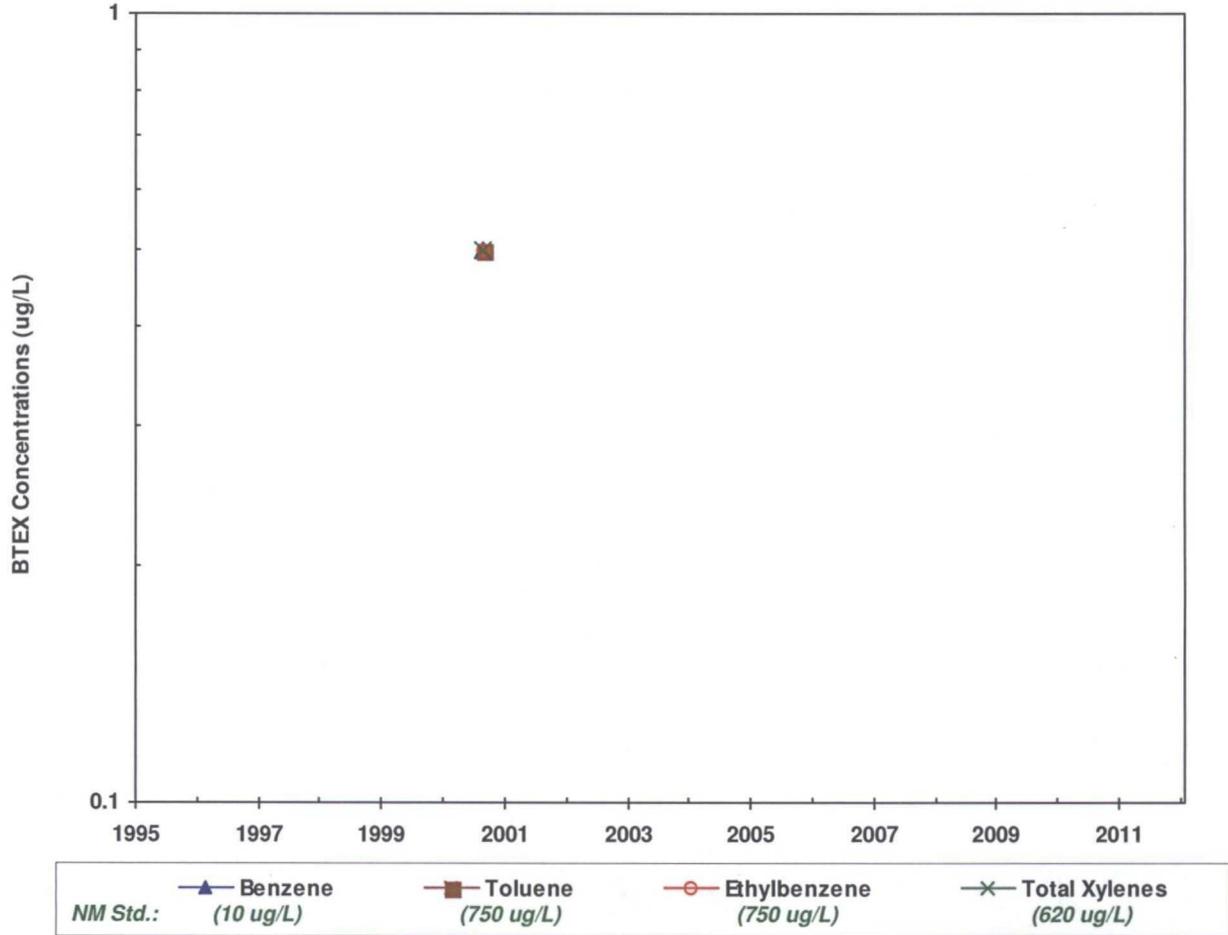
**FIGURE 3**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**K-31 LINE DRIP (METER #LD087)**  
**MW-1**



