3R - 205

REPORTS

DATE:

2002

elpaso Field Services

Certified Mail: #7001 1940 0002 1371 7676

February 28, 2003

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**

elpaso

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

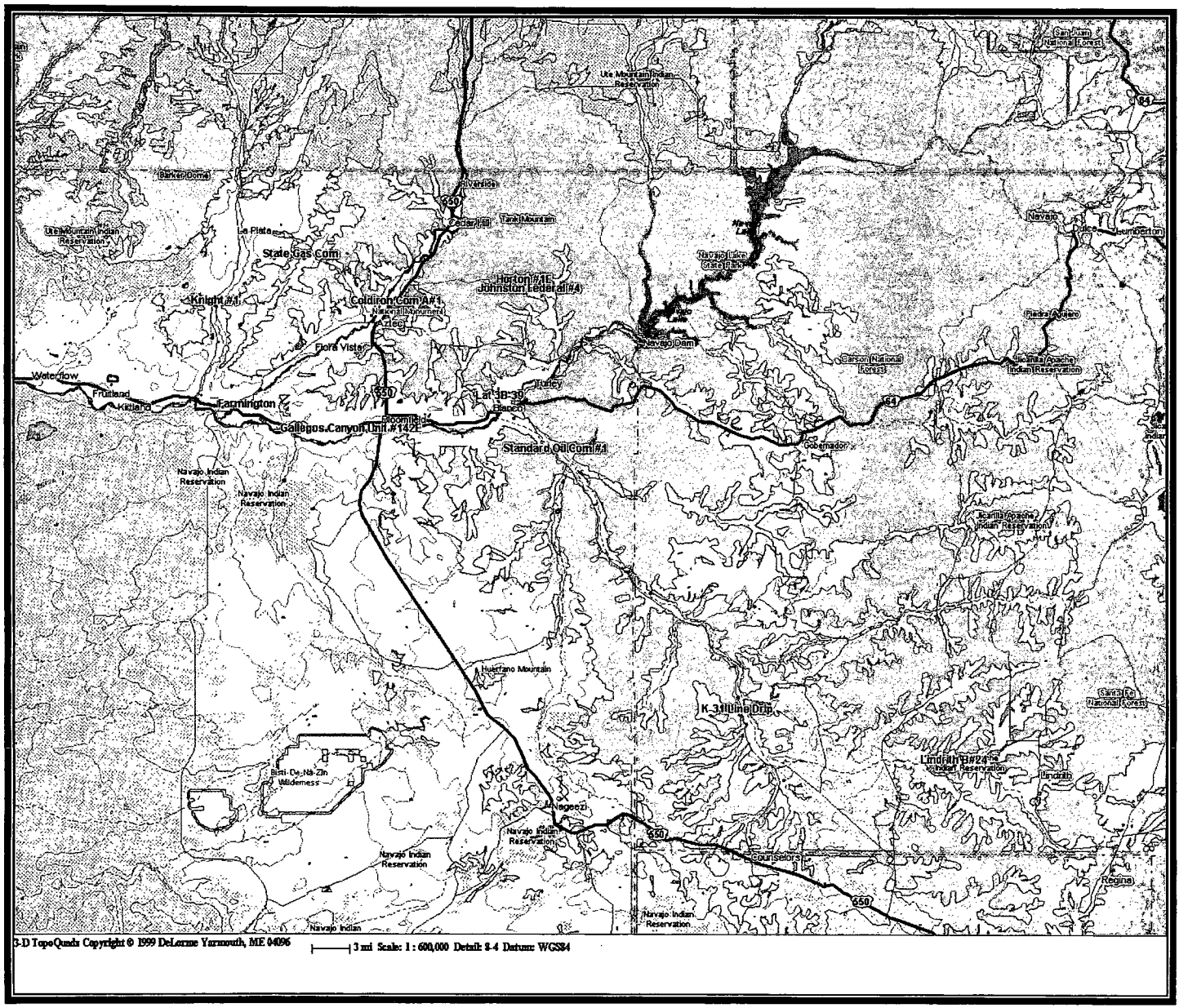
Site Map

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

elpaso

MWH
MONTGOMERY WATSON HARZA

Non - Federal Groundwater Site Map



EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT

K-31 Line Drip
Meter Code: LD087

SITE DETAILS

LEGAL DESCRIPTION: **Twn:** 25N **Rng:** 6W **Sec:** 16 **Unit:** N

NMOCD Haz Ranking: 40 **Land Type:** State **Operator:** EPFS

PREVIOUS ACTIVITIES

Site Assessment: 7/94	**Excavation:** 8/94 (90 cy)	**Soil Boring:** 9/95
Monitor Well: 3/97	**Geoprobe:** 7/97	**Additional MWs:** 7/00
Downgradient MWs: 7/00	**Replace MW:** NA	**Quarterly Initiated:** 6/97
ORC Nutrient Injection: 11/02	**Re-Excavation:** 11/95 (1786 cy)	**PSH Removal Initiated:** NA
Annual Initiated: 6/99	**Quarterly Resumed:** NA	

SUMMARY OF 2002 ACTIVITIES

MW-1: Semi-annual groundwater sampling and water level monitoring were performed during 2002.

MW-2: Semi-annual groundwater sampling and water level monitoring were performed during 2002.

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

Site-Wide Activities:

- Per the 2001 Annual Report recommendations, EPFS evaluated the groundwater flow gradient at this site. This evaluation included a review of groundwater and top of casing elevation data, a review of relative groundwater elevation changes over time, a review of free-product corrections for potentiometric surface, and a review of local topography.
- An oxygen-releasing compound (ORC) slurry was injected to approximately 15 feet bgs near MW-2 using direct-push technology. Please see the attached site maps for approximate injection point locations.

SUMMARY TABLES AND GRAPHS

- Analytical data are summarized in Table 1 and presented graphically in Figures 3 and 4.
- Direct-push boring logs for the ORC injection are presented in Attachment 1.
- Laboratory reports are presented in Attachment 2.
- Field documentation are presented in Attachment 3.

