3R - 186

REPORTS

DATE:



3R186

Certified Mail: #7002 0510 0000 0307 7497

February 26, 2004

Mr. William C. Olson New Mexico Oil Conservation Division 1220 St. Francis Dr. Santa Fe, NM 87504 MAR 03 2004

RECEIVED

Oil Conservation Division Environmental Bureau

RE: 2003 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 24 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

EPFS has organized the 24 Annual Reports (Volumes 1, 2 and 3) by land type. Volume 1 contains Annual Reports for sites found on Federal land. Volume 2 contains Non Federal sites and Volume 3 contains sites on Navajo land. Of the 24 reports submitted, EPFS is requesting closure of one site located on Navajo lands (Jennepah #1). EPFS understands closure of groundwater sites on Navajo lands falls under jurisdiction of the Navajo Nation Environmental Protection Agency and original documents have been submitted to them for review. Other Navajo sites are included in the report for your information.

If you have any questions concerning the enclosed reports, please call me at (505) 599-2124.

Sincerely,

Scott T. Pope P.G. Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; Certified Mail # 7002 0510 0000 0307 7473
 Mr. Bill Liesse, BLM - w / enclosures (federal sites only), Certified Mail # 7002 0510 0000 0307 7466

2003 ANNUAL GROUNDWATER REPORT FEDERAL SITES VOLUME I EL PASO FIELD SERVICES

TABLE OF CONTENTS

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
89961	Fields A#7A	32N	11W	34	E
89232	Johnston Fed #6A	31N	09W	35	F
94715	James F. Bell #1E	30N	13W	10	Р
89620	Sandoval GC A #1A	30N	09W	35	С
LD151	Lat 0-21 Line Drip	30N	09W	12	0
73220	Fogelson 4-1 Com. #14	29N	11W	4	Р
97213	Hamner #9	29N	09W	20	А
LD174	LAT L 40	28N	04W	13	Н
89894	Hammond #41A	27N	08W	25	0
94810	Miles Fed 1A	26N	07W	5	F
LD072	K27 LD072	25N	06W	4	Е
87640	Canada Mesa #2	24N	06W	24	I





MWH MONTGOMERY WATSON HARZA



Federal Groundwater Site Map

LIST OF ACRONYMS

В	benzene
btoc	below top of casing
Е	ethylbenzene
EPFS	El Paso Field Services
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitoring well
PSH	phase-separated hydrocarbons
NMWQCC	New Mexico Water Quality Control Commission
Т	toluene
TOC	top of casing
NA	not applicable
NE	not established
NM	not measured
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
ppb	parts per billion
μg/L	micrograms per liter
Х	total xylenes

EPFS GROUNDWATER SITES

Hammond #41A Meter Code: 89894

SITE DETAILS

Legal Description:	Town:	27N	Range:	8W	Sec:	25	Unit:	0
NMOCD Haz Ranking:	40	Land Type:	Federal	Operator:	R&	G Dril	ling Com	ipany
PREVIOUS ACTIVI	<u>FIES</u>							
Site Assessment:	6/94	Excavation:	7/94	Soil Boring	;:			7/95
Monitor Well:	5/97	Geoprobe:	11/96	Additional	MWs:			9/99
Downgradient MWs:	9/99	Replace MW:	NA	Quarterly	Initiated	l:		6/97
ORC Nutrient Injection:	7/98	Re- Excavation:	5/97	PSH Remo	val Initi	ated:		NA
Annual Initiated:	9/99	Quarterly Resumed:	NA					

SUMMARY OF 2003 ACTIVITIES

Closure was requested for this site during 2002, as detailed in the *Pit Closure Report-Hammond #41A*, submitted on November 27, 2002. Supporting documentation is provided with that report. EPFS discontinued quarterly monitoring pending closure approval. In response to the report, NMOCD requested that a temporary monitoring well be installed and sampled prior to granting final closure. This well (TMW-1) was installed and sampled in August 2003. A second closure request was submitted to NMOCD on September 2, 2003, but was denied due to a total xylenes concentration of 625 μ g/L, which is above the NMOCD standard of 620 μ g/L. All other BTEX concentrations were below standards.

Monitoring well TMW-1 was sampled again in November 2003. During this sampling event, both benzene (19 μ g/L) and total xylenes (1,200 μ g/L) concentrations were above standards. TMW-1 was completed as a permanent monitoring well with a steel surface casing and locking cap in February 2004.

SITE MAPS

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

EPFS GROUNDWATER SITES

Hammond #41A Meter Code: 89894

SUMMARY TABLES AND GRAPHS

- Analytical data from TMW-1 are summarized in Table 1, and historic data for all wells are presented graphically in Figures 3 through 6.
- Laboratory reports are presented in Attachment 1.
- Field documentation is presented in Attachment 2.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The geologic log and well completion diagram for TMW-1 were submitted to NMOCD with the September 2003 closure request letter, and are included in Attachment 3.

DISPOSITION OF GENERATED WASTES

Soil cuttings from drilling were spread at the drill site. Drilling fluid was not used.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site maps present both the water level and analytical data collected during 2003.

CONCLUSIONS

• Benzene and total xylenes concentrations were above standards in TMW-1 in samples collected in 2003.

RECOMMENDATIONS

- Based on NMOCD's October 20, 2003 letter rejecting site closure, TMW-1 will be sampled quarterly until four consecutive quarters of cleanup criteria have been achieved.
- Because historic samples have indicated that these wells have achieved closure standards, MW-1, MW-2 and MW-3 will be sampled again only at final closure.
- Once closure has been granted, all monitoring wells will be plugged and abandoned in accordance with the approved well abandonment plan.



.



LE
AB
[-

SUMMARY OF BTEX COMPOUNDS IN 2003 GROUNDWATER SAMPLES HAMMOND #41A (METER #89894)

Site Name	Manitoring Well	Samnle Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Depth to Water
	Surrounder	and admind	(ng/L)	(ug/L)	(ng/L)	(ug/L)	(ft btoc)
Hammond #41A	TMW1	8/13/2003	7.3	128	44.8	625	17.22
Hammond #41A	TMW1	11/15/2003	19.2	113	84.6	1,200	16.40

- -----



2003 Hammond 41A.xls,Hamm MW1

HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS HAMMOND #41A FIGURE 4 **MW-2**



2003 Hammond 41A.xls,Hamm MW2



2003 Hammond 41A.xls,Hamm MW3

- 53

.....

