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AGWMR

2009

El Paso Tennessee
Pipeline Company

San Juan Basin Pit Program
Groundwater Sites Project

Final 2009 Annual Report
Federal Sites (Volume 1)

April 2010

MWH

1801 California Street, Suite 2900
Denver, Colorado 80202

2009 ANNUAL GROUNDWATER REPORT
FEDERAL SITES VOLUME I

EL PASO TENNESSEE PIPELINE 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 2009.

elpaso MWH

MWH

BUILDING A BETTER WORLD

RECEIVED OCD

2010 APR 19 A 10:39

April 16, 2010

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

RE: El Paso Tennessee Pipeline Company Pit Groundwater Remediation Sites 2009 Annual Reports

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Tennessee Pipeline Company (EPTPC), is submitting the enclosed 2009 Annual Reports for each of EPTPC's 21 remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2009 sampling and product recovery data and include recommendations for 2010 activities at these sites.

The 2009 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 Doug Stavinoha of EPTPC (713-420-5150), Ian Yanagisawa of EPTPC (713-420-7361), or me (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)
Doug Stavinoha – EPTPC (Volumes 1, 2, and 3)

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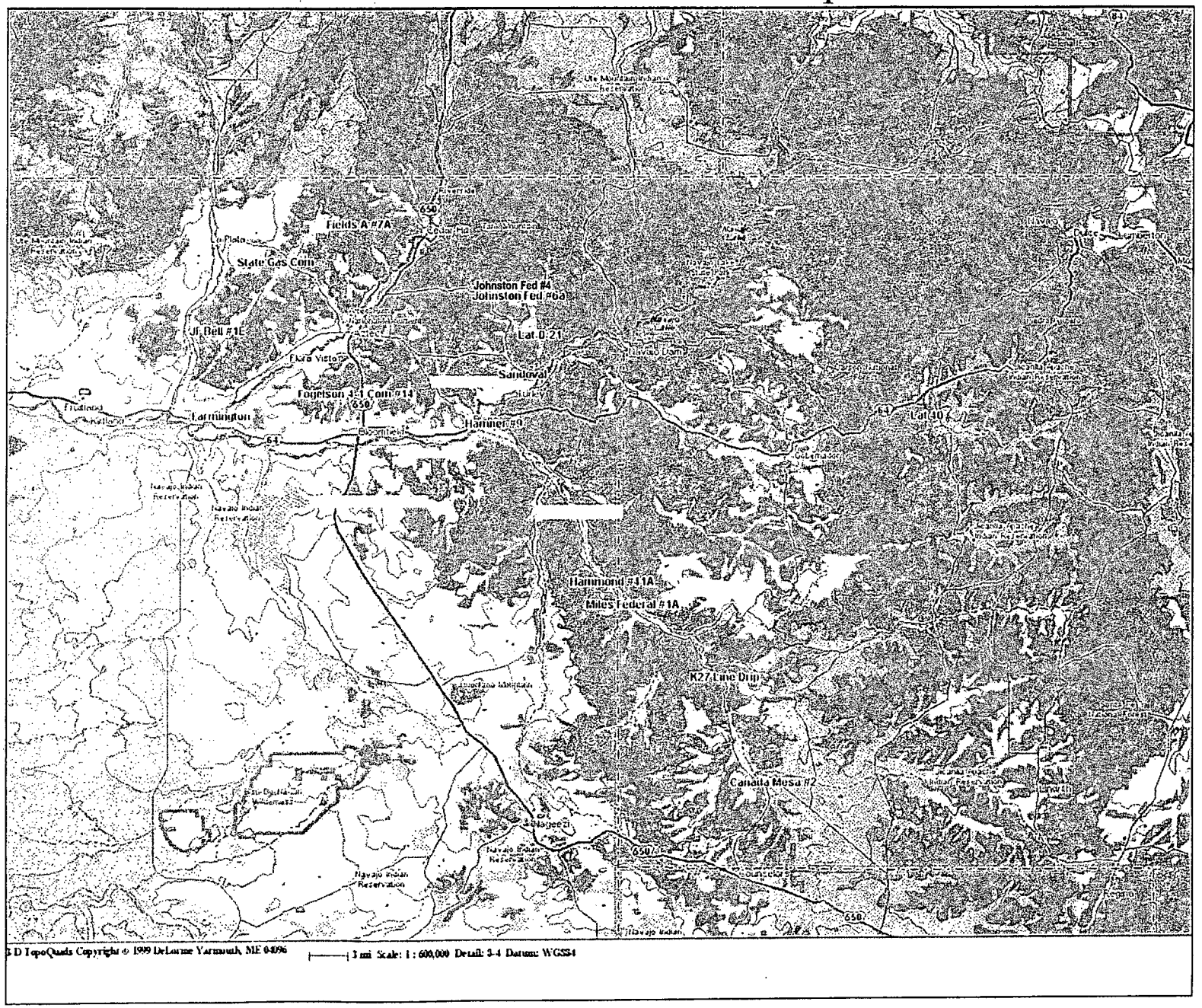
LIST OF ACRONYMS

AMSL	above mean sea level
B	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
T	toluene
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
X	total xylenes

Federal Groundwater Site Map



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EPTPC GROUNDWATER SITES
2009 ANNUAL GROUNDWATER REPORT

Fields A#7A
Meter Code: 89961

SITE DETAILS

Legal Description:	**Town:**	32n	**Range:**	11w	**Sec:**	34	**Unit:** E
NMOCD Haz Ranking:	40	**Land Type:**	Federal	**Operator:**	BP / Amoco Production Company		

PREVIOUS ACTIVITIES

Site Assessment:	8/94	**Excavation:**	9/94 (70cy)	**Soil Boring:**	7/95
Monitor Well:	7/95	**Geoprobe:**	NA	**Additional MWs:**	12/95
Downgradient MWs:	12/95	**Replace MW:**	NA	**Quarterly Initiated:**	NA
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	8/97
Annual Initiated:	4/97	**Quarterly Resumed:**	NA	**PSH Removal in 2009?**	No

SUMMARY OF 2009 ACTIVITIES

MW-1: Annual groundwater sampling (April) and semiannual water level monitoring (April and November) were performed during 2009.

MW-2: Semiannual water level monitoring (April and November) was performed during 2009. This well was dry in 2009.

MW-3: Annual groundwater sampling (April) and semiannual water level monitoring (April and November) were performed during 2009.

MW-4: Annual groundwater sampling (April) and semiannual water level monitoring (April and November) were performed during 2009.

Site-Wide Activities: No other activities were performed at this Site during 2009.

SITE MAP

A Site map (April) 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 5. 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 and 4.
- The 2009 laboratory report is presented in Attachment 1 (included on CD).
- The 2009 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 2009.