K-31 Line Drip
Meter Code: LD087

SITE MAP

Site maps are attached as Figures 1 and 2.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Direct-push drilling logs for the ORC injection points are presented in Attachment 1.

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.

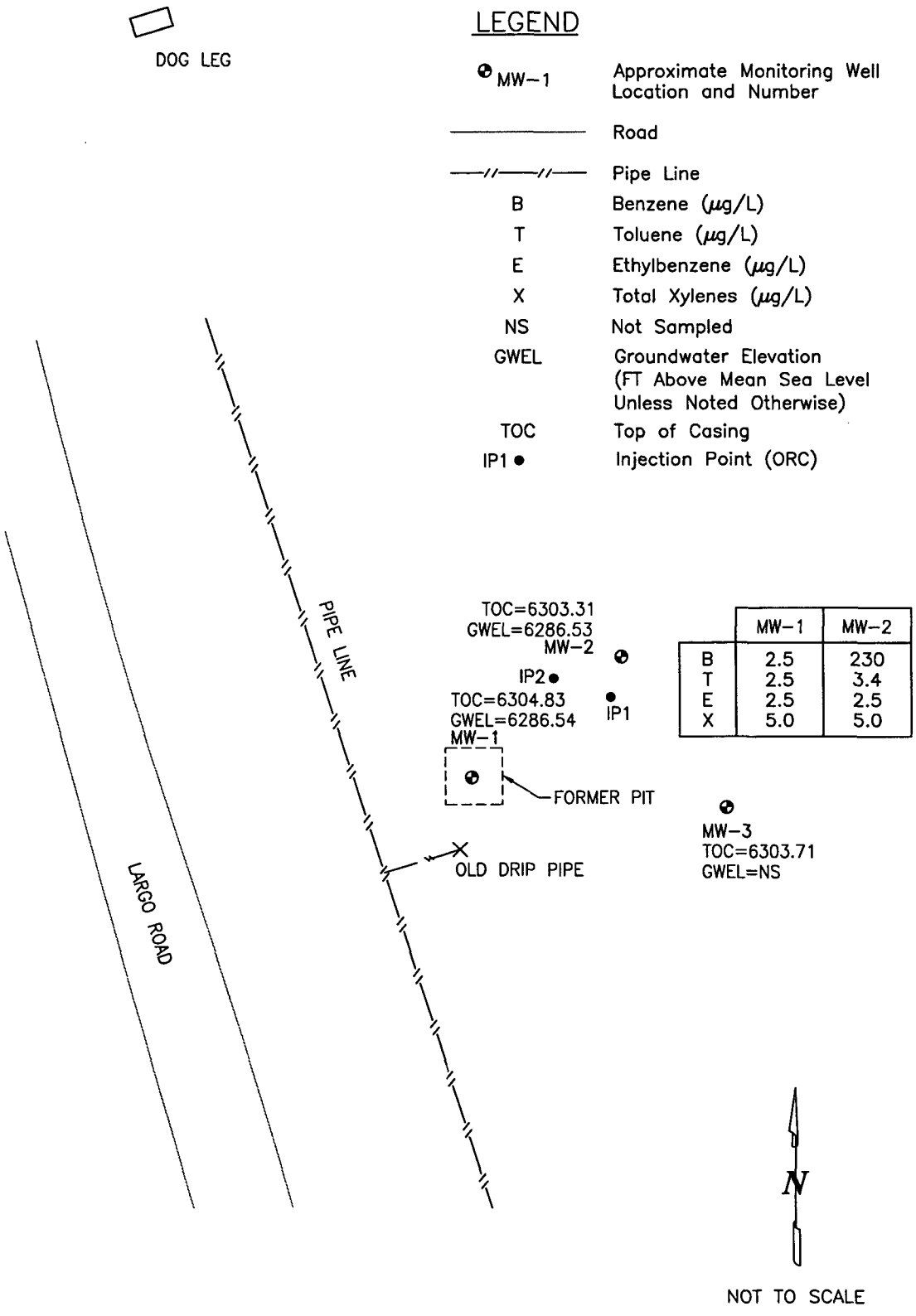
CONCLUSIONS

- BTEX concentrations in MW-1 remained below closure criteria for the fourth consecutive quarter.
- Benzene concentrations in MW-2 decreased from 240 µg/l in April 2002 to 104 µg/l in October 2002. The ORC slurry injection points located immediately upgradient of MW-2 during November 2002 should enhance the subsurface oxygen concentration leading to an increased rate of natural attenuation.
- The groundwater gradient assessment described earlier in this report indicated that the groundwater flow direction during 2002 appears to trend to the northeast, as indicated in the 2000 Annual Report. However, the flow direction presented in the 2001 Annual Report indicates that groundwater at this site trends to the northwest with a relatively flat gradient of 0.20 feet across the monitoring network, and is based on a single monitoring round (three measurements) collected during October 2001. Reviews of available data did not indicate an obvious error that would account for the variable flow direction. The ultimate conclusion of the gradient assessment was that the groundwater flow direction during 2002 was to the northeast, however, a variable gradient over time is possible.

K-31 Line Drip
Meter Code: LD087

RECOMMENDATIONS

- EPFS will collect quarterly groundwater level measurements at all monitoring wells at this site to better understand the flow direction variability at this site.
- If the quarterly water level measurements collected during 2002 indicate a change in groundwater flow direction from the northeast, EPFS will re-survey the top of casing elevations at all monitoring wells at this site to ensure that the groundwater elevations used reflect actual site conditions.
- Because sampling at MW-1 has indicated BTEX concentrations below detection limits for the previous four quarters, EPFS recommends that this well not be sampled until closure samples are scheduled for collection.
- EPFS recommends that MW-2 be sampled during February 2003 to assess the affects of the ORC injection. Based on these results, this well will be sampled either quarterly or semi-annually until closure criteria have been met.
- Because sampling at MW-3 has indicated BTEX concentrations below detection limits, EPFS recommends that this well not be sampled until closure samples are scheduled.