•

HISTORIC BTEX CONCENTRATIONS AND GROUNDWATER ELEVATIONS HAMMOND #41A FIGURE 6



2003 Hammond 41A.xls,Hamm TWM1

ATTACHMENT 1

LABORATORY REPORTS

DATA VALIDATION WORKSHEET

(Page 1 of 2)

	Anal	ytical Method/An	alytes: <u>SW-</u> 8	846 8021B (BT	EX) San	nple Colle	ction Date(s):	11/15/03
		Labor	ratory:	Accutest		MWH	Job Number:	EPC-SJRB (Groundwater)
		Batch Identifie	cation:	T6102	<u></u>		Matrix:	Water
		MS/MSD Pare	nt(s) ^(a) :	None	Fie	eld Replic	ate Parent(s):	None
	Vali	idation Comp	olete:	Jan	Itas (D	<u> </u>	04-03	
	Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Ouals.	Con	nments
	None	Hammond 41A	MW-1	T6102-01	Y		Benzene @ 19 Toluene @ 11 Ethylbenzene Xylenes (total o-Xylene @ 2 m/p-Xylene @	9.2 T μg/l 3 μg/l @ 84.6 μg/l) @ 1200 μg/l 59 μg/l 9 937 μg/l
D	None	Trip Blank	151103TB01	T6102-02	N			
								-
D								



DATA VALIDATION WORKS

(Page 2 of 2)

Analytical Method: SW-846 8021B (BTEX) MWH Job Number: EPC-SJRB (Groundwater)

Laboratory: Accutest

Batch Identification:

T6102

Validation Criteria					
Sample ID	Hammond 41A MW-1	151103TB 01			
Lab ID	T6102-01	T6102-02			
Holding Time	A	А			
Analyte List	А	А			
Reporting Limits	А	А			
Surrogate Spike Recovery	A	А			
Trip Blank	A	А			
Equipment Rinseate Blanks	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A			
Initial Calibration	N	N			
Initial Calibration Verification (ICV)	N	N	 		
Continuing Calibration Verification (CCV)	N	N			
Method Blank	A	А			
Laboratory Control Sample (LCS)	A	А			
Laboratory Control Sample Duplicate (LCSD)	N	Ν			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A			
Retention Time Window	N	N			
Injection Time(s)	N	N			
Hardcopy vs. Chain-of-Custody	А	А			
EDD vs. Hardcopy	N	N			
EDD vs. Chain of Custody	N	N			

(a) List QC batch identification if different than Batch ID

A indicates validation criteria were met

A/L indicates validation criteria met based upon Laboratory's QC Summary Form

X indicates validation criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review

NOTES:





12/02/03

Technical Report for

Montgomery Watson

EPFS San Juan Basin Groundwater Site

D-MWH-04-01-03-MSG-01

Accutest Job Number: T6102

Report to:

Montgomery Watson

brian.buttars@us.mwhglobal.com

ATTN: Brian Buttars

Total number of pages in report: 12



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.

Ron Martino Laboratory Manager

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Gulf Coast • 10165 Harwin Drive • Suite 150 • Houston, TX 77036 • tel: 713-271-4700 • fax: 713-271-4770 • http://www.accutest.com

1 of 12

Table of Contents

	1	**
--	---	----

]

1

1

Ť.

Section 1: Sample Summary	3
Section 2: Sample Results	4
2.1: T6102-1: HAMMOND 41A TMW-1	4
2.2: T6102-2: 151103TB01	5
Section 3: Misc. Forms	6
3.1: Chain of Custody	7
Section 4: GC Volatiles - QC Data Summaries	9
4.1: Method Blank Summary	10
4.2: Blank Spike Summary	11
4.3: Matrix Spike/Matrix Spike Duplicate Summary	12



Sample Summary

Montgomery Watson

EPFS San Juan Basin Groundwater Site Project No: D-MWH-04-01-03-MSG-01

Sample Number	Collected Date	I Time By	Ma Received Co	atrix de Type	Client Sample ID
T6102-1	11/15/03	10:10 MN	11/18/03 AQ) Water	HAMMOND 41A TMW-1
T6102-2	11/15/03	07:00 MN	11/18/03 AQ) Water	151103TB01



98-08-8

Report	of	Analysis	
		5	

Page 1 of 1

2.1

N

Client Sam Lab Sampl Matrix: Method: Project:	nple ID: le ID:	HAMM(T6102-1 AQ - Wa SW846 8 EPFS Sa	OND 41A ' ater 8021B In Juan Bas	TMW-1 in Groundwat	er Site	Date S Date J Percer	Sample Receiv nt Soli	ed: 11/15/03 red: 11/18/03 ids: n/a	
Run #1 Run #2	File ID KK00619	90.D	DF 20	Analyzed 11/28/03	By BC	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK332
Run #1 Run #2	Purge V 5.0 ml	olume							
Purgeable	Aromatics	6							
CAS No.	Compo	und		Result	RL	Units	Q		
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylber Xylenes o-Xylen m,p-Xyl	e nzene (total) e lene		19.2 113 84.6 1200 259 937	20 20 20 60 20 40	ug/l ug/l ug/l ug/l ug/l ug/l	J		
CAS No.	Surroga	ite Reco	veries	Run# 1	Run# 2	Lim	its		
460-00-4	4-Brom	ofluorob	enzene	85%		64-1	21%		

86%

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range

aaa-Trifluorotoluene

J = Indicates an estimated value

71-121%

- B = Indicates analyte found in associated method blank
- N = Indicates presumptive evidence of a compound



			Repo	rt of An	alysis		Page 1 of 1
Client Sar Lab Samp Matrix: Method: Project:	nple ID: 15110 de ID: T6102 AQ - SW84 EPFS	3TB01 2-2 Water 6 8021B San Juan B	asin Groundwa	ler Site	Date Sam Date Rece Percent S	pled: 11/15/03 vived: 11/18/03 olids: n/a	
Run #1 Run #2	File ID KK006187.D	DF 1	Analyzed 11/28/03	By BC	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK332
Run #1 Run #2	Purge Volume 5.0 ml	;					
Purgeable	Aromatics						
CAS No.	Compound		Result	RL	Units Q		
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total o-Xylene m,p-Xylene)	ND ND ND ND ND	1.0 1.0 3.0 1.0 2.0	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Re	coveries	Run# 1	Run# 2	Limits		

CAS No.Surrogate RecoveriesRun# 1Run# 2Limits460-00-44-Bromofluorobenzene79%64-121%98-08-8aaa-Trifluorotoluene78%71-121%

