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2010 AGWMR

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March 2, 2011

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

RE: El Paso Tennessee Pipeline Company Pit Groundwater Remediation

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:

Volume Location Type

- 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 lan 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)

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El Paso Tennessee Pipeline Company

San Juan Basin Pit Program Groundwater Sites Project

HECEIVED OCD

Final 2010 Annual Report Non-Federal Sites (Volume 2)

March 2011



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1801 California Street, Suite 2900 Denver, Colorado 80202

2010 ANNUAL GROUNDWATER REPORT NON-FEDERAL SITES VOLUME II EL PASO TENNESSEE PIPELINE COMPANY

TABLE OF CONTENTS

METER or LINE ID	NMOCD. CASE NO:	SITENAME	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	Н
70194	3RP-201-0	Johnston Fed #4	31N	09W	33	Н
LD087	3RP-205-0	K-31 Line Drip	25N	06W	16	N
72556	3RP-207-0	Knight #1	30N	13W	5	А
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	Н

*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 2010.

**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 2010.





LIST OF ACRONYMS

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AMSL	above mean sea level
В	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
Т	toluene
TOC	
IUC	top of casing
NA	top of casing not applicable
	· ·
NA	not applicable
NA NMOCD	not applicable New Mexico Oil Conservation Division
NA NMOCD NS	not applicable New Mexico Oil Conservation Division not sampled

Knight #1 Meter Code: 72556

SITE DETAILS

Legal Description:	Tow	n: 30N	Range:	13W	Sec: 5	Unit:	Α
NMOCD Haz Ranking:	30	Land Type:	Fee	Operator:	Fuller Petroleum Ind	2.	

PREVIOUS ACTIVITIES

Site Assessment:	1/95	Excavation:	1/95 (60 cy)	Soil Boring:	10/95
Monitor Well:	10/95	Geoprobe:	1/97	Additional MWs:	11/00
Downgradient MWs:	12/95	Replace MW:	NA	Quarterly Initiated:	4/96
ORC Nutrient Injection:	11/96	Re-Excavation:	NA	PSH Removal Initiated:	9/01
Annual Initiated:	NA	Quarterly Resumed:	NA	PSH Removal in 2010?	Yes

SUMMARY OF 2010 ACTIVITIES

- **MW-1:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2010.
- **MW-2:** Annual groundwater sampling (September) and quarterly water level monitoring were performed during 2010.
- **MW-3:** Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2010.
- **MW-4:** Annual groundwater sampling (September) and quarterly product recovery / water level monitoring were performed during 2010.
- MW-5: Annual groundwater sampling (September) and quarterly water level monitoring were performed in 2010.

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

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.

Knight #1 Meter Code: 72556

- Historic free-product recovery data are summarized on Table 2 and presented graphically in Figures 2, 4, and 5.
- 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.

DISPOSITION OF GENERATED WASTES

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station. Spent absorbent socks were managed 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 2010.

RESULTS

- The groundwater flow direction generally trends to the south-southeast.
- The annual sample collected from MW-1 had a benzene concentration of 2,910 µg/L. This result was well above the NMWQCC standard of 10 µg/L. Ethylbenzene (1,600 µg/L) and total xylenes (15,000 µg/L) were also above their respective NMWQCC standards. Overall, the MW-1 results were similar to previous years.
- Because there was no measurable free-product in MW-1, no product recovery was possible during 2010, leaving the cumulative total volume recovered at 0.42 gallons. Approximately 0.01 gallons of free-product were removed in 2005, the most recent year with recoverable product.
- The annual sample collected from MW-2 had a benzene concentration of 100 μ g/L. No other BTEX constituent exceeded its respective standard. Benzene concentrations in MW-2 have generally tended to fluctuate inversely with water. The site water levels during 2010 were at their highest recorded elevations.
- The annual sample collected from MW-3 had a benzene concentration of 2,710 μ g/L, an ethylbenzene concentration of 1,390 μ g/L, and a total xylenes concentration of 10,600 μ g/L, all above their respective NMWQCC standards. Concentrations in this well appear to increase with a rising water table. Free product has not been observed in this well since 2004, likely due to the increasing water level trend since that time.

