

3R - 207

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**



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MAR 05 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

El Paso Field Services

San Juan Basin Pit Program Groundwater Sites Project

2002 Annual Report Non-Federal Sites (Volume 2)

March 2003



MWH

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

EL PASO FIELD SERVICES ANNUAL GROUNDWATER REPORT

NON-FEDERAL SITES VOLUME II

TABLE OF CONTENTS

Site Map

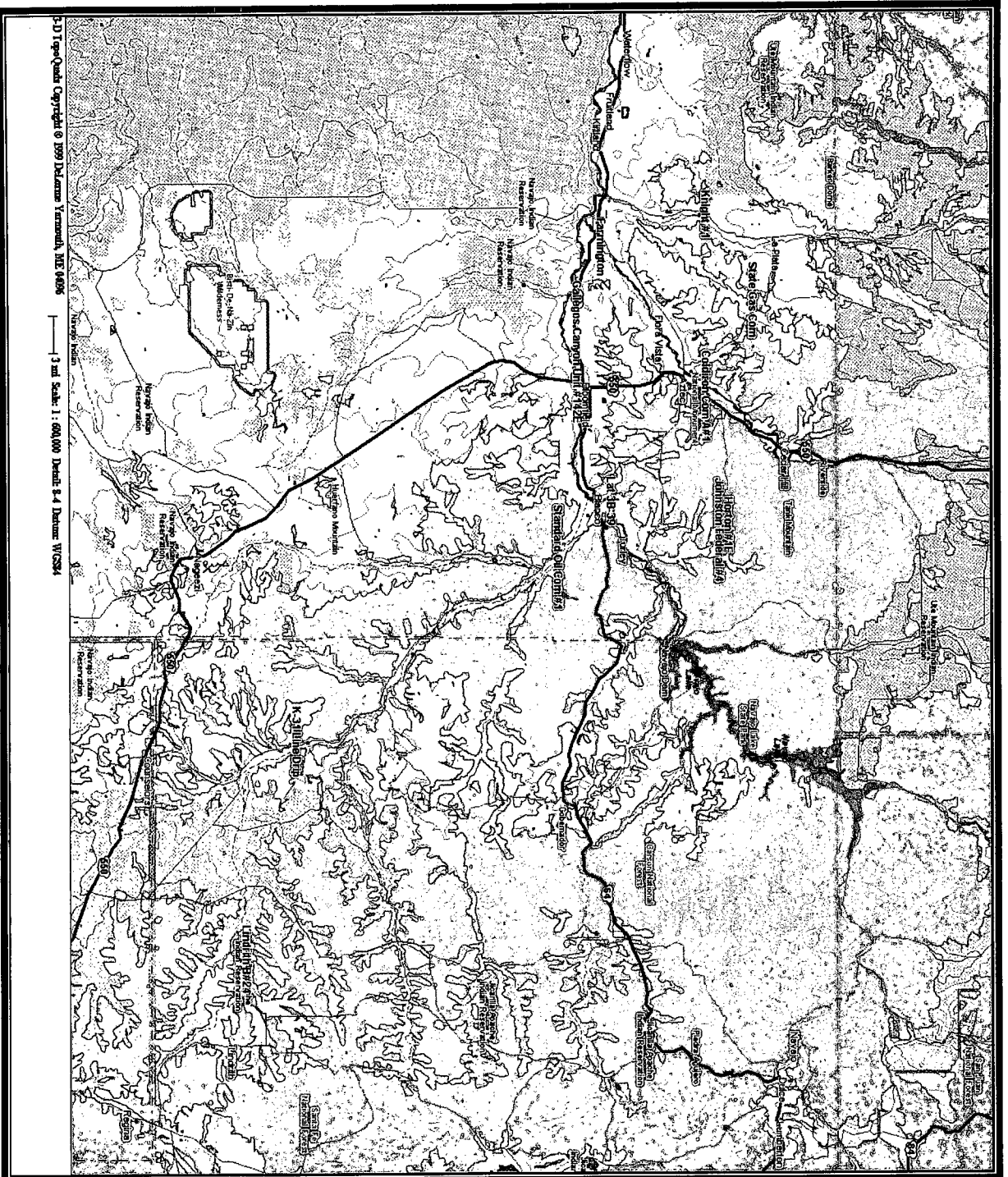
METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
71669	State Gas Com N #1	31N	12W	16	H
70194	Johnston Fed #4	31N	09W	33	H
93388	Horton #1E	31N	09W	28	H
72556	Knight #1	30N	13W	5	A
73551	Coldiron A #1	30N	11W	2	K
03906	GCU Com A #142E	29N	12W	25	G
70445	Standard Oil Com #1	29N	09W	36	N
LD146	Lat 3B-39 Line Drip	29N	09W	10	M
LD087	K-31 Line Drip	25N	06W	16	N
94967	Lindrith B #24	24N	03W	9	N



MWH

MONTGOMERY WATSON HARZA

Non - Federal Groundwater Site Map



**EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT**

**Knight #1
Meter Code: 72556**

SITE DETAILS

LEGAL DESCRIPTION: Twn: 30N Rng: 13W Sec: 5 Unit: A
NMOCD Haz Ranking: 30 **Land Type:** Fee **Operator:** Fuller Petroleum Inc.

PREVIOUS ACTIVITIES

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

SUMMARY OF 2002 ACTIVITIES

MW-1: This well was initially scheduled for semi-annual free-product recovery and water levels. However, beginning in September 2002, the site was rescheduled for quarterly site visits. Free-product recovery and water level measurements were collected in September and December 2002.

MW-2:

- Annual groundwater sampling (September) was performed during 2002.
- Quarterly water level measurements were initiated in September 2002.

MW-3: This well was initially scheduled for semi-annual free-product recovery and water levels. However, beginning in September 2002, the site was rescheduled for quarterly site visits. Free-product recovery and water level measurements were collected in September and December 2002.