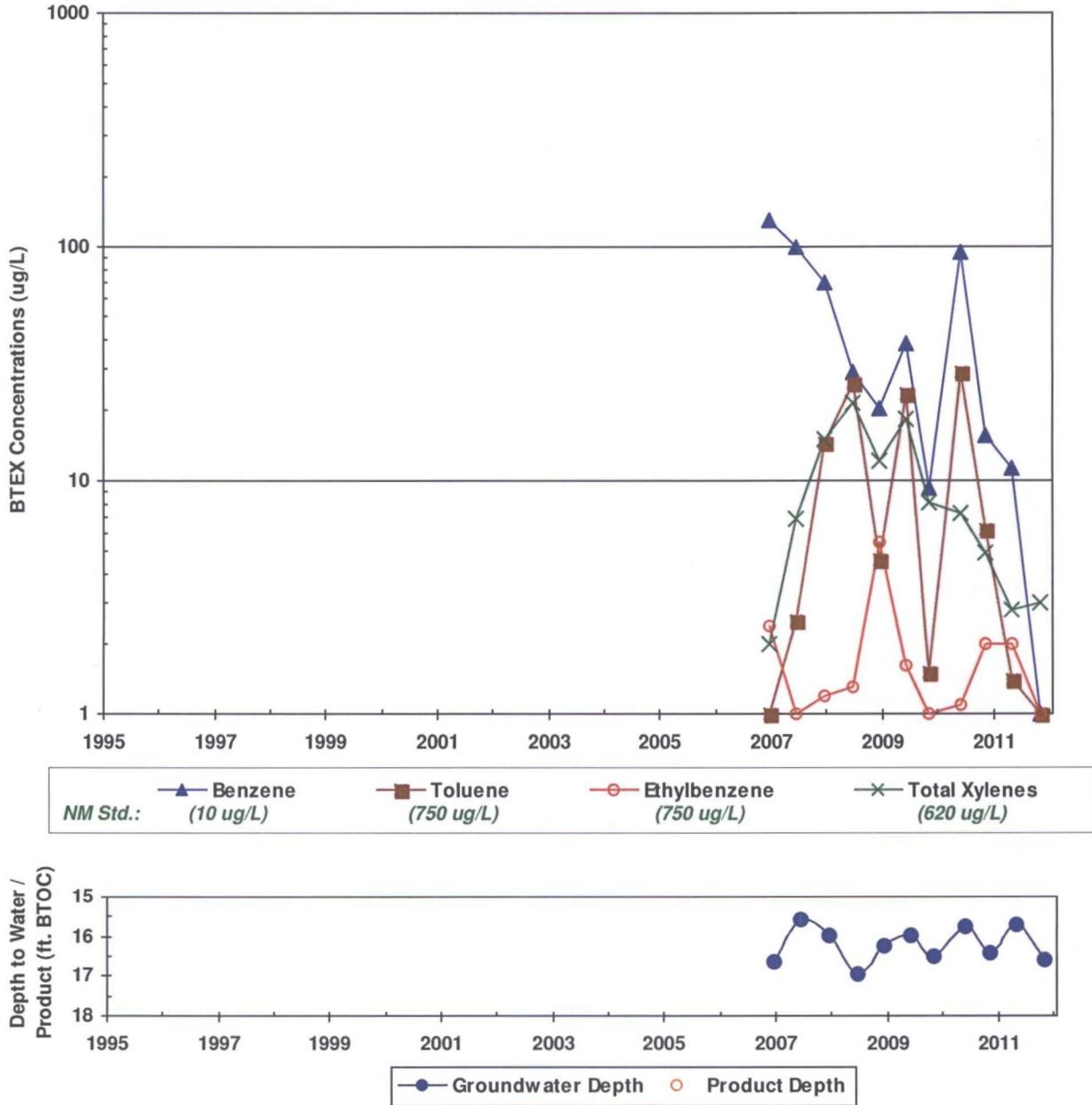
**FIGURE 4**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**K-31 LINE DRIP (METER #LD087)**  
**MW-2**