Knight #1 Meter Code: 72556

- The laboratory results from the annual sample collected at MW-4 during 2010 indicated a benzene concentration of 1,400 µg/L, an ethylbenzene concentration of 1,020 µg/L, and a total xylenes concentration of 6,410 µg/L. Toluene was not detected. The significantly elevated benzene, ethylbenzene, and xylenes levels, which were similar to those observed in 2009, coincided with the August 2009 appearance of free-product in this well. Free-product has been recovered since that time, for a total volume recovered of approximately 6.6 gallons (including 3.4 gallons of product recovered in 2010).
- Monitor well MW-5 was sampled in 2010 for the first time since 2002. MW-5 was originally deemed to be a clean well, but it was recently added back to the annual sampling list in order to improve plume delineation, particularly in light of the 2009 reappearance of free product at the site and the contemporaneous increases in the MW-3 BTEX constituent concentrations. The 2010 groundwater sample from MW-5 exhibited a benzene concentration of 34.1 µg/L. Notwithstanding a low-level total xylenes detection of 2.7J, the remaining BTEX constituents were not detected.

REMAINING CLOSURE REQUIREMENTS

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- 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 conditions must still be achieved:
 - 1. Recoverable free-product must be removed from the subsurface. Generally, this corresponds with an absence of measurable freeproduct in the monitor wells. Currently, product recovery efforts are still required at MW-4.
 - 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 monitor wells require additional monitoring. The remaining applicable standards are:

Knight #1 Meter Code: 72556

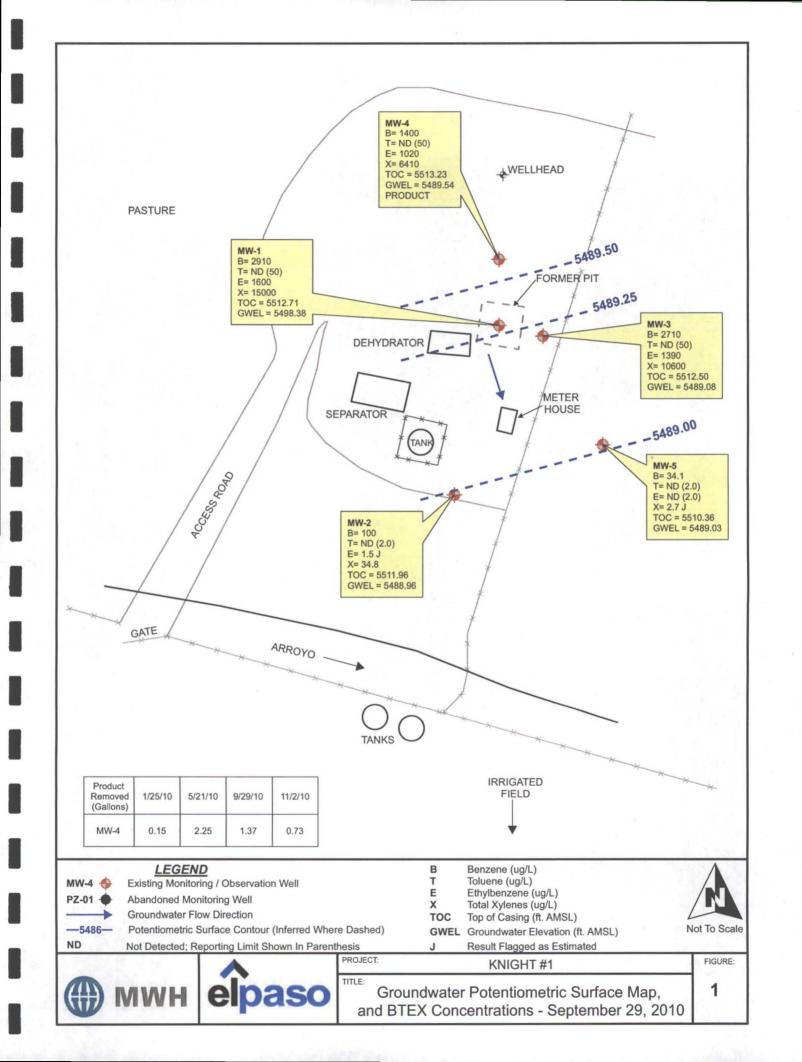
Constituent	NMWQCC GW Standard (μg/L)
Benzene	10
Toluene	750
Ethylbenzene	750
Total Xylenes	620