ND = Not detected 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



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody





		ITEST	-			1010	65 Har TEL.	win Dı 713-27	rive, S /1-470	ite. 15 10 FA), Hoi X: 71	ustan 3-27	, TX 1-477	77036 0	FED E	X Trackin	1	40	4	Bottle	Order Co	ntrol #		
" انتقا	Labo	ratorie	S					м	r₩₩.8	ccutes	t.com	I			84	ZZ	* 524	47	74	Accute	st Job #			
		Client / Reporting Informati	noi				P	roject In	tormatio	м	8.10			a an	-10-100				Requ	lested Ar	halysis			Matrix Cod
ompany N		2		Projec	t Name	, k	2	l	ten.		It,	11												OW - Onniong V
ddress	TRUT			Street	<u>41 V L/a</u>	10	2011	مناب	70	nry	[W]	n	<u> </u>		1 ·									GW - Ground V
d4	Reilly																							WW - Wate
Su	ninstron	State	87481	City				Stat	le]									SW- Sunace v SO - Soli
oject Cont	H Por	L	E-mail	Projec	t#										1									SL - Sludge Ol - Oil
none #	5599Z	124-		Fax #	505	59	19	21	1	1														LIQ - Other Lic
mpier's N	mm Ne	e		Client	Purchase Or	der#			-4	•] []									AIR - Air SOL - Other S
Accutest Sample #	Field IO	/ Point of Collection	SUMMA	#	Collection	Sampled	1	# of	F	Numbe 5 3	i ol pre	served y	jBottle ≩	5	0									WP - Wipe
	4	///	MEDH VI	al# Date	Time	By	Mathx	botties 7	1	2 -	Ŷ.	ž	2 3	18				+						
	Temmona	414 TMW-	L	11190	9 1010	in o	ac	6	14	_	┿┥	\vdash	-+-	+	1×	-+	-		+		\vdash	-+		+
	15110510			111503	600	ma	na	<u> . </u>	Щ		+								-					
				_	L	L			\square	-	\downarrow			_					<u> </u>			-+		
																			1					
							1											1-	1					
	· · · · · ·				┼───	<u> </u>			+			-+	+	+						+		-+		
	······								┼╍┼		+			+										
					<u> </u>		<u> </u>		┝┼		┝		-	+										
	Тиглагорос	Time (Business Davs)		Na sector Link				Data Di	eliverab	ie Inforr	nation					1.000				Commen	ts / Rema	rh c 🕷		
10 Day :	STANDARD	Approved By: /	Dale	1	Comme	rcial "A"				EDO Fo	mat													
5 Day R	USH			·	🛛 Comme	rcial '8'																	-	-
3 Dary E	WERGENCY	•·		-	Reduce	d Tier 1																, 1	D	L
2 Dery E	WERGENCY					1																		
J 1 Oary Ei I Other	WERGENCY	· · · · · · · · · · · · · · · · · · ·		-																				
				-	Comm	ercial *A	= Res	uits Onl	v															
nergency	& Rush T/A data av	ailable VIA LabLink		-																				
				Sample	Custody mus	t be docu	mented t	xolow ca	ch line	sample	s chang	e pos	session	, includ	ing couri	er deliver	, KCC	11201						a katerotea
inquished	2-	1200	Date Timer	Received by						Relinquis	hed by							ate Time:		Received	by.			
inquished b		,	Date Time	Reactives by	<u> </u>	1			-+	2 Relinquis	hed by					···-		ate Time:		2 Received	by:			<u> </u>
			1118 0415	, VA	ist					4										4				
inquished b	r		Date Time	Received by:	-0					Custody	Seal #					Preserv	ed where a	plicable		Dn lie	/		Cogle	Tep DI

I

T6102: Chain of Custody Page 1 of 2



3.1 3.1

ω

SAMPLE RECEIPT LOG TIME RECEIVED:	SAMPLE RECEIPT LOG DATETIME RECEIVED. INITIALS. BATTEL DE LL PASO DATETIME RECEIVED. INITIALS. DATE all "T for yes and "The form. If "Y" is circled, see variance for exp and in proper pill. No Sample received with the received intact and tamper evident on costs. Received intact and tamper evident on bottles. BOTLE # DATE SAMPLE MATRIX VOLUME TO T T T SAMPLE RECEIPT LOG BOTLE # DATE SAMPLE MATRIX VOLUME TO C T T T SAMPLE RECEIVED MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO C T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX VOLUME TO TO D T T T SAMPLE RECEIPT SAMPLE D MATRIX SAMPLE RECEIPT D COLLER TEMP. COLLER T	М-1	lanation): emp. range. r containers. in of custódy.	ATTON PRESERV. PH	L 1,2,3,4,5,6 U, <2, >12/NA	1,2,3,4,5,6 U, <2, >12 (Và	1'2'3'4'2'9 n' <2' >15'	1,2,3,4,5,6 Hr 2, >12, NA	4,2,3,4,5,6 U, <2, >12, NA	1,2,3,4,5,6 U. <2, >12, NA	1,2,3,4,5,6 U, <2, >12, N	<u>1,2,3,4,5,6</u> U, <2, >12, N		8°C COOLER TEMP:	Fam: SM012							
SAMPLE RECEIVED: TIME RECEIVED: aftition: 2: 0 N Sam aftition:	CLUC SAMPLE RECEIVED: CLUC DATE/TIME RECEIVED: CLUC AS Date N FLUC AS Date N ELUC N Sample N N N <td>T LOG 11/18/03 091 INTTALS: 40</td> <td>see variance for expl ples received in prope ple received in prope ple received with cha</td> <td>VINA 11.0</td> <td></td> <td>></td> <td></td> <td>core Freezer</td> <td>COOLER TEMP: //</td> <td>d Return to Client</td>	T LOG 11/18/03 091 INTTALS: 40	see variance for expl ples received in prope ple received in prope ple received with cha	VINA 11.0		>														core Freezer	COOLER TEMP: //	d Return to Client
	CCL PASO EL PASO EL PASO EL PASO Read in undranged con- ved in undranged con- ne sufficient for analysis tody matches sample II received intact and tan BOTTLE # DATE DATE DATE Sufficient for analysis received intact and tan BOTTLE # DATE Sufficient for analysis received intact and tan BOTTLE # DATE DATE DATE DATE DATE DATE DATE DATE	SAMPLE RECEIP	or no. If "N" is circled, dition. 2. ON Sam 4. P. N Sam 5. 6. ON Sam 3. on containers. Ds on containers. Ther evident on cooler.	SAMPLED MATRIX	1							- AN	× ~~~~							B: Subcontract EF: End SO4 5: NAOH 6: Other Comments:		utest disposal Hoi

ļ

T6102: Chain of Custody Page 2 of 2



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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



Method Blank Summary

; |

Job Numb Account: Project:	er: 16102 MWHSLCUT Montg EPFS San Juan Basin	omery Watson Groundwater S	Site			
Sample GKK332-N	File ID DF 1B KK006186.D1	Analyzed 11/28/03	By BC	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK332
The QC re	ported here applies to the	following sam	ples:		Method: SW	/846 8021B
T6102-1, T	6102-2					
CAS No.	Compound	Result	RL	Units Q		
71-43-2	Benzene	ND	1.0	ug/l		
100-41-4	Ethylbenzene	ND	1.0	ug/l		
108-88-3	Toluene	ND	1.0	ug/l		
1330-20-7	Xylenes (total)	ND	3.0	ug/l		
95-47-6	o-Xylene	ND	1.0	ug/l		
	m,p-Xylene	ND	2.0	ug/l		
CAS No.	Surrogate Recoveries		Limi	ts		
460-00-4	4-Bromofluorobenzene	77%	64-12	21%		
98-08-8	aaa-Trifluorotoluene	77%	71-12	21%		



4.1 4

Blank Sp Job Number Account: Project:	oike Summary T6102 MWHSLCUT Mor EPFS San Juan Bas	ntgomery Watsor sin Groundwater	ı Site				Page 1 of 1
Sample GKK332-BS	File ID DF KK006185.D1	Analyzed 11/28/03	By BC	P n	rep Date /a	Prep Batch n/a	Analytical Batch GKK332
The QC repo T6102-1, T6	orted here applies to t 102-2	he following sar	nples:			Method: SW	7846 8021B
CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits		
71-43-2	Renzene	20	19.0	95	74-119		

19.0

58.8

19.6

39.2

95

98

98

98

Limits

64-121%

71-121%

77-116

79-115

78-114

79-116

20

60

20

40

BSP

97%

90%

100-41-4 108-88-3

1330-20-7

95-47-6

CAS No.