MW-4:

- Annual groundwater sampling (September) was performed during 2002.
- Quarterly water level measurements were initiated in September 2002.

MW-5:

- Annual groundwater sampling (September) was performed during 2002.
- Quarterly water level measurements were initiated in September 2002.

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

**EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT**

**Knight #1
Meter Code: 72556**

SUMMARY TABLES AND GRAPHS

- Analytical data are summarized on Table 1 and presented graphically in Figures 3 through 7.
- Free-product recovery data are summarized on Table 2 and presented graphically in Figures 8 and 9.
- Laboratory reports are presented in Attachment 1.
- Field documentation is presented in Attachment 2.

SITE MAP

Site maps are attached as Figures 1 and 2.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2002.

DISPOSITION OF GENERATED WASTES

All phase-separated hydrocarbons were disposed of at the EPFS Kutz Separator located in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

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

CONCLUSIONS

- The groundwater flow direction trends to the south/southeast.
- Free-product recovery efforts at MW-1 resulted in removal of approximately 0.08 gallons of free-phase hydrocarbons during 2002 bringing the cumulative total volume recovered to date to 0.23 gallons.
- Laboratory results from the annual sample collected at MW-2 during September indicated a benzene concentration of 269 µg/l which is an increase over the 2001 concentration of 110 µg/l.
- Free-product recovery efforts at MW-3 resulted in removal of approximately 0.09 gallons of free-phase hydrocarbons during 2002 bringing the cumulative total volume recovered to date to 0.61 gallons.
- Laboratory results from the annual sample collected at MW-4 during September indicated a benzene concentration of 261 µg/l which is an increase over the 2001 concentration of 140 µg/l.

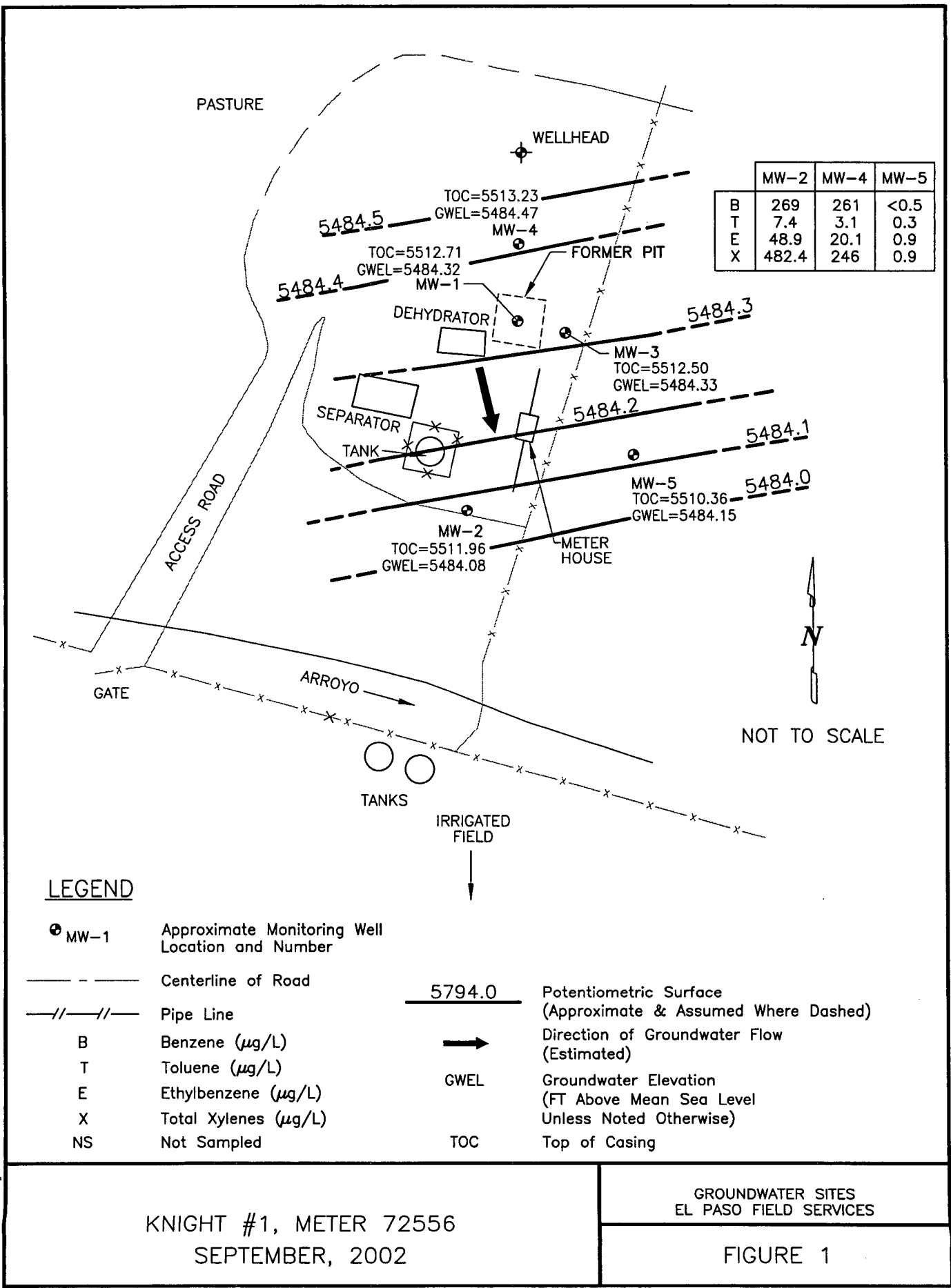
**EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT**

