3R - 068

2011 AGWMR

8/16/2012

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BUILDING A BETTER WORLD

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:

Volume	Location Type
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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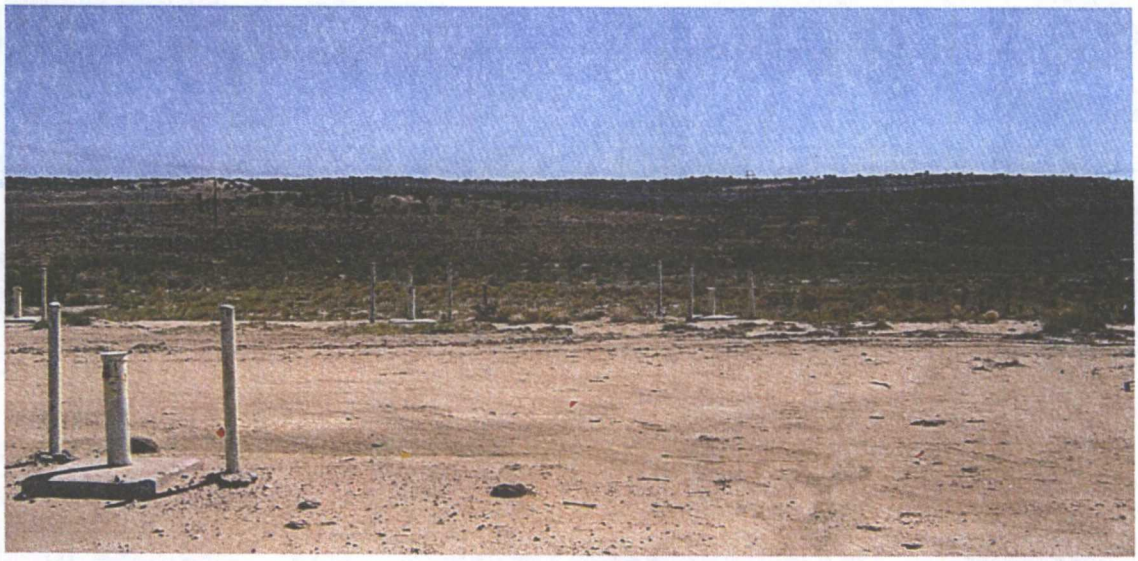

