

3R - 228

REPORTS

DATE:

2002

Certified Mail: #7001 1940 0002 1371 7676

February 28, 2003

RECEIVED

MAR 05 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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

RE: 2002 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 30 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

EPFS has organized the 30 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 30 reports submitted, EPFS is requesting closure of three sites located on Navajo lands. Of the three Navajo sites submitted for closure OCD has closed the Charley Pah #4 and the John Charles #8. The Rementa et al #1 has not been closed by either agency and EPFS reiterates request for closure of this site. EPFS understands closure of groundwater sites on Navajo land 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.

Three additional sites were submitted for closure in 2002. EPFS recently has received closure on the W.D. Heath B-5. Closure approval is pending on the D Loop Line Drip and Hammond # 41A. All of these sites are included in the 2002 Annual Report.

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 # 7001 1940 0002 1371 7669**
Mr. Bill Liesse, BLM - w / enclosures (federal sites only), **Certified Mail # 7001 1940 0002 1371 7652**



RECEIVED

MAR 05 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

El Paso Field Services

**San Juan Basin Pit Program
Groundwater Sites Project**

**2002 Annual Report
Federal Sites (Volume 1)**

March 2003



MWH

10619 South Jordan Gateway, Suite 100
Salt Lake City, Utah 84095

EL PASO FIELD SERVICES ANNUAL GROUNDWATER REPORT

FEDERAL SITES VOLUME I

TABLE OF CONTENTS

Site Map

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	P
89620	Sandoval GC A #1A	30N	09W	35	C
87493	W D Heath B-5	30N	09W	31	M
LD151	Lat 0-21 Line Drip	30N	09W	12	O
73220	Fogelson 4-1 Com. #14	29N	11W	4	P
97213	Hamner #9	29N	09W	20	A
72890	Ohio C Government #3	28N	11W	26	P
LD169	D Loop Line Drip	28N	08W	33	I
LD174	LAT LD 40	28N	04W	13	H
89894	Hammond #41A	27N	08W	25	O
94810	Miles Fed 1A	26N	07W	5	F
LD072	K27 LD072	25N	06W	4	E
87640	Canada Mesa #2	24N	06W	24	I



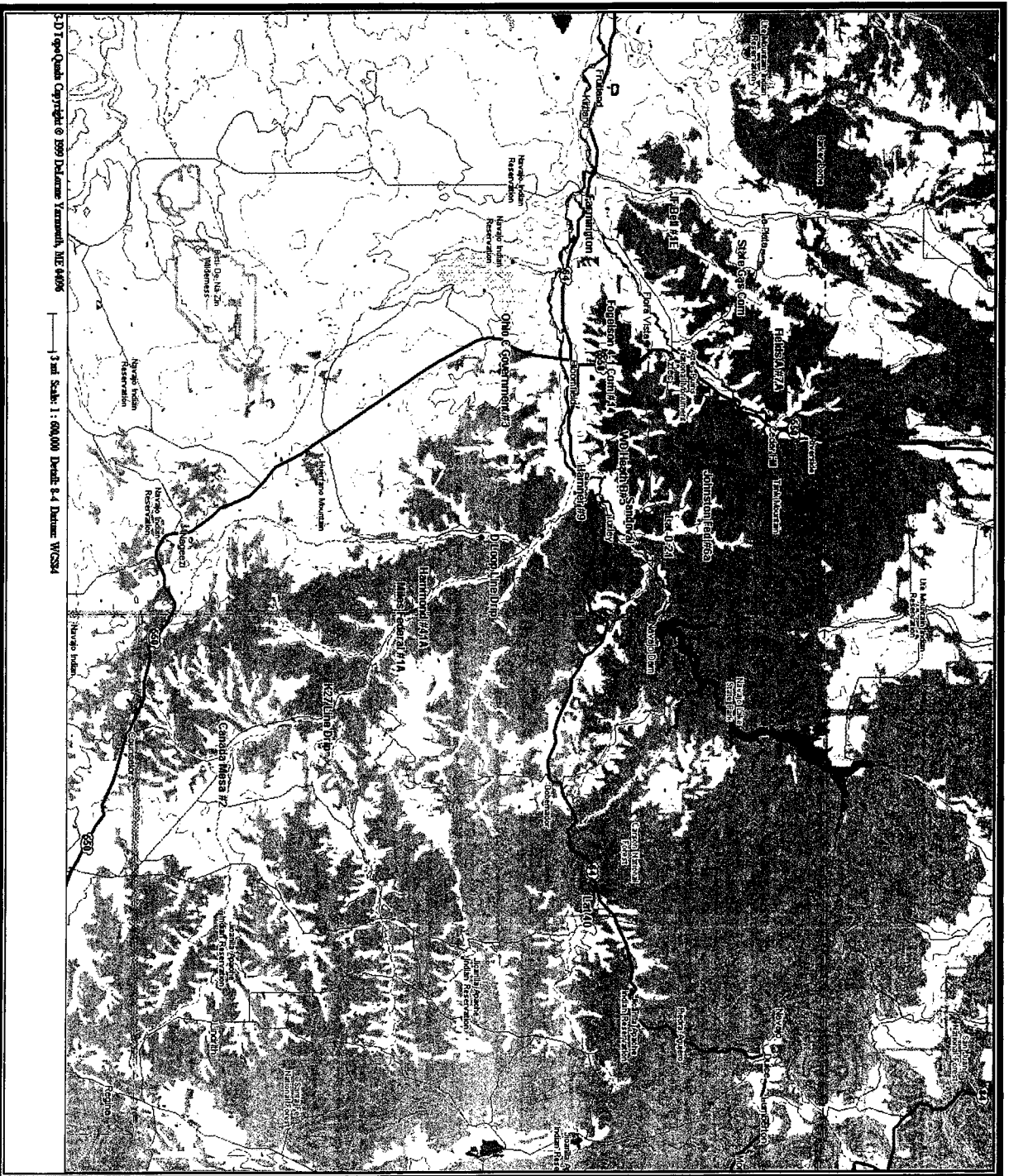
MWH

MONTGOMERY WATSON HARZA

ACRONYMS

B	Benzene
E	Ethylbenzene
EPFS	El Paso Field Services
ft	foot/feet
GWEL	groundwater elevation
ID	identifier
MW	Monitoring Well
PSH	Phase Separated Hydrocarbons
NMWQCC	New Mexico Water Quality Control Commission
T	Toluene
TOC	Top Of Casing
NE	not established
NS	not sampled
ORC	oxygen release compound
OCD	Oil Conservation Division
ppb	parts per billion
µg/L	micrograms per liter
X	Total Xylenes

Federal Groundwater Site Map



**EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT**

**Ohio C Government #3
Meter Code: 72890**

SITE DETAILS

LEGAL DESCRIPTION: Twn: 28N Rng: 11W Sec: 26 Unit: P
NMOCD Haz Ranking: 40 **Land Type:** Federal **Operator:** Marathon Oil Co.

PREVIOUS ACTIVITIES

Site Assessment: 9/94	Excavation: 9/94	Soil Boring: 9/95
Monitor Well: 9/97	Geoprobe: 11/96	Additional MWs: 11/99
Downgradient MWs: 11/99	Replace MW: NA	Quarterly Initiated: 6/97
ORC Nutrient Injection: NA	Re-Excavation: 9/95	PSH Removal Initiated: NA
Annual Initiated: NA	Quarterly Resumed: NA	

SUMMARY OF 2002 ACTIVITIES

MW-1: Quarterly water level monitoring was performed during 2002.

MW-2: Quarterly water level monitoring was performed during 2002.

MW-3: Quarterly water level monitoring was performed during 2002.

MW-4: Quarterly water level monitoring was performed during 2002.