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 prepared for this Site; however, the attached Site map presents the analytical and water level data collected during the annual sampling event.

RESULTS

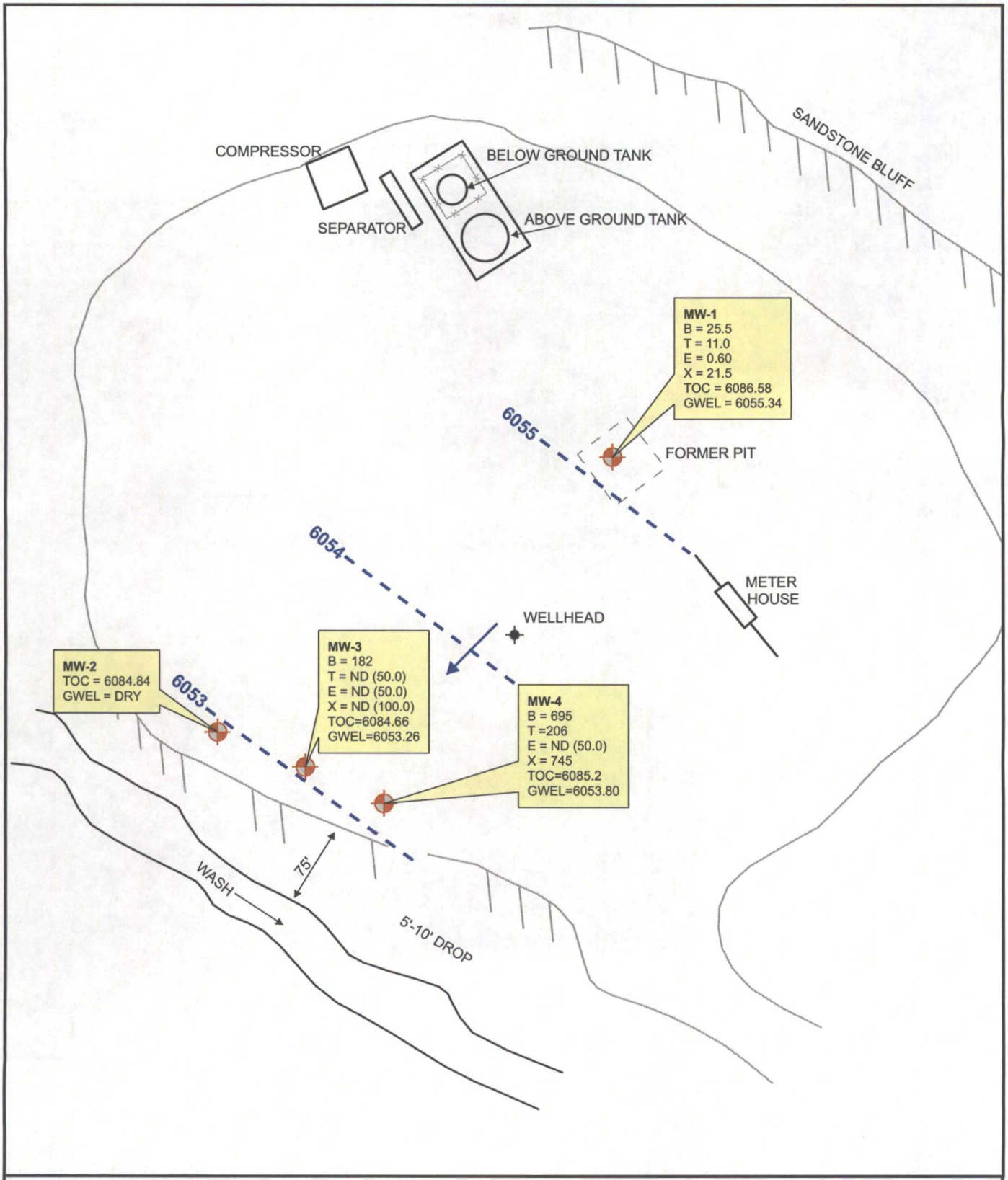
- The groundwater flow direction at this Site is to the southwest, based on historic water level measurements.
- BTEX concentrations in MW-1 have declined substantially since 1997, when free-product recovery was initiated. The April 2009 benzene concentration was 25.5 µg/L. All other BTEX constituents were below standards.
- MW-2, which was dry in 2009, was last sampled in 2008 and was clean at the time, consistent with the historical sample results for this well.
- BTEX concentrations in MW-3 have declined substantially since 1997, when free-product recovery was initiated at MW-1. However, the benzene concentration was 182 µg/L in April 2009, which is still above the NMWQCC benzene standard. All other BTEX constituents were below standards in 2009.
- BTEX concentrations in MW-4 have also attenuated from their historic highs in January 1997. The annual sample from MW-4 showed elevated benzene (695 µg/L) and total xylenes (745 µg/L) constituent concentrations, both decreased from their 2008 levels.

RECOMMENDATIONS

- MW-1 will be gauged semiannually and sampled annually (April) until BTEX concentrations approach the NMWQCC standards.

- EPTPC will attempt semiannual groundwater level measurements and annual groundwater sampling in April at MW-2, MW-3, and MW-4.

- Once concentrations approach the NMWQCC standards, the wells will be sampled quarterly until BTEX concentrations are below standards for four consecutive quarters, at which time this Site will be submitted for closure.



LEGEND

MW-4	Existing Monitoring / Observation Well	B	Benzene (ug/L)
→	Groundwater Flow Direction	T	Toluene (ug/L)
—1275—	Potentiometric Surface Contour (Inferred Where Dashed)	E	Ethylbenzene (ug/L)
ND	Not Detected; Reporting Limit Shown In Parenthesis	X	Total Xylenes (ug/L)
		TOC	Top of Casing (ft. AMSL)
		GWEL	Groundwater Elevation (ft. AMSL)

N

0 5 10 20 30 40 Feet

MWH elpaso

PROJECT: FIELDS A#7A

TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations - April 7, 2009

FIGURE: 1

FIGURE 3
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
FIELDS A#7A (METER #89961)
MW02