EL PASO CGP COMPANY

1001 LOUISIANA STREET
HOUSTON, TX 77002

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

AUGUST 2012

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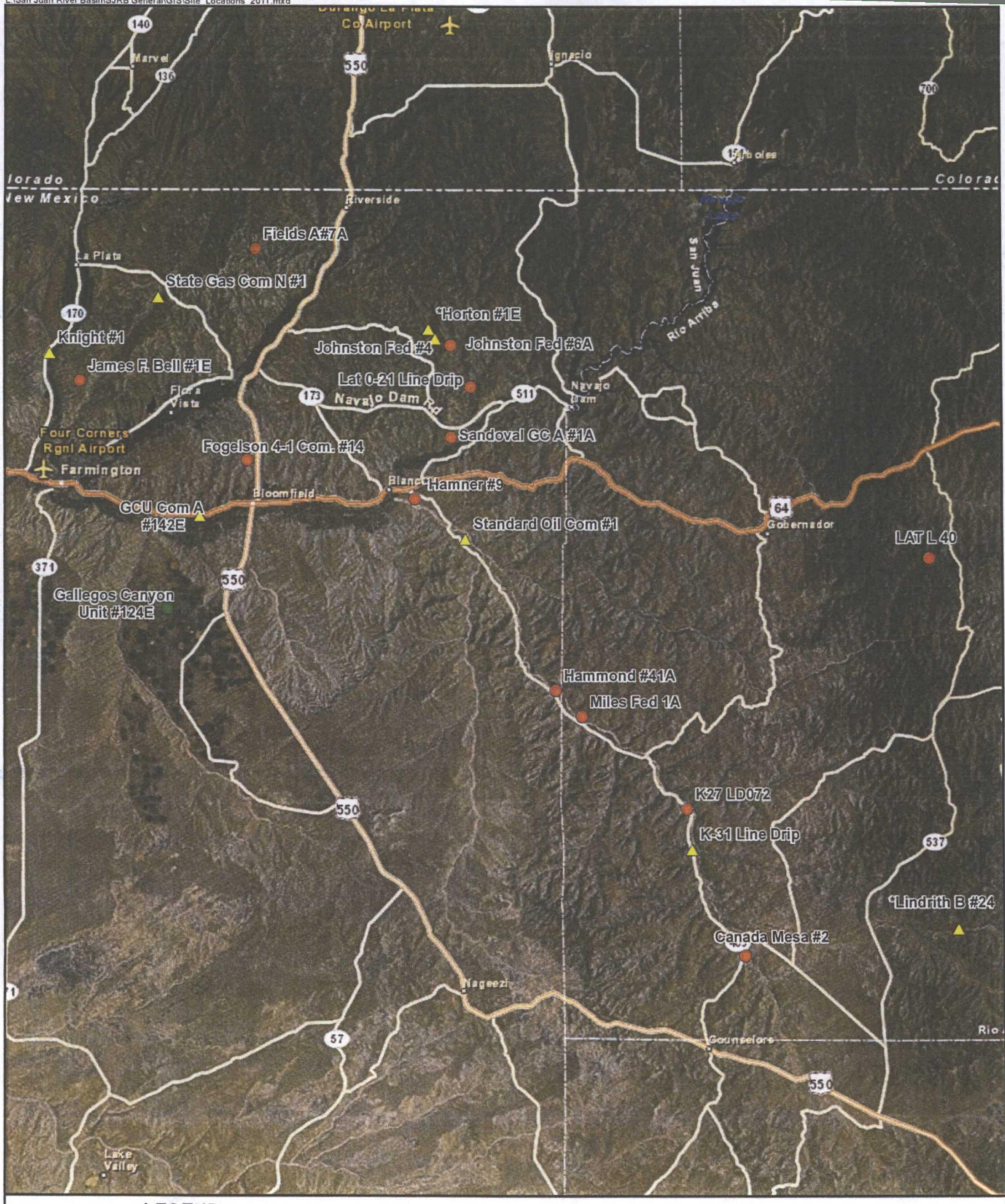
1801 California Street
Suite 2900
Denver, Colorado 80202
303 291 2222

L:\San Juan River Basin\SJRB General\GIS\Site Locations 2011.mxd



LEGEND

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

*Closure Request Pending with the NMOCD.

0 2 4 6 8 Miles

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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

METER or LINE ID	NMOCD CASE NO.	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
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.

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EPCGP GROUNDWATER SITES
2011 ANNUAL GROUNDWATER REPORT

Fogelson 4-1 Com #14
Meter Code: 73220

SITE DETAILS

Legal Description:	**Town:**	29N	**Range:**	11W	**Sec:**	4	**Unit:** P
NMOCD Haz Ranking:	10	**Land Type:**	Federal	**Operator:**	Burlington Resources		

PREVIOUS ACTIVITIES

Site Assessment:	3/94	**Excavation:**	4/94 (65cy)	**Soil Boring:**	10/95
Monitor Well:	10/95	**Geoprobe:**	12/96	**Additional MWs:**	6/00
Downgradient MWs:	6/00	**Replace MW:**	NA	**Quarterly Initiated:**	12/96
ORC Nutrient Injection:	8/01	**Re-Excavation:**	NA	**PSH Removal Initiated:**	NA
Annual Initiated:	6/98	**Quarterly Resumed:**	NA	**PSH Removal in 2011?**	Yes

SUMMARY OF 2011 ACTIVITIES

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

MW-2: Annual groundwater sampling (November) and quarterly water level monitoring was performed during 2011.