**Knight #1
Meter Code: 72556**

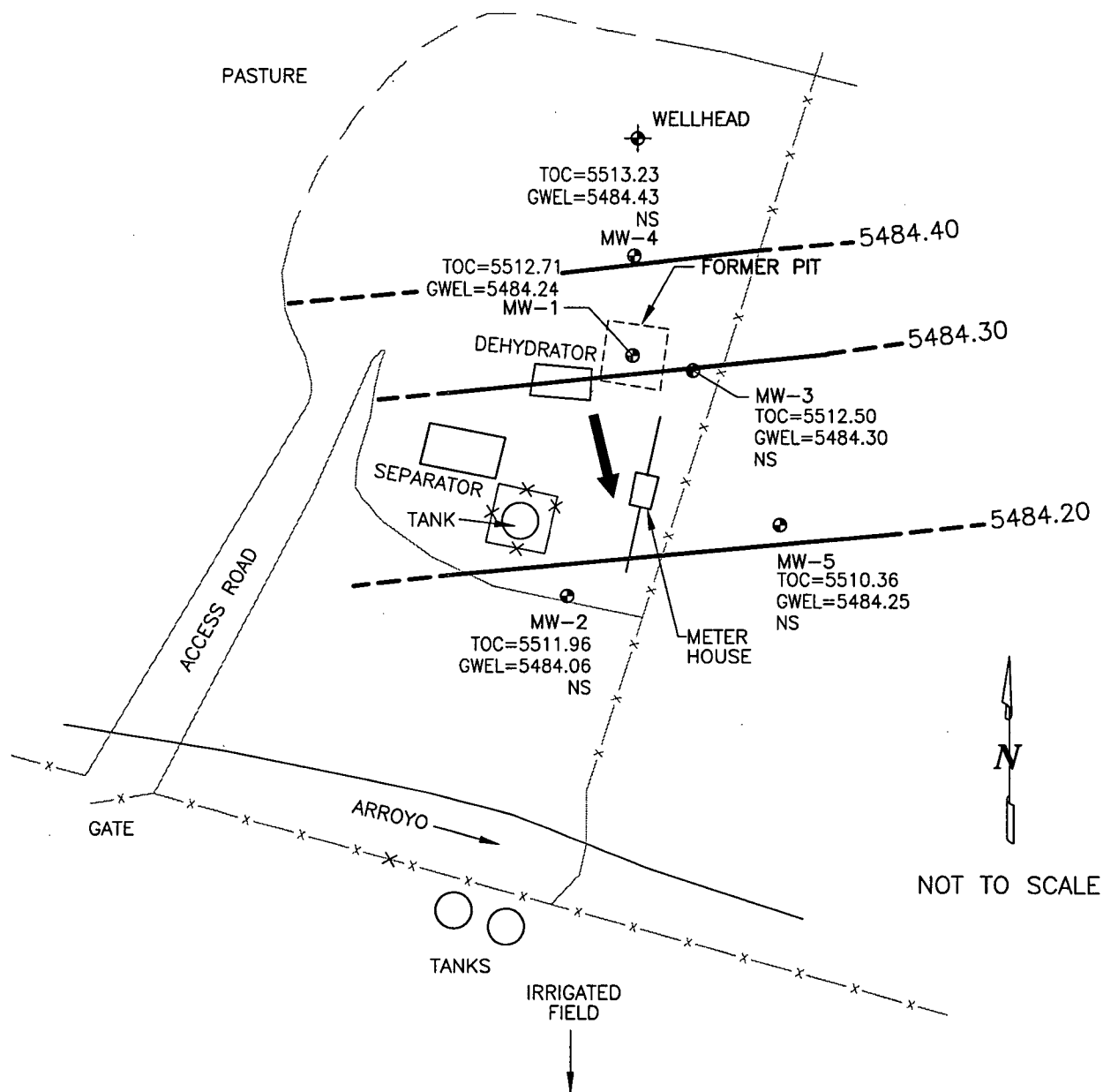
- Laboratory results from the annual sample collected at MW-5 during September indicated that BTEX concentrations remain significantly below closure criteria.

RECOMMENDATIONS

- EPFS will continue free-product recovery efforts at MW-1 and MW-3 on a quarterly basis.
- EPFS recommends redevelopment of monitoring wells MW-1 and MW-3 in an attempt to increase free-product recovery.
- EPFS will continue annual groundwater sampling and quarterly water level monitoring at MW-2 and MW-4 until the concentration of BTEX constituents approach closure criteria. These wells will then be scheduled for quarterly sample collection until closure criteria have been met.
- Because historical analytical data have indicated that BTEX concentrations are below or near detection limits at MW-5, EPFS recommends that this well not be sampled until closure. Water level monitoring at this well will continue on a quarterly basis.



knight_02.dwg



LEGEND

● MW-1	Approximate Monitoring Well Location and Number	→	Direction of Groundwater Flow (Estimated)
---	Centerline of Road	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
-//-/-	Pipe Line	TOC	Top of Casing
NS	Not Sampled		
<u>5794.0</u>	Potentiometric Surface (Approximate & Assumed Where Dashed)		

KNIGHT #1, METER 72556
DECEMBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
KNIGHT #1 (METER #72556)
(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)
02-4725-1	04-Sep-2002	2	269	7.40	48.9	475	7.40	482.40
02-4725-2	04-Sep-2002	4	261	3.10	20.10	246	0.50	246.50
02-4725-4	04-Sep-2002	5	<0.50	0.30	0.90	0.90	<0.50	0.90

Figure 3
 Historical BTEX Concentration and Groundwater Elevation vs. Time
 Knight #1 (Meter #72556)
 MW-1