**FIGURE 5**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**K-31 LINE DRIP (METER #LD087)**  
**MW-3**



**FIGURE 6**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**K-31 LINE DRIP (METER #LD087)**  
**MW-4**



**FIGURE 7**  
**SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS**  
**K-31 LINE DRIP (METER #LD087)**  
**MW-5**

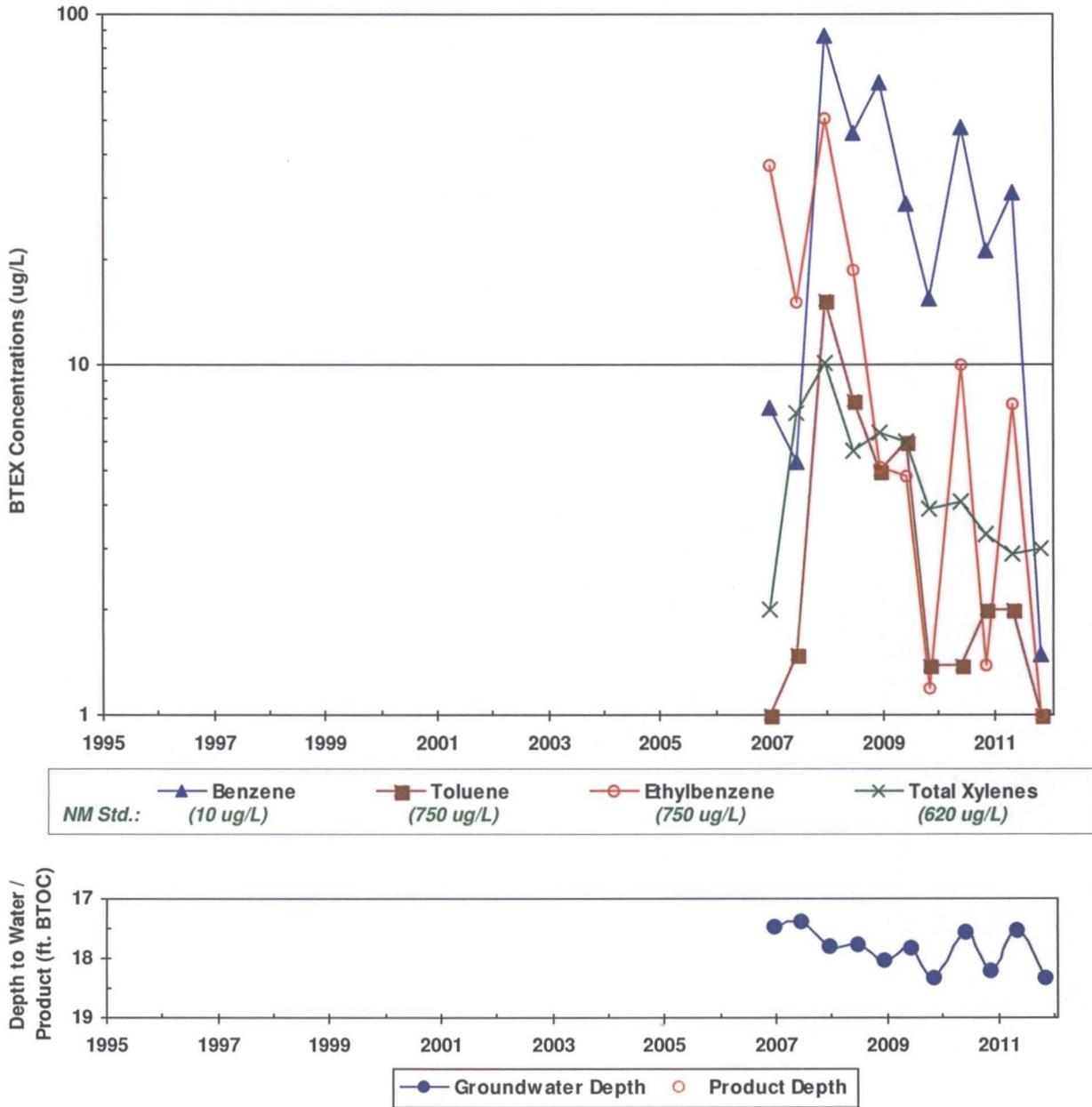


TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER  
K-31 LINE DRIP (METER #LD087)