k31ld_02.dwg

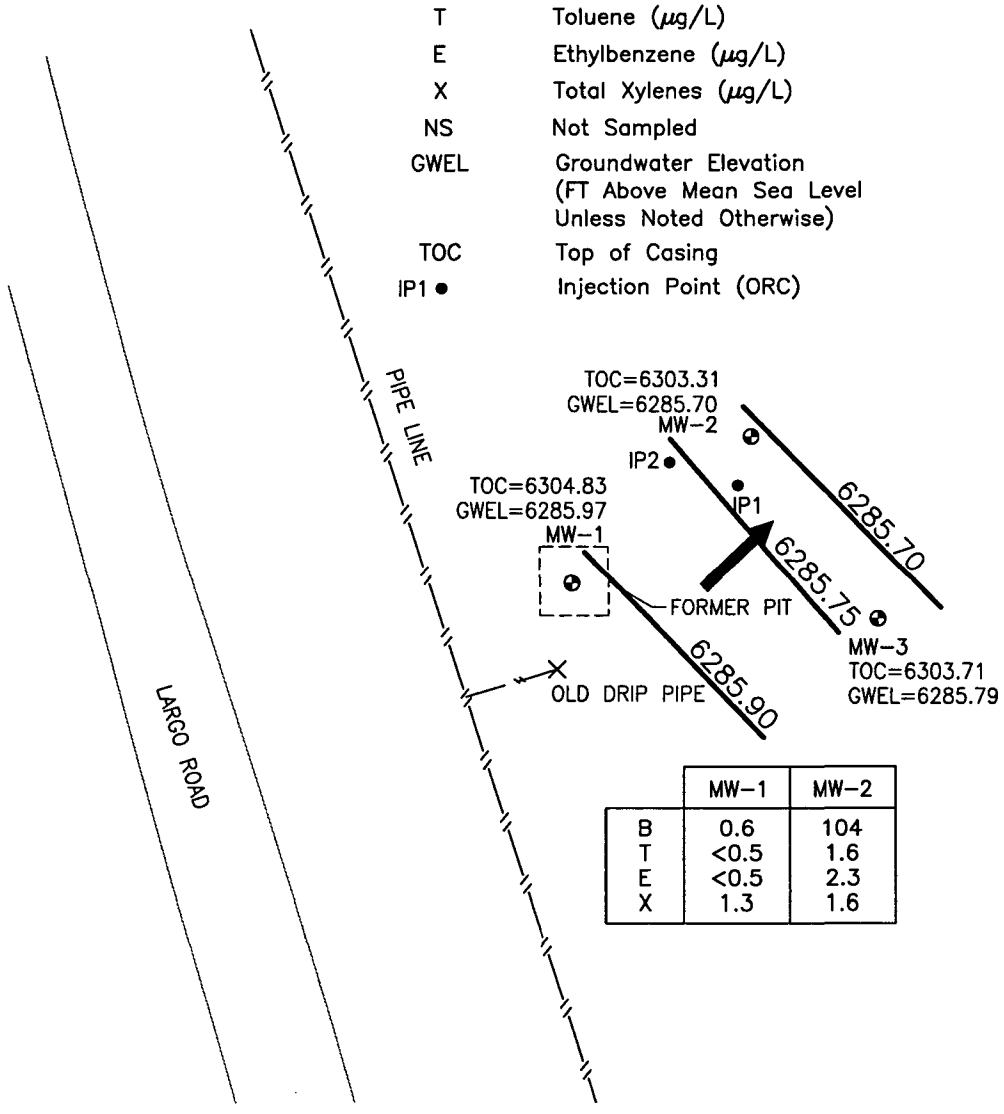
K-31 LINE DRIP, LD087
APRIL, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

LEGEND

DOG LEG	
MW-1	Approximate Monitoring Well Location and Number
	Road
	Pipe Line
6566.0	Potentiometric Surface (Assumed Where Dashed)
	Direction of Groundwater Flow (Estimated)
B	Benzene (µg/L)
T	Toluene (µg/L)
E	Ethylbenzene (µg/L)
X	Total Xylenes (µg/L)
NS	Not Sampled
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
TOC	Top of Casing
IP1	Injection Point (ORC)



	MW-1	MW-2
B	0.6	104
T	<0.5	1.6
E	<0.5	2.3
X	1.3	1.6

NOT TO SCALE

k31ld_02.dwg

K-31 LINE DRIP, LD087
OCTOBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2