460-00-4

98-08-8

Toluene

o-Xylene

m,p-Xylene

Xylenes (total)

Surrogate Recoveries

4-Bromofluorobenzene

aaa-Trifluorotoluene



4.2

Matrix Spi Job Number: Account: Project:	ike/Matrix Spike I T6102 MWHSLCUT Montgome EPFS San Juan Basin Gro	Duplicate ery Watson oundwater S	e S	umma	ary				Pa	age 1 of 1
Sample	File ID DF	Analyzed	В	y	Prep D	Date	Prep Bate	ch A	nalytical	Batch
T6104-1MS ^a	KK006193.D20	11/28/03	B	C	n/a		n/a	G	KK332	
T6104-1MSD a	KK006194.D20	11/28/03	В	С	n/a		n/a	G	KK332	
T6104-1 ^a	KK006192.D 20	11/28/03	В	С	n/a		n/a	G	KK332	
The QC report	ed here applies to the foll	owing sam	ples	:	<u> </u>		Method:	SW846	8021B	
T6102-1, T6102	2-2									
		T6104-1		Spike	MS	MS	MSD	MSD		Limits
CAS No. Co	mpound	ug/l	Q	ug/l	ug/l	%	ug/l	%	RPD	Rec/RPD
71-43-2 Ber	izene	401		400	764	91	769	92	1	64-124/16

400

400

1200

400

800

MSD

84%

97%

1110

668

5750

1430

4320

89

90

88

88

88

T6104-1

84%

94%

89

94

82

85

80

0

2

1

1

1

1110

684

56**80**

1420

4260

Limits

64-121%

71-121%

93% (a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

755

308

4700

1080

3620

MS

84%

100-41-4

108-88-3

95-47-6

CAS No.

460-00-4

98-08-8

1330-20-7

Ethylbenzene

Xylenes (total)

Toluene

o-Xylene

m,p-Xylene

Surrogate Recoveries

4-Bromofluorobenzene

aaa-Trifluorotoluene



4.3

64-123/14

64-120/13

66-118/18

65-119/20

66-120/14



			(Lage 1)	n <i>2)</i>			
Anal	ytical Method/An	nalytes: SW-8	846 8021B (BT	EX) San	nple Colle	ction Date(s):	08/13/03
	Labo	ratory:	Accutest		MWH	Job Number: _	EPC-SJRB (Groundwater
	Batch Identifi	cation:	T5132			Matrix: _	Water
	MS/MSD Pare	ent(s) ^(a) :	T5132-01	Fie	eld Replic	ate Parent(s):	None
Vali	idation Com	plete:	Jone T	Sttar	/ate/Signature	<u>8-25-0</u>	23
Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Con	nments
2,3,4	Charlie P2W	TMW	T5132-01	N			
1	Hammond 44A	M w -4	15132-02	Ŷ		Toluene @ 12 Ethylbenzene Xylenes (total) o-Xylene @ 13 m,p-Xylene @	3 μg/1 8 μg/1 @ 44.8 μg/1) @ 625 μg/1 55 μg/1 - 470 μg/1
None	Trip Blank	130803TB01	T5132-03	N			·
		}	1	1	1	1	

11

15.

٦Į . 1

Ì

DATA VALIDATION WORKSHEET

(Page 2 of 2)

Analytical Method: SW-846 8021B (BTEX)

MWH Job Number: EPC-SJRB (Groundwater)

Laboratory:

Accutest

Batch Identification: T5132

Validation Criteria						
Sample ID	Charlie P2W TMW	Hammond 44A MW-4	130803TB 01			
Lab ID	T5132-01	T5132-02	T5132-03			
Holding Time	A	A	А			
Analyte List	A	А	А			
Reporting Limits	A	A	A			
Trip Blank	A	A	A			
Equipment Rinseate Blanks	N/A	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A	N/A			
Surrogate Spike Recovery	А	A^1	A			
Initial Calibration	N	N	N			
Initial Calibration Verification (ICV)	N	N	N			
Continuing Calibration Verification (CCV)	N	N	N			
Laboratory Control Sample (LCS)	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N			
Method Blank	А	A	А			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	A ^{2.3,4}	N/A	N/A	 		
Retention Time Window	N	N	N			
Injection Time(s)	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	А			
EDD vs. Hardcopy	N	N	N			
EDD vs. Chain of Custody	N	N	N			

(a) List QC batch identification if different than Batch ID

A indicates validation criteria were met

A/L indicates validation criteria met based upon Laboratory's OC Summary Form

X indicates validation criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review

NOTES:

- Surrogate percent recovery outside acceptance criteria for aaa-Trifluorotoluene @ 125% (71-121). Only one surrogate outside 1) acceptance criteria, no data qualified.
- Matrix spike surrogate percent recoveries outside acceptance criteria for aaa-Trifluorotoluene @ 141% (71-121). Only one 2) surrogate outside acceptance criteria, data quality not affected.
- 3) Matrix spike percent recovery for Benzene outside acceptance criteria @ 146% (64-124), indicating a possible high bias. Analyte not detected in parent sample, no data qualified.
- 4) Matrix spike/matrix spike duplicate (MS/MSD) relative percent difference (RPD) outside acceptance criterion @ 27% (16). Analyte not detected in parent sample, no data qualified.