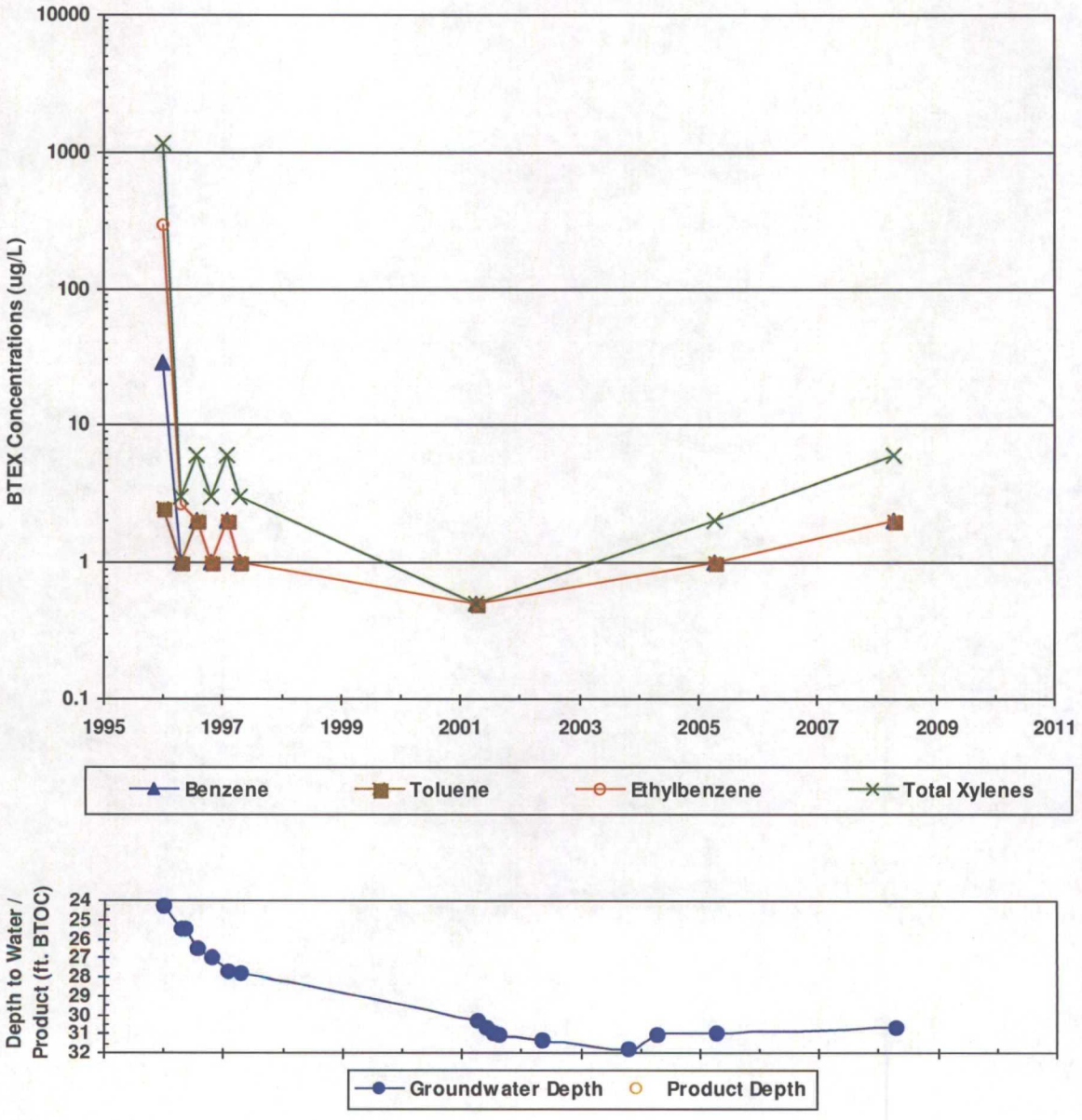


FIGURE 4
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
FIELDS A#7A (METER #89961)
MW03