MW-3: Annual groundwater sampling (November) and quarterly water level monitoring was performed during 2011.

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

SITE MAPS

A Site map (November) 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 in Table 2 and presented graphically in Figure 2.

- 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 managed as non-hazardous solid waste.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this Site; however, the attached Site map presents the 2011 analytical and water level data.

RESULTS

- The groundwater flow direction is generally to the west.
- Water levels at the Site are lower than at any other time in the sampling record (which goes back to 1995). It is typical to see observable accumulations of free-product as more of the smear zone becomes unsaturated. In 2011, a total of 0.26 gallons of free-product was recovered from MW-1 via product-absorbing socks.
- Long-term decreasing BTEX concentrations at the Site indicate that natural attenuation is likely occurring. Historically, benzene concentrations in MW-1 have decreased significantly from their level of 1,520 µg/L in 1995, when sampling was initiated. In November 2011, the benzene concentration was 171 µg/L, the ethylbenzene concentration was 818 µg/L, and the total xylenes concentration was 2,270 µg/L. These results were slightly lower than those in other recent years but were above their respective NMWQCC standards. The concentration of toluene was below its standard in 2011.
- The November 2011 annual groundwater samples collected from MW-2 and MW-3 were non-detect for BTEX. These results are in agreement with other historical data from these two wells.

CLOSURE CRITERIA

- 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, 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

- EPCGP recommends conducting quarterly water level/free-product monitoring for this Site. At this time, EPCGP recommends bailing MW-1 quarterly and installing absorbent socks after each bailing event. These activities should continue until free-product subsides.

- Once observable free-product has subsided from MW-1, ORC will be evaluated as a polishing measure. ORC socks are generally not utilized when hydrocarbon product (including residual phase product that cannot seep into a monitoring well) is present, due to the extremely high oxygen demand.

- EPCGP will evaluate the feasibility of passive venting to remove source material from the exposed portion of the smear zone.

- EPCGP will evaluate additional delineation upgradient of the pit to better understand the distribution of residual source material. A separate unlined pit, operated by Burlington Resources, was excavated in 1998. The pit was excavated to a depth of 41 feet below ground surface and although a soil sample collected from the walls and floor of the excavation was below the recommended remediation action level, further delineation in the area downgradient of the Burlington Resources pit may be warranted.

- EPCGP recommends sampling MW-1 annually.

- Historically, the BTEX concentrations at downgradient / crossgradient monitor wells MW-2 and MW-3 have been less than closure criteria. Because of the observed free-product in MW-1, EPCGP recommends that MW-2 and MW-3 continue to be gauged quarterly and sampled annually.