		CH	D NIA	CUSTOI	JY# 1308	DNUM EOS		
		10165	5 Harwin Drive, TEL 713-271-4	, Ste. 150, Rouston, TX 7703 700 EAX: 713-271-4770	6 FED-EX Tracking #	57/05 Bottle Order Control #		
Laboratories	_	-	MMM	vaccutest.com	Accufest Quote #	Accutest Job #		
Client / Reporting Information			Project Informa	alion		Requested Analysis	Matrix Cod	s
Company Name MWH / E/ PSO		Projectione 1/02	n Bes	22			DW - Drinking V GW - Gound V	ater ater
Address Holt Reilly		Street Co	anno	uster		· · · · · · · · · · · · · · · · · · ·	ww - wate	
City FURNING ON State NM	1 8740	2/ City	State			· · · · · · · · · · · · · · · · · · ·	SW - Surface V 50 - Soil	ater
Project Contact Lynn Kenselly	E-mail	Project #					SL- Sludge	
Phone # 505 599 2178		Fax# 5055	1265	61	×-		LIQ - Other Li	
Sampler's Name Mer true New	1	Client Purchase Order #			₹_		AIR - Air SOL - Other S	<u> </u>
Accutest Field ID / Point of Collection Sample #	SUMMA: MEOH Va	Collection Date Samoed	Matrix hottles	Number of preserved Bottles	8		WP Wipe	7
1 Chroliefau Tmu		8.13.3 0240 M.M.	W6 2 5	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	X		VER	Τ
2 HAMMAN HIA MUU-	4	B. 3. 3. 1220 MM	10 D 3		×			· ·
3 1308037841		8-1325 0722 1000	1 1 2011		X			
				•				
	_		_					
	-							
T								
C 10 Day STANDARD Approved By: //	Dale:	Commercial "A"	2 Data Delive	rable Information	-	comments / Remarks		
C 5 Day RUSH		Commercial "B"	1		k	661.4		
L 3 Day EMERGENCY		C Reduced Tier 1 Full Tier 1				といく		
D 1 Day EMERGENCY		[] TRRP13			•	•		
C Other			' = Results Only					
Emergency & Rush T/A data available V/A LabLink		Connels Connels Connels				\mathcal{N}		
Reinquistre Mangler	Date Time: 6.13-05	teceived by		Reinquished by		Time 700 Received by	, ,	
Relifiquisited by: 3	Date Time	taceived by:		Reinquished by:	Date	Time Received by		
Relinquished by: 5	Date Time:	teceived by		Custody Seal #	Preserved where appli	cable On leas	C Cooler Temp.	Τ
						- nztz ~ ,		Ţ



08/27/03

Technical Report for

Montgomery Watson

EPFS San Juan Basin Groundwater Site

Accutest Job Number: T5132

CINENTE MIL

Report to:

MWH

pamela.j.anderson@us.mwhglobal.com

ATTN: Pam Anderson

Total number of pages in report: 9



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.

Ron Martino Laboratory Manager

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Gulf Coast • 10165 Harwin Drive • Suite 150 • Houston, TX 77036 • tel: 713-271-4700 • fax: 713-271-4770 • http://www.accutest.com

Sample Summary

Montgomery Watson

-Ui

1

. Т

Job No: T5132

EPFS San Juan Basin Groundwater Site

Sample Number	Collected Date	Time By	Received	Matr Code	ix Type	Client Sample ID	
T5132-1	08/13/03	08:40 MN	08/14/03	AQ	Ground Water	CHARLIE PAH4 TMW	
T5132-2	08/13/03	10:20 MN	08/14/03	AQ	Ground Water	HAMMOND 44A TMW-1	· · ·
T5132-3	08/13/03	07:00 MN	08/14/03	AQ	Ground Water	130803TB01	

Report of	Analysis
-----------	----------

Page 1 of 1

Client Sample ID:CHARLIE PAH4 TMWLab Sample ID:T5132-1Matrix:AQ - Ground WaterMethod:SW846 8021BProject:EPFS San Juan Basin Groundwater Site				Date Sampled: 08/13/03 Date Received: 08/14/03 Percent Solids: n/a						
Run #1 Run #2	File ID KK005653.D	DF 1	Analyzed 08/22/03	By BC	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK302		
Run #1 Run #2	Purge Volume 5.0 ml				. <u> </u>					
Purgeable	Aromatics									
CAS No.	Compound		Result	RL	Units	Q				
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		ND ND ND ND ND	1.0 1.0 3.0 1.0 2.0	ug/l ug/l ug/l ug/l ug/l ug/l					

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%		64-121%
98-08-8	aaa-Trifluorotoluene	102%		71-121%



ND = Not detected 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

ļ

	Page 1 of 1						
Client San Lab Samp Matrix: Method: Project:	nple ID: HAMMO le ID: T5132-2 AQ - Grou SW846 80 EPFS San	ND 44A and Wate 21B Juan Ba	TMW-1 er sin Groundwat	er Site	Date Sampl Date Receiv Percent Soli		
Run #1 Run #2	File ID I KK005650.D I KK005651.D I	DF 20	Analyzed 08/22/03 08/22/03	By BC BC	Prep Date n/a n/a	Prep Batch n/a n/a	Analytical Batch GKK302 GKK302
Run #1 Run #2	Purge Volume 5.0 ml 5.0 ml						
Purgeable	Aromatics						
CAS No.	Compound		Result	RL	Units Q		
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		7.3 128 a 44.8 625 a 155 a 470 a	1.0 20 1.0 60 20 40	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recov	eries	Run# 1	Run# 2	Limits		
460-00-4 98-08-8	4-Bromofluorober aaa-Trifluorotolue	nzene ene	105% 125%	98% 100%	64-121% 71-121%		

(a) Result is from Run# 2



ND = Not detected 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

l i

}

Report of Analysis

Page 1 of 1

Client Sam Lab Samp Matrix: Method: Project:	t Sample ID: 130803TB01 Sample ID: T5132-3 ix: AQ - Ground Water od: SW846 8021B ct: EPFS San Juan Basin Groundwater Sit				Date Sampled: 08/13/03 Date Received: 08/14/03 Percent Solids: n/a e					
	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch			
Run #1	KK005646.D	l	08/22/03	BC	n/a	n/a	GKK302			
Run #2	KK005652.D	l 	08/22/03	BC	n/a	n/a	GKK302			
	Purge Volume									
Run #1	5.0 ml									
Run #2	5.0 ml				····					
Purgeable	Aromatics									
CAS No.	Compound		Result	RL	Units Q					
71-43-2	Benzene		ND	1.0	ug/l					
108-88-3	Toluene		ND	1.0	ug/l					
100-41-4	Ethylbenzene		ND	1.0	ug/l					
1330-20-7	Xylenes (total)		ND	3.0	ug/l					
95-47-6	o-Xylene		ND	1.0	ug/l					
	m,p-Xylene		ND	2.0	ug/l					
CAS No.	Surrogate Recov	eries	Run# 1	Run# 2	Limits					
460-00-4	4-Bromofluorober	nzene	93%	93%	64-121%					
98-08-8	aaa-Trifluorotolue	ene	101%	102%	71-121%					