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		
B1(15-19)	1/3/2006	802	<1.0	1.9	0.78J	NA	NA
B2(15-19)	1/3/2006	4030	348	423	439	NA	NA
B3(15-19)	1/3/2006	<1.0	<1.0	0.96J	<2.0	NA	NA
MW-1	4/16/1997	84.9	25.7	43.6	206	15.00	6297.33
MW-1	6/6/1997	115	<1.0	37.8	76.1	17.99	6294.34
MW-1	9/11/1997	259	10.8	124	58.4	18.48	6293.85
MW-1	12/9/1997	201	<1.0	71.5	25.8	18.09	6294.24
MW-1	3/19/1998	61.2	<1.0	17.8	2.35	17.59	6294.74
MW-1	6/2/1998	98.3	1.48	27.2	14.7	17.98	6294.35
MW-1	6/14/1999	65	3.7	4.2	10	17.98	6294.35
MW-1	6/27/2000	29	<0.5	3.5	12	18.10	6294.23
MW-1	4/3/2001	5	1.4	1.1	4.1	17.79	6294.54
MW-1	10/1/2001	3.3	1.1	0.8	5.6	18.94	6293.39
MW-1	4/1/2002	<2.5	<2.5	<2.5	<5.0	18.05	6294.28
MW-1	10/8/2002	0.6	<0.5	<0.5	1.3	18.86	6293.47
MW-2	8/31/2000	1800	590	86	490	17.36	6293.71
MW-2	4/3/2001	340	4	8.7	3.3	16.82	6294.25
MW-2	10/1/2001	190	3.0	4.5	3.7	17.63	6293.44
MW-2	4/1/2002	230	3.4	<2.5	<5.0	16.78	6294.29
MW-2	10/8/2002	104	1.6	2.3	1.6	17.61	6293.45
MW-2	3/13/2003	254	5.6	3.5	1.4	16.64	6294.43
MW-2	9/15/2003	125	2.6	5.2	3	17.78	6293.29
MW-2	3/22/2004	176	3.7	7.7	1.4	16.76	6294.31
MW-2	9/14/2004	32.2	1.4	2.4	1.3J	17.21	6293.86
MW-2	3/22/2005	93.7	0.56	4.2	<2.0	16.91	6294.16
MW-2	6/24/2005	322	1.9	11.0	2.5	17.44	6293.63
MW-2	9/14/2005	7.6	0.79J	0.78J	1.4J	17.92	6293.15
MW-2	12/14/2005	6.3J	0.48J	0.68J	0.89J	17.46	6293.61
MW-2	3/28/2006	40.8	0.68J	2.7	1.4J	17.02	6294.05
MW-2	6/7/2006	44.3	<1.0	2.7	0.86J	17.47	6293.60
MW-2	12/26/2006	50.8	<1.0	2.4	0.37J	16.90	6294.17
MW-2	6/12/2007	502	2.3	4.7	5.0	16.83	6294.24
MW-2	12/18/2007	10.2	<2.0	<2.0	<6.0	17.22	6293.85
MW-2	6/16/2008	123	<1.0	<1.0	<2.0	17.15	6293.92