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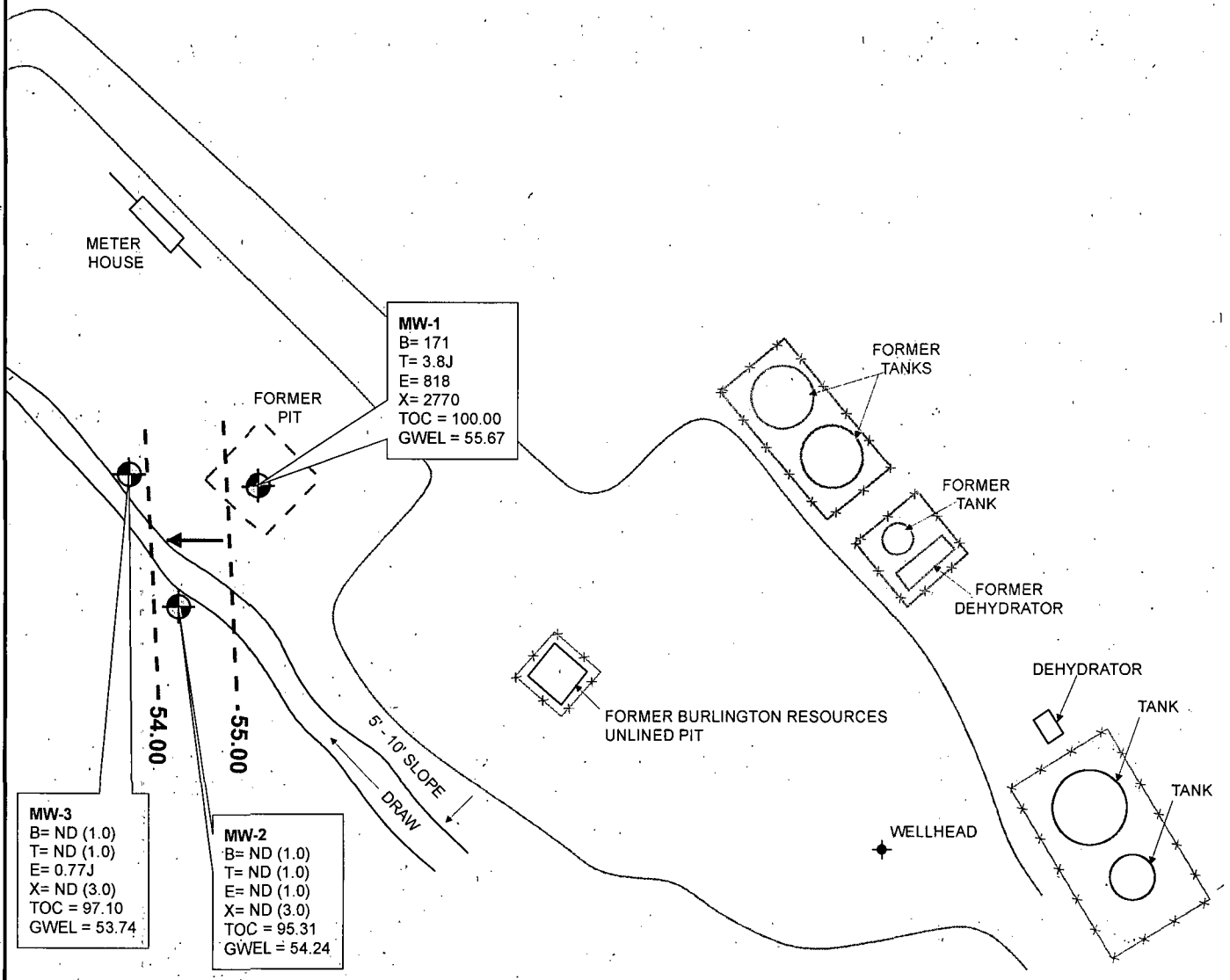


Product Removed (Gallons)	2/1/11	5/3/11	9/27/11	11/1/11	11/16/11
MW-1	0.06	0.05	0.05	0.05	0.05

LEGEND

MW-4	Existing Monitoring / Observation Well
→	Groundwater Flow Direction
—55:00—	Potentiometric Surface Contour (Inferred Where Dashed)
ND	Not Detected; Reporting Limit Shown In Parenthesis
J	Result Flagged as Estimated

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.