ND = Not detected 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

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Blank Spike Summary

E

Job Numb Account: Project:	er: T5132 MWHSLCUT Montgo EPFS San Juan Basin	ontgomery Watson asin Groundwater Site							
Sample GKK302-B	File ID DF S KK005644.D 1	File IDDFAnalyzedByPrKK005644.D 108/22/03BCn/		rep Date ′a	Prep Batch n/a	Analytical Batch GKK302			
	<u>, , , , , , , , , , , , , , , , , , , </u>								
The QC re	ported here applies to the	following sar	nples:			Method: SW	/846 8021B		
Т5132-1, Т	5132-2, T5132-3								
		Spike	BSP	BSP					
CAS No.	Compound	ug/l	ug/l	%	Limits				
71-43-2	Benzene	20	20.8	104	74-119				
100-41-4	Ethylbenzene	20	20.7	104	82-115				
108-88-3	Toluene	20	20.8	104	77-116				
1330-20-7	Xylenes (total)	60	61.3	102	79-115				
95-47-6	o-Xylene	20	20.3	102	78-114				
	m,p-Xylene	40	41.0	103	79-116				
CAS No.	Surrogate Recoveries	BSP	Li	mits					
460-00-4	4-Bromofluorobenzene	99%	64	-121%					
98-08-8	aaa-Trifluorotoluene 100% 71-121%								

Page 1 of 1

Method Job Numbe Account: Project:		Page 1 of 1				
Sample GKK302-M	File ID DF B KK005645.D 1	Analyzed 08/22/03	By BC	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK302
The QC rep T5132-1, T	ported here applies to the 5132-2, T5132-3	following sam	ples:		Method: SW	/846 8021B
CAS No.	Compound	Result	RL	Units Q		
71-43-2	Benzene	ND	1.0	ug/l		
100-41-4	Ethylbenzene	ND	1.0	ug/l		
108-88-3	Toluene	ND	1.0	ug/l		
1330-20-7	Xylenes (total)	ND	3.0	ug/l		
95-47-6	o-Xylene	ND	1.0	ug/l		
	m,p-Xylene	ND	2.0	ug/l		

Limits

64-121%

71-121%

96%

99%

Surrogate Recoveries

4-Bromofluorobenzene

aaa-Trifluorotoluene

CAS No.

460-00-4

98-08-8

Matrix Job Numb Account: Project:	Spike/Matrix Spike er: T5132 MWHSLCUT Montgo EPFS San Juan Basin	e Duplicat omery Watson Groundwater S	e Site	Summ	ary				Р	age 1 of 1
Sample	File ID DF	Analyzed]	Зу	Prep I	Date	Prep Bat	ch A	nalytical	Batch
T5132-1M	S KK005648.D1	08/22/03]	BC	n/a		n/a	G	KK302	
T5132-1MS	SD KK005649.D1	08/22/03	1	30	n/a		n/a	G	KK302	
15132-1	KK005653.D1	08/22/03	J	3C	n/a		n/a	G.	KK302	
The QC re T5132-1, T	ported here applies to the	following sam	ple	s:			Method:	SW846	8021B	
		T5132-1	~	Spike	MS	MS	MSD	MSD	DDD	Limits
CAS No.	Compound	ug/l	Q	ug/l	ug/l	%	ug/I	%	RPD	Rec/RPD
71-43-2	Benzene	ND		20	29.2	146*	22.2	111	27*	64-124/16
100-41-4	Ethylbenzene	ND		20	21.7	109	21.9	110	1	64-123/14
108-88-3	Toluene	ND		20	20.3	102	21.5	108	6	64-120/13
1330-20-7	Xylenes (total)	ND		60	63.0	105	64.5	108	2	66-118/18
95-47-6	o-Xylene	ND		20	20.8	104	21.4	107	3	65-119/20
	m,p-Xylene	ND		40	42.3	106	43.1	108	2	66-120/14
CAS No.	Surrogate Recoveries	MS		MSD	Т5	132-1	Limits			
460-00-4	4-Bromofluorobenzene	99%		101%	98	%	64-1219	%		

103%

141%* a

102%

71-121%

(a) Outside control limits due to matrix interference.

aaa-Trifluorotoluene

98-08-8

11

9 of 9

	1 ED 1. 7	SAMPLE	= KECEIP] ~			`	
ов #: /))	6	DATE/TIME RECE	IVED:)-14-05	0900		
LIENT: MWH				INITIALS:	EJ		
Ondition/Variance (Ci Y N Sample reco Y N Sample reco Y N Sample volu Y N Chain of Cu N Chain of Cu L Y N Custody sea . Y N Custody sea	rcle "Y" for yes a eived in undamag eived with proper ime sufficient for stody matches sa al received intact al received intact	nd "N" for no. If "N ged condition. 2. pH. 4 analysis. 6 ample IDs on conta and tamper eviden and tamper eviden	is circled, s N Samp N Samp N Samp N Samp Iners. t on cooler. t on bottles.	see variance fo ples received v ple received in ple received w	or explanation vithin temp. ra proper contai ith chain of cu): nge. ners. stody.	<u> </u>
SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	РН
1	1-2	8-13-03	L	Nom	Vler	1(2,3,4,5,6	IJ, <2, >12, Į
2	1-2			27 You(1 2,3,4,5,6	U, <2, >12,1
3			\mathcal{I}	yond	Ļ	1,2,3,4,5,6	U, <2, >12,
						1,2,3,4,5,6	U, <2, >12, 1
	-		·····			1,2,3,4,5,6	U, <2, >12, 1
			· · ·	_		1,2,3,4,5,6	U, <2, >12, M
	······································			13		1,2,3,4,5,6	U, <2, >12, ♪
	······································		103			1,2,3,4,5,6	U, <2, >12, N
		1	4/			1,2,3,4,5,6	U, <2, >12, M
		-5/		-		1,2,3,4,5,0	11 -2 >12
		7				123456	11 <2 >12.1
	/		·			1,2,3,4,5,6	U, <2, >12, !
						1,2,3,4,5,6	U, <2, >12, ł
						1,2,3,4,5,6	U, <2, >12, I
						1,2,3,4,5,6	U, <2, >12, I
CATION: WI: Walk-In ESERVATIVES: 1: Non	VR: Volatile Refrig e 2: HCL 3: HNO3	. SUB: Subcontrac 4: H2SO4 5: NAOF	t EF: Enco 1 6: Other Comments:	re Freezer			
of waters checked exclu	iding volatiles	-				······································	
OT SOILS N/A		-			11		