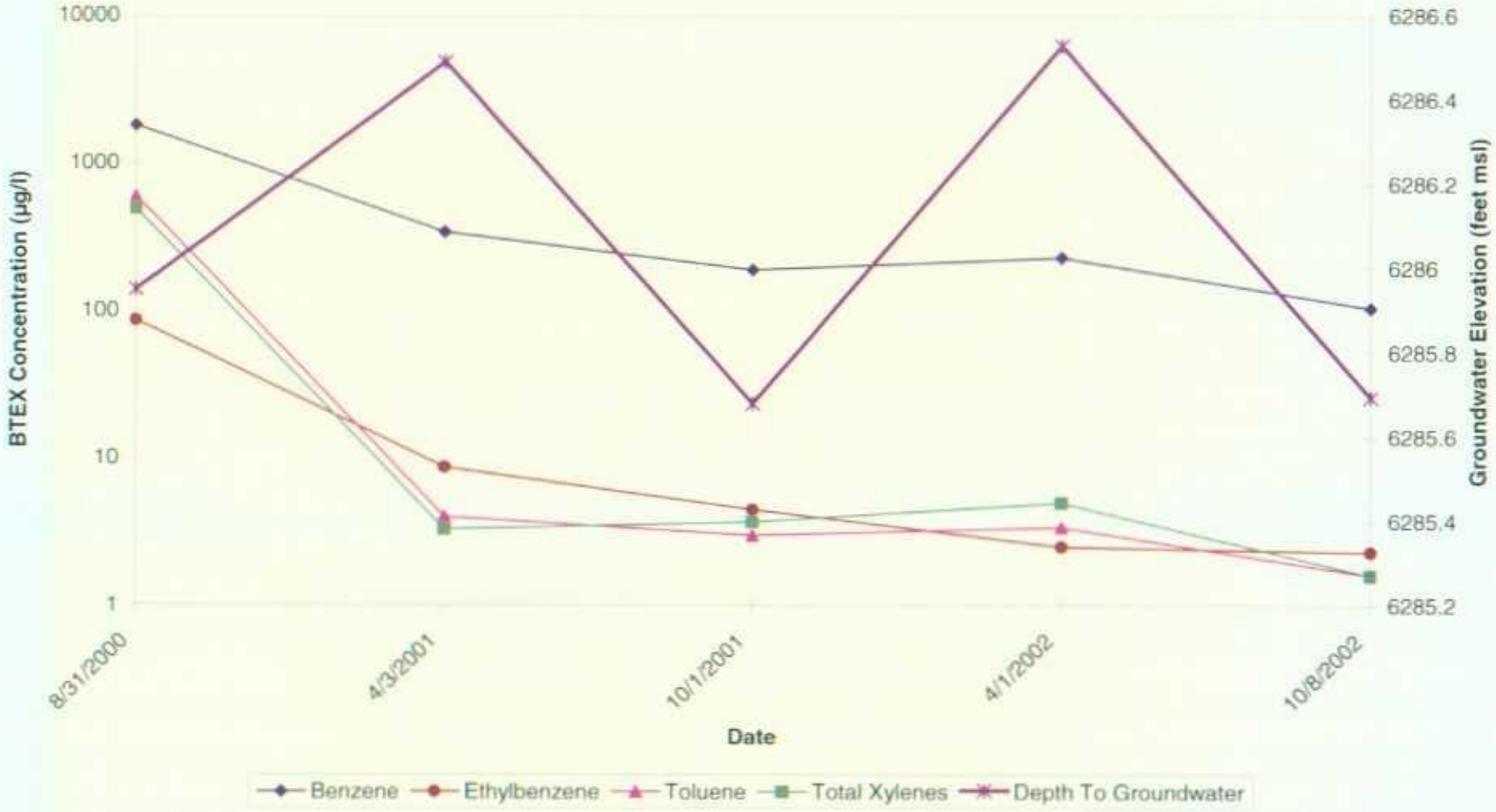
TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
K-31 LINE DRIP (METER #LD087)
(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)
087-0204-MW1	01-Apr-2002	1	<2.50	<2.50	<2.50	NA	NA	<5.00
02-5368-1	08-Oct-2002	1	0.60	<0.50	<0.50	0.50	0.80	1.30
087-0204-MW2	01-Apr-2002	2	230	3.40	<2.50	NA	NA	<5.00
02-5368-3	08-Oct-2002	2	104	1.60	2.30	0.60	1	1.60

Figure 3
BTEX Concentration and Groundwater Elevation vs. Time
K-31 Line Drip (Meter #LD087)
MW-1

Figure 4
BTEX Concentration and Groundwater Elevation vs. Time
K-31 Line Drip (Meter #LD087)
MW-2



ATTACHMENT 1

DIRECT-PUSH LOGS

K-31

DIRECT PUSH GEOPROBE LOG

BORING NAME: Injection Point 2 CONTRACTOR: ON SITE DRILLING

BORING DATE: Nov 20, 2002 WEATHER: Clear, Cool

GEOLOGIST: L. H. Benally INSTRUMENT: —

PROJECT NO: 4270033 ON BASE: ☐ OFF BASE: ☐ TOTAL DEPTH: 15

Depth	USGS	FID/PID	Graphic log	Soil Description
5				
10				Injection completed 1150
TD 15	—	—	—	Approx 37-38 lbs ORC injected mix one 30lb bag ORC to 5gal H_2O Approx 8 lbs ORC to 2gal.

	Name	Depth					
Sample #1		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #2		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #3		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #4		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #5		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐

PROJECT NO.

K-31

DIRECT PUSH GEOPROBE LOG

BORING NAME: Injection Point 1 CONTRACTOR: ON SITE DRILLING

BORING DATE: NOV 20, 2002 WEATHER: Clear, Cool

GEOLOGIST: L.H. Benally INSTRUMENT: —

PROJECT NO: 42700033 ON BASE: ☐ OFF BASE: ☐ TOTAL DEPTH: 15

Depth	USGS	FID/PID	Graphic log	Soil Description
5				
10				
TD → 15	—	—	—	Injection completed 1100 Approx 37-38 lbs ORC injected mix one 30lb bag & 5gal H_2O Approx 8 lbs ORC to 2gal H_2O

	Name	/ Depth					
Sample #1		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #2		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #3		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #4		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐
Sample #5		/	☐ VOC	☐ TPH	☐ SVOC	☐ Metals	☐

PROJECT NO.

ATTACHMENT 2

LABORATORY REPORTS

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 10/08/02

Laboratory: APCL **MWH Job Number:** EPC-SJRB (Ground Water)

Batch Identification: 02-05368 **Matrix:** Water

MS/MSD Parent(s)[a]: 02-05368-01 **Field Replicate Parent(s):** None

Validation Complete: Brian Buttars 10-29-02 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	K-31 MW-1	02-05368-01	Y	UB UB	o-Xylene @0.8 µg/l m/p-Xylene @ 0.5T µg/l
1	GW	Hammond 41A MW-2	02-05368-02	Y	UB	m/p-Xylene @ 0.5T µg/l
1	GW	K-31 MW-2	02-05368-03	Y	UB UB UB	Ethylbenzene @ 2.3 µg/l o-Xylene @ 1 µg/l m/p-Xylene @ 0.6T µg/l
1	GW	D Loop MW-3	02-05368-04	Y	UB UB UB	Ethylbenzene @ 1.6 µg/l o-Xylene @ 0.7 µg/l m/p-Xylene @ 0.7T µg/l
1	GW	Hammond 41A MW-3	02-05368-05	Y	UB	m/p-Xylene @ 0.6T µg/l
1	QC	TB02100801	02-05368-06	Y		Ethylbenzene @ 0.9 µg/l o-Xylene @0.4T µg/l m/p-Xylene @ 1 µg/l