Not To Scale

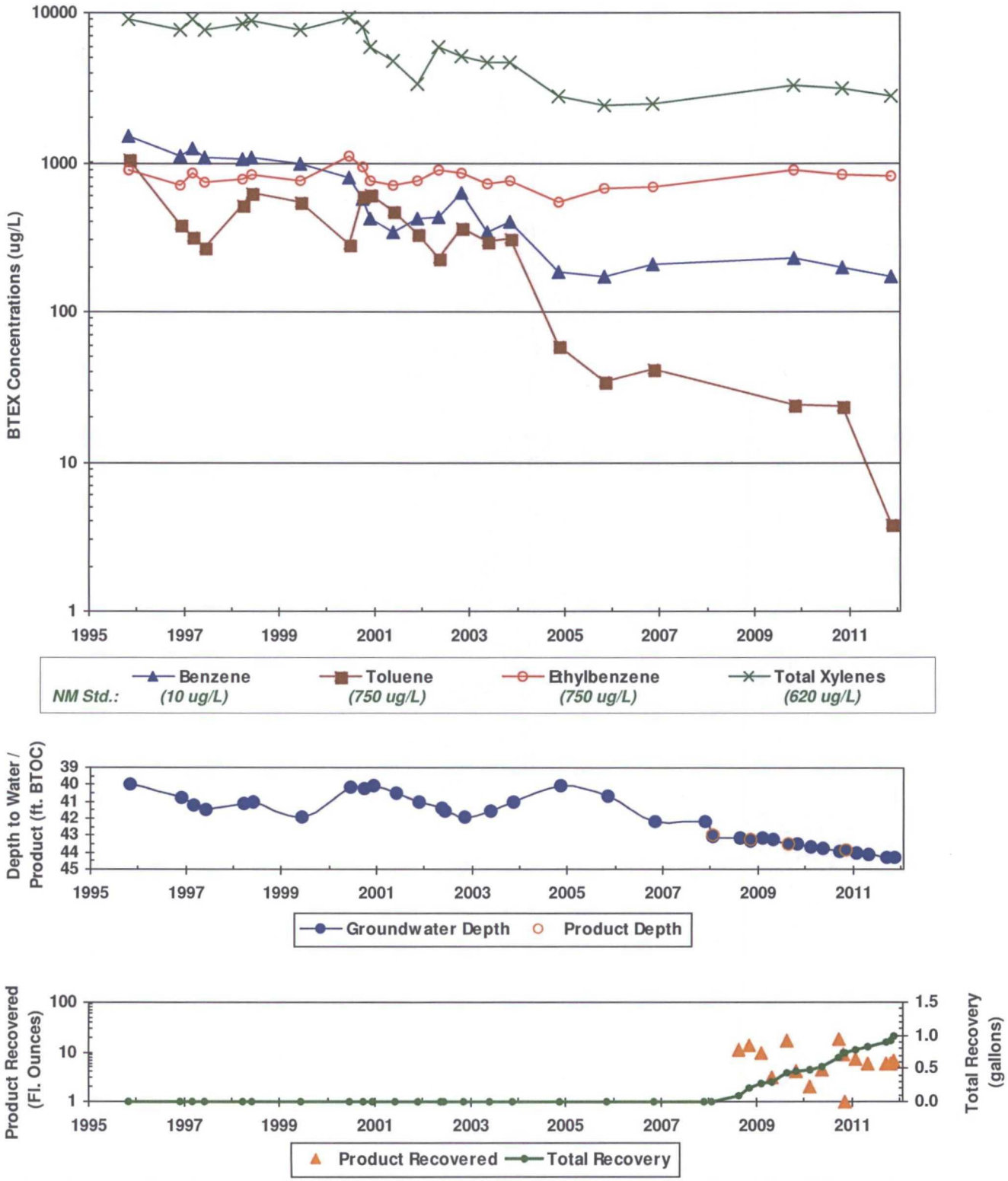
MWH

PROJECT: FOGELSON 4-1 COM. #14

TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations - November 16, 2011

FIGURE: 1

FIGURE 2
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
FOGELSON 4-1 COM. #14 (METER #73220)
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
FOGELSON 4-1 COM. #14 (METER #73220)
MW-2