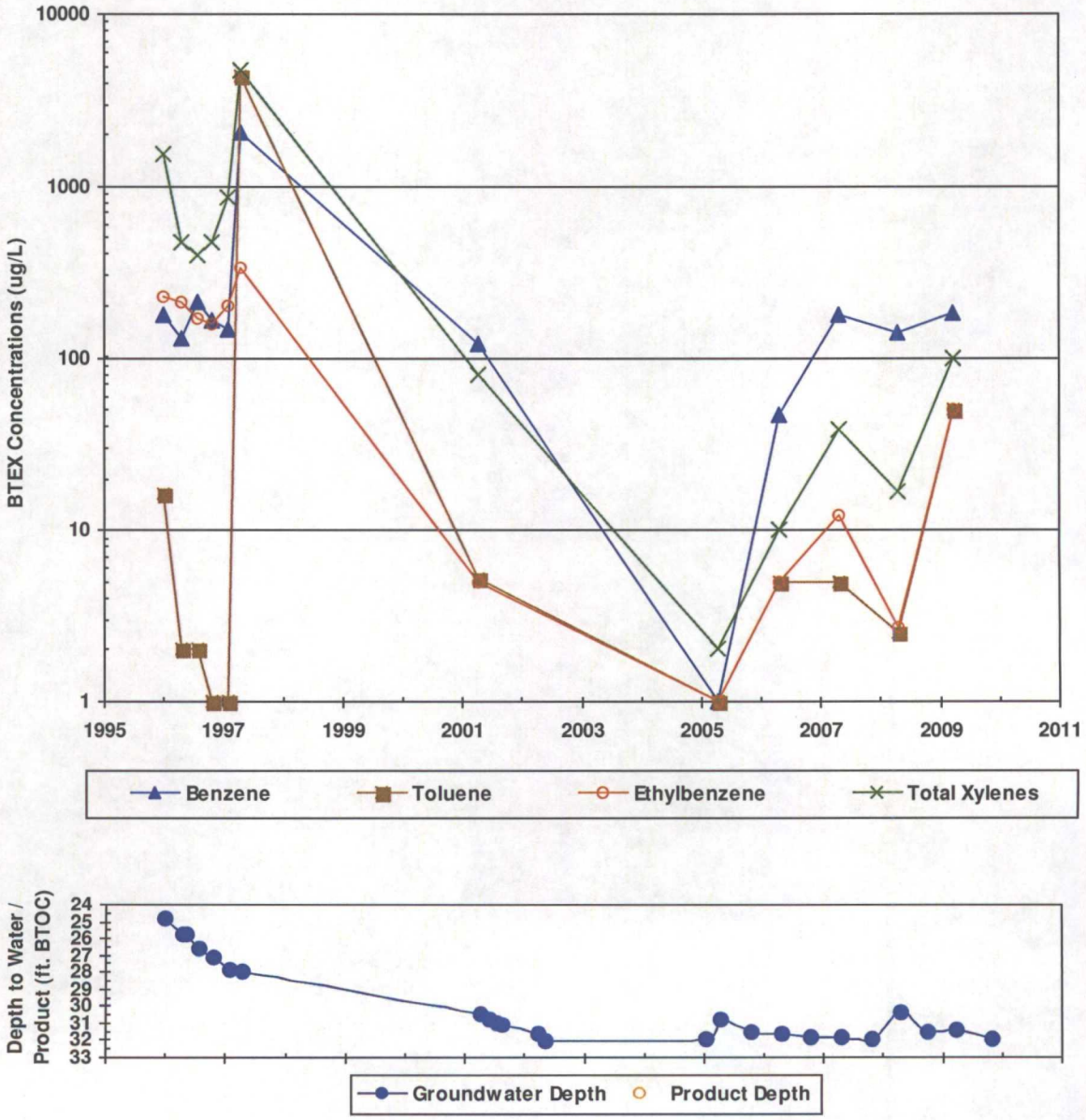
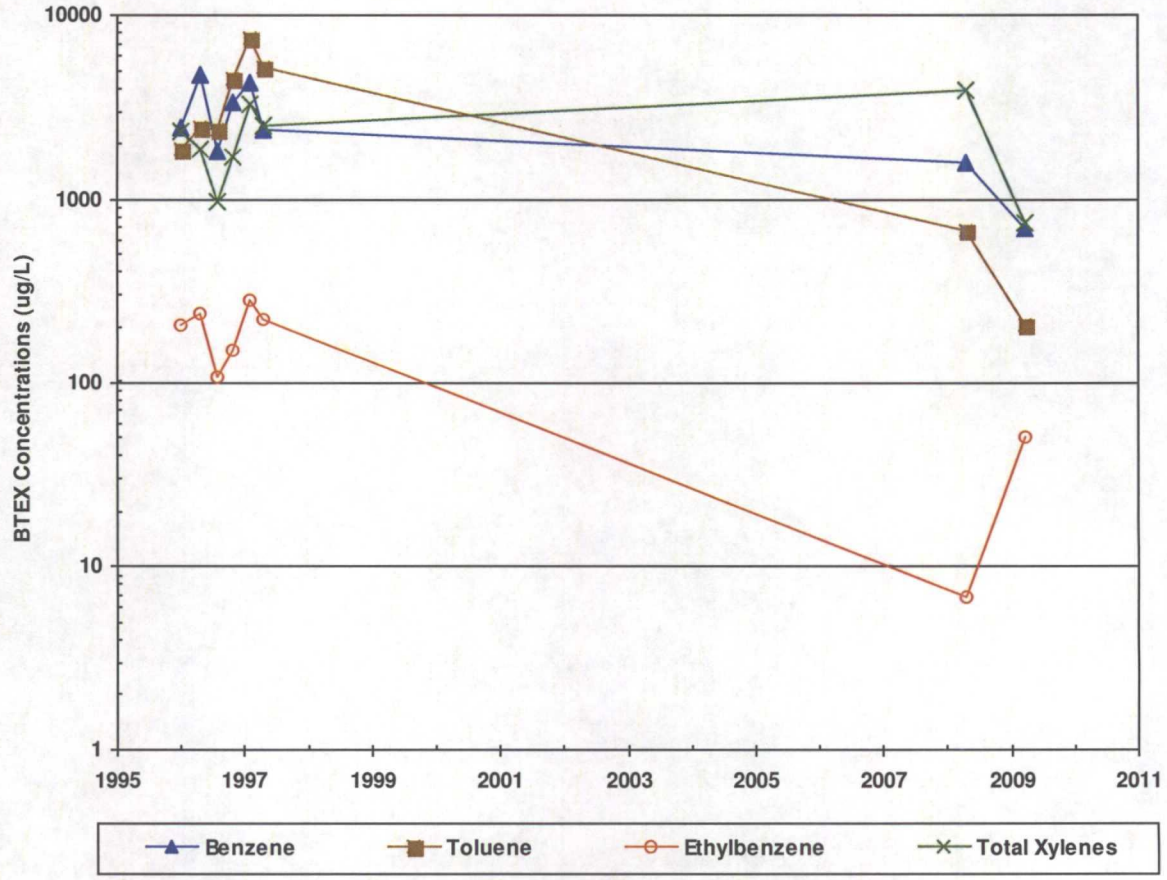
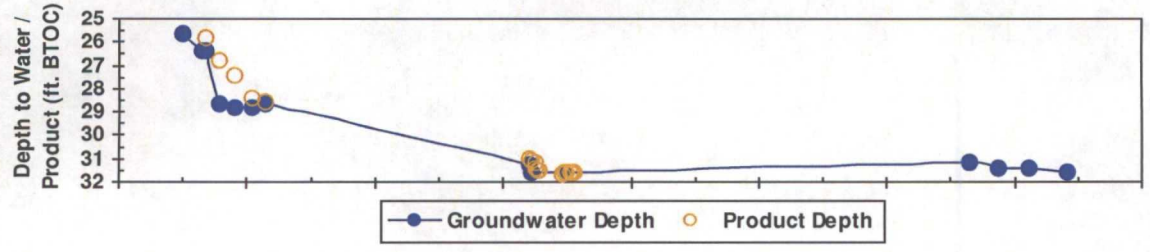
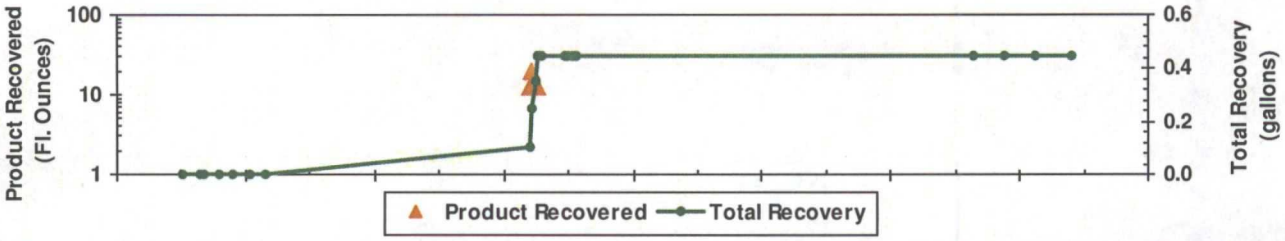


FIGURE 5
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
FIELDS A#7A (METER #89961)
MW04