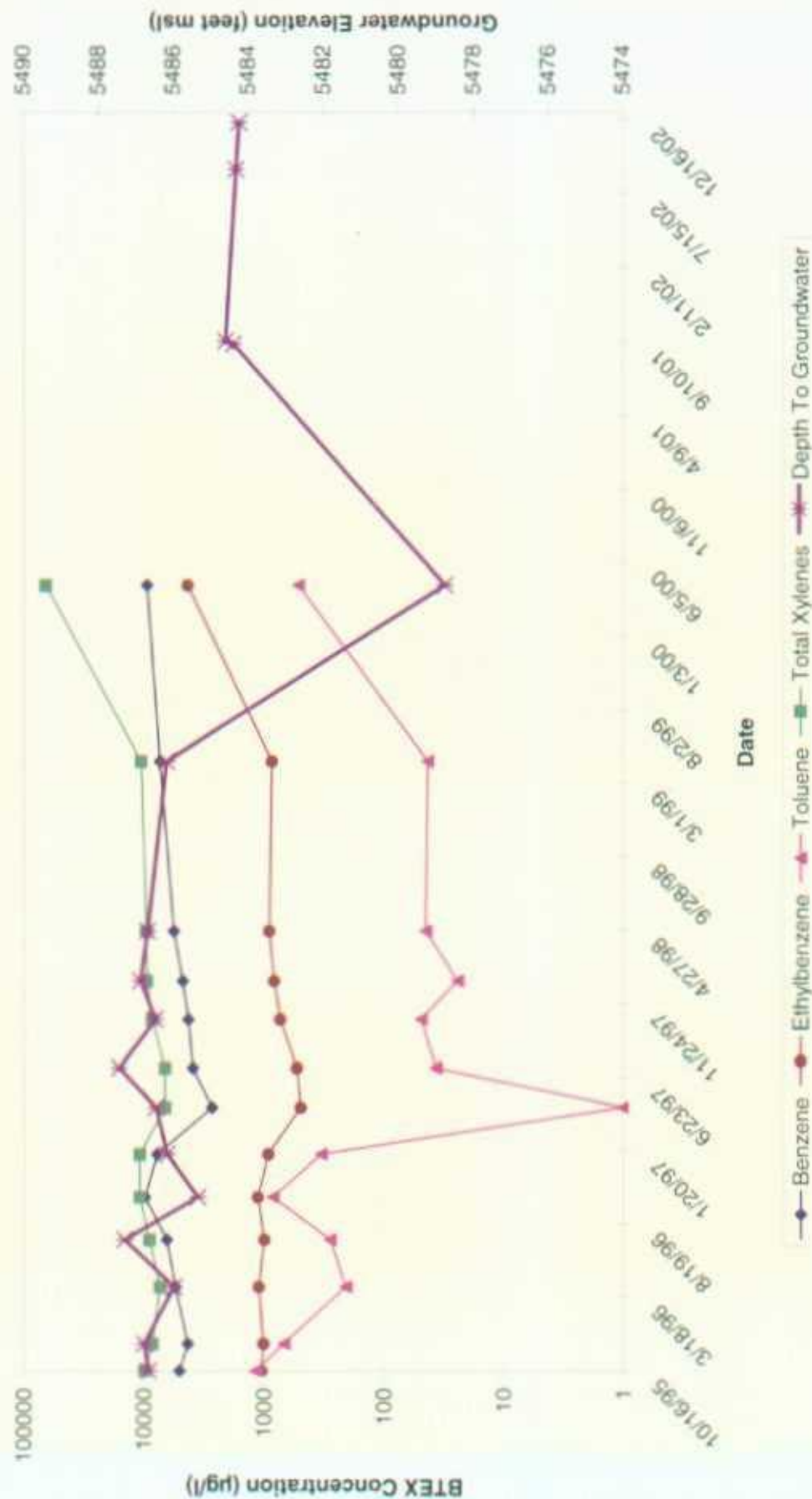


Figure 4
 BTEX Concentration and Groundwater Elevation vs. Time
 Knight #1 (Meter #72556)
 MW-2