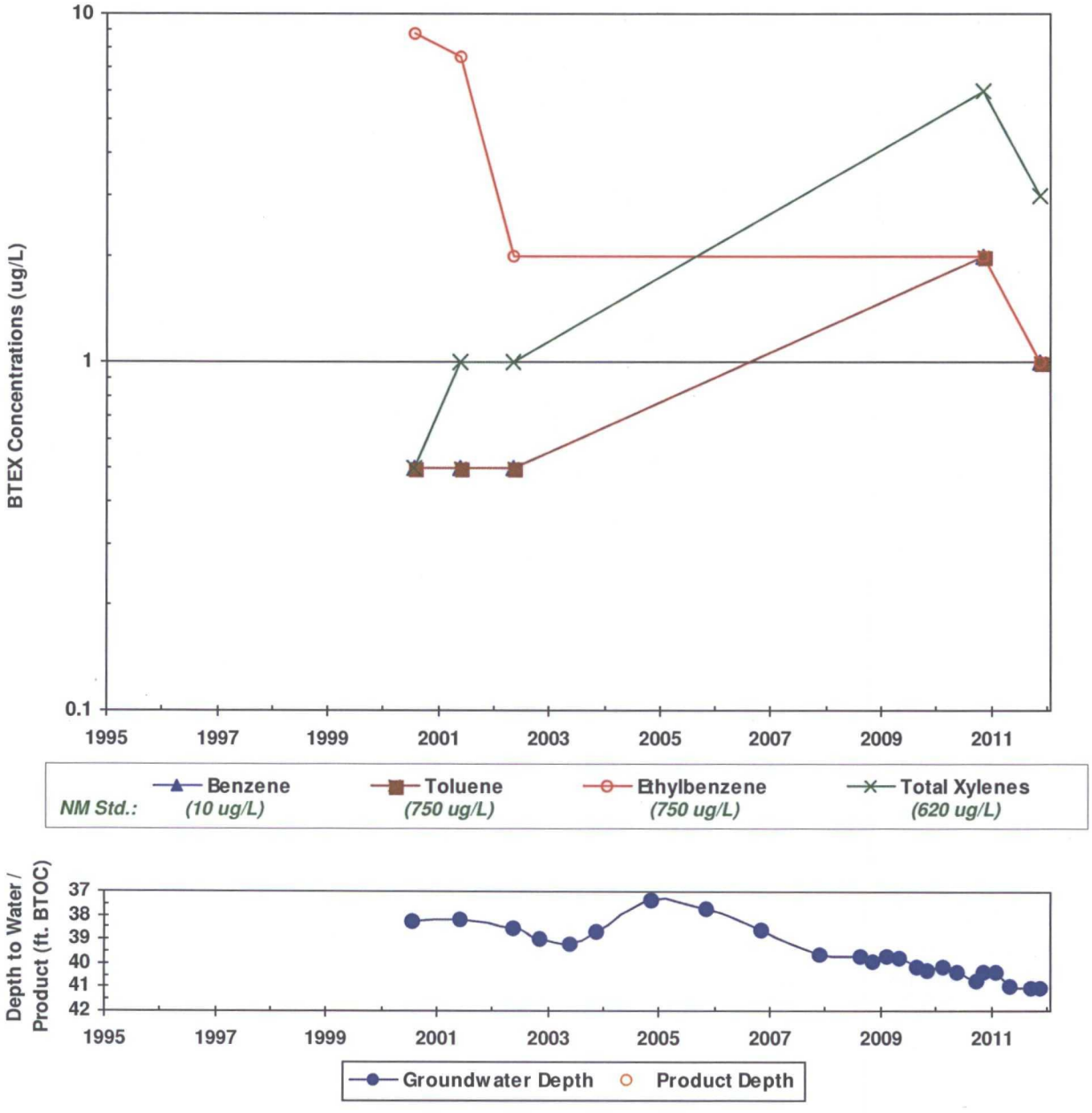


FIGURE 4
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
FOGELSON 4-1 COM. #14 (METER #73220)
MW-3