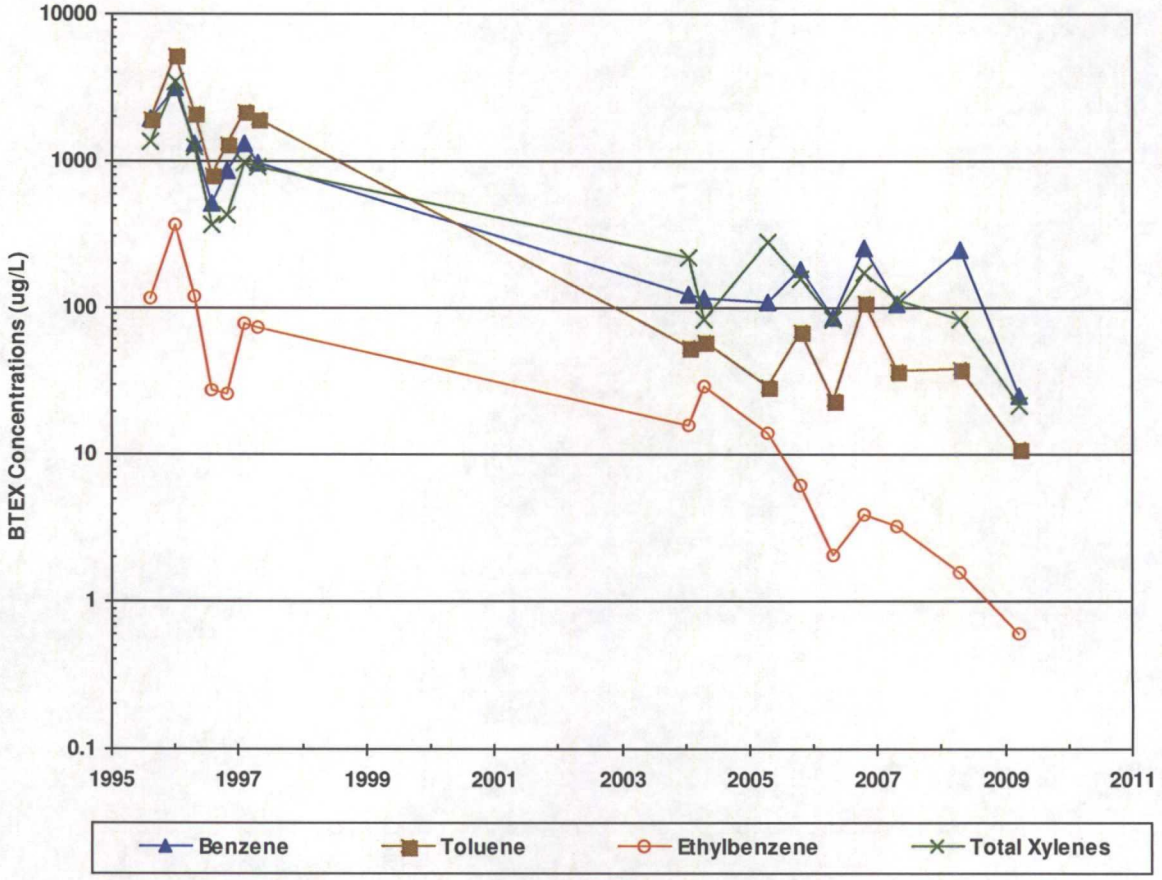


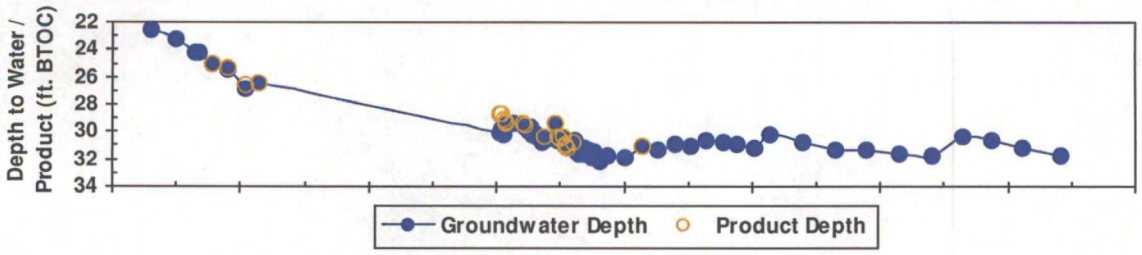


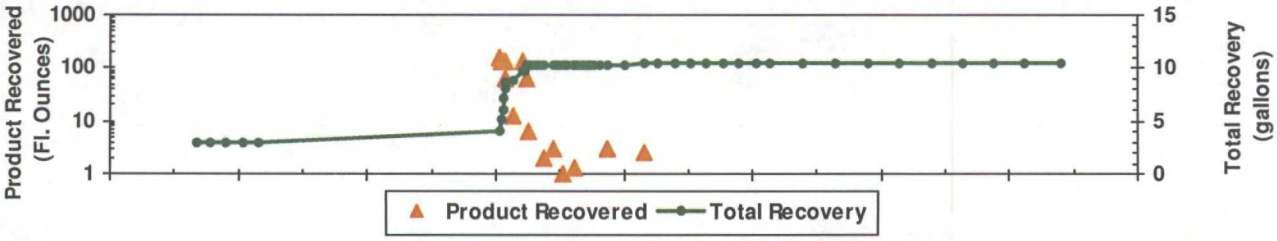


**In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.*

FIGURE 2
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
FIELDS A#7A (METER #89961)
MW01







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

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES
FIELDS A#7A (METER #89961)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW01	8/9/1995	**1950**	**1946**	115	**1361**	22.50	6064.08
MW01	1/3/1996	**3150**	**5280**	361	**3460**	23.28	6063.30
MW01	4/18/1996	**1300**	**2140**	119	**1240**	24.20	6062.38
MW01	7/29/1996	**503**	**804**	28	363	25.07	6061.55
MW01	10/21/1996	**843**	**1300**	26	422	25.45	6061.19
MW01	1/30/1997	**1300**	**2200**	76.8	**966**	26.83	6059.96
MW01	4/21/1997	**951**	**1920**	73	**894**	26.47	6060.13
MW01	1/26/2004	**121**	54	15.8	216	31.02	6055.56
MW01	4/21/2004	**116**	58.1	29.3	83.3	30.67	6055.91
MW01	4/18/2005	**108**	29.0	14.2	274	30.19	6056.39
MW01	10/22/2005	**180**	69.2	6.3	154	30.74	6055.84
MW01	4/25/2006	**83.7**	23.8	2.1J	82.5	31.41	6055.17
MW01	10/24/2006	**254**	108	4.0	169	31.39	6055.19
MW01	4/24/2007	**106**	37.2	3.3	112	31.66	6054.92
MW01	4/21/2008	**246**	38.3	1.6J	81.3	30.31	6056.27
MW01	4/7/2009	**25.5**	11.0	0.60J	21.5	31.24	6055.34
MW02	1/3/1996	**28.8**	<2.5	297	**1169**	24.27	6060.57
MW02	4/18/1996	<1.0	<1.0	2.64	<3.0	25.53	6059.31
MW02	7/29/1996	<2.0	<2.0	<2.0	<6.0	26.48	6058.36
MW02	10/21/1996	<1.0	<1.0	<1.0	<3.0	26.96	6057.88
MW02	1/30/1997	<2.0	<2.0	<2.0	<6.0	27.73	6057.11
MW02	4/21/1997	<1.0	<1.0	<1.0	<3.0	27.77	6057.07
MW02	4/13/2001	<0.5	<0.5	<0.5	<0.5	30.33	6054.51
MW02	4/18/2005	<1.0	<1.0	<1.0	<2.0	30.98	6053.86
MW02	4/21/2008	<2.0	<2.0	<2.0	<6.0	30.66	6054.18
MW03	1/3/1996	**176**	16.4	225	**1550**	24.88	6059.78
MW03	4/18/1996	**129**	<2.0	212	463	25.75	6058.91
MW03	7/29/1996	**212**	<2.0	167	393	26.64	6058.02
MW03	10/21/1996	**165**	<1.0	157	467	27.16	6057.50
MW03	1/30/1997	**144**	<1.0	198	**851**	27.92	6056.74
MW03	4/21/1997	**2070**	**4340**	332	**4730**	28.00	6056.66
MW03	4/13/2001	**120**	5.2	<5.0	80	30.48	6054.18
MW03	4/18/2005	<1.0	<1.0	<1.0	<2.0	30.77	6053.89
MW03	4/25/2006	**46.4**	<5.0	<5.0	<10	31.61	6053.05