**TABLE 1**  
**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER**  
**K-31 LINE DRIP (METER #LD087)**

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>		
MW-2	12/10/2008	1.8	<1.0	<1.0	0.64J	17.45	6293.62
MW-2	6/10/2009	<b>34.7</b>	<1.0	<1.0	<2.0	17.22	6293.85
MW-2	11/2/2009	0.51J	<1.0	<1.0	<2.0	17.76	6293.31
MW-2	6/2/2010	<b>209</b>	0.95J	<2.0	5.6J	16.96	6294.11
MW-2	11/8/2010	<2.0	<2.0	<2.0	<6.0	17.72	6293.35
MW-2	5/9/2011	<b>12.1</b>	<2.0	<2.0	<6.0	16.90	6294.17
MW-2	11/10/2011	1.3	<1.0	<1.0	<3.0	17.80	6293.27
MW-3	8/31/2000	<0.5	<0.5	<0.5	<0.5	17.69	6293.75
MW-4	12/26/2006	<b>131</b>	<1.0	2.4	<2.0	16.64	6292.95
MW-4	6/12/2007	<b>99.8</b>	2.5	<1.0	6.9	15.58	6294.01
MW-4	12/18/2007	<b>70.1</b>	14.5	1.2J	15.0	15.97	6293.62
MW-4	6/16/2008	<b>28.9</b>	25.8	1.3	21.6	16.92	6292.67
MW-4	12/10/2008	<b>20.4</b>	4.6	5.5	12.1	16.22	6293.37
MW-4	6/10/2009	<b>38.5</b>	23.2	1.6	18.3	15.97	6293.62
MW-4	11/2/2009	9.3	1.5	<1.0	8.1	16.50	6293.09
MW-4	6/2/2010	<b>94.1</b>	28.8	1.1J	7.3	15.73	6293.86
MW-4	11/8/2010	<b>15.6</b>	6.2	<2.0	4.9J	16.41	6293.18
MW-4	5/9/2011	<b>11.4</b>	1.4J	<2.0	2.8J	15.71	6293.88
MW-4	11/10/2011	<1.0	<1.0	<1.0	<3.0	16.57	6293.02
MW-5	12/26/2006	7.5	<1.0	37.3	<2.0	17.46	6294.00
MW-5	6/12/2007	5.3	1.5	15.2	7.3	17.39	6294.07
MW-5	12/18/2007	<b>87.0</b>	15.3	50.4	10.1	17.78	6293.68
MW-5	6/16/2008	<b>45.7</b>	7.9	18.7	5.7	17.75	6293.71
MW-5	12/10/2008	<b>63.5</b>	5	5.1	6.4	18.02	6293.44
MW-5	6/10/2009	<b>29.0</b>	6.0	4.8	6.0	17.81	6293.65
MW-5	11/2/2009	<b>15.5</b>	1.4	1.2	3.9	18.33	6293.13
MW-5	6/2/2010	<b>47.4</b>	1.4J	10.0	4.1J	17.55	6293.91
MW-5	11/8/2010	<b>21.2</b>	<2.0	1.4J	3.3J	18.20	6293.26
MW-5	5/9/2011	<b>31.2</b>	<2.0	7.7	2.9J	17.52	6293.94
MW-5	11/10/2011	1.5	<1.0	<1.0	<3.0	NA	NA

**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.

**EPCGP GROUNDWATER SITES  
2011 ANNUAL GROUNDWATER REPORT**

**Knight #1  
Meter Code: 72556**

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**SITE DETAILS**

**Legal Description:**                      **Town:** 30N      **Range:** 13W                      **Sec:** 5                      **Unit:** A  
**NMOCD Haz Ranking:** 30      **Land Type:** Fee                      **Operator:** Fuller Production (Well P&A'd)

**PREVIOUS ACTIVITIES**

<b>Site Assessment:</b>	1/95	<b>Excavation:</b>	1/95 (60 cy)	<b>Soil Boring:</b>	10/95
<b>Monitor Well:</b>	10/95	<b>Geoprobe:</b>	1/97	<b>Additional MWs:</b>	11/00
<b>Downgradient MWs:</b>	12/95	<b>Replace MW:</b>	NA	<b>Quarterly Initiated:</b>	4/96
<b>ORC Nutrient Injection:</b>	11/96	<b>Re-Excavation:</b>	NA	<b>PSH Removal Initiated:</b>	9/01
<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 water level monitoring were performed in 2011.

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

**MW-3:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2011.

**MW-4:** Annual groundwater sampling (September) and quarterly product recovery / water level monitoring were performed during 2011.

**MW-5:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2011.

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

**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 6.