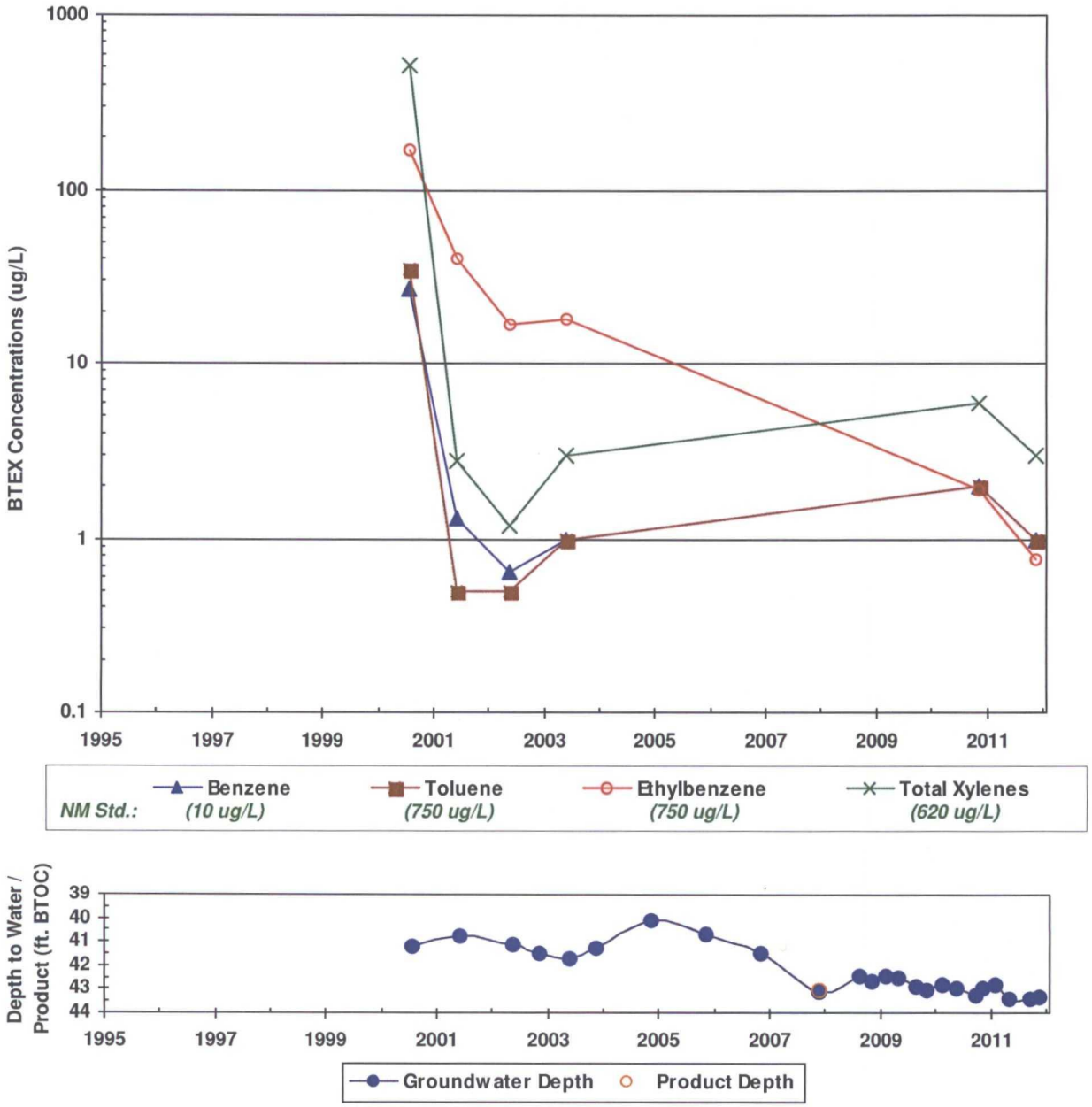


TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
FOGELSON 4-1 COM. #14 (METER #73220)