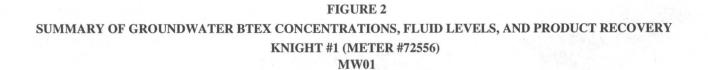
RECOMMENDATIONS

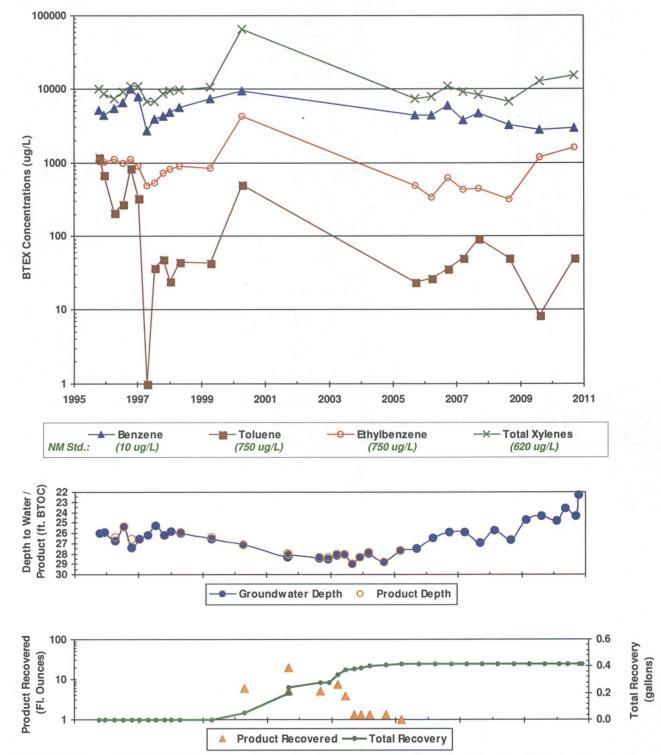
- EPTPC recommends annual sampling and quarterly water level gauging at MW-1. Free-product recovery will again be implemented if measurable free-product thicknesses reappear.
- EPTPC recommends annual sampling and quarterly water level gauging at MW-2.
- EPTPC recommends annual sampling and quarterly water level gauging at MW-3. Free-product recovery will again be implemented if measurable free-product thicknesses reappear.

• EPTPC recommends annual sampling and quarterly product recovery at MW-4.

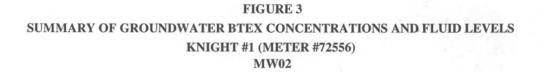
• EPTPC recommends continuing annual sampling at MW-5, along with quarterly water level monitoring.