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES
FIELDS A#7A (METER #89961)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		**10**	**750**	**750**	**620**		
MW03	4/24/2007	**179**	<5.0	12.3	37.9	31.90	6052.76
MW03	4/21/2008	**140**	2.5	2.7	16.9	30.40	6054.26
MW03	4/7/2009	**182**	<50	<50	<100	31.40	6053.26
MW04	1/3/1996	**2470**	**1880**	206	**2350**	25.69	6059.51
MW04	4/18/1996	**4760**	**2460**	235	**1880**	26.42	6058.78
MW04	7/29/1996	**1830**	**2380**	106	**967**	28.65	6058.01
MW04	10/21/1996	**3320**	**4520**	149	**1680**	28.84	6057.47
MW04	1/30/1997	**4320**	**7420**	280	**3250**	28.85	6056.69
MW04	4/21/1997	**2410**	**5170**	219	**2530**	28.68	6056.60
MW04	4/21/2008	**1580**	679	6.8J	**3900**	31.22	6053.98
MW04	4/7/2009	**695**	206	<50	**745**	31.40	6053.80

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.

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
FIELDS A#7A (METER #89961)

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	7/29/1996	25.02	25.07	0.05	--	2.85	6061.55
MW01	10/21/1996	25.38	25.45	0.07	--	2.85	6061.19
MW01	1/30/1997	26.57	26.83	0.26	--	2.85	6059.96
MW01	4/21/1997	26.44	26.47	0.03	--	2.85	6060.13
MW01	1/30/2001	28.74	30.08	1.34	1.25	4.10	6057.57
MW01	2/8/2001	28.65	29.85	1.20	1.00	5.10	6057.69
MW01	2/16/2001	29.08	30.20	1.12	1.00	6.10	6057.28
MW01	2/17/2001	29.08	29.66	0.58	1.00	7.10	6057.38
MW01	2/26/2001	29.39	29.54	0.15	1.00	8.10	6057.16
MW01	3/5/2001	29.25	29.28	0.03	0.50	8.60	6057.32
MW01	4/11/2001	--	29.33	0.00	0.10	8.70	6057.25
MW01	6/5/2001	29.34	29.46	0.12	1.00	9.70	6057.22
MW01	6/15/2001	29.57	29.65	0.08	--	9.70	6056.99
MW01	7/6/2001	--	30.00	0.00	0.50	10.20	6056.58
MW01	7/13/2001	--	29.96	0.00	0.05	10.25	6056.62
MW01	10/10/2001	30.32	30.33	0.01	0.02	10.27	6056.26
MW01	12/4/2001	--	30.51	0.00	0.02	10.29	6056.07
MW01	12/13/2001	29.42	29.43	0.01	--	10.29	6057.16
MW01	12/21/2001	30.39	30.40	0.01	--	10.29	6056.19
MW01	1/7/2002	30.58	30.59	0.01	--	10.29	6056.00
MW01	1/23/2002	30.40	30.41	0.01	0.01	10.30	6056.18
MW01	1/31/2002	30.94	30.95	0.01	--	10.30	6055.64
MW01	2/7/2002	31.11	31.12	0.01	--	10.30	6055.47
MW01	2/14/2002	31.17	31.18	0.01	--	10.30	6055.41
MW01	2/20/2002	31.14	31.15	0.01	--	10.30	6055.44
MW01	3/21/2002	30.78	30.80	0.02	--	10.30	6055.80
MW01	3/28/2002	--	30.92	0.00	0.01	10.31	6055.66
MW01	10/1/2002	--	31.77	0.00	0.02	10.33	6054.81
MW01	4/27/2003	31.06	31.07	0.01	0.02	10.35	6055.52
MW04	5/8/1996	25.83	26.42	0.59	--	0.00	6059.25
MW04	7/29/1996	26.82	28.65	1.83	--	0.00	6058.01
MW04	10/21/1996	27.45	28.84	1.39	--	0.00	6057.47
MW04	1/30/1997	28.43	28.85	0.42	--	0.00	6056.69
MW04	4/21/1997	28.58	28.68	0.10	--	0.00	6056.60

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
FIELDS A#7A (METER #89961)

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)
MW04	6/5/2001	31.01	31.25	0.24	0.10	0.10	6054.14
MW04	6/15/2001	31.12	31.56	0.44	0.15	0.25	6053.99
MW04	7/6/2001	31.20	NA	NA	0.10	0.35	NA
MW04	7/13/2001	31.44	NA	NA	0.10	0.45	NA
MW04	7/20/2001	31.51	NA	NA	--	0.45	NA
MW04	8/1/2001	31.54	NA	NA	--	0.45	NA
MW04	12/13/2001	31.65	NA	NA	--	0.45	NA
MW04	12/21/2001	31.61	NA	NA	--	0.45	NA
MW04	1/7/2002	31.61	NA	NA	--	0.45	NA
MW04	1/23/2002	31.62	NA	NA	--	0.45	NA
MW04	1/31/2002	31.61	NA	NA	--	0.45	NA
MW04	2/7/2002	31.60	NA	NA	--	0.45	NA
MW04	2/14/2002	31.62	NA	NA	--	0.45	NA
MW04	2/20/2002	31.62	NA	NA	--	0.45	NA

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.

Lodestar Services, Incorporated
PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin | Location: Fields A #7A | Well No: MW-4
Client: MWH | Date: 4/7/2009 | Time: 11:07
Project Manager: Ashley Ager | Sampler's Name: Troy Urban

Measuring Point: TOC | Depth to Water: 31.4 ft | Depth to Product: ft
Well Diameter: 4" | Total Depth: 31.58 ft | Product Thickness: ft
Water Column Height: 0.18 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☑ Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
0.18 x .65	0.117 x 3		0.35 gal

Time (military)	pH (su)	SC (ms)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
11:11	7.46	5.42	62.8				0.03	black, sheen
Final:	7.45	5.32	61.5				0.11	black, sheen, dry

COMMENTS: only enough water to fill two voas. HCL preservative reacted with groundwater - rinsed voa clean and sample is unpreserved.