MW-5: Quarterly groundwater sampling was performed during 2002 with the exception of June 2002.

Site-Wide Activities: No other activities were performed at this site during 2002.

SUMMARY TABLES AND GRAPHS

- Analytical data is summarized in Table 1 and presented graphically in Figure 4.
- Laboratory reports are included in Attachment 1.
- Field documentation is included in Attachment 2.

SITE MAP

Site maps are attached as Figures 1 through 3.

**EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT**

**Ohio C Government #3
Meter Code: 72890**

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2002.

DISPOSITION OF GENERATED WASTES

No wastes were generated at this site during 2002.

ISOCONCENTRATION MAPS

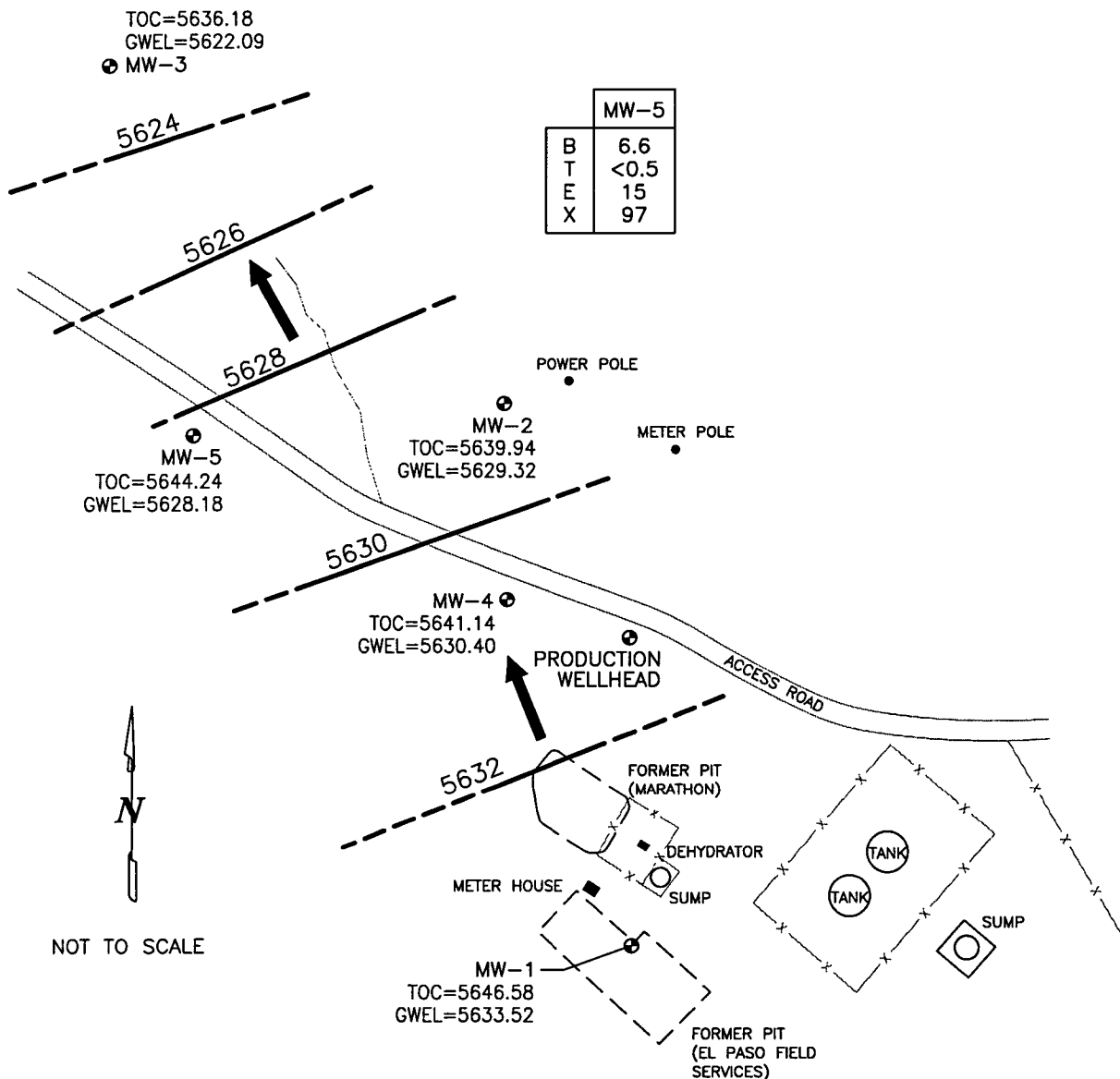
No isoconcentration maps were prepared for this site, however, the attached site maps present both potentiometric surface and analytical data collected during 2002.

CONCLUSIONS

- Analytical results for MW-5 have continued to be below closure criteria during 2002. This well requires one additional quarterly sample with results below 10 µg/l to be eligible for closure.

RECOMMENDATIONS

- EPFS will collect closure samples at all monitoring wells at this site (MW-1 through MW-5) during March 2003.
- If the March 2003 sample results are below closure standards, a closure request will be submitted.
- Following approval for closure, all monitoring wells will be abandoned in accordance with the approved EPFS Monitoring Well Abandonment Plan.