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 #: 801-025368
Collected by: Ashley Lowe
Collected on: 10/08/02

Received: 10/10/02
Extracted: N/A
Tested: 10/14/02
Reported: 10/16/02

Sample Description: Water
Project Description: 220013 San Juan River Plant

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 K-31 02-05368-1	MW-2 Hammond 41A 02-05368-2	MW-2 K-31 02-05368-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	0.6	<0.5	104
ETHYLBENZENE	8021B	µg/L	0.5	<0.5	<0.5	2.3
TOLUENE	8021B	µg/L	0.5	<0.5	<0.5	1.6
O-XYLENE	8021B	µg/L	0.5	0.8	<0.5	1
M,P-XYLENE	8021B	µg/L	1	0.5J	0.5J	0.6J

Component Analyzed	Method	Unit	PQL	Analysis Result MW-3 GWDLoop 02-05368-4	MW-3 Hammond 41A 02-05368-5	TB02100801 02-05368-6
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	4.9	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	1.6	<0.5	0.9
TOLUENE	8021B	µg/L	0.5	0.5J	<0.5	<0.5
O-XYLENE	8021B	µg/L	0.5	0.7	<0.5	0.4J
M,P-XYLENE	8021B	µg/L	1	0.7J	0.6J	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 #: 801-025368
Collected by: Ashley Lowe
Collected on: 10/08/02
Sample description:
Water
Project: San Juan River Plant /220013

Received: 10/10/02
Tested: 10/14/02
Reported: 10/23/02

Analysis of Water

801-025368QC

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	Control Limit %Diff
BTXE												
Benzene	02G4205	100	95	N.D.	µg/L	18.0	92	94	94	0	68-130	31
Toluene	02G4205	100	96	N.D.	µg/L	70.0	91	99	99	0	66-133	33
Ethylbenzene	02G4205	100	97	N.D.	µg/L	18.0	93	105	106	0	65-134	35
m/p-Xylene	02G4205	200	90	N.D.	µg/L	70.0	89	100	100	0	65-134	35
o-Xylene	02G4205	100	93	N.D.	µg/L	25.0	89	103	103	0	65-134	35

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:	025368
Project ID:	San Juan River Plant	Project No:	220013	Sample Matrix:	Water
		Batch No:	02G4205		

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G4205-LCS-01	76	0
2		02G4205-LSD-01	80	0
3		02G4205-MB-02	79	0
4	TB02100801	02-5368-6	87	0
5	MW-1 K-31	02-5368-1	88	0
6	MW-2 HAMMOND 41A	02-5368-2	89	0
7	MW-2 K-31	02-5368-3	89	0
8	MW-3 GWDLOOP	02-5368-4	92	0
9	MW-3 HAMMOND 41A	02-5368-5	87	0
10	MW-1 K-31	02-5368-1MS	87	0
11	MW-1 K-31	02-5368-1MSD	87	0
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

DATA VALIDATION WORKSHEET

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

Laboratory: APCL **Batch Identification:** 02-05368

Validation Criteria								
Sample ID	**K-31 MW-1**	**Hammond 41A MW-2**	**K-31 MW-2**	**D Loop MW-3**	**Hammond 41A MW-3**	**TB021008 01**		
Lab ID	**02-05368-01**	**02-05368-02**	**02-05368-03**	**02-05368-04**	**02-05368-05**	**02-05368-06**		
Hardcopy vs. Chain-of-Custody	A	A	A	A	A	A		
Holding Time	A	A	A	A	A	A		
Analyte List	A	A	A	A	A	A		
Reporting Limits	A	A	A	A	A	A		
Method Blank	A	A	A	A	A	A		
Trip Blank	A[1]	A[1]	A[1]	A[1]	A[1]	A[1]		
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A	N/A		
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A	N/A		
Initial Calibration	N	N	N	N	N	N		
Initial Calibration Verification (ICV)	N	N	N	N	N	N		
Continuing Calibration Verification (CCV)	A	A	A	A	A	A		
Laboratory Control Sample (LCS)	A	A	A	A	A	A		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	A	N/A	N/A	N/A	N/A	N/A		
Surrogate Spike Recovery	A	A	A	A	A	A		
Retention Time Window	N	N	N	N	N	N		
Injection Time(s)	N	N	N	N	N	N		
EDD vs. Hardcopy	N	N	N	N	N	N		
EDD vs. Chain of Custody	N	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 @ 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.
   b) o-Xylene @ 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.
   c) m/p-Xylene @ 1 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.

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021008AL01
Page 1 of 1
Air Bill No. 836381676565

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars
Project San Juan River Plant
Project Number 220013
Date Due 21 days
Sampler's Name Ashley Lowe
(print clearly)

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix [a]	Sampling Technique [b]	ANALYSES REQUESTED: BTEX SW-846 8021B	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			One Vial / No Pres	No Preservative
GW DLoop	MW-3		10-8-02	9:13	WG	B	✓											
GW Hammond 41A	MW-2		10-8-02	10:08	WG	B	✓										✓	
GW Hammond 41A	MW-3		10-8-02	10:32	WG	B	✓											
GW K-31	MW-2		10-8-02	13:34	WG	B	✓											✓
GW K-31	MW-1		10-8-02	13:52	WG	B	✓											✓
TB02100801			10-8-02				✓											

5368

[a] **Matrix:**
SO – Soil
WS – Surface Water
WG – Ground Water
AA – Air
WQ – Trip Blank/ Equipment Blanks
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
Bisti=BI
Jaquez=JA
North Flare Pit=NF
South Flare Pit=SF
San Juan River Plant=SJ

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley L Lowe / AESE	APCL	10-9-02	10:00
		10/10/02	LCC

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:

Applied P & Ch Laboratory
13760 Magnolia Ave., Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID: 5368 **Client Name/Project:** San Juan

1. Sample Arrival

Date/Time Received 10/10/02 1000 Date/Time Opened 10/10/02 1000 By (name): Eric

Custody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☑ FedEx ☐ APCL Empl: ____

2. Chain-of-Custody (CoC)

☑ With Samples? ☐ Faxed? ☐ Client has Copy? ☑ Signed, dated? By: Ashley
☑ Project ID? ☑ Analyses Clear? ☐ Hold Samples? #on Hold ____ # Received 6
☑ CoC/Docs Zip-Locked under lid? ☐ Compos.#: _ ☑ #Samples OK?
☐ Discrepancies? ☐ Client notified? ☐ Response (attach docs): ____

3. Shipping Container/Cooler

☑ Cooler Used? # of 1 Cooled by: ☑ Ice ☐ Blue Ice ☐ Dry Ice ☐ None
Temp °C 2.6
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? ☐ Absent ☐ Intact ☐ Tampered?