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other

Water Disposal: Rio Vista

Sample ID: MW-4 | Sample Time: 11:17

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other

Trip Blank: 07042009TB01 | Duplicate Sample:

Lodestar Services, Incorporated
PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater **Date:** 04/07/2009
Project Manager: Ashley Ager
Client: MWH
Site Name: Fields A #7A

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	9:13 AM	-	31.24	-	-	sampled for BTEX
MW-2		-	-	-	-	dry at 31.93
MW-3		-	31.40	-	-	sampled for BTEX
MW-4		-	31.40	-	-	sampled for BTEX

Comments
Current Operator: BP
Take site photos, review site map. No changes to current map.

Signature: *Ashley L. Ager* Date: 04/07/2009

Lodestar Services, Incorporated
PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater **Date:** 11/04/2009
Project Manager: Ashley Ager
Client: MWH
Site Name: Fields A #7A

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	8:39 AM	-	31.77	-	-	
MW-2		-	-	-	-	dry at 31.96
MW-3		-	31.97	-	-	
MW-4		-	31.58	-	-	

Comments

Signature: *Ashley L. Ager* Date: 11/05/2009

Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

04/20/09

Technical Report for

Montgomery Watson

San Juan Basin Pit Groundwater Remediation 2008-2009

Accutest Job Number: T26735

Sampling Date: 04/07/09

Report to:

MWH Americas
1801 California St. Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com; daniel.a.wade@mwhglobal.com;
craig.moore@mwhglobal.com; ala@lodestarservices.com
ATTN: Jed Smith

Total number of pages in report: **20**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: William Reeves 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5

Table of Contents

-1-

Sample Summary

Montgomery Watson

Job No: T26735

San Juan Basin Pit Groundwater Remediation 2008-2009

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T26735-1	04/07/09	10:20	TU	04/08/09	AQ	Ground Water	FIELDS A7 MW-1
T26735-2	04/07/09	10:50	TU	04/08/09	AQ	Ground Water	FIELDS A7 MW-3
T26735-3	04/07/09	11:17	TU	04/08/09	AQ	Ground Water	FIELDS A7 MW-4
T26735-4	04/07/09	07:00	TU	04/08/09	AQ	Trip Blank Water	070409TB01

ACCUTEST. Laboratories

2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Montgomery Watson	**Job No**	T26735
Site:	San Juan Basin Pit Groundwater Remediation 2008-2009	**Report Date**	4/20/2009 3:29:23 PM

3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 04/07/2009 and were received at Accutest on 04/08/2009 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of T26735. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ **Batch ID:** GKK1470

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	FIELDS A7 MW-1		
Lab Sample ID:	T26735-1	Date Sampled:	04/07/09
Matrix:	AQ - Ground Water	Date Received:	04/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK030477.D	1	04/09/09	FI	n/a	n/a	GKK1470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	25.5	1.0	0.21	ug/l	
108-88-3	Toluene	11.0	1.0	0.23	ug/l	
100-41-4	Ethylbenzene	0.60	1.0	0.35	ug/l	J
1330-20-7	Xylenes (total)	21.5	2.0	0.55	ug/l	
95-47-6	o-Xylene	4.6	1.0	0.55	ug/l	
	m,p-Xylene	16.9	1.0	0.66	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	92%		58-125%
98-08-8	aaa-Trifluorotoluene	81%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	FIELDS A7 MW-3		
Lab Sample ID:	T26735-2	Date Sampled:	04/07/09
Matrix:	AQ - Ground Water	Date Received:	04/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK030478.D	50	04/09/09	FI	n/a	n/a	GKK1470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	182	50	10	ug/l	
108-88-3	Toluene	ND	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	17	ug/l	
1330-20-7	Xylenes (total)	ND	100	28	ug/l	
95-47-6	o-Xylene	ND	50	28	ug/l	
	m,p-Xylene	ND	50	33	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	79%		58-125%
98-08-8	aaa-Trifluorotoluene	73%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELDS A7 MW-4		
Lab Sample ID:	T26735-3	Date Sampled:	04/07/09
Matrix:	AQ - Ground Water	Date Received:	04/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK030479.D	50	04/09/09	FI	n/a	n/a	GKK1470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	695	50	10	ug/l	
108-88-3	Toluene	206	50	11	ug/l	
100-41-4	Ethylbenzene	ND	50	17	ug/l	
1330-20-7	Xylenes (total)	745	100	28	ug/l	
95-47-6	o-Xylene	229	50	28	ug/l	
	m,p-Xylene	516	50	33	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		58-125%
98-08-8	aaa-Trifluorotoluene	77%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	070409TB01		
Lab Sample ID:	T26735-4	Date Sampled:	04/07/09
Matrix:	AQ - Trip Blank Water	Date Received:	04/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK030476.D	1	04/09/09	FI	n/a	n/a	GKK1470
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.21	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.35	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.55	ug/l	
95-47-6	o-Xylene	ND	1.0	0.55	ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	89%		58-125%
98-08-8	aaa-Trifluorotoluene	74%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

ACCUTEST Laboratories

CHAIN OF CUSTODY

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

Page ___ of ___

FED-EX Tracking #: 869388512605
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T26735

Client / Reporting Information

Company Name: MWH
Project Contact: Jed Smith
E-Mail: jed.smith@mwhglobal.com
Address: 1801 California Street, Suite 2900
City: Denver State: CO Zip: 80202
Phone No.: 303-291-2276 Fax No.:
Samplers's Name: Troy Urban

Project Information

Project Name / No.: EPTPC San Juan Basin Pit GW Remediation 2008-2009
Bill to: El Paso Corp
Invoice Attn.: Norma Ramos
Address: 1001 Louisiana Street, Rm S1904B
City: Houstor State: TX Zip: 77002
Phone No.: Fax No.:
Client Purchase Order #: West-ALAB-GroundRem-007

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Wastewater; SO - Soil; SL - Sludge; OI - Oil; LIQ - Liquid; SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	BTEX (8021B)	LAB USE ONLY
1	Fields A7 MW-1	040709	1020	GW	3	X								X	
2	Fields A7 MW-3	040709	1050	GW	3								X	X	
3	Fields A7 MW-4	040709	1117	GW	2								X	X	
4	070409 TB01	040709	0700	GW	2	X								X	

Turnaround Time (Business days)

- [X] 10 Day STANDARD
- [ ] 7 Day
- [ ] 4 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Approved By:/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

please copy results to a/a @ lodestar services, com

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature] 1345	4/7/09	1	2 FedEx	4-8-9 900	2 [signature]
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice X Cooler Temp. 2.0 °C