MW-5	
B	6.6
T	<0.5
E	15
X	97

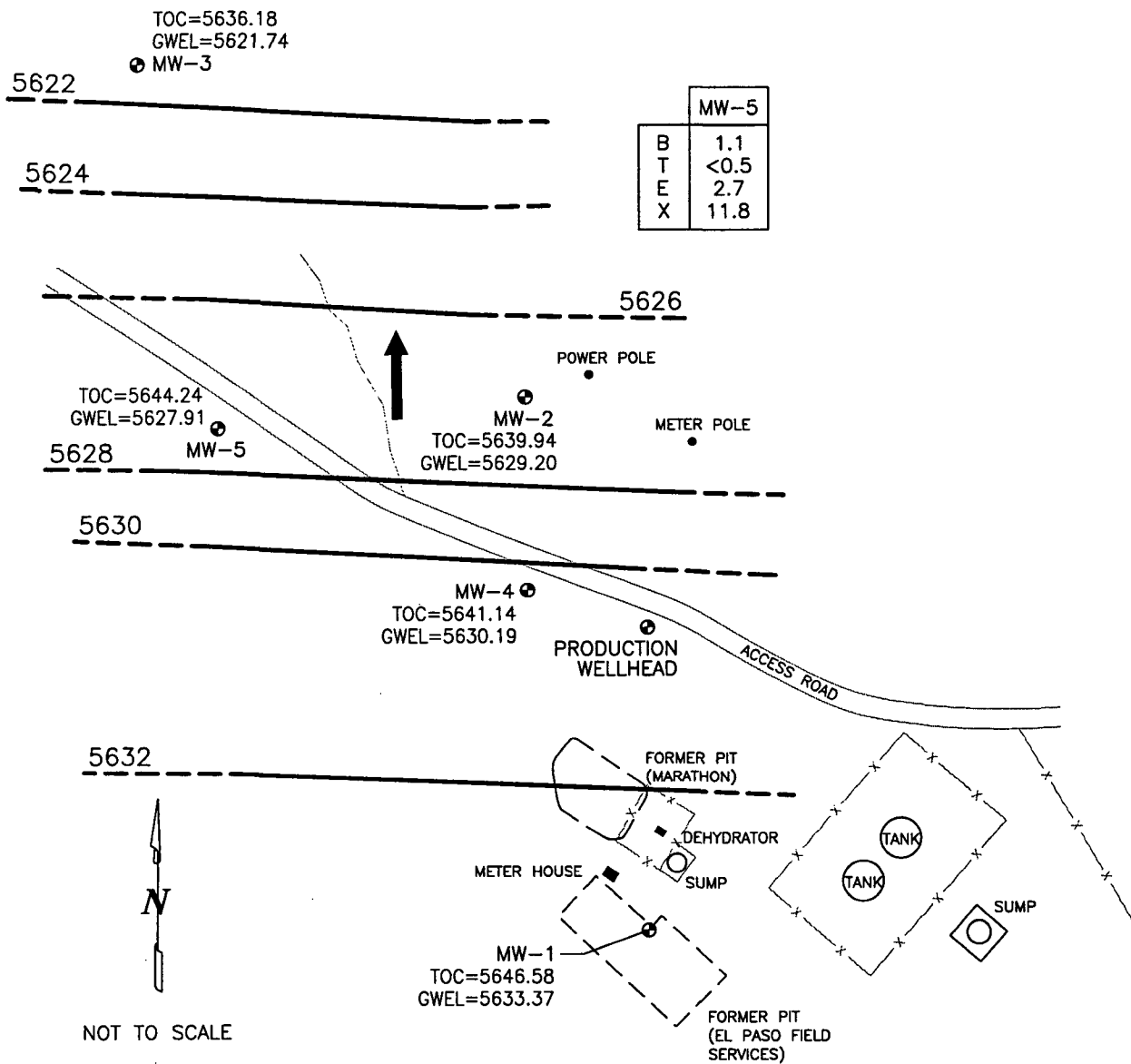
LEGEND

● MW-1	Approximate Monitoring Well Location and Number	5628	Potentiometric Surface (Approximate & Assumed Where Dashed)
— x — x —	Fence Line	→	Direction of Groundwater Flow (Estimated)
B	Benzene ($\mu\text{g/L}$)	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
T	Toluene ($\mu\text{g/L}$)	TOC	Top of Casing
E	Ethylbenzene ($\mu\text{g/L}$)		
X	Total Xylenes ($\mu\text{g/L}$)		

OHIO "C" GOVERNMENT 3, METER 72890
MARCH, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1



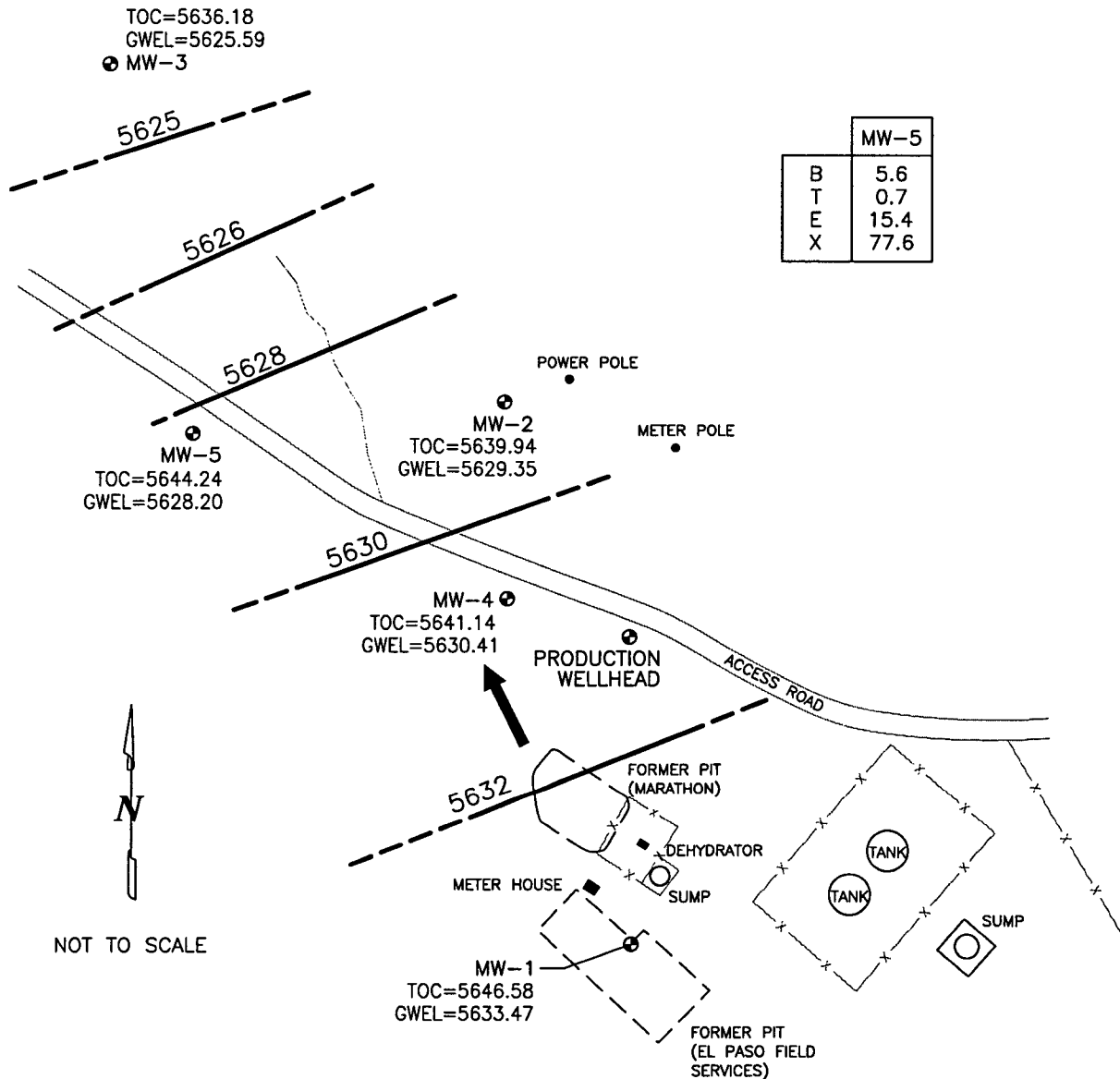
LEGEND

⊕ MW-1	Approximate Monitoring Well Location and Number	5628	Potentiometric Surface (Approximate & Assumed Where Dashed)
— x — x —	Fence Line	→	Direction of Groundwater Flow (Estimated)
B	Benzene (μg/L)	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
T	Toluene (μg/L)	TOC	Top of Casing
E	Ethylbenzene (μg/L)		
X	Total Xylenes (μg/L)		

OHIO "C" GOVERNMENT 3, METER 72890
SEPTEMBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2



MW-5	
B	5.6
T	0.7
E	15.4
X	77.6

LEGEND

● MW-1	Approximate Monitoring Well Location and Number	5628	Potentiometric Surface (Approximate & Assumed Where Dashed)
—x—x—	Fence Line	→	Direction of Groundwater Flow (Estimated)
B	Benzene (μg/L)	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
T	Toluene (μg/L)	TOC	Top of Casing
E	Ethylbenzene (μg/L)		
X	Total Xylenes (μg/L)		

OHIO "C" GOVERNMENT 3, METER 72890
DECEMBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

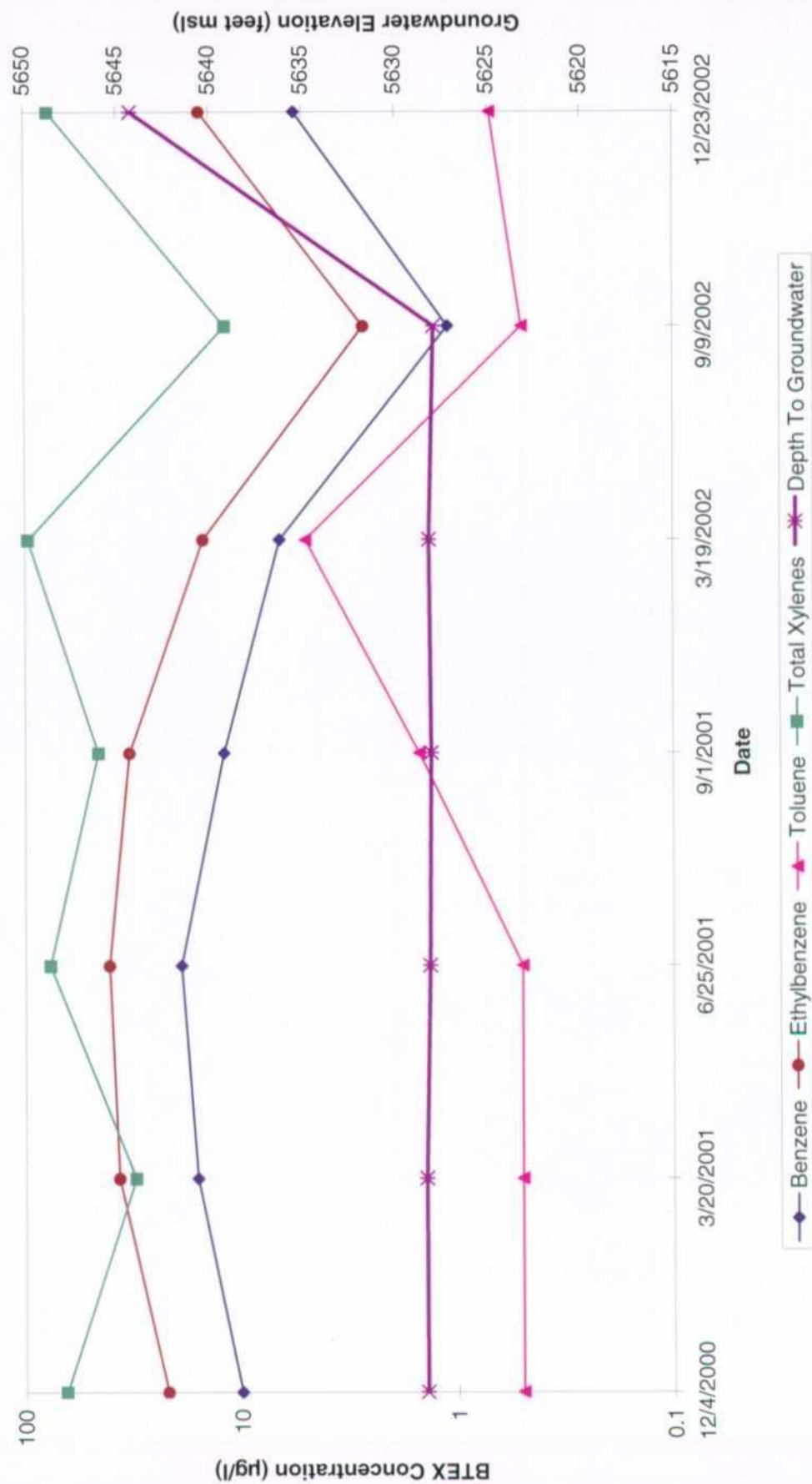
FIGURE 3

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
OHIO C GOVERNMENT #3 (METER #72890)
(Page 1 of 1)

Sample Identification	Sample Date	MW Identification	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	m,p-Xylene (µg/l)	o-Xylene (µg/l)	Total Xylenes (µg/l)
OHI-0203-MW5	3/19/02	5	6.60	<5.00	15.00	NA	NA	97.00
02-4813-2	9/9/02	5	1.10	0.50	2.70	7.80	4.00	11.80
02-6831-4	12/23/02	5	5.60	0.70	15.40	59.00	18.60	77.60

Figure 4
 BTEX Concentration and Groundwater Elevation vs. Time
 Ohio C Government #3 (Meter #72890)
 MW-5



ATTACHMENT 1
LABORATORY REPORTS

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) Sample Collection Date(s): 12/23-24/02

Laboratory: APCL

MWH Job Number: EPC-SJRB
(Groundwater)

Batch Identification: 02-06831

Matrix: Water

MS/MSD Parent(s)^(a): 02-06831-05

Field Replicate Parent(s): None

Validation Complete:

Brian D. Bittans 1-16-03
(Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	Jennepah MW-1	02-06831-01	Y	B B B B B	Benzene @ 27.4 µg/l Ethylbenzene @ 62.5 µg/l Toluene @ 67.1 µg/l o-Xylene @ 210 µg/l m/p-Xylene @ 128 µg/l
1	GW	Canada Mesa MW-2	02-06831-02	Y	B B UB UB B	Benzene @ 12.1 µg/l Ethylbenzene @ 129 µg/l Toluene @ 2.1 µg/l o-Xylene @ 2.4 µg/l m/p-Xylene @ 14 µg/l
1	GW	Canada Mesa MW-3	02-06831-03	Y	B B B B B	Benzene @ 1,430 µg/l Ethylbenzene @ 483 µg/l Toluene @ 95 µg/l o-Xylene @ 169 µg/l m/p-Xylene @ 2,190 µg/l
1	GW	Ohio "C" Govt #3 MW-5	02-06831-04	Y	B B UB B B	Benzene @ 5.6 µg/l Ethylbenzene @ 15.4 µg/l Toluene @ 0.7 µg/l o-Xylene @ 18.6 µg/l m/p-Xylene @ 59 µg/l
1	QC	TB02101501	02-06831-05	Y		Benzene @ 0.3T µg/l Ethylbenzene @ 1.5 µg/l Toluene @ 0.5 µg/l o-Xylene @ 0.5 µg/l m/p-Xylene @ 2.4 µg/l

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

Montgomery Watson Harza

Attention: Brian Butters.

10619 South Jordan Gateway

Salt Lake City UT 84095

Tel: (801)617-3200 Fax: (801)617-4200

APCL Analytical Report

Service ID #: 801-026831

Collected by: Delbert Belcis.

Collected on: 10/15-12/24/02

Received: 12/26/02

Extracted: N/A

Tested: 12/26-31/02

Reported: 01/03/03

Sample Description: Water

Project Description: 220013

San Juan River Basin

Groundwater

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Results	
				MW-1	MW-2
				02-06831-1	02-06831-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	27.4	12.1
ETHYLBENZENE	8021B	µg/L	0.5	62.5	129
TOLUENE	8021B	µg/L	0.5	67.1	2.1
O-XYLENE	8021B	µg/L	0.5	210	2.4
M,P-XYLENE	8021B	µg/L	1	128	14

Component Analyzed	Method	Unit	PQL	Analysis Results	
				MW-3	TB02101501
				02-06831-3	02-06831-5
BTXE					
Dilution Factor				5	1
BENZENE	8021B	µg/L	0.5	1,430	0.3J
ETHYLBENZENE	8021B	µg/L	0.5	483	1.5
TOLUENE	8021B	µg/L	0.5	95	0.5
O-XYLENE	8021B	µg/L	0.5	169	0.5
M,P-XYLENE	8021B	µg/L	1	2,190	2.4

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau

Laboratory Director

Applied P & Ch Laboratory

DATA VALIDATION WORKSHEET

(Page 2 of 2)

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

Laboratory: APCL Batch Identification: 02-06831

Validation Criteria								
Sample ID	Jennepah MW-1	Canada Mesa MW-2	Canada Mesa MW-3	Ohio "C" Govt #3 MW-5	TB 02101501			
Lab ID	02-06831-01	02-06831-02	02-06831-03	02-06831-04	02-06831-05			
Holding Time	A	A	A	A	A			
Analyte List	A	A	A	A	A			
Reporting Limits	A	A	A	A	A			
Method Blank	A	A	A	A	A			
Trip Blank	A ¹	A ¹	A ¹	A ¹	A ¹			
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A			
Initial Calibration	N	N	N	N	N			
Initial Calibration Verification (ICV)	N	N	N	N	N			
Continuing Calibration Verification (CCV)	A	A	A	A	A			
Laboratory Control Sample (LCS)	A	A	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	A			
Surrogate Spike Recovery	A	A	A	A	A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	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 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:

1) The following analytes were detected in the trip blank:

- Benzene @ 0.3T µg/L, qualify all sample concentrations less than or equal to 1.5 µg/L with a "UB" flag and all sample concentrations greater than 1.5 µg/l with a "B" flag.
- Ethylbenzene @ 1.5 µg/L, qualify all sample concentrations less than or equal to 7.5 µg/L with a "UB" flag and all sample concentrations greater than 7.5 µg/l with a "B" flag.
- Toluene @ 0.5 µg/L, qualify all sample concentrations less than or equal to 2.5 µg/L with a "UB" flag and all sample concentrations greater than 2.5 µg/l with a "B" flag.
- o-Xylene @ 0.5 µg/L, qualify all sample concentrations less than or equal to 2.5 µg/L with a "UB" flag and all sample concentrations greater than 2.5 µg/l with a "B" flag.
- m/p-Xylene @ 2.4 µg/L, qualify all sample concentrations less than or equal to 12 µg/L with a "UB" flag and all sample concentrations greater than 12 µg/l with a "B" flag.

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL QA/QC Report

Submitted to:

Montgomery Watson Harza
Attention: Brian Buttars
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-026831

Received: 12/26/02

Collected by: Delbert Belcis.

Tested: 12/26-31/02

Collected on: 10/15-12/24/02

Reported: 01/09/03

Sample description:

Water

Project: San Juan River Basin /220013

Analysis of Water

801-026831QC

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
BTXE												
Benzene	02G5133	100	97	N.D.	µg/L	18.0	86	80	80	1	68-130	31
Toluene	02G5133	100	103	N.D.	µg/L	70.0	88	80	80	0	66-133	33
Ethylbenzene	02G5133	100	105	N.D.	µg/L	18.0	95	78	78	0	65-134	35
m/p-Xylene	02G5133	200	98	N.D.	µg/L	70.0	91	79	79	0	65-134	35
o-Xylene	02G5133	100	99	N.D.	µg/L	25.0	89	79	80	1	65-134	35

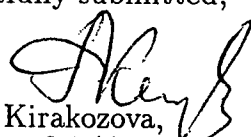
Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
BTXE												
Benzene	02G5174	100	98	N.D.	µg/L	18.0	76	79	78	1	68-130	31
Toluene	02G5174	100	105	N.D.	µg/L	70.0	77	79	80	1	66-133	33
Ethylbenzene	02G5174	100	107	N.D.	µg/L	18.0	83	77	77	1	65-134	35
m/p-Xylene	02G5174	200	100	N.D.	µg/L	70.0	79	79	78	1	65-134	35
o-Xylene	02G5174	100	100	N.D.	µg/L	25.0	78	76	76	0	65-134	35

*: LCS/LCSD is used.

Notation: ICV - Initial Calibration Verification
CCV - Continuation Calibration Verification
LCS - Lab Control Spike
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ICS - Interference Check Standard
MD - Matrix Duplicate
N.D. - Not detected or less than PQL

CCB - Continuation Calibration Blank
M-blank - Method Blank
SP Level - Spike Level
%Rec - Recovery Percent
%RPD - Relative Percent Differences
%Diff - Control Limit for %RPD
ICP-SD - ICP Serial Dilution
N.A. - Not Applicable

Respectfully submitted,


Regina Kirakozova,
Associate QA/QC Director
Applied P & Ch Laboratory

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 8021B

Client Name: Montgomery Watson Harza

Contract No:

Lab Code: APCL

Case No:

SAS No:

SDG Number: 026831

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Water

Batch No: 02G5133

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G5133-LCS-01	85	0
2		02G5133-LSD-01	82	0
3		02G5133-MB-02	87	0
4	MW-1	02-6831-1	120	0
5	MW-2	02-6831-2	105	0
6	MW-5	02-6831-4	96	0
7	TB02101501	02-6831-5	89	0
8	TB02101501	02-6831-5MS	89	0
9	TB02101501	02-6831-5MSD	88	0
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

QC Control Limit

S1 = 4-BROMO-FLUOROBENZENE (PID)

65-134

Column to be used to flag recovery values:

* - Values outside of contract required QC Limits

D - Surrogate diluted out

I - Matrix Interference

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 8021B

Client Name: Montgomery Watson Harza

Contract No:

Lab Code:

APCL

Case No:

SAS No:

Service ID:

026831

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix:

Water

Batch No: 02G5174

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G5174-LCS-01	82	0
2		02G5174-LSD-01	80	0
3		02G5174-MB-02	85	0
4	MW-3	02-6831-3	106	0
5	333-MW01-WG3	02-6870-1MS	82	0
6	333-MW01-WG3	02-6870-1MSD	83	0
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

S1 = 4-BROMO-FLUOROBENZENE (PID)

QC Control Limit

65-134

Column to be used to flag recovery values:

* - Values outside of contract required QC Limits

D - Surrogate diluted out

I - Matrix Interference

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

LABORATORY APCL
 Contract El Paso Corp., San Juan River Basin

Chain of Custody ID 021224 PB
 Page 1 of 1
 Air Bill No. 836381676760

MWH
 Phone (801) 617-3200 FAX (801) 617-4200
 MWH Contact Brian Butters
 Project Sanduan River Basin
 Project Number 220013
 Date Due 21 days
 Sampler's Name Delbert Belas
 (print clearly)

Phone (801) 617-3200 FAX (801) 617-4200																				
MWH Contract <u>Brian Butters</u>																				
Project <u>Sanduan River Basin</u>																				
Project Number <u>220013</u>																				
Date Due <u>21 days</u>																				
Sampler's Name <u>Delbert Belas</u> (print clearly)																				
Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix (a)	Sampling Technique (b)	ANALYSES REQUESTED													
GW- Jeneedah	MW-1		12/23/02	1125	W6	B	✓	BTEX SW-846 8021B												
GW- OHIC "c" bovt # 3	MW-5		12/23/02	1530	W6	B	✓	Alkalinity SM 2320B												
GW- Canada Mesa	MW-2		12/24/02	1205	W6	B	✓	TDS USEPA 160.1												
GW- Canada Mesa	MW-3		12/24/02	1125	W6	B	✓	NM WQCC Metals SW-846 6010B & 7470A												
1802101501			10/15/02				✓	Cations SW-846 6010B												
								Anions USEPA 300.0												
								Nitrate USEPA 300.0												
								Nitrite USEPA 300.0												
</																				

02331

(a) Matrix:
 SO - Soil
 WS - Surface Water
 WG - Ground Water

AA - Air
 WQ - Trip Blank/
 Equipment Blanks
 Grab=G
 Hand Auger=HA

(b) Sampling Technique:
 Submersible Pump=SP
 Bladder Pump=BP
 Bailor=B
 Wellhead Faucet=WF
 Hydropunch=HP

Location IDs:
 Groundwater Sites=GW
 Bist=BI
 Jaquez=JA

North Flare Pit=NF
 South Flare Pit=SF
 San Juan River Plant=SU

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Delbert Belas / 955E	Paul K	02-24-02	1410
		12/26/02	1000

LABORATORY USE ONLY

SAMPLES WERE:

- Shipped or hand delivered
Notes:
- Ambient or Chilled
Notes:
- Temperature _____
- Received Broken/Leaking (Improperly Sealed)
Notes:
- Properly Preserved
Notes:
- Received Within Holding Times
Notes:

COC Tape Was:

- Present on Outer Package
Y N NA
- Unbroken on Outer Package
Y N NA
- Present on Sample
Y N NA
- Unbroken on Sample
Y N NA

Discrepancies Between Sample Labels and COC Record?
Y N

Notes: N

DATA VALIDATION WORKSHEET



MWH Job Number: EPC-SJRB
(Ground Water)

Matrix: Water

Page: 1 of 2

1313 # 9-27-02
(Date/Signature)

[illegible]

APCL Analytical Report

Submitted to:

Montgomery Watson Harza

Attention: Brian Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-024813

Collected by: Ashley Lowe

Collected on: 09/09/02

Received: 09/11/02

Extracted: N/A

Tested: 09/13/02

Reported: 09/16/02

Sample Description: Water

Project Description: 4270032-020105 San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-1 GW Horton 1E	MW-5 GW Ohio Gov	TB02090901
				02-04813-1	02-04813-2	02-04813-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	167	1.1	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	2.4	2.7	0.9
TOLUENE	8021B	µg/L	0.5	49.9	0.5	0.4J
O-XYLENE	8021B	µg/L	0.5	1.7	4.0	<0.5
M,P-XYLENE	8021B	µg/L	1	11	7.8	0.9J

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

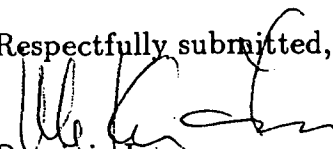
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,


Dominic Lau

Laboratory Director

Applied P & Ch Laboratory

DATA VALIDATION WORKSHEET

Analytical Method: SW-846 8021B (BTEX)

MWH Job Number:

EPC-SJRB
(Ground Water)

Laboratory: APCL

Batch Identification: 02-04813

Validation Criteria							
Sample ID	Horton 1E MW-1	Ohio Gov. MW-5					
Lab ID	02-04813- 01	02-04813- 02					
Hardcopy vs. Chain-of-Custody	A	A					
Holding Time	A	A					
Analyte List	A	A					
Reporting Limits	A	A					
Method Blank	A	A					
Trip Blank	A ¹	A ¹					
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)	A	A					
Laboratory Control Sample (LCS)	A	A					
Laboratory Control Sample Duplicate (LCSD)	N	N					
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A					
Surrogate Spike Recovery	A	A					
Retention Time Window	N	N					
Injection Time(s)	N	N					
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:

1) The following analytes were detected in the trip blank:

- Ethylbenzene @ 0.9 µg/L, qualify all sample concentrations less than or equal to 4.5 µg/L with a "UB" flag and all sample concentrations greater than 4.5 µg/L with a "B" flag.
- Toluene @ 0.4T µg/L, qualify all sample concentrations less than or equal to 2.0 µg/L with a "UB" flag and all sample concentrations greater than 2.0 µg/L with a "B" flag.
- m/p-Xylene @ 0.9T µg/L, qualify all sample concentrations less than or equal to 4.5 µg/L with a "UB" flag and all sample concentrations greater than 4.5 µg/L with a "B" flag.

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL QA/QC Report

Submitted to:

Montgomery Watson Harza
Attention: Brian Butters
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-024813

Collected by: Ashley Lowe

Collected on: 09/09/02

Sample description:

Water

Project: San Juan River Basin /4270032-020105

Received: 09/11/02

Tested: 09/13/02

Reported: 09/17/02

Analysis of Water

801-024813QC

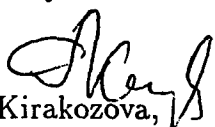
Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
BTXE												
Benzene	02G3843	100	99	N.D.	µg/L	18.0	85	85*	86*	2	65-129	31
Toluene	02G3843	100	100	N.D.	µg/L	7000	89	90	90	0	66-133	33
Ethylbenzene	02G3843	100	101	N.D.	µg/L	1800	97	96	94	2	65-134	35
m/p-Xylene	02G3843	200	94	N.D.	µg/L	7000	92	88	88	0	65-134	35
o-Xylene	02G3843	100	96	N.D.	µg/L	2500	91	97	94	4	65-134	35

*: LCS/LCSD is used.

Notation: ICV - Initial Calibration Verification
CCV - Continuation Calibration Verification
LCS - Lab Control Spike
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ICS - Interference Check Standard
MD - Matrix Duplicate
N.D. - Not detected or less than PQL

CCB - Continuation Calibration Blank
M-blank - Method Blank
SP Level - Spike Level
%Rec - Recovery Percent
%RPD - Relative Percent Differences
%Diff - Control Limit for %RPD
ICP-SD - ICP Serial Dilution
N.A. - Not Applicable

Respectfully submitted,


Regina Kirakozova,
Associate QA/QC Director
Applied P & Ch Laboratory

LABORATORY APCL
Contract El Paso Corp., San Juan River Basin

Phone (801) 617-3200 FAX (801) 617-4200

MWH Contact Brian Buttars

Project San Juan River Basin

Project Number 4270032-020105

Date Due 21 Days

Sampler's Name Ashley Lowe

700
100
100
100

Chain of Custody ID 020910AL01
Page 1 of 1
Air Bill No. 83415209748

Relinquished by/Affiliation		Received by/Affiliation		Date	Time
Ashley & Sonar THESE 14:00		[Signature] / APCL		07/10/12	14:00
				9/10/12	0830

⁽¹⁾ Matrix: SO - Soil WS - Surface Water WG - Ground Water		AA - Air WQ - Trip Blank/ Equipment Blanks WW - Wastewater	
⁽²⁾ Sampling Technique: Composite=C Grab=G Hand Auger=HA		Submersible Pump=SP Bladder Pump=BP Bailor=B Wellhead Faucet=WF Hydropunch=HP	
Location IDs: Groundwater Sites=GW Bist=BI Jaquez=JA		North Flare Pit=NF South Flare Pit=SF San Juan River Plant=SJ	
3 Present on Sample Y N		NA	
4 Unbroken on Sample Y N		NA	
Notes: Discrepancies Between Sample Labels and COC Record? Y N			

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 203085
April 10, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name OHIO C GOVT. #3
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 03/22/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

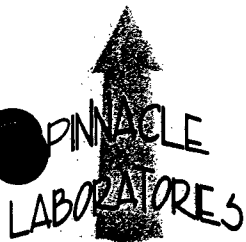
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 203085
PROJECT #	: 1517000121	DATE RECEIVED	: 03/22/02
PROJECT NAME	: OHIO C GOVT. #3	REPORT DATE	: 04/10/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
03085 - 01	OHI-0203-MW5	AQUEOUS	03/19/02
03085 - 02	TRIP BLANK	AQUEOUS	03/20/02



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : OHIO C GOVT. #3

PINNACLE I.D.: 203085

AMPLE			DATE	DATE	DATE	DIL.
. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	OHI-0203-MW5	AQUEOUS	03/19/02	NA	03/25/02	1
2	TRIP BLANK	AQUEOUS	03/20/02	NA	03/25/02	1

PARAMETER	DET. LIMIT	UNITS	OHI-0203-MW5	TRIP BLANK
ENZENE	0.5	UG/L	6.6	< 0.5
OLUENE	0.5	UG/L	< 0.5	< 0.5
THYLBENZENE	0.5	UG/L	15	< 0.5
OTAXYLENES	1.0	UG/L	97	< 1.0

URROGATE:

ROMOFLUOROBENZENE (%)

97

90

URROGATE LIMITS (80 - 120)

HEMIST NOTES:

/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203085
LABORATORY I. D.	: 032502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: OHIO C GOVT. #3		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
ORTHO XYLENES	UG/L	<1.0

UNSATURATED:
MONOFLUOROBENZENE (%) 86
UNSATURATED LIMITS: (80 - 120)
HIGHLIGHT NOTES:
/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203085
BATCH #	: 032502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: OHIO C GOVT. #3	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.2	91	17.9	90	2	(80 - 120)	20
TOLUENE	<0.5	20.0	18.2	91	17.1	86	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	17.9	90	16.8	84	6	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	55.6	93	52.3	87	6	(80 - 120)	20

ANALYST NOTES:

N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

EST : EPA 8021 MODIFIED
ISMSD # : 203085-01
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : OHIO C GOVT. #3

PINNACLE I.D. : 203085
DATE EXTRACTED : N/A
DATE ANALYZED : 03/25/02
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	6.63	20.0	23.9	86	24.4	89	2	(80 - 120)	20
OLUENE	<0.5	20.0	17.3	87	17.8	89	3	(80 - 120)	20
THYLBENZENE	15.2	20.0	31.4	81	32.6	87	4	(80 - 120)	20
TOTAL XYLENES	96.8	60.0	144	79	149	87	3	(80 - 120)	20

NOTES:

Due to concentration of Xylenes, recovery limits not applicable. LCS/LCSD data indicates sample data acceptable.