4. Sample Preservation

☐ pH <2 ☐ pH >12
If Not, pH = ____ Preserved by: ☐ Client ☐ APCL ☐ Third Party ____

5. Holding-time Requirements

☐ pH 24hr ☐ BACT 6/24hr ☐ Cr^{VI} 24hr ☐ NO_3^- 48hr ☐ BOD 48hr
☐ Cl_2 ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☑ Intact? ☐ Broken? ☐ Documented? Number: ____
Type: ☑ plastic 4 ☑ glass ☐ Tube: brass/SS ☐ Tedlar Bag
☑ Quantity OK? ☐ Leaking? ☐ Anomaly?
☑ Caps tight? ☐ Air Bubbles? ☐ Anomaly?
Labels: ☑ Unique ID? ☐ Date/Time ☐ Preserved?

7. Turn Around Time

☑ RUSH TAT: 5 ☐ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H_2O ☐ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other: ____
☑ Ground H_2O ☐ Sludge ☐ Filter ☐ Oil/Petro ☐ Paint ☐ W. Water ☐ Extract ☐ Unknown

9. Pre-Login Check List Completed & OK?

☑ ALL OK? (if not, attach docs) ☐ Client Contact? (Name:____)Date/Time:____

Received/Checked by: [signature] Date: 10 Oct 2002 Time: 9:13 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

02-05368 (0984_ 976) (2721900_ 976)

10/10/02

Part 1: General Information

☐	Company Information	Name:	*Montgomery Watson Harza*
		Address:	*10619 South Jordan Gateway ,Salt Lake City ,UT 84095*
☐	Project Information	Project Description:	*San Juan River Plant*
			Hill AFB
		Project #:	*220013*
☐	Billing Information	P.O. #:	
		Bill Address:	*10619 South Jordan Gateway ,Salt Lake City ,UT 84095*
		Lab Project ID:	*1999_0746*
		Client Database #:	*04*
☐	Receiving Information	Who Received Sample?	*Eric Wendland*
		Receiving Date/Time:	*10/10/02 1000*
		COC No.	
☐	Shipping Information	Shipping Company	*Express*
		Packing Information:	*Cooler/Ice Chester*
		Cooler Temperature:	*2.6 °C*
☐	Container Information	Container Provider:	*Client*
☐	Sampling Information	Sampling Person:	
		Sampling Company:	*Client*
☐	Turn-Around-Time Option:		*Rush 5 working day(s)*
☐	QC Option:		*QC and Surro. Rep.*
☐	Disposal Option:		*Not specify*

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Container	Preservative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days	
1	MW-3 GWDLoop ,	VOA	02-05368-4	W	V	C	40	2	G	100802	N	0	7	☐
2	MW-2 Hammond 41A ,	VOA	02-05368-2	W	V	C	40	2	G	100802	N	0	7	☐
3	MW-3 Hammond 41A ,	VOA	02-05368-5	W	V	C	40	2	G	100802	N	0	7	☐
4	MW-2 K-31 ,	VOA	02-05368-3	W	V		40	2	G	100802	N	0	7	☐
5	MW-1 K-31 ,	VOA	02-05368-1	W	V		40	2	G	100802	N	0	7	☐
6	TB02100801 ,	VOA	02-05368-6	W	V	C	40	1	G	100802	N	0	7	☐

Part 3: Analysis Information

Test Items: ☑ ~~8021B~~ BTXE

Seq. #	Client"s Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	BTXE	
1	MW-3 GWDLoop	VOA	02-05368-4	W	X	☐
2	MW-2 Hammond 41A	VOA	02-05368-2	W	X	☐
3	MW-3 Hammond 41A	VOA	02-05368-5	W	X	☐
4	MW-2 K-31	VOA	02-05368-3	W	X	☐
5	MW-1 K-31	VOA	02-05368-1	W	X	☐
6	TB02100801	VOA	02-05368-6	W	X	☑

☐ Client"s Requirement: **BTXE UNPRESERVED ON SAMPLE # 1,2,3** ✓ EPK 10/10/02

Login By En-Yu Paul Kou

Check By HY

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **204014**
April 19, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name K-31
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 04/03/02 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

PINNACLE LABORATORIES

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

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 204014
PROJECT #	: 1517000121	DATE RECEIVED	: 04/03/02
PROJECT NAME	: K-31	REPORT DATE	: 04/19/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
204014 - 01	087-0204-MW1	AQUEOUS	04/01/02
204014 - 02	087-0204-MW2	AQUEOUS	04/01/02

PINNACLE LABORATORIES

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
;LIENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D.: 204014
'ROJECT # : 1517000121
'ROJECT NAME : K-31

;AMPLE D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
1	087-0204-MW1	AQUEOUS	04/01/02	NA	04/05/02	5
2	087-0204-MW2	AQUEOUS	04/01/02	NA	04/05/02	5

'ARAMETER	DET. LIMIT	UNITS	087-0204-MW1	087-0204-MW2
3ENZENE	0.5	**UG/L**	< 2.5	**230**
'OLUENE	0.5	**UG/L**	< 2.5	**3.4**
:THYLBENZENE	0.5	UG/L	< 2.5	< 2.5
'C [redacted]XYLENES	1.0	UG/L	< 5.0	< 5.0
;URROGATE:				
3ROMOFLUOROBENZENE (%)			101	92
;URROGATE LIMITS	(80 - 120)			

;HEMIST NOTES:
N/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.	: 204014
;LANK I. D.	: 040502	DATE EXTRACTED	: N/A
:LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
'ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
'ROJECT NAME	: K-31		

'ARAMETER	UNITS	
;ENZENE	UG/L	<0.5
'OLUENE	UG/L	<0.5
:THYLBENZENE	UG/L	<0.5
'OTAL XYLENES	UG/L	<1.0
;URROGATE:		
;ROMOFLUOROBENZENE (%)		88
;U ATE LIMITS:	(80 - 120)	
:HEMIST NOTES:		
N/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.	: 204014
BATCH #	: 040502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: K-31	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	18.9	95	18.0	90	5	(80 - 120)	20
TOLUENE	<0.5	20.0	19.0	95	18.7	94	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.5	98	19.2	96	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.0	103	61.0	102	2	(80 - 120)	20

CHEMIST 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
MS/MSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204014
SMSD #	: 204016-01	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: K-31	UNITS	: UG/L

ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	3.6	20.0	23.6	100	24.5	105	4	(80 - 120)	20
OLUENE	0.70	20.0	19.6	95	19.4	94	1	(80 - 120)	20
THYLBENZENE	2.1	20.0	21.8	99	21.5	97	1	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	62.6	104	62.3	104	0	(80 - 120)	20

HEMIST NOTES:
/A

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

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

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 4-1-02 PAGE: 1 OF 1

PLI Accession #: 204014

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: LISA Winn

COMPANY: AMEC

ADDRESS: 2060 AFTON place, Farmington N.M. 87401

PHONE: (505) 327-7928

FAX: (505) 326-5721

BILL TO: SCOTT pope

COMPANY: EL paso Field Services

ADDRESS: 614 Reilly AVE. Farmington N.M. 87401

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject		(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐		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
087-0204-MW1	4-1-02	1330	H_2O	01						X																							2
087-0204-MW2	4-1-02	1415	H_2O	02						X																							2

PROJECT INFORMATION

PROJ. NO.: 1517000121

PROJ. NAME: EPFS GW. project

P.O. NO.:

SHIPPED VIA: Grey Hound

SAMPLE RECEIPT

NO. CONTAINERS	4
CUSTODY SEALS	Y/N/(NA)
RECEIVED INTACT	YES
BLUE ICE/ICE	5.8°

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

K-31 (LD087)

RELINQUISHED BY: 1.
Signature: [signature] Time: 1630
Printed Name: Chris A Maez Date: 4-2-02
Company: AMEC
See reverse side (Force Majeure)

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 2.
Signature: Francine Turnio Time: 0915
Printed Name: Francine Turnio Date: 4/3/02
Pinnacle Laboratories Inc.

ATTACHMENT 3

FIELD DOCUMENTATION

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Ashley Lowe
Client Company: MWH
Site Name: K-31

Project No: 220013
Date: 10-8-02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	12:35	18.86	NA	29.35	0	0	sampled
MW-3	13:17	17.92	NA	22.89	0	0	
MW-2	13:20	17.615	NA	23.40	0	0	sampled

COMMENTS: replaced lock on MW-1

Signature: Ashley L Lowe Date: 10/8/02

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH

Location: K-31 Well No: MW-2 Development ☐ Sampling ☑

Project Manager Ashley Lowe Date 10-8-02 Start Time 13:20 Weather 68° Sunny

Depth to Water 17.615 Depth to Product NA Product Thickness NA Measuring Point TOC

Water Column Height 5.8 Well Dia. 2" TD 23.40

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 ☑ Sabilization of Indicator Parameters ☐ Other er bail dry

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	
0.16 x 5.8	0.9 x 3		2.8 gal = 177.7 oz

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
13:25	5.49	9980	20.7				32 oz	light yellow, slightly
	5.51	9630	18.5				64	cloudy
	5.51	9450	17.3				96	cloudier
	5.53	9370	16.9				128	orange-brown color
	5.54	9220	16.7				160	
	5.55	9230	16.6				192	
	5.54	9220	16.6				224	

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
13:34	5.54	9220	16.6					224	

COMMENTS: Dropped bailer into well during sampling. Fished out HCl preservative reacted w/ CO_3 in water. Rinsed vial before sample collection.

INSTRUMENTATION: pH Meter ☑ _____ Temperature Meter ☑ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☑ _____

Water Disposal Kutz Plant

Sample ID K-31 MW-2 Sample Time 13:34 BTEX ☑ VOCs ☐ Alkilinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB TB021008 01

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH

Location: K-31 Well No: MW-1 Development ☐ Sampling ☑

Project Manager Ashley Lowe Date 10-8-02 Start Time 12:35 Weather 68°, Sunny

Depth to Water 18.86 Depth to Product NA Product Thickness NA Measuring Point TOC

Water Column Height 10.49 Well Dia. 4" TD 29.35

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 ☑ Sabilization 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 10.49	6.8 x 3		20.5 gal

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
12:46	4.91	4930	25.8				1 gal	light yellow, slightly
	4.81	9190	19.8				3	cloudy
	4.83	8440	17.4				5	grayer color, odor
	4.94	7830	17.4				7	bailing down
	4.96	7260	17.6				8	dark gray, cloudy
	4.99	7190	17.7				9	almost dry
	5.02	6850	17.6				10	dry - will come back for sample

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
13:52	5.02	6840	17.9					10 gal	

COMMENTS: Bailed dry, then returned 45 mins later to sample. HCl reacted w/ CO_3 in water. Rinsed vial before collecting sample

INSTRUMENTATION: pH Meter ☑ _____ Temperature Meter ☑ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☑ _____

Water Disposal Kutz Plant

Sample ID K-31 MW-1 Sample Time 13:52 BTEX ☑ VOCs ☐ Alkilinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB TB021008O1

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021008NL01
Page 1 of 1
Air Bill No. 836285167656S

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars

Project San Juan River Plant
Project Number 770013
Date Due 21 days
Sampler's Name Ashley Lowe
(print clearly)

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix [a]	Sampling Technique [b]	ANALYSES REQUESTED: BTEX SW-846 8021B	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				
GW DLoop	MW-3		10-8-02	9:13	WG	B	✓											
GW Hammond 4/A	MW-2		10-8-02	10:08	WG	B	✓											
GW Hammond 4/A	MW-3		10-8-02	10:32	WG	B	✓											
GW K-31	MW-2		10-8-02	13:34	WG	B	✓											
GW K-31	MW-1		10-8-02	13:52	WG	B	✓											
TB02100801			10-8-02				✓											

[a] **Matrix:**
SO – Soil
WS – Surface Water
WG – Ground Water
AA – Air
WQ – Trip Blank/ Equipment Blanks
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
Bisti=BI
Jaquez=JA
North Flare Pit=NF
South Flare Pit=SF
San Juan River Plant=SJ

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley K. Lowe / AESE		10-9-02	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 Packag
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:

FedEx Express **Airbill** FedEx tracking Number **836381676565**

Form I.D. No. [redacted]

Please print and press hard.

e 10-9-02 Sender's FedEx Account Number 1700 20235

ider's ne Ashley Lowe Phone (505) 566-9116

npany AESE

dress 906 San Juan Blvd ste D Dept./Floor/Suite/Room

Farmington State NM ZIP 87401

ur Internal Billing Reference
24 characters will appear on invoice.

ipient's ne Eric Wendland Phone (909) 590-1828

npany APCL

dress 13760 Magnolia Ave
"OLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

dress Dept./Floor/Suite/Room

Chino State CA ZIP 91710

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service
Packages up to 150 lbs. Delivery commitment may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate 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: _____

5 Packaging
* Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [x] Other

6 Special Handling
Include FedEx address in Section 3.

- [ ] 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
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:*
Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. 1421-27-695 Exp. Date

Total Packages	Total Weight	Total Declared Value†
1	10 lbs	$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details.

FedEx Use Only

8 Release Signature
Sign to authorize delivery without obtaining signature.

By signing 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 • Part #157612 • ©1994–2001 FedEx • PRINTED IN U.S.A. WCSL 02

RETAIN THIS COPY FOR YOUR RECORDS.

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 1 Page 1 of 1

Project Name EPFS GW project Project Manager Lisa Winn Project No. 151700012

Client Company El paso Field Services

Site Name K-31 (LD 087) Site Address Rio Arriba CO.

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.42
Initial Depth to Water (feet) 18.08
Height of Water Column in Well (feet) 11.32
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	11.32	7.42x3	22.26
Gravel Pack			
Drilling Fluids			
Total			22.26

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☑ DO Monitor	YSI 95
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

EWR Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
4-1-02	1309		X				4.5	4.5			16.6	7.06	11.07		Cloudy orange mild septic odor
	1319		X			28.34	4.5	9			14.2	7.34	9.77	1.85	no change

Comments After Bailing Approximately 9 gal. Bailed well Dry Let Recover Sampled for BTEX 8310

Developer's Signature(s) Chris L May Date 4-1-02 Reviewer L Winn Date 4/4/02

L:\forms\MW Dvlpmnt 2.dot 11/20/01

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 2

Page 1 of 1

Project Name EPFS GW project Project Manager LISA Winn Project No 15172000121

Client Company El Paso Field Services

Site Name K-31 (LP087) Site Address Rio Arriba CO

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☐ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 23.44
Initial Depth to Water (feet) ~16.78
Height of Water Column in Well (feet) 6.66
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	6.66	1.08x3	3.24
Gravel Pack			
Drilling Fluids			
Total			3.24

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☑ DO Monitor	YSI 95
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

Lutz Seperator Bloomfield NM

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
4-1-02	1344		X				.75	.75			13.7	7.03	12.24		Cloudy Light Brown mild Septic Odor
	1347		X				.75	1.5			12.5	7.05	11.78		" "
	1349		X			22.50	.75	2.25			12.3	7.14	11.49	3.59	No change

Comments After Bailing Approximately 2.25 gal. Bailed well Dry Let Recover Sampled for BTEX 1415

Developer's Signature(s) Rio A Mc Date 4-1-02 Reviewer [signature] Date 4/4/02

L:\forms\MW Dvlpmnt 2.dot 11/20/01

WELL OBSERVATION DATA

Project Name: EPFS Gw. project

Project No.: 151700012

Project Mngr: Lisa Winn

Task: 2

Client Co.: El paso Field Services

Date: 4-1-02

Site Name: K-31 (LD 087)

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Sinking Product Thickness	Comments
MW 3	1420								

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

Comments:

Signature: Chad A. May

Date: 4-1-02

PINNACLE LABORATORIES

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 4-02 PAGE: 1 OF 1

PLI Accession #:

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Lisa Winn

COMPANY: AMEC

ADDRESS: 2060 Afton Place
Farmington N.M. 87401

PHONE: (505) 327-7928

FAX: (505) 326-5721

BILL TO: Scott Pope

COMPANY: El Paso Field Services

ADDRESS: 614 Reilly Ave.
Farmington N.M. 87401

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	NO. OF CONTAINERS
087-0204-MW1	4-1-02	1330	H2O		2
087-0204-MW2	4-1-02	1415	H2O		2

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	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:	
				X																					
				X																					

PROJECT INFORMATION

PROJ. NO.: 15170000121

PROJ. NAME: EPFS GW project

P.O. NO.:

SHIPPED VIA: Greyhound

SAMPLE RECEIPT

NO. CONTAINERS	
CUSTODY SEALS	Y / N / NA
RECEIVED INTACT	
BLUE ICE/ICE	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

K-31
(LD 087)

RELINQUISHED BY: 1.

Signature: [signature] Time: 1630

Printed Name: [illegible] Date: 4-2-02

Company: AMEC

See reverse side (Force Majeure)

RECEIVED BY: 1.

Signature: Time:

Printed Name: Date:

Company:

RELINQUISHED BY:

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY: (LAB) 2

Signature: Time:

Printed Name: Date:

Pinnacle Laboratories Inc.