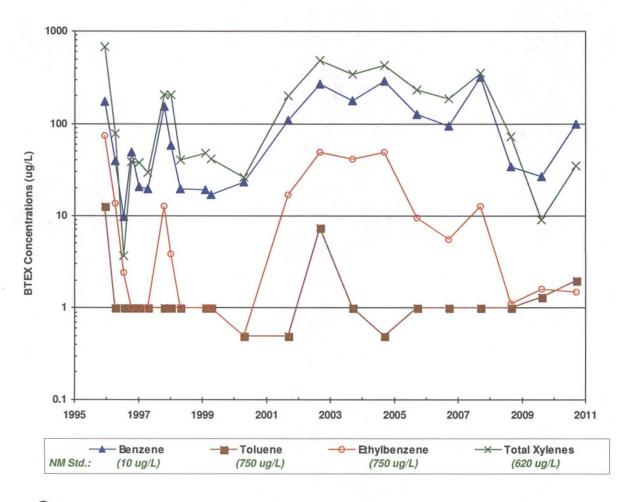


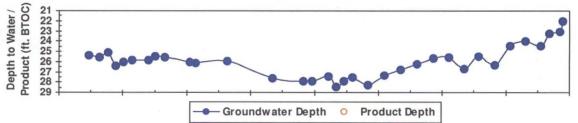


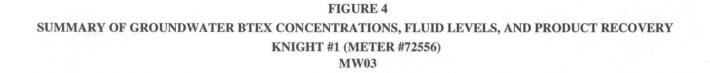


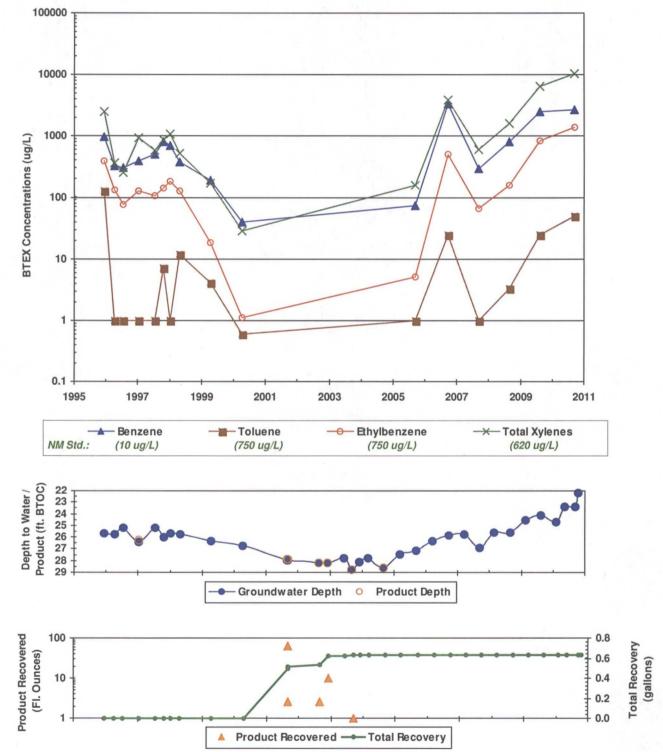
*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.



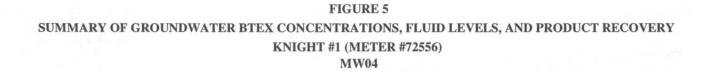


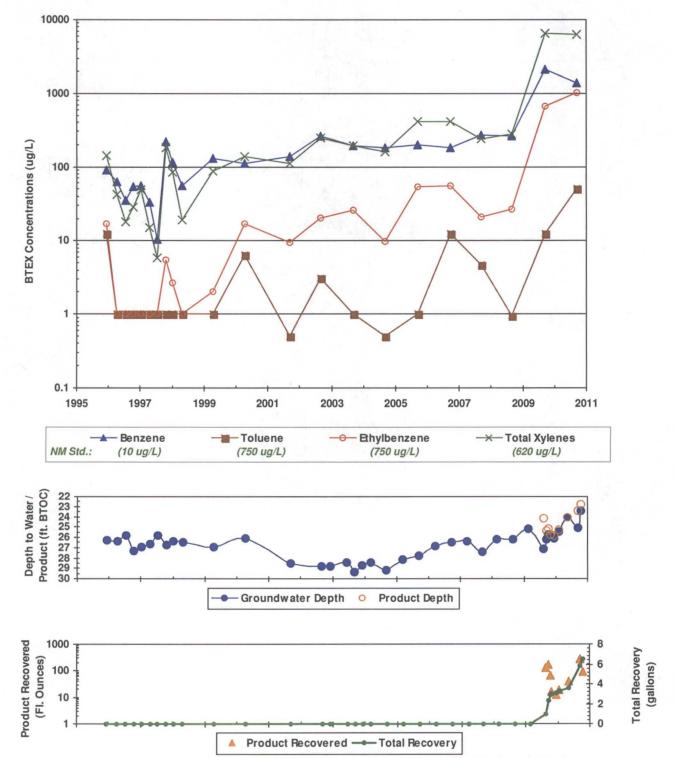




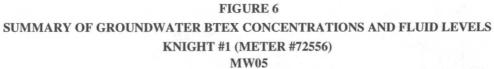


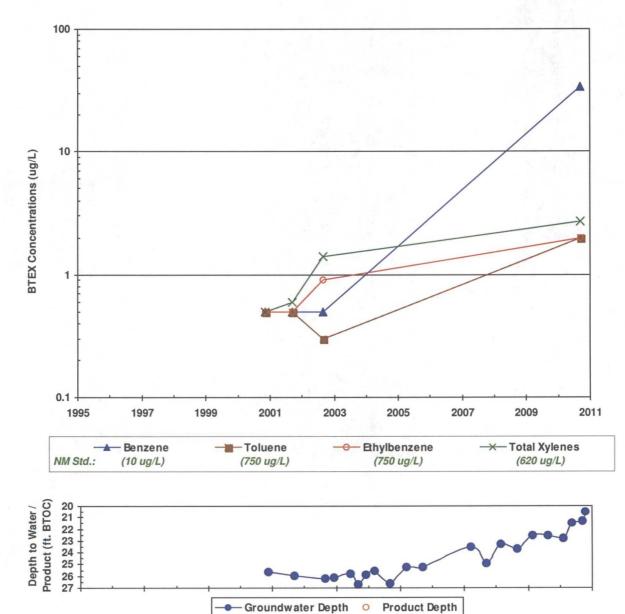
*In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.





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





MW05

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	(ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC	GW Std.:	10	750	750	620	BIOC)	
MW01	10/16/1995	5080	1180	1050	9970	26.03	5486.68
MW01	12/12/1995	4330»	679	1010	8560	25.91	5486.80
MW01	4/9/1996	5490	· 208	1100	7370	26.71	5486.30
MW01	7/17/1996	6450	279	990	9060	25,39	5487.35
MW01	10/15/1996	9870	840	1120	10900	27.35	5485.96
MW01	1/13/1997	7760	. 332	914	10900	26.537	5486.18
MW01	4/22/1997	2700	<1.0	492	6690	26.23	5486.48
Si MW01	.7/14/1997;	3900	36.7	530	6700	25.25	5487.46
MW01	10/22/1997	4270	48.7	728	8580	26.22	5486.49
MW01	1/9/1998	4750	24.2	819	9480	25,82	5486.89
MW01	4/24/1998	5610	44.7	898	9530	26.01	5486.81
MW01	4/16/1999	7340	< 42.8	853	10600	26.52	5486.29
MW01	4/19/2000	9400	510	4300	66000	27.14	5485.63
MW01	9/19/2005	4430	. 23.7	487	7370	27:47	5485.24
MW01	3/27/2006	4410	26.6J	337	7860	26.49	5486.22
MW01	9/26/2006	5880	36.5	633	11000	25.91	5486.80
MW01	3/28/2007	3740	<50	441	9210	25.87	5486.84
MW01	9/17/2007	4640	93.3	444	8180	26.94	5485.77
MW01	9/9/2008	3230	<50	324	6780	26.68	5486.03
MW01	8/27/2009	2790	8.3J	1190	12500	24.30	5488.41
MW01	9/29/2010	2910	<50	1600	15000	24.33	5488.38
MW02	12/12/1995	175	<12.5	74.3	671	25.37	5486.59
MW02	4/9/1996	39.2	<1.0	13.4	77.9	25.58	5486.38
MW02	7/17/1996	9.55	<1.0	2.39	3.65	25.09	5486.87
MW02	10/15/1996	49.7	<1.0	<1.0	38.4	26.36	5485.60
MW02	1/13/1997	20.3	<1.0	<1.0	37.3	26.05	5485.91
MW02	4/22/1997	19.4	<1.0	<1.0	29.8	25.82	5486.14
MW02	10/22/1997	155	<1.0	12.6	204	25:86	5486.10
MW02	1/9/1998	58.0	<1.0	3.85	207	25.50	5486.46
MW02	4/24/1998	19.4	<1.0	<1.0	40.7	25.60	5486.36
MW02	2/9/1999	19.0	<1.0	<1.0	48	26.05	5485.91
MW02	4/16/1999	16.7	<1.0	<1.0	41	26.16	\$5485.80
MW02	4/19/2000	23.0	0.5	<0.5	. 26	25.92	5486.04
MW02	9/11/2001	110	<0.5	17	200	27.60	5484.36

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES KNIGHT #1 (METER #72556)

Page 1

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft	Corrected GW Elevation
NMWQCO	CGW Std.:	10	750	750	620	BTOC)	(ft AMSL)
MW02	9/4/2002	269	7.4	48.9	482.4	27.88	5484.08
MW02	9/17/2003	177	<1.0	41	343	28.42	5483.54
MW02,	9/15/2004	291	, < 0.5	48.9	431	28.25	5483.71
MW02	9/19/2005	126	<1.0	9.5 [°]	231	26.80	5485.16
MW02	9/26/2006	95.8	<1.0	5.5	189	25.66	5486.30
MW02	9/17/2007	317	<1.0	12.5	354	26.63	5485.33
MW02	9/9/2008	34.3	<1.0	~ 1.1	71.9	26.30	5485.66
MW02	8/27/2009	26.6	1.3	1.6	9.0	24.00	5487.96
MW02	9/29/2010	,100	<2.0	1.5J	34.8	23.00	5488.96
MW03	12/12/1995	979	<125	398	2540	25.67	5486.83
MW03	4/9/1996	328	<1.0	132	369	25.78	5486.72
MW03	7/17/1996	299	<1.0	76.7	251	25.15	5487.35
MW03	1/13/1997	395	<1.0	126	955	26.41	5486.22
MW03	7/14/1997	499 ·	<1.0	104	583	25.21	5487.29
MW03	10/22/1997	817	7.22	141	869	, 26.01	5486.49
MW03	1/9/1998	702	<1.0	185	1080	·25.69	5486.81
MW03	4/24/1998	. 377	11.8	126	525	25.76	5486.74
MW03	4/16/1999	191	4.11	, 18.1	⁴ 169	26.30	5486.20
MW03	4/19/2000	40	0.6	1.1	28	26.75	5485.75
MW03	9/19/2005	73.8	<1.0	5.2	158	27.16	5485.34
MW03	9/26/2006	3370	<25	498	3960	25.83	5486.67
MW03	9/17/2007	288	<1.0	65.4	599	26.85	5485.65
MW03	9/9/2008	805	3.3	160	1630	25.62	5486.88
MW03	8/27/2009	2490	<25	842	6560	24.13	5488.37
MW03	9/29/2010	2710	<50	1390	10600	23.42	5489.08
MW04	12/12/1995	90.1	<12.5	16.8	144	26.27	5486.96
MW04	4/9/1996	63.1	<1.0	<1.0	42.5	26.40	5486.83
MW04	7/17/1996	35	<1.0	<1.0	17.8	25.77	5487.46
MW04	10/15/1996	53.5	<1.0	<1.0	28.4	27.26	5485.97
MW04	1/13/1997	56.2	<1.0	<1.0	48.4	26.96	5486.27
MW04	4/22//1997	32.8	<1.0	<1.0	15.2	26.69	5486.54
MW04	7/14/1997	10.4	<1.0	<1.0	5.79	25.78	5487.45
MW04	10/22/1997	215	<1.0	5.5	184	26.72	5486.51
MW04	1/9/1998	114	<1.0	2.66	85.7	26.34	5486.89

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES KNIGHT #1 (METER #72556)

Page 2

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft	Corrected GW Elevation
NMWQ	CC GW Std.:	10	750	750	620	BTOC)	(ft AMSL)
MW04	4/24/1998	55.4	<1.0	<1.0	19.3	26.44	5486.79
MW04	4/16/1999	129	<1.0	2.03	87.3	26.97	5486.26
MW04	4/19/2000	110	6.5	17	140	26.09	5487.14
MW04	9/11/2001	140	<0.5	9.6	110	28.48	5484.75
MW04	9/4/2002	261	3.1	20.1	246.5	28.75	5484.48
MW04	9/17/2003	192	<1.0	26.3	194	29.36	5483.87
MW04	9/15/2004	182	<0.5	9.8	161	29.20	5484.03
MW04	9/19/2005	199	<1.0	53.8	416	27.74 🤇	5485.49
MW04	9/26/2006	180	12.5	55.9	417	26.45	5486.78
MW04	9/17/2007	272	4.7	21.3	236	27.44	5485 79
MW04	9/9/2008	265	0.94J	26.5	274	26.15	5487.08
	9/23/2009	2110	12.6J	676	6440	26.15	5487.72
MW04	9/29/2010	1400	<50	1020	6410	25.05	5489.54
MW05	11/15/2000	<0.5	<0.5	<0.5	<0.5	25.62	5484.74
MW05	9/11/2001	<0.5	<0.5	<0.5	0.6	25.94	5484.42
MW05	9/4/2002	<0.5	0.3	0:9	1:4	26.20	5484:15
MW05	9/29/2010·	34.1	<2.0	<2.0	2.7J	21.33	5489.03

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES KNIGHT #1 (METER #72556)

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.

SUMMARY OF FREE-PRODUCT REMOVAL KNIGHT #1 (METER #72556)

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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)
MW01	4/9/1996	26.34	26.71	0.37	A Start A	0:00	5486.30
MW01	7/17/1996	25.35	25.39	0.04		0.00	5487.35
	10/15/1996;	26.60	27.35	0.75		0.00	5485.96
MW01	4/24/1998	25.87	, 26.01	0.14		0.00	5486.81
MW01	4/16/1999	26.40	26.52	0.12	. 4. ² 2	0.00	5486.29
MW01	4/19/2000	27.07	27.14	0.07	0.05	0.05	5485.63
MW01	9/5/2001	27.93	28.32	0.39	0.15	0.20	5484:70
MW01	9/11/2001	28.05	28.10	0.05	0.04	0.24	5484.65
MW01	9/4/2002	28.317	28:39	0.08	0.04	0.28	5484.38
MW01	12/10/2002	28.31	28.47	0.16		0.28	5484.37
MW01	3/20/2003	28.05	28.14	0.09	.0.06	0.34	5484.64
MW01	6/19/2003	28.00	28.02	0.02	0.03	0.37	5484.71
MW01	9/17/2003	28.95	28.97	0.01	0.01	0.38	5483.76
MW01	12/9/2003	28.30	28.32	0.02	0.01	0.39	5484.41
MW01	3/15/2004	27.89	27.99	0.10	0.01	0.40	5484.80
MW01	9/15/2004	28.77	28.78	0.01	0.01	0.41	5483.94
MW01	3/16/2005	27.67	27.67	0.00	0.01	0.42	5485.04
MW03	1/13/1997	26.25	26.41	0.16		0.00	5486.22
, MW03	9/5/2001	27.84	27.91	0.07	20.50	0.50	5484.65
MW03	9/11/2001	27.89	27.91	0.02	0.02	0.52	5484.61
MW03	9/4/2002	28.16	28.17	0.01*	0.02	0.54	5484.34
MW03	12/10/2002	28.17	28.20	0.03	0.08	0.62	5484.32
MW03	9/17/2003	28.76	28.79	0.03	0.01	0.63	5483.73
MW03	9/15/2004	28.60	28.60	0.00		0.63	5483.90
MW04	8/27/2009	×24.13	27.10	2.97	1.00	1.00	5488.51
MW04	9/23/2009	25.35	26.15	0.80	1.38	2.38	5487.72
MW04	10/19/2009	25.15	25.70	0.55	0.53	2.91	5487.97
MW04	11/5/2009	25.69	25.95	0.26	0.13	3.03	5487.49
MW04	12/21/2009	25.85	26.05	0.20	0.10	3.13	5487.34
MW04	1/25/2010	NA	NA	· NA	0.15	3.28	NA
MW04	2/11/2010	25:28	25.40	0.12		3.28	5487.93
MW04	5/21/2010	24.03	24.05	. 0.02	0.32	· 3.60	5489.20
MW04	9/29/2010	·····<23.35	25,05	1.70	2.25	5.85	5489.54
MW04	11/2/2010	22.74	23.38	° 0.64	0.73	6.58	5490.36

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SUMMARY OF FREE-PRODUCT REMOVAL KNIGHT #1 (METER #72556)

		Depth to	Depth to	Product	Volume	Cumulative	Corrected
Monitor	Removal	Product (ft	Water (ft	Thickness	Removed	Removal	GW Elevation
Well	Date	BTOC)	BTOC)	(feet)	(gallons)	(gallons)	(ft AMSL)

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.

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