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{PD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

CHAIN OF CUSTODY

DATE: 3-20-02 PAGE: 1 OF 1

20308

PROJECT MANAGER: Lisa Winn COMPANY: AMEC ADDRESS: 2060 Afton place Farmington NM. 87401 PHONE: (505) 327-7928 FAX: (505) 326-5721 BILL TO: SCOTT POPE COMPANY: El Paso Field Services ADDRESS: 614 Raily AVE Farmington NM. 87401		SAMPLED DATE TIME MAT'L LAB ID OHL - Q003-MW 5 3-19-02 1410 H ₂ O 101 Trip Blank 3-20-02 1320 H ₂ O 102		ANALYSIS REQUEST			
Petroleum Hydrocarbons (418.1) TPH				8260 (TCL) Volatile Organics			
				8260 (Full) Volatile Organics			
				8260 (CUST) Volatile Organics			
				8260 (Landfill) Volatile Organics			
				Pesticides /PCB (608/8081/8082)			
				Herbicides (615/8151)			
				Base/Neutral/Acid Compounds GC/MS (625/8270)			
				Polynuclear Aromatics (610/8310/8270-SIMS)			
				General Chemistry:			
				Priority Pollutant Metals (13)			
				Target Analyte List Metals (23)			
				RCRA Metals (8)			
				RCRA Metals by TCLP (Method 1311)			
				Metals:			
				NUMBER OF CONTAINERS			

PROJECT INFORMATION PROJ. NO.: 157000121 PROJ. NAME: GFS GW project P.O. NO.: SHIPPED VIA: Greyhound		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS (RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK CERTIFICATION REQUIRED: ☐ NM ☐ SOWA ☐ OTHER METHANOL PRESERVATION ☐		COMMENTS: FIXED FEE ☐ OHIO C GOVT. #3 meter # (22950)		
SAMPLE RECEIPT NO. CONTAINERS: 3 CUSTOM SEAL: 101 RECEIVED IN: 105 SIGNATURE:		RECEIVED BY: LAB SIGNATURE: JIMMIE JIMMIE 0945 PRINTED NAME: JIMMIE JIMMIE DATE: 3-20-02		RECEIVED BY: LAB SIGNATURE: JIMMIE JIMMIE 0945 PRINTED NAME: JIMMIE JIMMIE DATE: 3-20-02		

DISTRIBUTION: White - P.I. Canary - Originator

LABOR WORLDWIDE ATT.NET

ATTACHMENT 2
FIELD DOCUMENTATION

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Ohio C 904 #3 Well No: MW-5 Development ☐ Sampling ☒
 Project Manager Delbert Beck Date 12-23-02 Start Time 1400 Weather cloudy
 Depth to Water 16.040 Depth to Product NA Product Thickness NA Measuring Point 70C
 Water Column Height 5.58 Well Dia. 4" ~~FD = 21.620~~ ^{DB} TD = 21.620

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
 Bottom Valve Bailer ☐ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐
 Criteria: 3 to 5 Casing Volumes of Water Removal ☐ Stabilization of Indicator Parameters ☐ Other ☐

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed					
	Gallons	Ounces						
Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
1425	7.5	2730	16.6				0.5	grayish black, oily
	7.64	2720	15.0				1 gal	film on top. odor
	7.50	2740	14.6				1.5	
	7.57	2680	13.9				2.0	
	7.53	2690	13.1				2.5	
	7.52	2650	12.8				3.0	
	7.49	2650	12.3					
	7.44	2800	13.1					
	7.49	2770	13.3					
	7.44	2800	13.1					
	7.44	2850	12.8					
	7.41	2870	12.5					
	7.43	2880	12.6					
	7.39	2950	12.5					
	7.37	2980	13.2					Continue on
	7.38	2960	12.3					next sheet

Final:
 Time pH SC Temp Eh-ORP D.O. Turbidity Ferrous Iron Vol Evac. Comments/Flow rate

COMMENTS: * sheet 1 of 2.
continue on next sheet.

INSTRUMENTATION: pH Meter ☐ Temperature Meter ☐
 DO Monitor ☐ Other ☐
 Conductivity Meter ☐

Water Disposal _____

Sample ID _____ Sample Time _____ BTEX ☐ VOCs ☐ Alkalinity ☐

TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB _____

WELL DEVELOPMENT AND SAMPLING LOG

Project No: _____ Project Name: _____ Client: _____

Location: _____ Well No: _____ Development ☐ Sampling ☐

Project Manager _____ Date _____ Start Time _____ Weather _____

Depth to Water _____ Depth to Product _____ Product Thickness _____ Measuring Point _____

Water Column Height _____ Well Dia. _____

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
1530	7.34	3050	12.9	/	/	/		10.5	Sample.

COMMENTS: at sample, color was grey to cloudy almost
clear.

INSTRUMENTATION: pH Meter ☒ _____ Temperature Meter ☒ _____
DO Monitor ☐ _____ Other ☐ _____
Conductivity Meter ☒ _____

Water Disposal KUTZ PLANT

Sample ID Ohio Govt #3 MW-5 Sample Time 1530 BTEX ☒ VOCs ☐ Alkalinity ☐

TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____

MS/MSD _____ BD _____ BD Name/Time _____ TB _____

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Delbert Bekis
Client Company: MWH
Site Name: 0110 C Government #3

Project No: 220613

Date: 12/24/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	1400	13.11	—	21.620	—	—	
MW-4	1405	10.73	—	20.90	—	—	
MW-2	1410	10.59	—	16.62	—	—	
MW-3	1415	14.33	—	21.44	—	—	
MW-5	1425	16.040	—	21.620	—	—	collected sample.

COMMENTS:

Signature:

Signature: Delbert Bekis

Date:

Date: 12/24/02

Chain of Custody ID C21274 PB
Page 1 of 1
Air Bill No. 834381676760

LABORATORY APCL
Contract El Paso Corp., San Jaun River Basin

Phone (801) 617-3200 FAX (801) 617-4200

Project San Juan River Basin

Date Due 21 days

Sampler's Name Deibert Bekis
(print clearly)

[illegible]



USA Airbill

8 81676760

1 From Please print and sign here
Date 12/24/02 Sender's FedEx Account Number 220929116

Sender's Name Delbert Belis Phone (505) 566-9116

Company AESE

Address 906 San Juan Blvd Suite D

City Farmington State N.M. ZIP 87401

2 Your Internal Billing Reference First 24 characters will appear on invoice. OPTIONAL

3 To Recipient's Name Eric Wendland Phone (909) 590-1828

Company APCL

Address 13760 Magnolia Ave

To "HOLD" at FedEx location, print FedEx address.