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	11/6/1995	1520	1050	907	9180	39.99	60.01
MW-1	12/6/1996	1110	388	713	7730	40.74	59.26
MW-1	3/10/1997	1240	318	850	9050	41.23	58.77
MW-1	6/6/1997	1080	268	747	7700	41.44	58.56
MW-1	3/30/1998	1070	522	789	8430	41.08	58.92
MW-1	6/4/1998	1090	627	837	8880	41.02	58.98
MW-1	6/15/1999	1000	550	770	7800	41.88	58.12
MW-1	6/19/2000	790	280	1100	9300	40.17	59.83
MW-1	10/2/2000	580	600	950	8000	40.22	59.78
MW-1	12/5/2000	420	610	770	6000	40.09	59.91
MW-1	5/30/2001	340	470	710	4800	40.54	59.46
MW-1	11/26/2001	420	330	760	3400	41.00	59.00
MW-1	5/15/2002	430	230	900	6000	41.37	58.63
MW-1	11/4/2002	625	370	862	5210	41.90	58.10
MW-1	5/21/2003	339	296	723	4730	41.57	58.43
MW-1	11/15/2003	401	308	755	4700	41.00	59.00
MW-1	11/16/2004	185	59.9	550	2800	40.10	59.90
MW-1	11/8/2005	174	34.3	675	2440	40.68	59.32
MW-1	11/8/2006	206	41.6	694	2460	42.16	57.84
MW-1	11/3/2009	230	24.2J	901	3290	43.52	56.48
MW-1	11/9/2010	198	23.5	840	3170	43.89	56.12
MW-1	11/16/2011	171	3.8J	818	2770	44.33	55.67
MW-2	7/27/2000	<0.5	<0.5	8.8	<0.5	38.25	57.06
MW-2	5/30/2001	<0.5	<0.5	7.5	1	38.17	57.14
MW-2	5/15/2002	<0.5	<0.5	2.0	<1.0	38.56	56.75
MW-2	11/9/2010	<2.0	<2.0	<2.0	<6.0	40.35	54.96
MW-2	11/16/2011	<1.0	<1.0	<1.0	<3.0	41.07	54.24
MW-3	7/27/2000	27	35	170	520	41.21	55.89
MW-3	5/30/2001	1.3	<0.5	40	2.8	40.77	56.33
MW-3	5/15/2002	0.64	<0.5	17	1.2	41.14	55.96
MW-3	5/21/2003	<1.0	<1.0	18.2	<3.0	41.71	55.39
MW-3	11/9/2010	<2.0	<2.0	1.9J	<6.0	42.97	54.13
MW-3	11/16/2011	<1.0	<1.0	0.77J	<3.0	43.36	53.74

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
FOGELSON 4-1 COM. #14 (METER #73220)

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		

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.

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
FOGELSON 4-1 COM. #14 (METER #73220)

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 (Feet*)
MW-1	1/25/2008	43.00	43.10	0.10	--	0.00	56.98
MW-1	8/12/2008	--	43.14	0.00	0.09	0.09	56.86
MW-1	11/7/2008	43.24	43.32	0.08	0.11	0.20	56.74
MW-1	2/6/2009	--	43.12	0.00	0.08	0.28	56.88
MW-1	5/4/2009	--	43.22	0.00	0.02	0.30	56.78
MW-1	8/26/2009	43.46	43.53	0.07	0.13	0.43	56.53
MW-1	11/3/2009	--	43.52	0.00	0.03	0.47	56.48
MW-1	2/11/2010	--	43.64	0.00	0.02	0.48	56.36
MW-1	5/25/2010	--	43.75	0.00	0.04	0.52	56.25
MW-1	9/24/2010	--	43.95	0.00	0.14	0.66	56.05
MW-1	11/1/2010	NA	NA	NA	0.07	0.73	NA
MW-1	11/9/2010	43.88	43.89	0.01	0.01	0.74	56.12
MW-1	2/1/2011	--	44.03	0.00	0.06	0.79	55.97
MW-1	5/3/2011	--	44.14	0.00	0.05	0.84	55.86
MW-1	9/27/2011	--	44.30	0.00	0.05	0.89	55.70
MW-1	11/1/2011	NA	NA	NA	0.05	0.93	NA
MW-1	11/16/2011	--	44.33	0.00	0.05	0.99	55.67
MW-3	11/29/2007	43.01	43.10	0.09	--	0.00	54.07

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