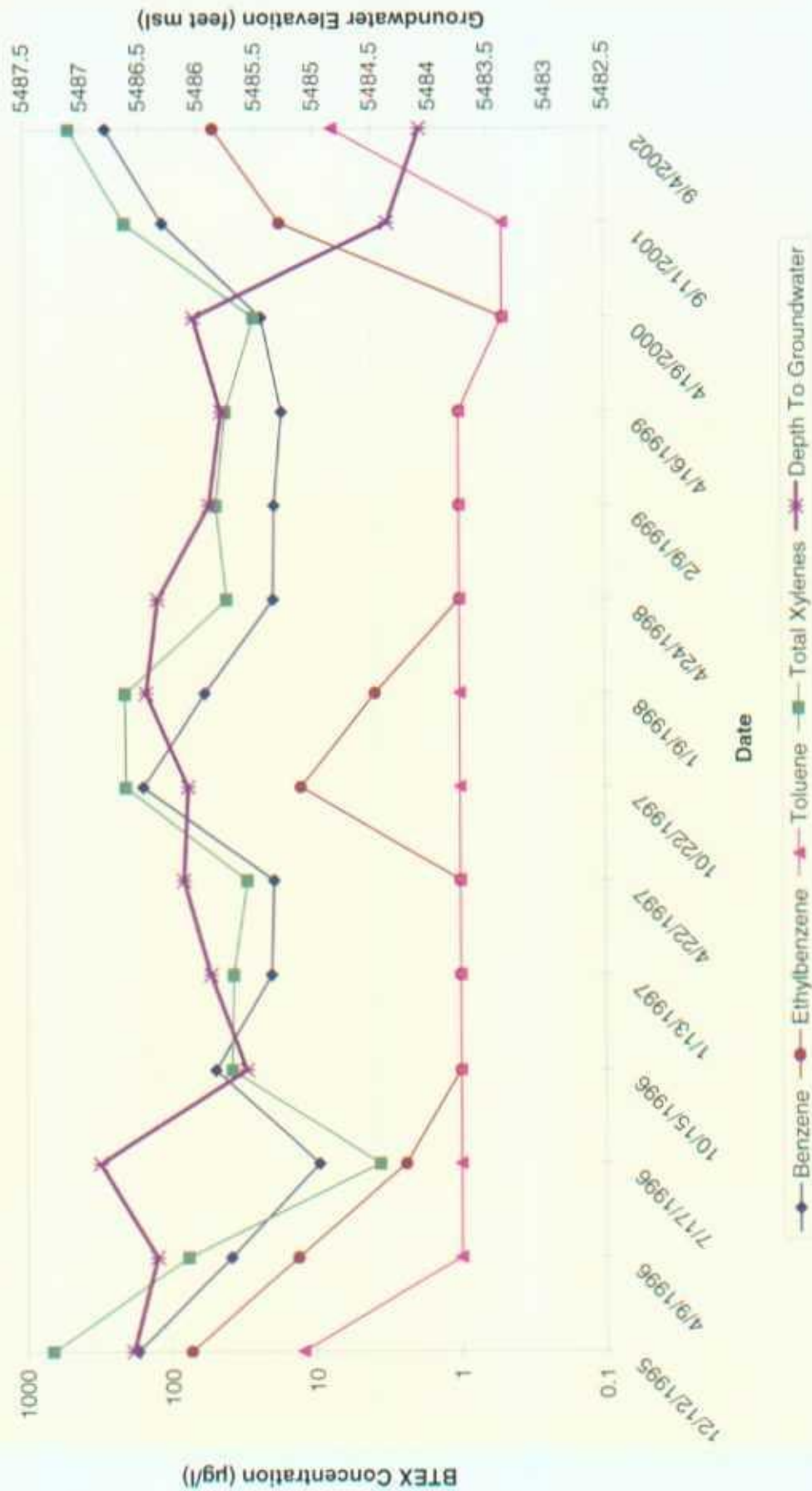


Figure 5
 Historical BTEX Concentration and Groundwater Elevation vs. Time
 Knight #1 (Meter #72556)
 MW-3

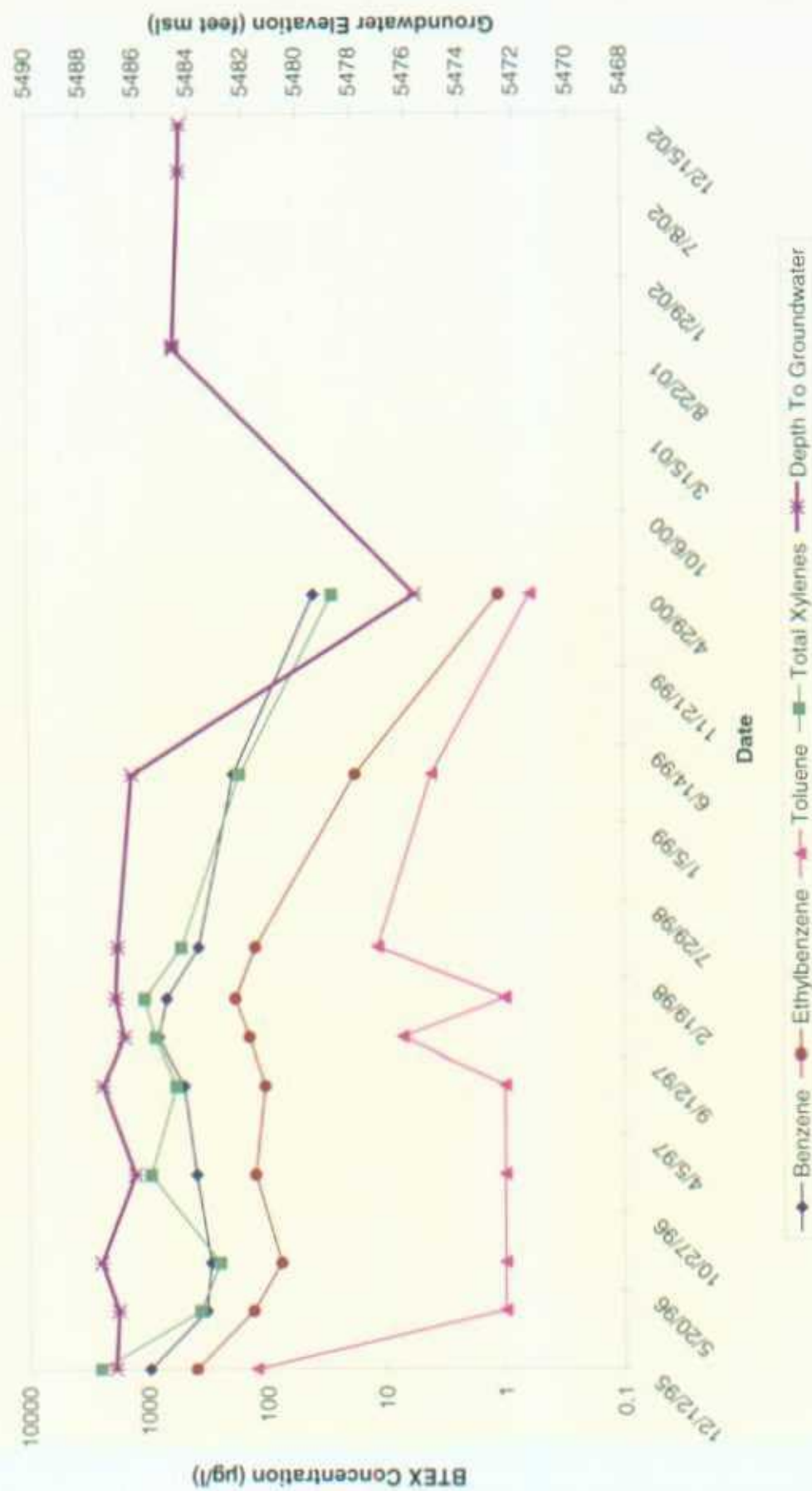
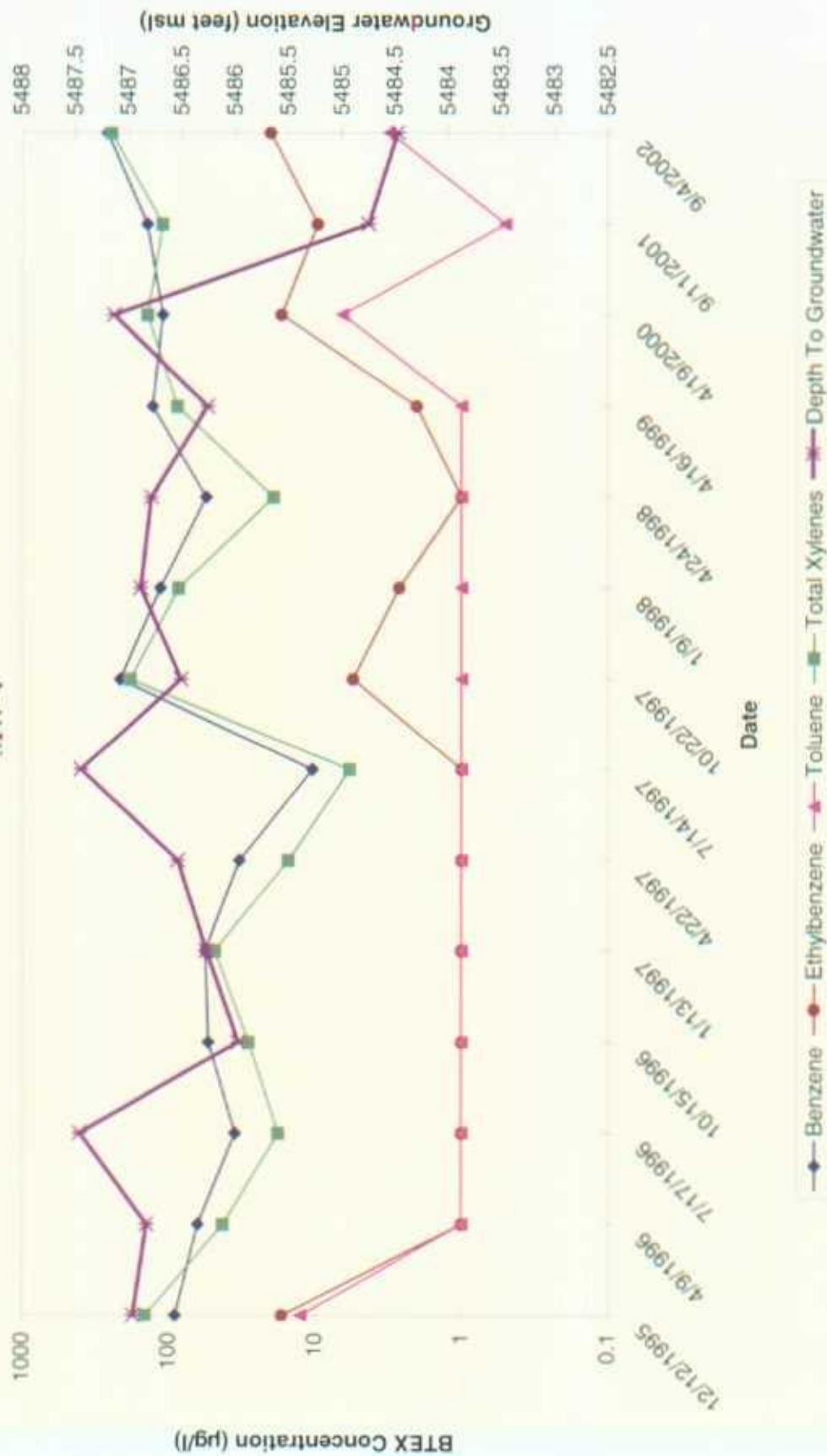