Address

City Chino State CA ZIP 91710

Try online shipping at fedex.com

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4a Express Package Service Packages up to 750 lbs. Delivery commitment may be later in some areas.
☒ FedEx Priority Overnight Next business morning
☐ FedEx Standard Overnight Next business afternoon
☐ FedEx First Overnight Delivery to select locations

☐ FedEx 2Day Second business day
☐ FedEx Express Saver Third business day
FedEx Envelope rates not available. Minimum charge: One-pound rate.

4b Express Freight Service Packages over 150 lbs. Delivery commitment may be later in some areas.
☐ FedEx 1Day Freight* Next business day
☐ FedEx 2Day Freight Second business day
☐ FedEx 3Day Freight Third business day
* Call for Confirmation

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☐ SATURDAY Delivery Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes.
☐ HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight.
☐ Does this shipment contain dangerous goods? One box must be checked.
☒ No ☐ Yes ☐ 109 kg (241 lbs) Dangerous Goods Declaration not required.
☐ Dry Ice Dry Ice 1, UN 1845
☐ Cargo Aircraft Only

7 Payment Bill for: Enter FedEx Acct. No. or Credit Card No. below.
☐ Sender Acct. No. in Section 3
☒ Recipient Third Party
☐ Credit Card
☐ Cash/Check
FedEx Acct. No. 1491-27-695
Credit Card No. 1491-27-695
Total Packages 1
Total Weight 1 lb
Total Declared Value* \$.00
FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.
By signing this Airbill you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

446

Rev. Date 10/01 • Per #17612 • ©1994-2001 FedEx • PRINTED IN U.S.A. WCS 02

Product Recovery and Well Observation Data

Project Name: San Juan River Basin

Project Manager: Ashley Lowe

Client Company: MWH

Site Name: Ohio C Government #3

Project No: 220013

Date: 9/9/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	15:47	13.212	—	21.620	—	—	
MW-4	15:56	10.948	—	20.895	—	—	
MW-2	16:00	10.742	—	16.645	—	—	
MW-5	16:08	16.330	—	21.645	—	—	sample collected
MW-3	16:45	14.443	—	21.465	—	—	

COMMENTS: _____

Signature: Wendy R. Rowe

Date: 09/09/02

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Ohio Govt #3 Well No: MW-5 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 9/9/02 Start Time 16:08 Weather 79° Cloudy
 Depth to Water 16.330 Depth to Product NA Product Thickness NA Measuring Point TOC
 Water Column Height 5.345' Well Dia. 4" TD 21.645

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
 Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐
 Criteria: 3 to 5 Casing Volumes of Water Removal ☒ Stabilization of Indicator Parameters ☐ Other or bail dry

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	
<u>0.65 x 5.345</u>	<u>3.5 x 3</u>		<u>10.42 gal</u>

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
<u>16:12</u>	<u>5.20</u>	<u>2800</u>	<u>29.4</u>				<u>0.5</u>	<u>light yellow-tan color</u>
	<u>5.14</u>	<u>2640</u>	<u>27.0</u>				<u>1.5</u>	<u>moderate odor, dirt</u>
	<u>5.11</u>	<u>2580</u>	<u>25.7</u>				<u>2.5</u>	<u>particles</u>
	<u>5.25</u>	<u>2680</u>	<u>23.2</u>				<u>3.5</u>	<u>dark brown, cloudy</u>
	<u>5.22</u>	<u>2600</u>	<u>21.7</u>				<u>4.5</u>	<u>some grass in water</u>
	<u>5.24</u>	<u>2580</u>	<u>21.2</u>				<u>5.5</u>	
	<u>5.26</u>	<u>2530</u>	<u>20.8</u>				<u>6.5</u>	
	<u>5.29</u>	<u>2550</u>	<u>20.2</u>				<u>7.5</u>	
	<u>5.29</u>	<u>2540</u>	<u>20.1</u>				<u>8.5</u>	
	<u>5.31</u>	<u>2550</u>	<u>20.2</u>				<u>9.5</u>	
	<u>5.31</u>	<u>2560</u>	<u>20.1</u>				<u>10.5</u>	

Final:
 Time 16:29 pH 5.31 SC 2560 Temp 20.1 Eh-ORP _____ D.O. _____ Turbidity _____ Ferrous Iron _____ Vol Evac. 10.5 gal Comments/Flow rate No preservative

COMMENTS: HCl preservative reacted w/CO₂ in water. Rinsed vials before filling.

INSTRUMENTATION: pH Meter ☒ _____ Temperature Meter ☒ _____
 DO Monitor ☐ _____ Other ☐ _____
 Conductivity Meter ☒ _____
 Water Disposal Kutz Plant
 Sample ID Ohio C Government #3 Sample Time 16:29 BTEX ☒ VOCs ☐ Alkalinity ☐
MW-5
 DS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ _____
 MS/MSD _____ BD _____ BD Name/Time _____ TB 18090901

LABORATORY APCL

Contract El Paso Corp., San Juan River Basin

PLAN

Phone (801) 617-3200 FAX (801) 617-4200

MTW Contact Brian Butters

Project San Juan River Basin

Project Number 42-70032-020105

Date Due 21 Days

Submitter's Name: Ashley Lowe

(print clearly)

Chain of Custody ID Q20910 AL-01

Page-

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CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

[illegible]

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

Chain of Custody ID 020910AL01
 Page 1 of 1
 Air Bill No. 834715209748

LABORATORY APCL
 Contract El Paso Corp., San Juan River Basin

MWH
 Phone (801) 617-3200 FAX (801) 617-4200
 MWH Contact Brian Butters
 Project San Juan River Basin
 Project Number 4270032-020105
 Date Due 21 Days
 Sampler's Name Ashley Lowe
 (print clearly)

LABORATORY USE ONLY		ANALYSES REQUESTED							Time Collected		Date Collected		Matrix (a)		Sampling Technique (b)		BTEX SW-846 80218		Alkalinity SM 2320B		TDS USEPA 160.1		NM WQCC Metals SW-846 6010B & 7470A		Cations SW-846 6010B		Anions USEPA 300.0		Nitrate USEPA 300.0		Nitrite USEPA 300.0		No Preservative						
SAMPLES WERE:	LABORATORY USE ONLY																																						
1 Shipped or hand delivered Notes:																																							
2 Ambient or Chilled Notes:																																							
3 Temperature																																							
4 Received Broken/Leaking (Improperly Sealed) Y N Notes:																																							
5 Properly Preserved Y N Notes:																																							
6 Received Within Holding Times Y N Notes:																																							
COC Tape Was:																																							
1 Present on Outer Packaging Y N NA																																							
2 Unbroken on Outer Package Y N NA																																							
3 Present on Sample Y N NA																																							
4 Unbroken on Sample Y N NA Notes:																																							
Discrepancies Between Sample Labels and COC Record? Y N Notes:																																							

(a) Matrix: AA - Air
 SO - Soil
 WS - Surface Water
 WG - Ground Water
 WQ - Trip Blank/
 Equipment Blanks
 WW - Wastewater
 Composite=C
 Grab=G
 Hand Auger=HA
 Submersible Pump=SP
 Bladder Pump=BP
 Bailor=B
 Wellhead Faucet=WF
 Hydropunch=HP
 Location IDs:
 Groundwater Sites=GW
 Bistl=BI
 Jaquez=JA
 North Flare Pit=NF
 South Flare Pit=SF
 San Juan River Plant=SJ

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
<u>Ashley Lowe / ASES</u>		<u>09/10/02</u>	<u>14:00</u>

Date 3/28/

amec

Project No.: LS17000121

Task: 2

Date: 3-19-02

Date: 3-19-02

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

ture:

Date: 3-19-02