Laboratories Clent/Reporting Information And Clent/Reporting Information And Clent Report Pass Adress Mone # Mone # Mon	Project Mark Project Information Project Mark Project Mark Street Street Street <t< th=""><th>Requested Analysis Matrix Coc Matrix Coc GW Gound WW. Wat WW. Wat SN Sund SN Sund SU Sund SI Sund SI Sund SI Sund AIR - Air</th></t<>	Requested Analysis Matrix Coc Matrix Coc GW Gound WW. Wat WW. Wat SN Sund SN Sund SU Sund SI Sund SI Sund SI Sund AIR - Air
andress MULH/EL PSO address CUL4/EC/LA State NMI/MENS None # NMI/MENS Pone # SSS 59 2178 Ample's Name M2 Fund None # None	Projectione Market Mean Street Street Street Street Street State Annual Project # Fax # State Fax # State Client Purchase Order # Number of preserved Bottles Street State State State Fax # State Annual Project # State State State State State State State State State State	DW. Drinking GW Ground WW. Wat WW. Wat SW Surface SO Ori - Ori AIR - Air SOL - Other I
udress By EURMINAJON Slate NM S LUMM KENSULA E hore # 505 599 2178 ampler's Name MENTAL Net	Street Street Street State 3.720/ City State Fax # 523 3.7372.119 Client Purchase Order # State Summer of preserved Bottles SUMMA # Date Time Sumped Matrix bottles 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	WW. Wat SW. Surface SV. Surface SO Or IIQ - Other L
My FURMINAJON State NM S Lynn Kensel E Dolo # 505 599 2178 ander's Name MENTIN ACTING	コブゼの City State and Project # State Fax # <u>5</u> ろろ 5 7 9 2 1 1 9 Citent Purchase Order # Citent Purchase Order # Number of preserved Bottles EUMMA # Date Time Surged Matrix bottles 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	SW: Surface SW: Surface SO: Surface SU: Other 1 AIR - Air SOL - Other
Lynn Kensler E. Done # 505 599 2178 ander's Name Menter Nord Collector	nail Project # Fax # 503 5392119 Client Purchase Order # SUMMA # Collection Number of preserved Bottles SUMMA # Date Time Surped Matrix bottles 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	SL-Study O! - OI LIQ - OHer I AIR - Air SOL - Other
ample's Name Mer Find Date Active Meridian Contract	Fax # SOS SS9219 X Client Purchase Order # Client Purchase Order # SUMMA # Collection Number of preserved Bottles Number of preserved Bottles Matrix MeOH Veat Date Time By Matrix No	AIR - Air
ample's Name Martin Name Contact	Client Purchase Order # SUMMA # Collection Number of preserved Bottles By MECH Vid # Date Time Sampled Matrix bottles 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	AIR - AIr
Acculact Civild IN / Point of Collection	SUMMA # Collection Number of preserved Bottles MECH Val # Date Time Sampled Matrix bottles By Matrix bottles The bottles By By B	
) Chaptice an Tmin	X	VUER
2 HAMMAN 41 A MUD-4	× CC 913 num aco/835.8	
3 1308037841	X 1 1 2rn new rato Freis	
-		
To Day STANDARD I Unnaround Time (business Days) Approved By: / Date:	Commercial -A Comme	Comments / Remarks & A.8
8 Day RUSH 3 Day EMERGENCY 2 Day EMERGENCY 1 Day EMERGENCY	Connercial -B- Reduced Tier 1 5-UII Tier 1 1 TRRP13	75132
Other nergency & Rush T/A data available VIA LabLink	Commercial "A" = Results Only	
inquishe r Mu, ya nnyer. Dae Tin	Sample Custody must be documented below each time samples change possession, including couries Retends by	rdelivery I
Aquisted by Date Time	55 1 600 1 2 Received by: Reinquished by:	Date Time. Received by Control of the control of th
nquished by: Date Tin	e: Received by Custody Seal #	Preserved where applicable 01 LgP Cooler Tomp

ATTACHMENT 2

FIELD DOCUMENTATION



Project No.:30001.0	Project Name: <u>SJB Groundwater</u>	Client: MWH/EL Paso
cation: Hammond 41A	Well No: TMW-1	Development Sampling
Project ManagerMJN	Date <u>11/15/03</u> Start	Time_0939_ Weather_Sunny 40s
Depth to Water <u>16.40</u>	Depth to Product Product Thickness	na Measuring Point TOC
Water Column Height 9.79	Well Dia2"	

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other

Bottom Valve Bailer x

1

Double Check Valve Bailer Stainless-Steel Kemmerer

Criteria: 3 to 5 Casing Volumes of Water Removal X stabilization of Indicator Parameters X Other or bail dry_

	Water Volum		
Gal/ft x ft of water	Gallons	Ounces	Gal/oz to be removed
9.79 x 0.16	1.57 x 3		4.7

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0945	7.76	1480	57.6	<u></u>			0.5	dark dark gray, slight sheen
	7.8	1460	57.9				1	
	7.78	1480	57.8				1.5	
	7.77	1510	57.8				2.0	
	7.65	1560	57.8				3.0	light gray
	7.65	1670	57.9				4.0	
	7.70	1780	57.8	1			5.0	
	7.70	1870	57.8	+			5.5	· · · · · · · · · · · · · · · · · · ·
	7.66	1930	57.8				6.0	
	7.67	1970	57.9				6.5	
<u>1001</u>	7.70	2000	58.2	•			7.0	light light gray

Final:							Ferrous		
Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Iron	Vol Evac.	Comments/Flow Rate
<u>1001</u>	7.70	2000	58.2					7.0	light light gray

COMMENTS:		·····	
			Temperatura Motor
INSTROMENTATION.			
		······································	
Condu	uctivity Meter X		
ater Disposal Kutz	Sample ID_Hammond	<u>41 A TMW-1</u>	Sample Time1010
BTEX VOCs Alkalinity	TDS Cations Anions	Nitrate Nitrite Ammonia	TKN NMWQCC Metals Total Phosphorus
			-
MS/MSD	BD	BD Name/Time	TB 151103tb01
	·····		

PRODUCT RECOVERY/WATER LEVEL DATA

Martin J. Nee PO Box 3861 Farmington, NM 87499-3861 (505)334-2791 (505)320-9675cell

Project Name_	San Juan Basin Ground Water	Project No.	30001.0
Project Manager	MJN		
Client Company	MWH	Date	11-15-03
Site Name	Hammond 41A	·	

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product thickness	Comments
MW-1	1020	-	18.26		
MW-2		-	17.69	-	-
MW-3			19.23		
TMW	0939		16.40		

Comments

Signature:

Martin J. Nee

Date:

November 15, 2003

		WELL	VELO	OPMENT	AND S	AMPLIN	NG LOO	
Project No:	300	201.0	Proiec	t Name: S	TBB	and	uteclient:	mut
Location: A	ZAMINA	4 2 Wall		47-66	TMW-	Devel	onment 🕅	
		MTA)	10	Data S	1,10	Stort Tim		
	. /	77.7 -			101-2		10 <u>70 70</u>	Weather Sorring O
Depth to Wa	ater/_	<u>/ 85</u> Dep	th to Pro	duct	_ Product	Thickness	5 <u> </u>	Measuring Point
Water Colun	nn Heigh	t	Well Dia.					
Sampling M	ethod:	Submersible	Pump 🛛	Centrifug	al Pump D] Peristal	tic Pump 🗍	Other
		Bottom Valve	Bailer [heck Val	ve Bailer 🗌] Stainless	S-Steel Kemmerer
Criteria: 3 t	o 5 Casir	ng Volumes o	f Water F	Removal 🗹	Sabiliza	tion of Indi	cator Param	eters 🔄 Other 🛻 back de
Gal/ft x f	ofwater		1	Water Volum	e in Well			Gal/oz to be removed
			Gallons			Junces		3.3.a)
Time		SC SC	Tomp		DO	Turbidity		Comments/
(military)	μп	(umhos/cm)	(°C)	(millivolts)	(mg/L)	(NTU)	(gal.)	Flow rate
1104	700	2610	248	·	. <u></u> _	<u> </u>	0.25	VerySilky
1110	707	2240	205			<u> </u>	3	
1125	142	2150	191				_ 5	VfiniSend in buck.
1137	763	2360	20	<u>.</u>			10	
1155	743	2180	192			<u> </u>	15	V STG/Sondy
1158		DTW	<u></u>	-85	BTOC	• 		0
	·	<u> </u>		<u></u>			<u> </u>	·
								· .
								· · · · · · · · · · · · · · · · · · ·
	<u> </u>							,
								
								·····
inal:							Ferrous	
Time	рΗ	SC	Temp	Eh-ORP	D.O.	Turbidity	Iron	Vol Evac. Comments/Flow r
1165	743	2180	192					15
								A
COMMENT	's:_ <u>₩</u>	ellt		not c	lea	~ w	n n	roduced V fin
Sa		1 m		il.	. C	an I	1 no	+ bail down
Cher	Z.	1 90	nd	no	due	e		
<u> </u>			09	/				
INSTRUMEN	ITATION	l: pH	Meter	⊉		Temp	erature Met	er 🙀
		Conductivity	Monitor [Meter]	니 뒷			Uth	er [_]
Water Dispo	$ \mathbf{k} $	LITZ	1110101 [····				1
Sample ID		12	Sa	mple Time		B		
		- <u></u>				U		
		J Anions			NITILE		imonia 📋	
	_							
Total Phosp	norus 厂			🛛		🛛		O

I

| | |

ł

E

í

WELL DEVELOPMENT AND SAMPLING LOG

							. <u> </u>	<u> </u>		
Project No:				Projec	t Name: 🗲	BG.	rank	_ Client:	MW	H
Location: \dot{H}	esamer	4	AWell N	lo:	H2-4-	TMW-	Develo		Sampling	Z
Project Man	ager/	mJ	-N-		_ Date _ 2	3.13 03	Start Tim	e <u>0936</u>	Weather	803
Depth to Water 17 22 Depth to Product Product Thickness Measuring Point TOC										
Water Colur	nn Heigh	nt <u>6</u>	88	Well Dia	_2"	=				
Sampling M	lethod:	Subm	nersible l	Pump 🛛	Centrifug	al Pump [] Peristatt	ic Pump 🗋	Other 🔲	
		Botto	m Valve	Bailer D	Double C	Check Val	ve Bailer 🗌	Stainless	Steel Kemm	erer 🗋
Criteria: 31	to 5 Casi	ng Vol	lumes of	Water F	Removal 🖪	Sabiliza	tion of Indic	ator Param	eters 24 Oth	19r
Gal/ft x f	Gal/ft x ft of water Gallops Gal/oz to be removed									
6.88	*-16		/.	-1 x	3				3.3	
Time (military)	рH	; (umh	SC Ios/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	C	comments/ Flow rate
0941	763	25	30	70				.25	cheen	
	TZC	5 24	30	191	<u> </u>	<u> </u>	<u></u>	15	Silta	Sheen
	750	20	260	187				175		Ŋ
	729	20	010	181	<u></u>		·	/	- 11	n
	739	22	230	180	,			2	н	17
	743	10	40	182				3	_ Sith	No Sheen
1013	14	10	330	181			·		"	н
<u></u>										<u></u>
					<u> </u>				<u> </u>	
<u> </u>								- <u></u>		
			<u></u>						·	
							<u></u>			<u> </u>
		·						<u> </u>		
		·		<u> </u>			<u> </u>			<u></u>
Final:								Former		
Time	pН		SC	Temp	Eh-ORP	D.O.	Turbidity	fron	Vol Evac.	Comments/Flow rate
1013	744	19	30	181						
COMMEN	rs:	Ma	kis	400	d us	ter			······	
<u></u>										
INSTRUME	NTATION	v:	DΗ	Meter I	V		Temp	erature Met	er 🔟	
		-	DON	Ionitor	<u></u>		P ,	Oth	er 🔲	
		Con	ductivity	Meter [¥					
Water Dispo	sal	Jin	a MI	110-	mple Time	107	<u>م</u>		····	
	CM Ken	1 <u>0 4</u> 1.	4 111U	∠~ 7 5a		100	BT			
TDS 🔲 🤉	Cations		Anions		litrate	Nitrite		monia 📋		IM WQCC Metals
Total Phosp	horus []					0			
MS/MSD			BD	··	BD	Name/Ti	me			TB 1308051 BC

h

П

d,

1

ATTACHMENT 3

GEOLOGIC BORELOG AND WELL COMPLETION DIAGRAM HAMMOND 41A, TMW-1

MONITORING WELL LOG FORM Project: Amage Project No: Long Well Date Drilled: \$16103 Date Completed: \$16103 Logged By: L. Senally Boring ID: TMUI BORING LOCATION Northing: Easting: Ground Surface Elevation (ft.): Vell X Measuring Point (MP) Elevation (ft.): Water Elevation (ft.): MP is Top of PVC Casing Datum: NGVD (1929) Date Measured: Drilling Contractor: Envirefeith 27.9 Total Depth (ft.): Drilling Method: Diameter (in.) 80' 2 H-54 7 آكاهر Slot Size 0.10 Screen: Diameter Depth Casing: Diameter 2 * Length Type · ~~ Cement Grout Seal Bentonite Seal Sand USCS/ASTM CLASSIFICATION ELEVATION (FEET) GRAIN SIZE MAX. PID READING (ppm) DEPTH (FEET) BLOWS (6 IN.) SAMPLE TYPE GRAPHIC LOG SAMPLE RECOVERY GRAVEL % SAND % FINES LITHOLOGIC DESCRIPTION (USCS name; color; size and angularity of each component or plasticity; density; moisture content; additional facts) 0-5 Sundy Silf light brown 5 5-10 smol w/ little silt light brown C 10 SAND N/fingvarels 10-15 Light brown C 15 17 ground water, SAND T 15-20 SHND w/ Sono Grand Gray 70 20-25 SAND 1/ 50-6020 Growel Gray C 15 25-27 SANDY Clay Grey Well set at 27.9 bgs 130 C ġ California Split Spoon Sampler (2.5" I.D.) • C ROJECT Standard penetration test sampler S Cuttings С ¥ Elevation of ground water PAGE 1 OF