Figure 6
BTEX Concentration and Groundwater Elevation vs. Time
Knight #1 (Meter #72556)
MW-4



ATTACHMENT 1
LABORATORY REPORTS

(Date/Signature)

9-27-02

[illegible]

DATA VALIDATION WORKSHEET

Analytical Method: SW-846 8021B (BTEX)

MWH Job Number: _____

EPC-SJRB
(Ground Water)

Laboratory: APCL

Batch Identification: 02-04725

Validation Criteria								
Sample ID	GW Knight #1 MW-2	GW Knight #1 MW-4	GW Knight #1 MW-5	GW State Gas MW-4	GW State Gas MW-5			
Lab ID	02-04725-01	02-04725-02	02-04725-04	02-04725-03	02-04725-05			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
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			
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:

- a) Ethylbenzene @ 1.0 µg/L, qualify all sample concentrations less than or equal to 5.0 µg/L with a "UB" flag and all sample concentrations greater than 5.0 µg/l with a "B" flag (apply to dilutions proportionally)

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

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 #: 801-024725

Collected by: Ashley Lowe

Collected on: 09/04/02

Received: 09/06/02

Extracted: N/A

Tested: 09/08-13/02

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-2 GW Knight #1	MW-4 GW Knight #1	MW-4 GW State Gas
				02-04725-1	02-04725-2	02-04725-3
BTXE						
Dilution Factor				1	1	100
BENZENE	8021B	µg/L	0.5	269	261	17,800
ETHYLBENZENE	8021B	µg/L	0.5	48.9	20.1	750
TOLUENE	8021B	µg/L	0.5	7.4	3.1	13,900
O-XYLENE	8021B	µg/L	0.5	7.4	0.5J	2,600
M,P-XYLENE	8021B	µg/L	1	475	246	8,270

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-5 GW Knight #1	MW-5 GW State Gas	TB02090401
				02-04725-4	02-04725-5	02-04725-6
BTXE						
Dilution Factor				1	100	1
BENZENE	8021B	µg/L	0.5	<0.5	21,100	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	0.9	1,310	1.0
TOLUENE	8021B	µg/L	0.5	0.3J	190	<0.5
O-XYLENE	8021B	µg/L	0.5	<0.5	70	<0.5
M,P-XYLENE	8021B	µg/L	1	0.9J	5,490	1

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

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 #: 801-024725

Collected by: Ashley Lowe

Collected on: 09/04/02

Sample description:

Water

Project: San Juan River Basin /4270 032-020105

Received: 09/06/02

Tested: 09/08-13/02

Reported: 09/17/02

Analysis of Water

801-024725QC

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	02G3787	100	96	N.D.	µg/L	18.0	91	91*	92*	1	65-129	31
Toluene	02G3787	100	96	N.D.	µg/L	350	93	77	78	1	66-133	33
Ethylbenzene	02G3787	100	98	N.D.	µg/L	18.0	100	100*	100*	0	82-134	35
m/p-Xylene	02G3787	200	91	N.D.	µg/L	70.0	96	96*	96*	0	73-134	35
o-Xylene	02G3787	100	94	N.D.	µg/L	125	96	67	71	6	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	02G3806	100	93	N.D.	µg/L	18.0	92	89	89	0	68-130	31
Toluene	02G3806	100	93	N.D.	µg/L	70.0	92	93	94	1	66-133	33
Ethylbenzene	02G3806	100	95	N.D.	µg/L	18.0	97	95	95	0	65-134	35
m/p-Xylene	02G3806	200	88	N.D.	µg/L	70.0	92	94	95	1	65-134	35
o-Xylene	02G3806	100	89	N.D.	µg/L	25.0	91	97	97	0	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	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

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

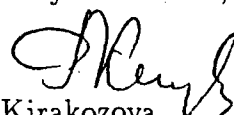
APCL QA/QC Report

*: 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:

024725

Project ID: San Juan River Basin

Project No: 4270032-020105

Sample Matrix:

Water

Batch No: 02G3787

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3787-LCS-01	86	0
2		02G3787-LSD-01	86	0
3		02G3787-MB-02	87	0
4	TB02090401	02-4725-6	89	0
5	MW-2 GW KNIGHT #1	02-4725-1	93	0
6	MW-4 GW KNIGHT #1	02-4725-2	94	0
7	MW-5 GW STATE GAS	02-4725-5MS	84	0
8	MW-5 GW STATE GAS	02-4725-5MSD	87	0
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

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:

024725

Project ID: San Juan River Basin

Project No: 4270032-020105

Sample Matrix:

Water

Batch No: 02G3806

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3806-LCS-01	78	0
2		02G3806-LSD-01	80	0
3		02G3806-MB-02	82	0
4	MW-4 GW STATE GAS	02-4725-3	91	0
5	821816-0748	02-4758-13MS	86	0
6	821816-0748	02-4758-13MSD	86	0
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

QC Control Limit
65-134

S1 = 4-BROMO-FLUOROBENZENE (PID)

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:

024725

Project ID: San Juan River Basin

Project No: 4270032-020105

Sample Matrix:

Water

Batch No: 02G3843

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3843-LCS-01	77	0
2		02G3843-LSD-01	84	0
3		02G3843-MB-02	87	0
4	MW-5 GW KNIGHT #1	02-4725-4	88	0
5	MW-5 GW STATE GAS	02-4725-5	87	0
6	MW-5 GW STATE GAS	02-4725-5MS	88	0
7	MW-5 GW STATE GAS	02-4725-5MSD	85	0
8				
9				
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

LABORATORY APCL

MWH

MVH Contact Brian Buttars

Project 427D032 - 020105

Project Number San Juan River Basin

Date Due 21 Days

Sampler's Name Ashley Lowe
(print clearly)

450

SAMPLES WERE:

- 1 Shipped or hand delivered**
Notes:
- 2 Ambient or Chilled**
Notes:

3 Temperature

- 4 Received Broken/Leaking
(Improperly Sealed)**

Notes:

- 5 Properly Preserved**
Y **N**

Notes:

- 6 Received Within Holding Times**

Notes:

COC Tape Was:

- 1 Present on Outer Package
Y N NA

—

- | 2 Unbroken on Outer Package | Y | N | NA |
|-----------------------------|---|---|----|
|-----------------------------|---|---|----|

1

- 3 Present on Sample
Y N NA

Unbreak

Notes:

Discrepancies Between Sample Labels and COC Record?

Notes:

Chain of Custody ID 020904AL 01
Page 1 of 1
Air Bill No. 834715209726

Air Bill No. 834715207146

ATTACHMENT 2
FIELD DOCUMENTATION

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
 Project Manager: Delbert Bekis
 Client Company: MWH
 Site Name: Knight #1

Project No: 220613
 Date: 12-10-02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-3		28.20	28.17	37.925	.03	.1002	light colored product, clear after bailing
MW-1		28.47	28.31	33.880	.16		Bailed Dry
MW-2		27.90					
MW-4		28.80					
MW-5		26.11					

COMMENTS:

MW-1 was bailed dry \approx 1 gal of water & product.
 MW-3 - light colored product, clear after bailing out \approx 1 gal. & 1002 of product.

Signature: Delbert Bekis

Date: 12/10/02

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: Montgomery Watson
 Location: Knight #1 Well No: MW-4 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 09/04/02 Start Time 8:30 Weather 72° sunny
 Depth to Water 28.755' Depth to Product 33' Product Thickness _____ Measuring Point Top of Casing
 Water Column Height 8.015' Well Dia. 4" TD 36.770

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 8.02</u>	<u>5.21 x 3</u>		<u>15.63 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>8:35</u>	<u>7.13</u>	<u>16916</u>	<u>17.4</u>				<u>0.5 gal</u>	<u>light yellow, strong odor</u>
	<u>7.01</u>	<u>1630</u>	<u>16.6</u>				<u>1</u>	
	<u>7.29</u>	<u>1662</u>	<u>16.3</u>				<u>3</u>	<u>grayer color</u>
	<u>6.97</u>	<u>1674</u>	<u>16.3</u>				<u>5</u>	
	<u>7.02</u>	<u>1678</u>	<u>16.3</u>				<u>7</u>	
	<u>6.96</u>	<u>1697</u>	<u>16.4</u>				<u>9</u>	
	<u>6.98</u>	<u>1706</u>	<u>16.2</u>				<u>11</u>	<u>brownish-gray color</u>
	<u>7.07</u>	<u>1720</u>	<u>16.2</u>				<u>12</u>	
	<u>7.09</u>	<u>1713</u>	<u>16.2</u>				<u>13</u>	
	<u>7.09</u>	<u>1729</u>	<u>16.6</u>				<u>14</u>	
	<u>7.12</u>	<u>1727</u>	<u>16.2</u>				<u>15</u>	
	<u>7.11</u>	<u>1730</u>	<u>16.4</u>				<u>16</u>	<u>good recovery</u>
<u>9:36</u>								<u>sample</u>

Final:

Time 9:36 pH 7.11 SC 1730 Temp 16.4 Eh-ORP _____ D.O. _____ Turbidity _____ Ferrous Iron _____ Vol Evac. 16 gal Comments/Flow rate _____

COMMENTS:

INSTRUMENTATION:

pH Meter ☒ _____
 DO Monitor ☐ _____
 Conductivity Meter ☒ _____

Temperature Meter ☒ _____
 Other ☐ _____

Water Disposal Kutz Plant

Sample ID Knight #1 MW-4 Sample Time 9:36 BTEX ☒ VOCs ☐ Alkalinity ☐

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

Total Phosphorus ☐ _____

MS/MSD _____ BD _____ BD Name/Time _____ TB 1602090401

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Knight #1 Well No: MW-2 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 09/04/02 Start Time 10:32 Weather 72° Sunny
 Depth to Water 27.88 Depth to Product NA Product Thickness NA Measuring Point top of casing
 Water Column Height 8.995 Well Dia. 4" TD 36.875

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						
0.65 x 8.995	5.8 x 3		17.5 gal					
Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
10:36	7.47	1630	22.6				1 gal	clear, but strong color
	6.99	1649	20.5				3	grayish color
	7.03	1759	20.2				5	
	7.09	1782	19.6				7	
	7.06	1865	19.7				9	light brown
	7.11	1897	21.2				11	
	7.09	1901	21.0				13	
	7.09	1889	20.9				14	
	7.10	1892	20.8				15	
	7.08	1892	21.0				16	
	7.09	1894	20.9				17	
	7.08	1895	20.9				18	
11:31								sample

Final:
 Time 11:31 pH 7.08 SC 1895 Temp 20.9 Eh-ORP D.O. Turbidity Ferrous Iron Vol Evac. 18 Comments/Flow rate

COMMENTS: _____

INSTRUMENTATION: pH Meter ☒ DO Monitor ☐ Conductivity Meter ☒ Temperature Meter ☒ Other ☐
 Water Disposal Kutz Plant
 Sample ID Knight #1 MW-2 Sample Time 11:31 BTEX ☒ VOCs ☐ Alkalinity ☐
 TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ _____
 MS/MSD _____ BD _____ BD Name/Time _____ TB TB02090401

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Ashley Lowe
Client Company: MWH
Site Name: Knight #1

Project No: 220013
Date: 09/04/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-3	9:52	28.168	28.160	37.295 37.295	0.008	~2 oz	bright yellow product - stuck to sides of bailer - did not form true layer of any thickness in bailer
MW-1	10:11	28.390	28.305	33.880	0.085	~5 oz	bright yellow color

COMMENTS:

Signature: Ashley L Love

Date: 09/04/02

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Knight #1 Well No: MW-5 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 09/01/02 Start Time 11:39 Weather 72° sunny
Depth to Water 26.205 Depth to Product NA Product Thickness NA Measuring Point TOC
Water Column Height 6.593' Well Dia: 2" TD: 32.798

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	
0.116 x 6.593	1.05 x 3		3.2 ga

[illegible]

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
1202	7.12	1815	15.5					22402	

COMMENTS: _____

INSTRUMENTATION:

pH Meter	<input checked="" type="checkbox"/>	_____	Temperature Meter	<input checked="" type="checkbox"/>	_____
DO Monitor	<input type="checkbox"/>	_____	Other	<input type="checkbox"/>	_____
Conductivity Meter	<input checked="" type="checkbox"/>	_____			

Water Disposal Kutz Plant

Sample ID Knight #1 MW-5 Sample Time 12:02 BTEX ☒ VOCs ☐ Alkalinity ☐

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

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

MS/MSD _____ BD _____ BD Name/Time _____ TB TB0209040

Chain of Custody ID 020907AL 1077060720

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

Contract El Paso Corp., San Jaun River Basin

WYH

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

MWH Contact **Brian Butters**

Project 4271032 - 020105

Project Number San Juan River Basin

Date Due 21 DAYS

Sampler's Name Asp/Nov 1-1982

(print clearly)

[illegible]

(a) Matrix:	AA – Air	WQ – Trip Blank/ Equipment Blanks	(b) Sampling Technique
SO – Soil			Composite=C
WS – Surface Water			Grab=G
WG – Ground Water			Hand Auger=HA
WW – Wastewater			

(b) Sampling Technique:
Composite=C
Grab=G
Hand Auger=HA
Submersible Pump=SP
Bladder Pump=Bp
Bailer=B
Wellhead Faucet=WF
Hydropunch=HP

Location IDs:
Groundwater Sites=GW
Bisll=BI
Jaquez=JA
North Flare PII=NF
South Flare PII=SF
San Juan River Plant=SJ

Relinquished by/Affiliation
Anthony L. Lewis/AESE

[illegible]

	Date	Time
	7/5/02	10:00

LABORATORY USE ONLY	
SAMPLES WERE:	
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 Package	
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:	



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Sender's FedEx Account Number 220929116

Sender's Name Ashley Lowe Phone 505 566-9116

Company A.E. Schmidt Environmental

Address 906 San Juan Blvd, Suite D

City Farmington State NM ZIP 87401

Internal Billing Reference

Client's Name Eric Wendland Phone 909 590-1820

Company APCL

Address 13760 Magnolia Ave

City Chicago State CA ZIP 91710



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☐ Cash/Check

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