4.1

4

T26735: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T26735 Client: MWH Date/Time Received: 4-8-9 920

# of Coolers Received: 1 Thermometer #: #3 Temperature Adjustment Factor: -0.9

Cooler Temps: #1: 2.0 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: _____

COOLER INFORMATION
- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY
- [ ] Chain of Custody not received
- [ ] Sample D/T unclear or missing
- [ ] Analyses unclear or missing
- [ ] COC not properly executed

SAMPLE INFORMATION
- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION
- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [ ] Received Water Trip Blank
- [ ] Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies:
(1) 5x MW-4 on COC says None preserved - Bottle has HCL - Logged in as Non-preserved

TECHNICIAN SIGNATURE/DATE: Edward Clarke 4-8-9

INFORMATION AND SAMPLE LABELING VERIFIED BY: Ivat

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

i:\mwalker\forms\samplemanagement

4.1

SAMPLE RECEIPT LOG

JOB #: T26735 DATE/TIME RECEIVED: 4-8-9 900

CLIENT: MWH INITIALS: SC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	Fields A7 MW-1	4-7-9 1020	W	40ml	1-3	VR	1 (2) 3 4 5 6 7 8	<2 >12
|	2	| MW-3	1050	|	|	"	|	(1) 2 3 4 5 6 7 8	<2 >12
|	3	| MW-4	1117	|	|	1-2	|	(1) 2 3 4 5 6 7 8	<2 >12
|	4	Trip Blank	—	—	|	1-2	|	1 (2) 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

SC 4-8-9

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

4.1

4

T26735: Chain of Custody
Page 3 of 3

Appendix A Laboratory Data Package Cover Page

This data package consists of:

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
- ☐ R10 Other problems or anomalies.
- ☐ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [ ] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Paul K Canevaro	Paul K Canevaro	Laboratory Director	4/20/2009
Name (Printed)	Signature	Official Title (printed)	Date

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: Accutest Laboratories Gulf Coast	LRC Date: 4/20/2009
Project Name: San Juan Basin Pit Groundwater Remediation 2008-2009	Laboratory Job Number: T26735
Reviewer Name: Paul K. Canevaro	Prep Batch Number(s): GKK1470

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample quantitation limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: Accutest Laboratories Gulf Coast	LRC Date: 4/20/2009
Project Name: San Juan Basin Pit Groundwater Remediation 2008-2009	Laboratory Job Number: T26735
Reviewer Name: Paul K. Canevaro	Prep Batch Number(s): GKK1470

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?			X		
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?	X				
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports	
Laboratory Name: Accutest Laboratories Gulf Coast	LRC Date: 4/20/2009
Project : San Juan Basin Pit Groundwater Remediation 2008-2009	Laboratory Job Number: T26735
Reviewer Name: Paul K. Canevaro	Prep Batch Number(s): GKK1470

ER #[1]	DESCRIPTION
1	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SQL/MDL is defined in the report as the MDL.
2	All anomalies are discussed in the case narrative

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T26735
Account: MWHCODE Montgomery Watson
Project: San Juan Basin Pit Groundwater Remediation 2008-2009

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1470-MB	KK030474.D	1	04/09/09	FI	n/a	n/a	GKK1470

The QC reported here applies to the following samples: Method: SW846 8021B

T26735-1, T26735-2, T26735-3, T26735-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.35	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.55	ug/l	
95-47-6	o-Xylene	ND	1.0	0.55	ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	92%	58-125%
98-08-8	aaa-Trifluorotoluene	74%	73-139%

Blank Spike/Blank Spike Duplicate Summary

Job Number: T26735
Account: MWHCODE Montgomery Watson
Project: San Juan Basin Pit Groundwater Remediation 2008-2009

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1470-BS	KK030471.D	1	04/09/09	FI	n/a	n/a	GKK1470
GKK1470-BSD	KK030472.D	1	04/09/09	FI	n/a	n/a	GKK1470

The QC reported here applies to the following samples: Method: SW846 8021B

T26735-1, T26735-2, T26735-3, T26735-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.5	98	18.9	95	3	86-121/30
100-41-4	Ethylbenzene	20	18.9	95	18.4	92	3	81-116/30
108-88-3	Toluene	20	19.3	97	18.7	94	3	87-117/30
1330-20-7	Xylenes (total)	60	56.2	94	54.7	91	3	85-115/30
95-47-6	o-Xylene	20	18.6	93	18.2	91	2	87-116/30
	m,p-Xylene	40	37.6	94	36.6	92	3	84-116/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	98%	97%	58-125%
98-08-8	aaa-Trifluorotoluene	78%	76%	73-139%

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WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin | Location: Fields A #7A | Well No: MW-3
Client: MWH | Date: 4/7/2009 | Time: 10:37
Project Manager: Ashley Ager | Sampler's Name: Troy Urban

Measuring Point: TOC | Depth to Water: 31.8 ft | Depth to Product: ft
Well Diameter: 4" | Total Depth: 31.96 ft | Product Thickness: ft
Water Column Height: 0.16 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☑ Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
0.16 x .65	0.104 x 3		0.312 gal

Time (military)	pH (su)	SC (ms)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
10:45	7.29	4.85	61.2				0.185	black, sheen
Final:	7.85	4.92	60.6				0.2	black, sheen, dry

COMMENTS: barely enough water to fill voas. HCL preservative reacted with groundwater - rinsed voa clean and sample is unpreserved.

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other

Water Disposal: Rio Vista

Sample ID: MW-3 | Sample Time: 10:50

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other

Trip Blank: 07042009TB01 | Duplicate Sample:

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PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin | Location: Fields A #7A | Well No: MW-1
Client: MWH | Date: 4/7/2009 | Time: 9:28
Project Manager: Ashley Ager | Sampler's Name: Troy Urban

Measuring Point: TOC | Depth to Water: 31.24 ft | Depth to Product: ft
Well Diameter: 4" | Total Depth: 39.92 ft | Product Thickness: ft
Water Column Height: 8.68 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☑ Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
8.68 x .65	5.64 x 3		16.93 gal

Time (military)	pH (su)	SC (ms)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
9:42	6.94	6.54	59.2				1	clear
	7.00	6.51	59.2				2	clear
	7.04	6.63	59.2				3	clear
	7.13	6.74	59.4				5	clear
	7.35	7.04	59.4				10	clear
	7.44	6.86	59.2				15	clear
	7.46	6.88	59.4				16	light gray, silty
	7.45	6.88	59.4				17	light gray, silty
Final:	7.42	6.9	59.3				17.5	light gray, silty

COMMENTS:

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other

Water Disposal: Rio Vista

Sample ID: MW-1 | Sample Time: 10:20

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other

Trip Blank: 07042009TB01 | Duplicate Sample: