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REPORTS

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FINAL

**ANNUAL REPORT
FOR
JAQUEZ COM. C#1 AND JAQUEZ COM. E#1**

APRIL 2003

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TABLE OF CONTENTS

	PAGE NO.
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION	1-1
1.1 Summary of Previous Activities	1-1
1.2 Report Organization	1-6
2.0 SUMMARY OF 2002 ACTIVITIES	2-1
2.1 ORC Injection	2-1
2.2 Sparge Air Injection Point Installation	2-2
2.3 Monitoring Well Installation	2-3
2.4 Soil Vapor Extraction Activities	2-3
2.5 Air Sparging Activities	2-4
2.6 Groundwater Sampling	2-5
2.7 Surface Water Sampling	2-6
3.0 DISCUSSION OF RESULTS	3-1
3.1 ORC Injection Results	3-1
3.2 Sparge Air Injection Point Installation Results	3-1
3.3 Soil Vapor Extraction Results	3-1
3.4 Air Sparging Results	3-3
3.5 Groundwater Elevation Monitoring	3-3
3.6 Groundwater Analytical Results	3-3
3.7 Surface Water Sampling Results	3-6
4.0 CONCLUSIONS AND RECOMMENDATIONS	4-1
5.0 REFERENCES	R-1
APPENDICES	
APPENDIX A	2002 Geologic Logs and Well Completion Diagrams
APPENDIX B	2002 Laboratory Reports for Air Emissions Analyses
APPENDIX C	2002 Operations and Maintenance Activities Documentation
APPENDIX D	2002 Field Sampling Documentation
APPENDIX E	2002 Laboratory Reports for Groundwater Samples
APPENDIX F	Summary of Historical Groundwater Data
APPENDIX G	Benzene Concentration and Groundwater Elevation vs. Time
APPENDIX H	Benzene Concentration and Dissolved Oxygen vs. Time
APPENDIX I	2002 Laboratory Reports for Surface Water Samples

TABLE OF CONTENTS
(continued)

LIST OF TABLES

(Tables follow at the end of their respective section)

TABLE NO.	TITLE
3-1	2002 Mass Removal Air Emissions Calculations
3-2	Summary of 2002 Analytical Data

LIST OF FIGURES

FIGURE NO.	TITLE	follows section no.
1	Site Location Map	1
2	Jaquez Site Layout	1
3	Potentiometric Surface Map (February 2002)	3
4	Benzene Concentration Map (February 2002)	3
5	Potentiometric Surface Map (May 2002)	3
6	Benzene Concentration Map (May 2002)	3
7	Potentiometric Surface Map (August 2002)	3
8	Benzene Concentration Map (August 2002)	3
9	Potentiometric Surface Map (November 2002)	3
10	Benzene Concentration Map (November 2002)	3

LIST OF ACRONYMS

$\mu\text{g/l}$	micrograms per liter
m^3	cubic meters
mg/kg	milligrams per kilogram
yd^3	cubic yards
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DO	dissolved oxygen
EC	electrical conductivity
EPFS	El Paso Field Services
IDW	investigation-derived waste
LNAPL	light, non-aqueous phase liquid
NMWQCC	New Mexico Water Quality Control Commission
NMOCD	New Mexico Oil Conservation Division
O&M	operation and maintenance
ORC	oxygen-releasing compound
PID	photoionization detector
PSH	phase-separated hydrocarbons
psi	pounds per square inch
PVC	polyvinyl chloride
scfm	standard cubic feet per minute
SVE	soil vapor extraction
TPH	total petroleum hydrocarbons

EXECUTIVE SUMMARY

The Jaquez Com. C#1 and Jaquez Com. E#1 (Jaquez) groundwater site is located in Section 6, Township 29N, Range 9W, in San Juan County, near Blanco, New Mexico. El Paso Field Services (EPFS) manages the site that includes two meter stations located within 40 feet of one another.

Environmental concerns at the Jaquez site include dissolved-phase hydrocarbons in groundwater at concentrations above New Mexico Water Quality Control Commission (NMWQCC) standards and petroleum hydrocarbons in soil at concentrations potentially above NMWQCC standards. The land adjacent to the site is presently occupied by the local residents and is used primarily for farming. The Citizens Ditch, an elevated surface water conveyance for irrigation and potable water for the City of Bloomfield, bisects the site. High groundwater elevations caused by leakage from Citizens Ditch locally affect groundwater flow pathways and remediation strategies.

EPFS has delineated the groundwater plume and is aggressively remediating the area north of Citizens Ditch using air sparging and soil vapor extraction. Free-product has been removed and active free-product recovery is no longer required at this site. The area south of Citizens Ditch is presently undergoing enhanced biodegradation with chemical oxygen enhancement. Activities conducted during 2002 include continued air sparging and soil vapor extraction in the area north of Citizens Ditch, and injection of an oxygen-releasing compound (ORC) consisting of a magnesium peroxide slurry solution in the area south of Citizens Ditch. In addition, one new monitoring well was installed, and two temporary monitoring wells were abandoned in the area south of Citizens Ditch. This report presents the results of these activities and on-going groundwater monitoring.

During 2002, the air sparging and SVE remediation systems continued to significantly reduce dissolved-phase hydrocarbon concentrations in groundwater beneath the area north of Citizens Ditch. More significantly, benzene concentrations in monitoring wells R-1 and R-2 are approaching cleanup standards with maximum benzene concentrations of 23 µg/l and 19.8 µg/l, respectively. Benzene concentrations in all monitoring wells in the area north of Citizens Ditch were below NMWQCC standards during May 2002. In addition, benzene concentrations in monitoring well R-4 continued to decrease during 2002, ranging from a high of 120 µg/l in February 2002 to less than 0.5 µg/l in both May and August. In the area south of Citizens Ditch, benzene was not detected above cleanup standards in groundwater samples except for in monitoring well M-4. Average benzene concentrations in this well decreased approximately 41 percent from concentrations measured in 2001, and are likely to continue to decline as a result of the injection of the ORC immediately upgradient of monitoring well M-4.

1.0 INTRODUCTION

This annual report has been prepared on behalf of El Paso Field Services (EPFS) to present a summary of physical activities performed and analytical data collected at the Jaquez Com. C#1 and Jaquez Com. E#1 (Jaquez) meter stations during 2002. These meter stations are located approximately 40 feet apart in Section 6, Township 29N, Range 9W, in San Juan County, New Mexico as shown in Figure 1. The Jaquez Site is bisected by Citizens Ditch and is divided into the area north of Citizens Ditch and the area south of Citizens Ditch. Figure 2 presents a detailed map of the Jaquez Site.

This annual report presents a summary of field activities performed at the Jaquez Site during 2002 including:

- Operation and maintenance (O&M) activities associated with the air sparging and soil vapor extraction systems located in the area north of Citizens Ditch.
- On-going groundwater and surface water monitoring in the areas north and south of Citizens Ditch.
- Installation of oxygen-releasing compound (ORC) near monitoring well M-4 in the area south of Citizens Ditch.
- Installation of two air injection points near monitoring well M-4 in the area south of Citizens Ditch.
- Installation of a new monitoring well M-7 in the area south of Citizens Ditch.
- Abandonment of two temporary groundwater monitoring points (TMW-1 and TMW-2) on the southern portion of the site.

1.1 SUMMARY OF PREVIOUS ACTIVITIES

Previous Investigations. The Jaquez Site was identified in 1992 when the adjoining landowners expressed concern regarding potential hydrocarbon contamination in a garden area south of the two meter site locations. EPFS, then El Paso Natural Gas, initiated a comprehensive soil and groundwater investigation of the meter sites and nearby garden area in March 1993, as directed by the New Mexico Oil Conservation Division (NMOCD). In June 1993, EPFS submitted a remediation plan to NMOCD for excavation activities at areas both north and south of Citizens Ditch, and subsequently excavated hydrocarbon-contaminated soils in August and September 1993. Groundwater

monitoring wells R-1 through R-5 (north of Citizens Ditch) and M-1 through M-5 (south of Citizens Ditch) were also installed and sampled.

In June 1999, the landowner encountered discolored soils while plowing in the garden area. As a result, EPFS and NMOCD sampled the site and recommended additional soil and groundwater investigation. In November 1999, a test trench was dug across the field revealing a small area of residual contamination on the western side of the garden area. Additional investigations were conducted in December 1999 to further investigate allegations of a second pit location north of the Citizens Ditch. No evidence of an additional pit or impacted soils were found during that investigation.

In January 2000, additional downgradient monitoring wells were installed west of the site near the landowner residence, as requested by NMOCD and the landowner. In addition, a six-inch diameter irrigation well north of Citizens Ditch was sampled in February 2000. No BTEX was detected above analytical laboratory detection limits in these samples. Also in February 2000, six sediment samples were collected from the Citizens Ditch for hydrocarbon analyses during a brief closure of the conveyance. All sediment samples were below NMOCD standards. In July 2000, temporary monitoring wells TMW-1 and TMW-2 were installed and sampled near the fenceline in the area south of Citizens Ditch. No detectable contamination was found in these samples. Surface water samples (above and below the site) from the Citizens Ditch have been collected on a regular basis since June 2000. Sampling results to-date have not shown contaminants of concern above NMWQCC standards in surface water conveyed across the Jaquez Site by Citizens Ditch.

Previous Remedial Action. Remedial activities have been ongoing since 1993 at the Jaquez Site. In addition to the excavation of contaminated soils mentioned above, passive and belt-type hydrocarbon skimmers were installed in two wells in the area north of Citizens Ditch to collect free-phase hydrocarbons from wells that indicated seasonal accumulations of free-product. By 1998, approximately 265 gallons of free-phase hydrocarbons were recovered from the wells in the area north of Citizens Ditch. No free-phase hydrocarbons have been measured in any well since March 29, 2000. Dissolved phase hydrocarbon levels continued to decrease in 1999 and during 2000.

In January 2000, air sparging and vapor extraction activities were initiated on the north side of Citizens Ditch to address residual soil and dissolved-phase groundwater contamination in the former pit area. This aggressive remediation has considerably reduced hydrocarbon concentrations in the area north of Citizens Ditch to levels at or near the NMOCD remediation standards.

The area south of Citizens Ditch has been subjected to passive venting and nutrient amendments since 1998 in an effort to enhance biological degradation. Hydrocarbon concentrations in groundwater below the area south of Citizens Ditch have shown a reducing trend during that time.

Summary of Previous Activities. A chronological summary of activities at the Jaquez Site is provided below.

- Late 1992 - Landowner expressed concern regarding potential hydrocarbon contamination in a garden area near the meter site location.
- March 1993 - Comprehensive soil and groundwater investigation performed on meter site locations and nearby garden area.
- June 1993 - EPNG submits a remedial plan to NMOCD.
- July 1993 - NMOCD approves the remedial plan.
- August 1993 - Remediation activities initiated.
- September 1993 - Remediation activities completed.
- September 1993 - Monitoring wells R-1 through R-5 and M-1 through M-5 were installed north and south of Citizens Ditch. Initial sampling for benzene, toluene, ethylbenzene, and xylene (BTEX) indicated monitoring wells R-1, R-2, R-4, M-3, and M-4 were above NMWQCC standards. Monitoring wells at the site were initially sampled monthly and are now sampled quarterly.
- October 1993 to October 1996 - Phase separated hydrocarbons (PSH) were observed in monitor wells R-1 and R-2 during the months of seasonally low groundwater levels (i.e., January through May). Passive skimmer systems were installed to remove the PSH during periods of PSH accumulation.
- November 1996 - A pumping test was initiated to determine if light non-aqueous phase liquids (LNAPL) could be removed during high seasonal groundwater by depressing the water table in and around R-1 and R-2.
- December 1996 - EPFS injected approximately 500 gallons of urea nitrate solution into the passive vent system and installed magnesium peroxide socks in

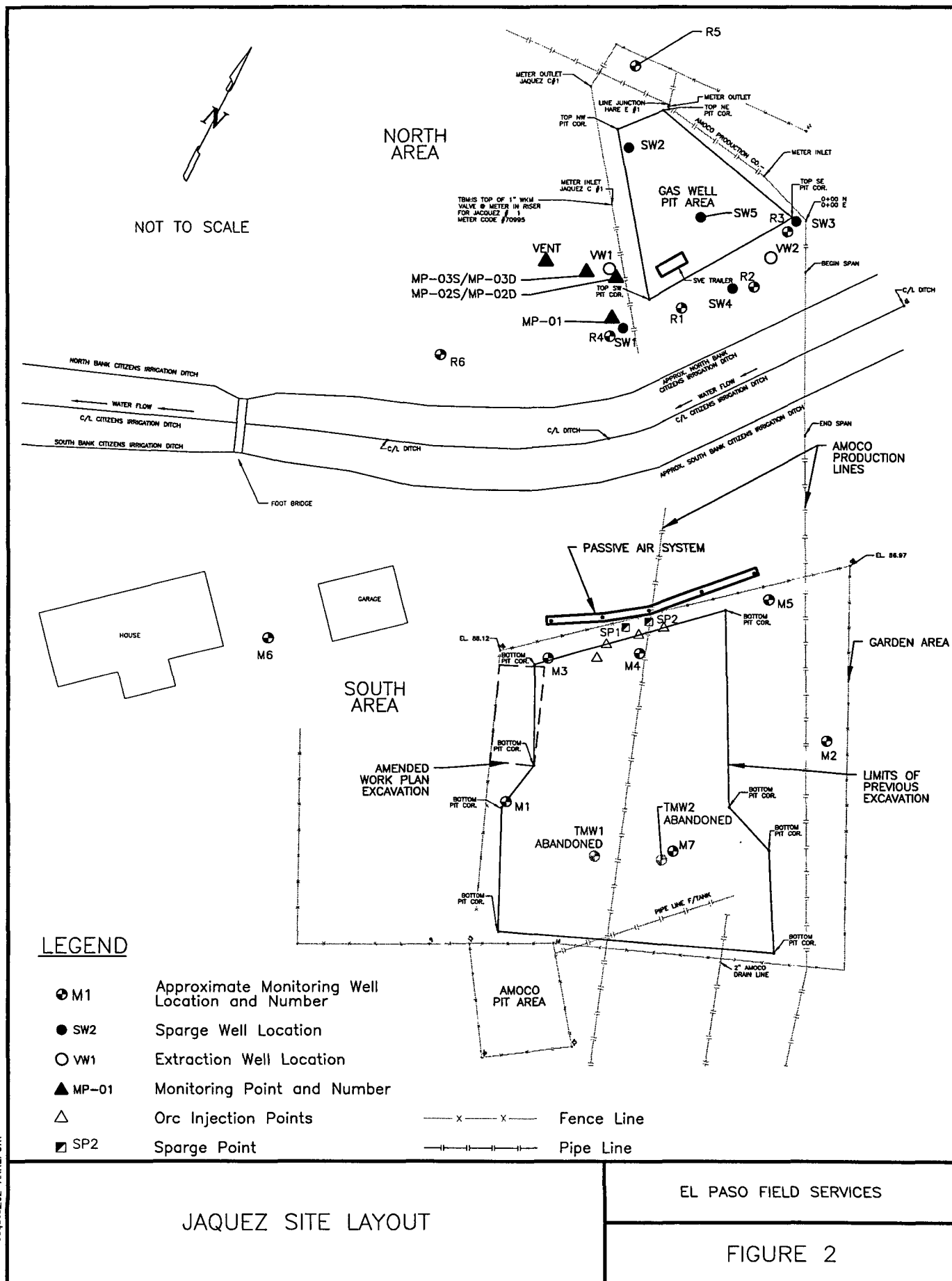
monitoring wells M-3 and M-4 to supply oxygen to enhance natural biodegradation of hydrocarbons in groundwater.

- January 1997 - EPFS installed a belt skimmer in R-2 to remove phase-separated hydrocarbons.
- February 1997 - EPFS installed a belt skimmer in R-1 to remove phase-separated hydrocarbons.
- November 1997 - EPFS installed two temporary monitoring wells inside the excavated area north of R-1 to determine if PSH could be recovered during high groundwater season.
- June 1997 - Belt skimmer PSH recovery system shut down due to seasonal reduction of product thickness related to local irrigation.
- January 1998 - EPFS restarts belt skimmer in R-1 and R-2.
- April 1998 - Belt skimmer PSH recovery system shut down due to seasonal reduction of product thickness related to local irrigation.
- July 1998 - EPFS injected approximately 500 gallons of urea nitrate solution into the passive vent system and installed magnesium peroxide socks in monitoring wells M-3, M-4, R-3, and R-4 to supply oxygen to enhance natural biodegradation of hydrocarbons in groundwater.
- November 1998 - EPFS conducts investigation of possible hydrocarbon seep of groundwater into the surface water of an arroyo to the south of the property. No hydrocarbons are found during this investigation.
- June 1999 - EPFS submits soil and groundwater remediation workplan to the NMOCD for sparging in the area north of Citizens Ditch.
- June 1999 - Landowner encountered discolored soils while plowing. EPFS and NMOCD sample area of concern.
- August 1999 - One sparge well, one SVE point, and five monitoring points are installed and a soil vapor extraction and aquifer pilot test were performed north of Citizens Ditch.
- August 1999 - EPFS submits soil sample results and work plan for additional soil and groundwater investigations as requested by NMOCD.
- September 1999 - NMOCD approves soil and groundwater investigation work plan with modifications.
- October 1999 - EPFS submits Pilot Test Report and workplan for soil and groundwater remediation using sparge techniques to the NMOCD.
- November 1999 - Landowner requests test trench across field. Test trench reveals small area of residual contamination on western side of garden area.
- December 1999 - Meeting with landowner reveals possible second pit location on north side of Citizens Ditch. Four test trenches excavated in possible pit area. No evidence of pit or impacted soils found.

- January 2000 – EPFS submits soil investigation results and amended work plan for soil and groundwater investigation.
- January 2000 – EPFS begins air sparging remediation of the aquifer.
- January 2000 – EPFS installs two additional downgradient monitoring wells as requested by landowner and the NMOCD.
- February 2000 – EPFS samples the existing six-inch irrigation well as requested by Mr. Jaquez and the NMOCD.
- February 2000 – EPFS samples sediment in the ditch as requested by Mr. Jaquez.
- May 2000 - New Mexico Air Quality Board advises on air permit requirements and notice of intent requirements for the remediation system effluent.
- June 2000 – EPFS collects a series of air samples from the effluent of the soil vapor extraction system for calculating the total estimated emissions.
- June 2000 – EPFS samples surface water from Citizens Ditch both upgradient and downgradient of the Jaquez Com E #1 and Com C #1 site.
- June 2000 – EPFS excavated approximately 204 cubic yards of soil from the northwestern corner of the garden area then backfilled the excavation with aggregate rock topped with a mixture of clean soil and livestock manure.
- June 2000 – EPFS injected 70 gallons of urea nitrate mixed with 600 gallons of potable water into the passive air system south of Citizens Ditch.
- July 2000 – EPFS installs two temporary groundwater monitoring wells in the garden area south of Citizens Ditch.
- August 2000 – EPFS samples seep that had developed at the toe of the ditch embankment on the north side of the former cornfield.
- October 2000 – EPFS begins an evaluation of the remediation system to ensure optimum performance and effectiveness.
- December 2000 – EPFS concludes the evaluation of the air sparge and SVE system and incorporates functional changes to effect the most aggressive results.
- March 2001 - EPFS installs two new sparge wells and one new vapor extraction well in the northern portion of the site.
- September 2001 – EPFS injected aqueous urea nitrate into the passive system located on the southern side of Citizens Ditch.
- November 2002 – EPFS installs two new sparge points SP-1 and SP-2 located on the south side of Citizens Ditch immediately north of monitoring well M-4.
- November 2002 – EPFS injected ORC into four injection locations immediately north of monitoring well M-4.
- December 2002 – EPFS abandoned temporary wells TMW-1 and TMW-2.
- December 2002 – EPFS installed one new monitor well M-7 at the approximate location of TMW-2.

1.2 REPORT ORGANIZATION

This report is organized into five sections and appendices containing supporting documentation. Section 1.0 contains an introduction and summary of past site activities. Section 2.0 presents a detailed summary of activities performed at the site during 2002, and Section 3.0 contains a discussion of results from operations and maintenance and sampling activities. Conclusions and recommendations are presented in Section 4.0, while references are provided in Section 5.0. The attached appendices include supporting documentation for activities performed at the site during 2002.



2.0 DESCRIPTION OF 2002 ACTIVITIES

This section contains a detailed discussion of activities performed at the Jaquez Site during 2002. Three contractors performed field work at this site during the past year. MWH provided oversight for all field work conducted during 2002. AMEC Inc. provided field services during the first six months of 2002, while AESE Inc. provided field services between June and December 2002. Activities conducted at this site include:

- Injection of oxygen-releasing compound (ORC) at four injection points near monitoring well M-4.
- Installation of two sparge air injection points near monitoring well M-4.
- Installation of a new monitoring well (M-7) and abandonment of two temporary groundwater monitoring locations (TMW-1 and TMW-2).
- Continued operation and maintenance activities associated with the existing air sparging and soil vapor extraction systems.
- Environmental sampling of groundwater, surface water, and air.

The following sections describe the activities listed above conducted during 2002.

2.1 ORC INJECTION

Approximately 30 pounds of oxygen-releasing compound slurry were injected to approximately 15 feet below ground surface (bgs) at four injection points immediately upgradient of existing monitoring well M-4 as shown in Figure 2. The purpose of this activity was to reduce concentrations of aromatic hydrocarbons in the southern portion of the site by enhancing the dissolved oxygen in the shallow groundwater to allow the natural biological processes to reduce contaminant levels to below regulatory standards.

Installation of the ORC was performed on November 19, 2003 using direct-push drilling technology. No drill cuttings or other investigation-derived waste (IDW) were generated. Field forms, including boring logs for the injection points, are presented in Appendix A.

2.2 SPARGE AIR INJECTION POINT INSTALLATION

Two 1-inch sparge air injection points were also installed on November 19, 2002 in the area south of Citizens Ditch immediately upgradient of monitoring well M-4 (see Figure 2). The purpose of the injection points is to serve as a backup remedial alternative in case the ORC does not effectively reduce concentrations of aromatic hydrocarbons in the shallow groundwater in the southern portion of the site. These points were not hooked up to the system, but were installed for future use if necessary.

Sparge point SP-1 was installed using hollow-stem auger methods to a total boring depth of 15.3 feet below ground surface (bgs). The installation boring log indicates that silty clay alluvium was encountered from ground surface to a depth of approximately 10 feet bgs, and flowing sands were encountered for the remainder of the boring depth. The sparge point was constructed of 0.010-inch slotted, 1-inch polyvinyl chloride (PVC) casing, screened from 12.2 to 15.2 feet bgs with a coarse sand (20-40) pack installed from 7.0 to 15.3 feet bgs. A 5-foot coated bentonite seal was installed on top of the sand pack and the remainder of the borehole was cemented to the ground surface. The sparge point was completed above ground with concrete and a 4-foot steel protective casing. Less than half of one 55-gallon drum of soil boring cuttings was collected during the installation of this sparge point, and it was properly disposed of at the Envirotech Soil Remediation Facility in Hilltop, New Mexico. Field documentation, including boring logs and well completion diagrams is presented in Appendix A.

The boring for sparge point SP-2 was advanced by hollow-stem auger methods to 14.8 feet bgs. Alluvial soils were encountered in this boring; silty clays were logged to a depth of 12 feet bgs followed by flowing sands for the remainder of the boring depth. Hydrocarbon odors were noted below 4 feet bgs. The sparge point was constructed of 0.010-inch slotted, 1-inch PVC casing screened from 11.8 to 14.8 feet bgs with a coarse sand (20-40) pack installed from 6.5 to 14.8 feet bgs. A 4-foot coated bentonite seal was installed on top of the sand pack, and the remainder of the borehole was cemented to the ground surface. The sparge point was completed above ground with concrete and a 4-foot steel protective casing. Less than half of one 55-gallon drum of soil boring

cuttings was collected during the installation of this sparge point, and it was properly disposed of at the Envirotech Soil Remediation Facility in Hilltop, New Mexico. Field documentation, including boring logs and well completion diagrams, is presented in Appendix A.

2.3 MONITORING WELL INSTALLATION

At NMOCD's request, an additional monitoring well (M-7) was installed in the approximate location of TMW-2 to serve as a downgradient monitoring point. The boring for this well was advanced to approximately 15 feet bgs using hollow-stem auger methods. This two-inch well, was constructed of 0.01-inch slotted PVC casing and was screened from 14 feet 8 inches to 4 feet 8 inches bgs with a coarse sand pack (20-40) installed from 14 feet 10 inches bgs to 4 feet 4 inches bgs. A coated bentonite pellet seal was installed from 3 feet to 4 feet 4 inches bgs and then grouted to approximately 1 foot bgs. This well was completed above ground with concrete from 0 to 1 foot bgs, and a 4-foot steel protective casing. Approximately one 55-gallon drum of soil boring cuttings was collected during the installation of this sparge point, and it was properly disposed of at the Envirotech Soil Remediation Facility in Hilltop, New Mexico. Field documentation, including boring logs and well completion diagrams, is presented in Appendix A.

During the field work associated with installation of M-7, the two existing temporary monitoring points TMW-1 and TMW-2 were abandoned by removing the shallowest section of well casing and then filling the wells with granular bentonite from the bottom of the well to the surface. Field documentation, including abandonment forms for these wells, is presented in Appendix A.

2.4 SOIL VAPOR EXTRACTION ACTIVITIES

Operation and Maintenance. The existing soil vapor extraction (SVE) system located in the area north of Citizens Ditch continued to operate effectively during 2002. Weekly operation and maintenance visits to the SVE system were conducted and included monitoring of the influent and effluent pressure and flow, total volatile hydrocarbon

measurements of the system effluent using a photoionization detector, and total volatile hydrocarbons measurements in each of the six monitoring wells located in the area north of Citizens Ditch. Effluent air samples were collected on a monthly basis for laboratory analysis. In addition, the O&M technician performed any necessary maintenance and repairs to the system. Field documentation of O&M activities is presented in Appendix C.

Summary of SVE Operations. During 2002, the SVE system was operated on a 12-hour per day, 5-day per week operation schedule with the exception of the following shutdown periods:

- January 1, 2002 through January 2, 2002 (New Year Holiday).
- July 4, 2002 through July 8, 2002 (Independence Day Holiday).
- November 26, 2002 through December 5, 2002 (Thanksgiving Holiday).
- December 12, 2002 through December 31, 2002 (Christmas Holiday).
- During groundwater sampling events conducted in February, May, August, and November.

As mentioned previously, weekly monitoring of the air effluent using a PID was conducted along with monthly collection of air effluent samples for laboratory analysis. Air permitting is not required for this SVE system as long as air emissions remain below 25 tons benzene per year. Benzene and total BTEX removal rates for 2002 are discussed further in Section 3.0.

2.5 AIR SPARGING ACTIVITIES

The existing air sparging system, co-located with the SVE system discussed above, continued to operate during 2002. Weekly operation and maintenance visits to the site were conducted that included monitoring of the pressure and flow rate at each injection point. In addition, the O&M technician performed required maintenance and repairs. The sparge system was operated on the same schedule as the SVE system (see

Section 2.4) at Jaquez, except for the following maintenance events. The rubber connection between the motor and sparge compressor was replaced twice during 2002. The first failure occurred on February 8, 2002, and the rubber connection was replaced and the system turned back on on March 5, 2002. The second failure occurred on November 4, 2002 and was repaired and restarted on November 25, 2002. Field documentation for O&M activities is provided in Appendix C.

2.6 GROUNDWATER SAMPLING

Monitoring wells R-1 through R-6 (area north of Citizens Ditch) were scheduled for quarterly groundwater sampling in February, May, August, and November 2002, along with monthly water level elevation monitoring. All samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Field sampling documentation is presented in Appendix D, while laboratory reports are provided in Appendix F.

Monitoring wells M-1 through M-6 (area south of Citizens Ditch) were sampled in February, May, and November along with quarterly water level monitoring in February, May, August, and November. All water level measurements were collected after the remediation systems had been turned off for 24 hours. All samples collected between January 2002 and June 2002 were analyzed by Pinnacle Laboratories of Albuquerque, NM. After June, samples were analyzed by APCL Laboratories of Chino, California.

Prior to sampling, field personnel checked for phase-separated hydrocarbons (PSH) and measured water levels using an oil-water interface probe. Measurements were recorded on a field sampling sheet. All measurements were collected 24 hours after the remediation systems were turned off. The remediation systems were then restarted immediately after each sampling event.

Monitoring wells were bailed and sampled using a disposable Teflon bailer. Field parameters collected during each sampling event included the following:

- Temperature

- pH
- Electrical conductivity (EC)
- Dissolved oxygen (DO)

Temperature, pH, and EC readings were collected using YSI 63 water quality monitors and DO was measured using a YSI 95 DO meter. Purge volumes, water levels, DO, pH, and EC measurements were recorded on the field sampling sheets provided in Appendix D.

2.7 SURFACE WATER SAMPLING

Surface water samples were collected from Citizens Ditch at locations both upgradient and downgradient of the site during June and December 2002. Field sampling documentation is presented in Appendix D, while laboratory reports are provided in Appendix F.

3.0 DISCUSSION OF RESULTS

This section describes the results of activities conducted at the Jaquez site during 2002.

3.1 ORC INJECTION RESULTS

As discussed in Section 2.0, approximately 30 pounds of ORC slurry were injected in four locations to approximately 15 feet bgs immediately upgradient of existing monitoring well M-4 on November 19, 2002. The purpose of the ORC injection was to increase the dissolved oxygen concentration in the shallow groundwater to enhance natural attenuation processes. Performance monitoring samples were not scheduled for collection until after December 2002, therefore, discussion of the effectiveness of the ORC injection will be deferred to the 2003 Annual Report. It should be noted, however, that benzene concentrations at monitoring well M-4 continued to show a declining trend during 2002 with approximately 1.2 micrograms per liter ($\mu\text{g/l}$) benzene detected in the November 2002 sample.

3.2 SPARGE AIR INJECTION POINT INSTALLATION RESULTS

After the two sparge injection points were installed near M-4 during November 2002, no additional activities were performed. The sparge points were installed to take advantage of the direct-push drilling contractor that was on site to perform the ORC injection. These points are intended to be hooked up to the existing sparge system only in the event that the ORC injection proves to be ineffective.

3.3 SOIL VAPOR EXTRACTION RESULTS

The soil vapor extraction system operated at VW-2 throughout 2002 at an average well-head extraction rate of approximately 14 standard cubic feet per minute (scfm). Monthly average PID readings, representing SVE removal rates in 2002, were as follows: January (88 PID Units), February (1.3 PID Units), March (210 PID Units), April (213 PID Units), May (123 PID Units), June (110 PID Units), July (56 PID Units), August (68 PID Units),

September (19 PID Units), October (13 PID Units), November (9 PID Units), and December (14 PID Units).

Air emissions from the Jaquez SVE system have not exceeded the potential emission rate of 25 tons of benzene/year during its operational span, therefore, no permit for emissions is required by the State of New Mexico. However, monthly effluent air samples for BTEX laboratory analysis were collected during 2002 with the exception of January and September. The air sample scheduled for January was inadvertently missed, while the air sample collected during September exceeded the standard holding time and was subsequently not analyzed. Laboratory reports for air emissions analyses are presented in Appendix B. Using the monthly laboratory analysis of effluent air, benzene removal rates were calculated as follows:

$$M = \frac{1.1 \times C \times Q \times T}{1 \times 10^9}$$

Where: M= Emission Rate (tons per year)

C= Benzene or BTEX concentrations (mg/m³)

Q= Flow rate (m³ per hour)

T= Operating Time (hours)

As stated previously, the SVE system was scheduled to operate on a 12-hour per day, 5-days per week schedule with complete shutdown of the system during major holidays. All emissions calculations were based on this schedule taking into consideration those days that the system was shutdown due to mechanical issues or scheduled outages.

During 2002, the SVE system removed a total of 0.0007 tons of benzene and 0.001 tons of total BTEX constituents. The average benzene removal rate during 2002 was 6×10^{-5} tons/month. The highest removal rates were observed in June (0.00025 tons of benzene and 0.00028 tons of total BTEX). The June values accounted for 36 and 27 percent of

the annual removal of benzene and total BTEX, respectively. Table 3-1 presents a summary of laboratory results for air analyses along with mass removal calculations for the SVE system during 2002.

3.4 AIR SPARGING RESULTS

The air sparging system operated at sparge wells SW-1, SW-4, and SW-5 throughout 2002, except as noted in Section 2.0. With the exception of mechanical difficulties discussed in Section 2.0, the system operated within the expected ranges for air injection pressure and flow rate. Injection pressures for the sparging system ranged from 6 to 13 pounds per square inch. Flow rates at SW-1 typically ranged from 2.5 to 4 scfm, while SW-4 flow rates ranged from 2 to 6 scfm, and SW-5 operated between 2.5 and 7 scfm. Results for the air sparging system are discussed later in this section in terms of contaminant concentrations.

3.5 GROUNDWATER ELEVATION MONITORING

Potentiometric surface maps were prepared for each of the quarterly monitoring rounds conducted in February (Figure 3), May (Figure 5), August (Figure 7), and November 2002 (Figure 9). Groundwater elevation measurements at this site indicate that the shallow groundwater mounds in the immediate vicinity of Citizens Ditch, presumably because the conveyance is losing water to the shallow aquifer as it travels across the site. In addition, the shallow groundwater mound may be enhanced by the injection of sparge air below the water table immediately north of Citizens Ditch. The regional groundwater appears to enter the site from the north/northeast, then trends to the south across Citizens Ditch.

3.6 GROUNDWATER ANALYTICAL RESULTS

Table 3-2 presents a summary of the analytical results for all groundwater samples collected at the Jaquez Site during 2002. Figures 4, 6, 8, and 10 present isoconcentration maps for each sampling round. Field sampling documentation for groundwater sampling

is provided in Appendix D, laboratory reports are provided in Appendix E, and a summary of historical groundwater data is presented in Appendix F.

Area North of Citizens Ditch

Dissolved Hydrocarbon Results. Benzene concentrations in the area north of Citizens Ditch, as defined by monitoring wells R-1 through R-6, continued to decline during 2002. Benzene concentrations in monitoring well R-1 ranged from less than the detection limit (<0.5 $\mu\text{g/l}$) to 23 $\mu\text{g/l}$ as compared to an average of 140 $\mu\text{g/l}$ during 2001. Similar results were observed in monitoring well R-2 with a range of benzene concentrations between less than detection to 19.8 $\mu\text{g/l}$. Laboratory results from samples collected from monitoring well R-4 also continued to show declining benzene concentrations ranging from 120 $\mu\text{g/l}$ in February 2002 to less than detection limits in both May and August. The remaining monitoring wells located in the area north of Citizens Ditch (R-3, R-5, and R-6) did not contain measurable concentrations of benzene during 2002, which is consistent with analytical results from samples collected during 2001.

The analytical results for the groundwater sampling round conducted in February 2002 indicated that all wells located north of Citizens Ditch were below standards with the exception of monitoring wells R-1 (23 $\mu\text{g/l}$) and R-4 (120 $\mu\text{g/l}$). The May sampling round indicated all wells were below NMWQCC standards, while the August sampling results showed all wells below standards except for monitoring well R-2, which slightly exceeded standards at 11.4 $\mu\text{g/l}$. The results for the November 2002 sampling event indicated that only monitoring wells R-2 (19.8 $\mu\text{g/l}$) and R-4 (15.8 $\mu\text{g/l}$) exceeded benzene standards. Appendix G presents benzene concentrations and groundwater elevations versus time charts.

Dissolved Oxygen Results. Dissolved oxygen in groundwater was measured at each monitoring well in the area north of Citizens Ditch during May, August, and November 2002. The purpose of this monitoring was to ensure that sparge system was delivering adequate oxygen to the groundwater to support natural attenuation processes. Generally, a dissolved oxygen concentration in groundwater of greater than 0.5 mg/l is considered

sufficient for supporting aerobic natural attenuation processes. Results from the dissolved oxygen monitoring performed during 2002 indicate that the sparge system is delivering adequate oxygen to the monitoring wells located in the area north of Citizens Ditch. The charts included in Appendix H present benzene concentration and dissolved oxygen over time for each of the monitoring wells located north of Citizens Ditch.

Area South of Citizens Ditch

Dissolved Hydrocarbon Results. Benzene concentrations in groundwater in the area south of Citizens Ditch, as defined by monitoring wells M-1 through M-6, remained consistent with historic levels. There were no benzene detections above NMWQCC groundwater standards in monitoring wells M-1, M-2, M-3, M-5, and M-6. Benzene concentrations appeared to decrease in M-4, ranging from 1.2 µg/l (November) to 51 µg/l (May) with an average concentration of approximately 29 µg/l as compared with a 2001 average benzene concentration of 70 µg/l. These results indicate an average concentration reduction of approximately 41 percent. It should be noted that the benzene concentration at M-4 during the November 2002 sampling event was below NMWQCC standards for the first time since 1996. Appendix G presents charts for benzene concentrations and groundwater elevations versus time.

Nitrate Results. Nitrate samples were collected from monitoring wells M-3 and M-4 during February and May 2002. The purpose of these samples was to assess whether adequate nutrients were available for biodegradation of hydrocarbons and to evaluate whether nutrient additions at the passive air system performed in October 2001 caused exceedances of the NMWQCC nitrate standard of 10 mg/l. As shown in Table 3-2, nitrate concentrations in monitoring well M-3 were approximately 0.3 mg/l during both sampling events. The nitrate concentrations in monitoring well M-4 ranged from 27.2 mg/l in February to 16 mg/l in May 2002. These results indicate that there is adequate nitrogen to support natural attenuation processes in monitoring well M-4, and the nitrate concentrations in this well are above the NMWQCC nitrate standard. This slight exceedance of the nitrate standard is likely an artifact of the urea injection during October

2001, and appears to be declining over time. It should be noted that no additional injections of nitrogen are planned for this site.

Phase-Separated Hydrocarbons

No free-phase hydrocarbons have been measured in any wells at the Jaquez Site since March 29, 2000.

3.7 SURFACE WATER SAMPLING RESULTS

Surface water samples were scheduled to be collected from Citizens Ditch, at locations both upstream and downstream of the site, during July and December 2002. Because Citizens Ditch was turned off for most of the month of December, this sample was not collected until January 8, 2003.

Table 3-2 presents a summary of the surface water analytical results. Results of the surface water samples collected from Citizens Ditch indicate no detections above NMWQCC standards, which is consistent with samples collected during 2001. It should be noted that slight concentrations ($\leq 1 \mu\text{g/l}$) of toluene, ethylbenzene and xylenes were detected during both sampling events. Because these analytes were detected in both the upgradient and downgradient samples, it is likely that the low reported concentrations are either an artifact of the laboratory or are from a source other than the Jaquez Site.

TABLE 3-1

**2002 MASS REMOVAL AIR EMISSIONS CALCULATIONS
JAQUEZ SVE SYSTEM
(Page 1 of 1)**

Date Sampled	Benzene (mg/m ³)	Toluene (mg/m ³)	Ethylbenzene (mg/m ³)	Total Xylenes (mg/m ³)	C Benzene (mg/m ³) ^(a)	C BTEX (mg/m ³) ^(a)	Q (m ³ /hr)	T (hrs)	Pounds Benzene/ Hour	Pounds BTEX/ Hour	Tons Benzene/ Month ^(b)	Maximum Tons Benzene/ Month ^(c)	Tons BTEX/ Month ^(b)	Maximum Tons BTEX/ Month ^(c)	
02/22/02	<0.16	<0.19	<0.22	<0.22	0.08	0.32	24	708	0.000004	0.00002	1.5E-06	1.6E-06	5.9E-06	6.2E-06	(d)
03/20/02	15.6	7.7	<1.3	4.5	15.6	28.2	24	372	0.0008	0.001	1.5E-04	2.8E-04	2.7E-04	5.0E-04	
04/24/02	9.3	<9.0	2.6	6.1	9.3	21.7	24	264	0.0005	0.001	6.4E-05	1.8E-04	1.5E-04	4.2E-04	
05/16/02	7.3	<1.9	<2.1	3.5	7.3	12.4	24	348	0.0004	0.0007	6.7E-05	1.4E-04	1.1E-04	2.3E-04	
06/13/02	26.2	<0.94	0.93	2.6	26.2	30.0	24	360	0.001	0.002	2.5E-04	5.1E-04	2.8E-04	5.9E-04	
07/18/02	5.1	2.1	0.29	0.57	5.1	8.1	24	300	0.0003	0.0004	4.0E-05	9.6E-05	6.3E-05	1.5E-04	
08/08/02	3.2	3.2	0.29	0.64	3.2	7.3	24	600	0.0002	0.0004	5.0E-05	6.2E-05	1.1E-04	1.4E-04	(e)
10/15/02	0.96	0.32	0.29	0.38	0.96	1.9	24	372	0.00005	0.0001	9.3E-06	1.9E-05	1.9E-05	3.8E-05	
11/26/02	1.3	0.13	0.32	0.35	1.3	2.1	24	300	0.00007	0.0001	1.0E-05	7.3E-05	1.6E-05	1.2E-04	
12/12/02	0.96	0.64	0.32	0.48	0.96	2.4	24	72	0.00005	0.0001	1.8E-06	1.9E-05	4.5E-06	4.7E-05	
Total Emissions (tons/year)											0.0007	0.001	0.001	0.002	
Average Emissions (tons/month)											0.00006	0.0001	0.00009	0.0002	

(a) When a compound was not detected, it was assumed that the concentration was equal to half the reporting limit

(b) Tons of benzene or BTEX emitted during the time period, based on actual number of operating hours

(c) Worst case emissions for the time period had the system been operating 24 hours per day, every day

(d) Assumes emissions from February sampling round applicable to January and February

(e) Assumes emissions from August sampling round applicable to August and September

BTEX Benzene, toluene, ethylbenzene, and xylenes

C Total concentration

Q Emission rate of gas

T Time of operation, in hours

TABLE 3-2

SUMMARY OF 2002 ANALYTICAL DATA
JAQUEZ PROJECT

Page (1 of 3)

Location Identification	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	m,p-Xylene (µg/l)	o-Xylene (µg/l)	Total Xylenes (µg/l)	Nitrates (mg/l)	Dissolved Oxygen (mg/l)	Depth to Water (feet bgs)
CDDG	18-Jul-2002	<0.5	0.4	0.7	0.9	<0.5	0.9	NA	NA	NA
CDDG	08-Jan-2003	<0.5	<0.5	<0.5	0.9	<0.5	0.9	NA	NA	NA
CDUG	18-Jul-2002	<0.5	0.6	1.0	1.0	0.3	1.3	NA	NA	NA
CDUG	08-Jan-2003	<0.5	<0.5	<0.5	1	<0.5	1	NA	NA	NA
M-1	22-Feb-2002	<0.5	<1.0	<0.5	NA	NA	<0.5	NA	NA	4.94
M-1	22-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	4.55	3.38
M-1	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	4.03
M-1	06-Nov-2002	<0.5	<0.5	<0.5	1	<0.5	1	NA	NA	4.04
M-2	22-Feb-2002	<0.5	<1.0	<0.5	NA	NA	<0.5	NA	NA	4.76
M-2	22-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	0.51	2.97
M-2	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	3.71
M-2	06-Nov-2002	<0.5	<0.5	0.8	0.7	<0.5	0.7	NA	NA	3.87
M-3	22-Feb-2002	<0.5	<0.5	<0.5	NA	NA	1.1	0.32	NA	5.07
M-3	22-May-2002	<0.5	<0.5	<0.5	NA	NA	1	0.31	1.72	3.10
M-3	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	4.92
M-3	06-Nov-2002	0.7	0.4	<0.5	0.5	0.8	1.3	NA	NA	4.37
M-4	22-Feb-2002	34	<0.5	<0.5	NA	NA	3.4	27.2	NA	4.00
M-4	22-May-2002	51	<0.5	<0.5	NA	NA	2.2	16.0	2.41	1.40
M-4	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	5.78
M-4	06-Nov-2002	1.2	<0.5	<0.5	0.7	<0.5	0.7	NA	NA	5.12
M-5	22-Feb-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	NA	5.21
M-5	22-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	NA	2.94
M-5	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	3.97
M-5	06-Nov-2002	<0.5	<0.5	<0.5	0.7	<0.5	0.7	NA	NA	4.22

TABLE 3-2

SUMMARY OF 2002 ANALYTICAL DATA
JAQUEZ PROJECT

Page (2 of 3)

Location Identification	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	m,p-Xylene (µg/l)	o-Xylene (µg/l)	Total Xylenes (µg/l)	Nitrates (mg/l)	Dissolved Oxygen (mg/l)	Depth to Water (feet bgs)
M-6	22-Feb-2002	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	NA	8.40
M-6	22-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	3.57	6.67
M-6	06-Nov-2002	<0.5	0.4	1.1	1	0.3	1.3	NA	NA	7.49
R-1	21-Feb-2002	23	1.3	2.1	NA	NA	6.1	NA	NA	15.14
R-1	23-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	3.73	13.63
R-1	08-Aug-2002	0.4	2.5	1.2	2	0.4	2.4	NA	3.94	15.88
R-1	06-Nov-2002	6	0.5	1.1	2	0.4	2.4	NA	3.75	14.18
R-2	21-Feb-2002	<20	1.0	<3.1	NA	NA	35	NA	NA	13.98
R-2	23-May-2002	<0.5	<0.5	2.4	NA	NA	30	NA	0.81	12.46
R-2	08-Aug-2002	11.4	0.6	2.0	7.5	1.8	9.3	NA	1.41	12.45
R-2	06-Nov-2002	19.8	0.6	1.6	6.1	1.5	7.6	NA	1.48	12.99
R-3	21-Feb-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	NA	14.94
R-3	23-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	1.13	13.25
R-3	08-Aug-2002	<0.5	0.5	0.9	1	<0.5	1	NA	1.20	13.26
R-3	06-Nov-2002	<0.5	<0.5	<0.5	0.8	<0.5	0.8	NA	1.78	13.89
R-4	21-Feb-2002	120	2.6	0.56	NA	NA	7.5	NA	NA	14.43
R-4	23-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	1.76	12.88
R-4	08-Aug-2002	<0.5	0.4	0.8	0.7	<0.5	0.7	NA	1.28	12.84
R-4	06-Nov-2002	15.8	0.6	0.9	14	6.9	20.9	NA	1.29	13.75
R-5	21-Feb-2002	<0.5	<1.0	<0.5	NA	NA	<0.5	NA	NA	17.29
R-5	23-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	1.70	15.99
R-5	08-Aug-2002	<0.5	0.4	0.9	0.9	<0.5	0.9	NA	2.15	15.88
R-5	06-Nov-2002	<0.5	<0.5	<0.5	0.8	<0.5	0.8	NA	2.29	16.25

TABLE 3-2

**SUMMARY OF 2002 ANALYTICAL DATA
JAQUEZ PROJECT**

Page (3 of 3)

Location Identification	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	m,p-Xylene (µg/l)	o-Xylene (µg/l)	Total Xylenes (µg/l)	Nitrates (mg/l)	Dissolved Oxygen (mg/l)	Depth to Water (feet bgs)
R-6	21-Feb-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	NA	16.84
R-6	23-May-2002	<0.5	<0.5	<0.5	NA	NA	<1.0	NA	6.59	12.75
R-6	08-Aug-2002	<0.5	0.4	0.9	1	<0.5	1	NA	3.92	13.44
R-6	06-Nov-2002	<0.5	<0.5	<0.5	0.9	<0.5	0.9	NA	4.24	14.76
TMW-01	22-Feb-2002	NA	NA	NA	NA	NA	NA	NA	NA	4.47
TMW-01	22-May-2002	NA	NA	NA	NA	NA	NA	NA	NA	2.90
TMW-01	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	3.31
TMW-01	06-Nov-2002	NA	NA	NA	NA	NA	NA	NA	NA	3.61
TMW-02	22-Feb-2002	NA	NA	NA	NA	NA	NA	NA	NA	3.40
TMW-02	22-May-2002	NA	NA	NA	NA	NA	NA	NA	NA	1.93
TMW-02	08-Aug-2002	NA	NA	NA	NA	NA	NA	NA	NA	2.42
TMW-02	06-Nov-2002	NA	NA	NA	NA	NA	NA	NA	NA	2.62

NA - not analyzed

bgs - below ground surface

µg/l - micrograms per liter

mg/l - milligrams per liter

NOT TO SCALE

LEGEND

- M1 Approximate Monitoring Well Location and Number
- SW2 Sparge Well Location
- VW1 Extraction Well Location
- △ Orc Injection Points
- SP2 Sparge Point
- X — X — Fence Line
- | — | — Pipe Line
- GWEL Groundwater Elevation (Monitoring Wells Recorded 2/22/02; Recovery Wells Recorded 2/21/02)

TOC
5586

Top of Casing
Potentiometric Surface
(Approximate & Assumed Where Dashed)
Direction of Groundwater Flow
(Estimated)

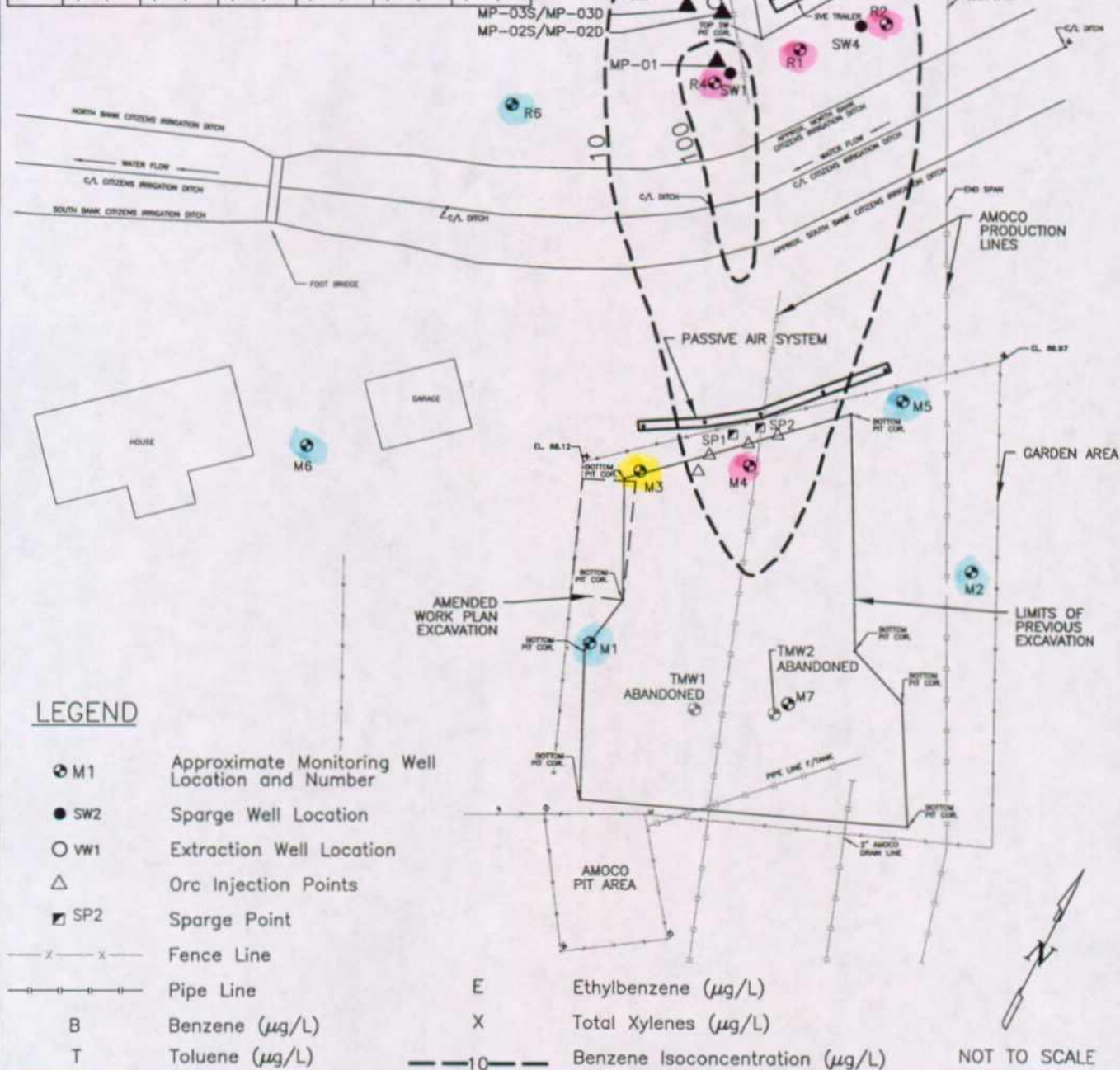
POTENTIOMETRIC SURFACE MAP JAEQUEZ COM C#1 AND JAEQUEZ COM E#1 (2/21/02)

EL PASO FIELD SERVICES

FIGURE 3

	M1	M2	M3	M4	M5	M6
B	<0.5	<0.5	<0.5	34	<0.5	<0.5
T	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5
E	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
X	<0.5	<0.5	1.1	3.4	<1.0	<0.5
DATE	2/22/02	2/22/02	2/22/02	2/22/02	2/22/02	2/22/02

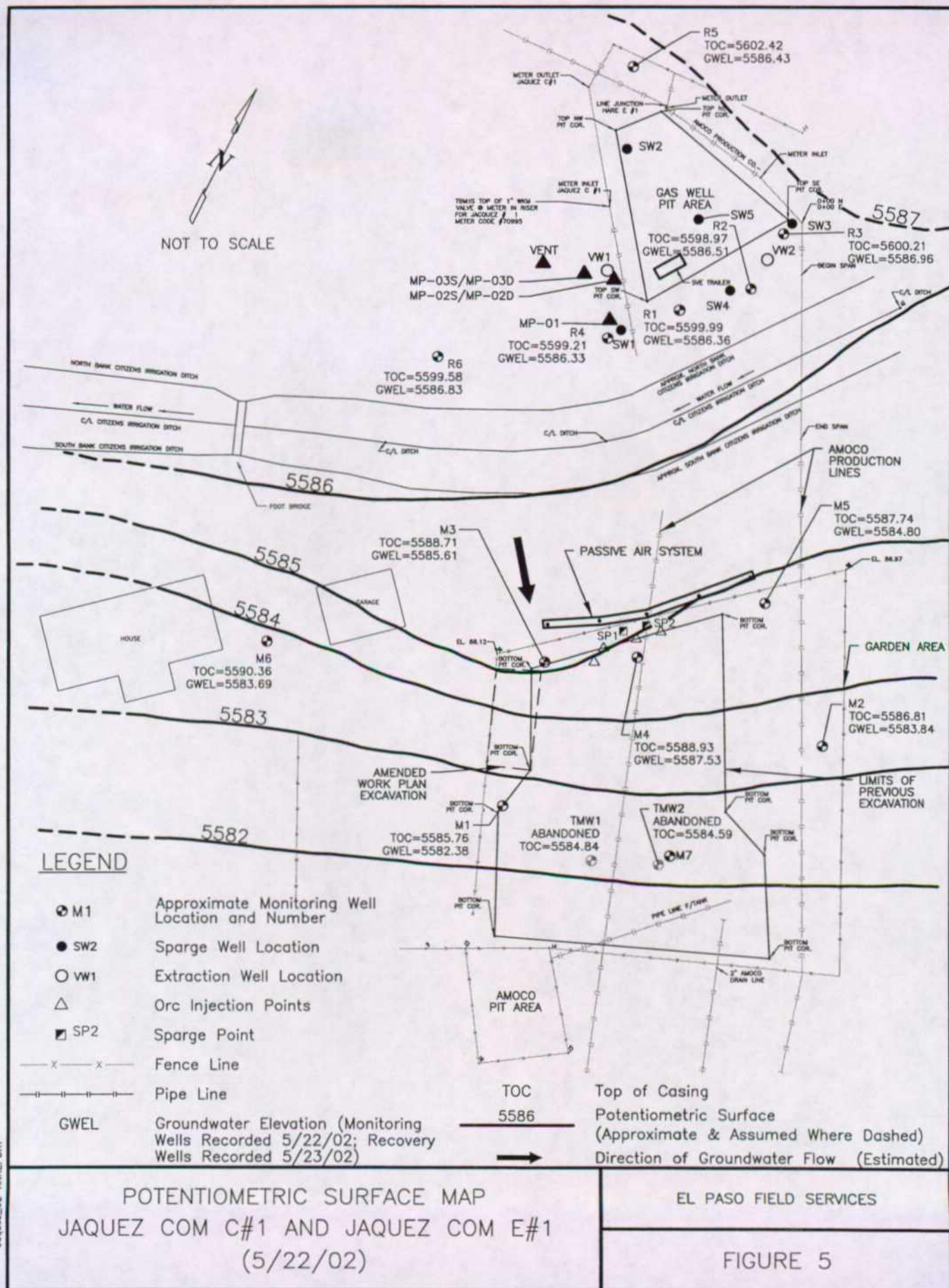
	R1	R2	R3	R4	R5	R6
B	23	20	<0.5	120	<0.5	<0.5
T	1.3	<1.0	<0.5	2.6	<1.0	<0.5
E	2.1	3.1	<0.5	0.56	<0.5	<0.5
X	6.1	35	<1.0	7.5	<0.5	<1.0
DATE	2/21/02	2/21/02	2/21/02	2/21/02	2/21/02	2/21/02



BENZENE CONCENTRATION MAP
JAQUEZ COM C#1 AND JAQUEZ COM E#1
(2/21/02)

EL PASO FIELD SERVICES

FIGURE 4



	R1	R2	R3	R4	R5	R6
B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
E	<0.5	2.4	<0.5	<0.5	<0.5	<0.5
X	<1.0	30	<1.0	<1.0	<1.0	<1.0
DATE	5/23/02	5/23/02	5/23/02	5/23/02	5/23/02	5/23/02

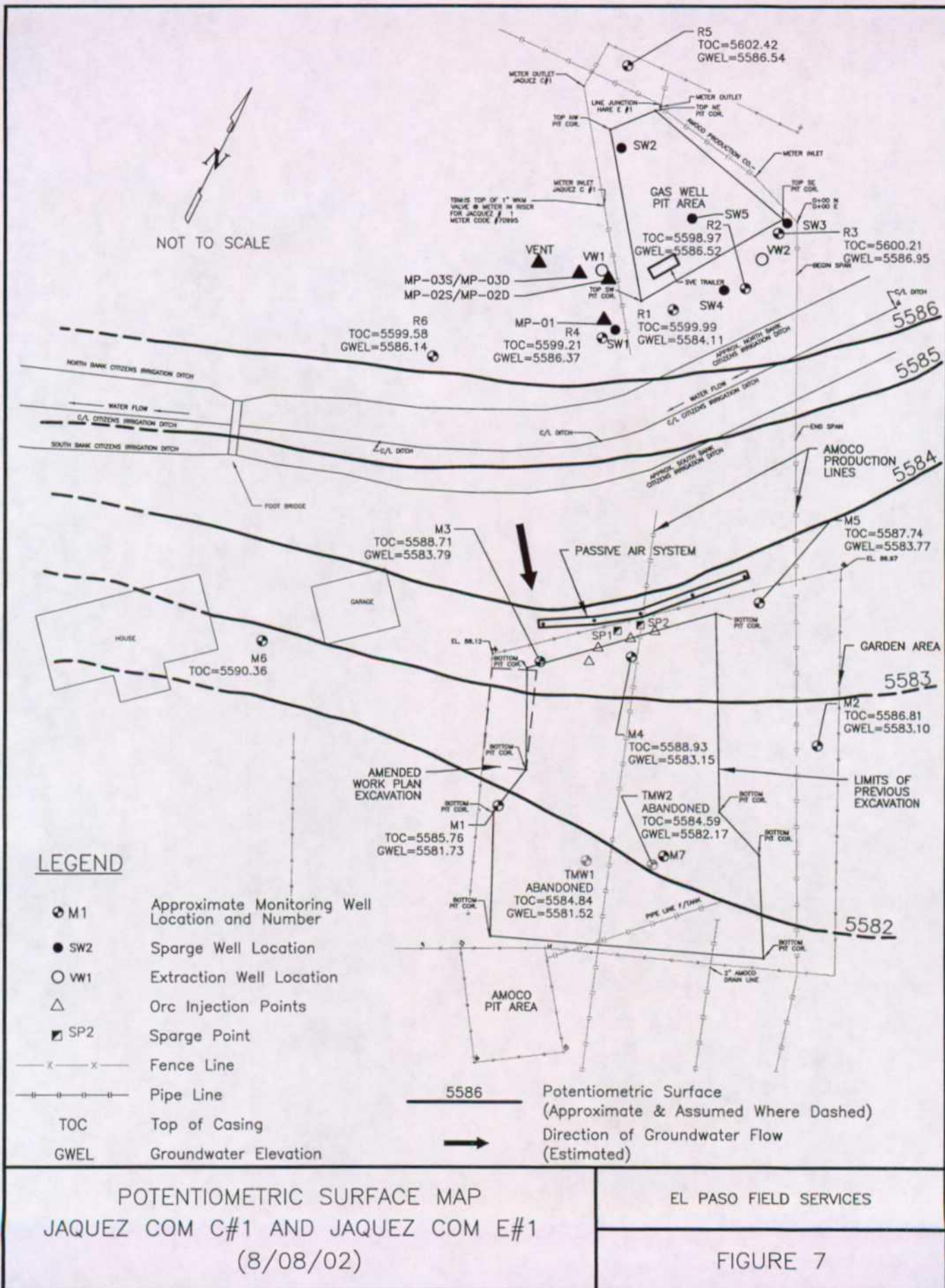


E	Ethylbenzene ($\mu\text{g/L}$)
X	Total Xylenes ($\mu\text{g/L}$)
-10—	Benzene Isoconcentration ($\mu\text{g/L}$) (Estimated)

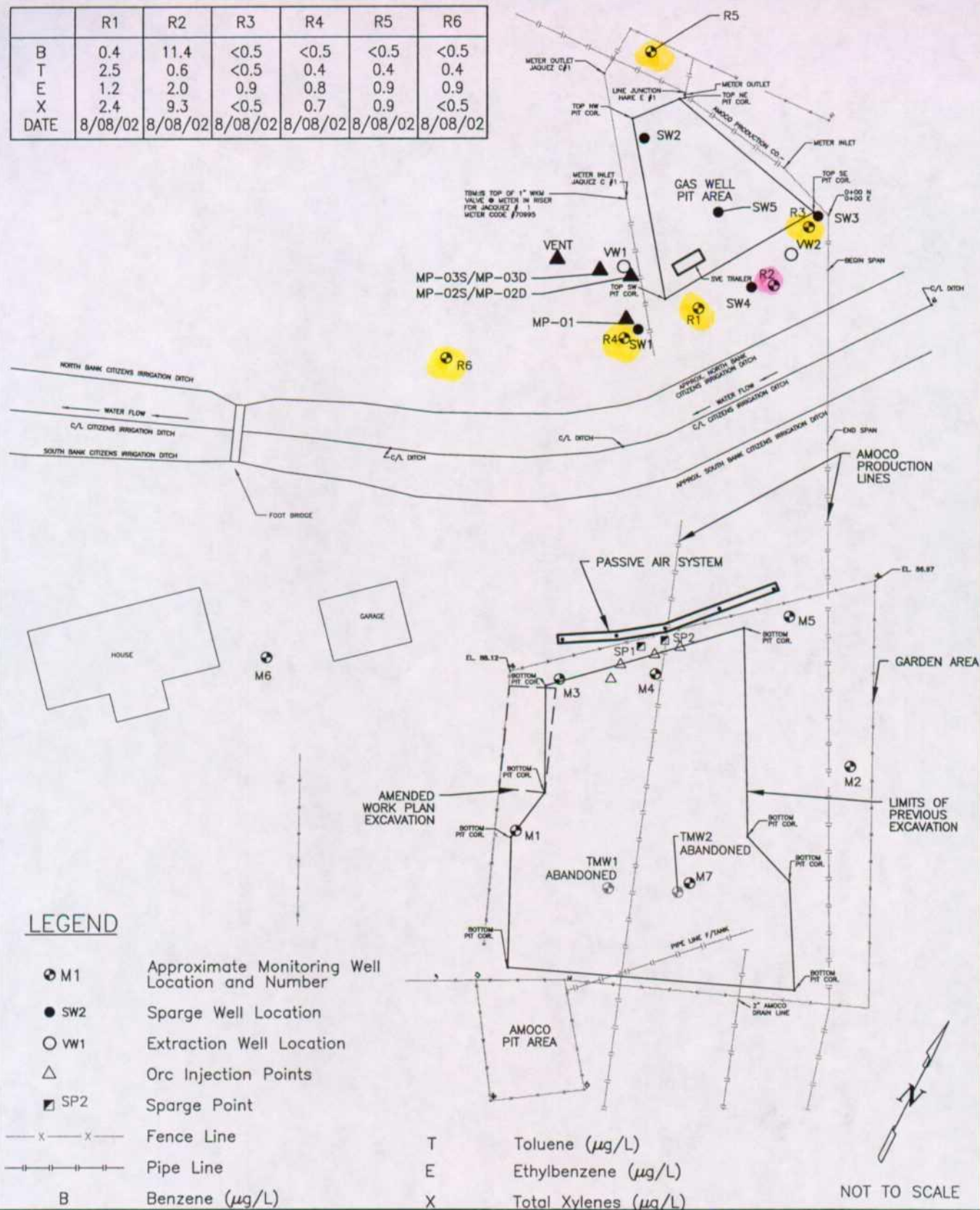
NOT TO SCALE

EL PASO FIELD SERVICES

FIGURE 6



	R1	R2	R3	R4	R5	R6
B	0.4	11.4	<0.5	<0.5	<0.5	<0.5
T	2.5	0.6	<0.5	0.4	0.4	0.4
E	1.2	2.0	0.9	0.8	0.9	0.9
X	2.4	9.3	<0.5	0.7	0.9	<0.5
DATE	8/08/02	8/08/02	8/08/02	8/08/02	8/08/02	8/08/02

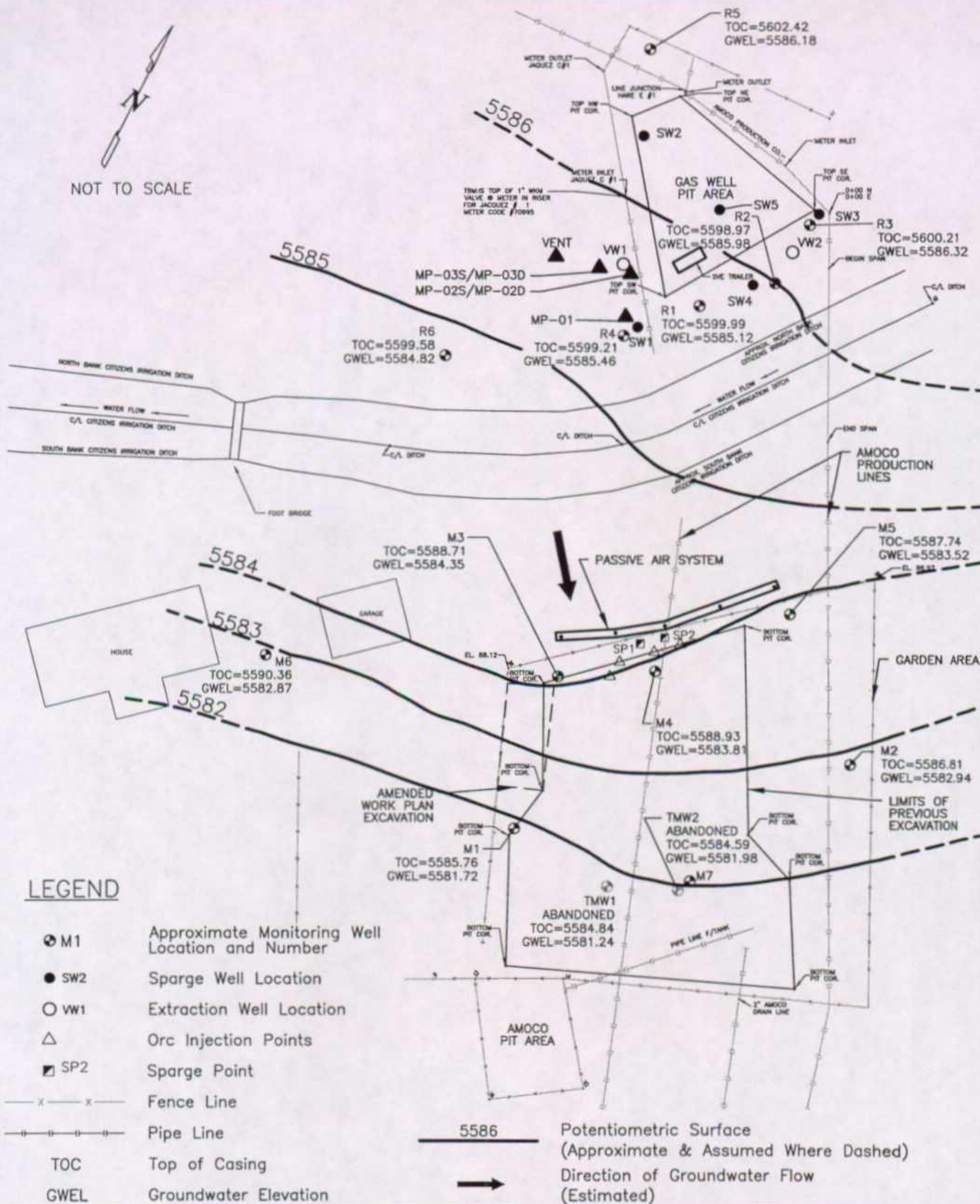


BENZENE CONCENTRATION MAP
JAQUEZ COM C#1 AND JAQUEZ COM E#1
(08/08/02)

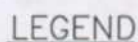
EL PASO FIELD SERVICES

FIGURE 8

NOT TO SCALE



	R1	R2	R3	R4	R5	R6
B	6	19.8	<0.5	15.8	<0.5	<0.5
T	0.5	0.6	<0.5	0.6	<0.5	<0.5
E	1.1	1.6	<0.5	0.9	<0.5	<0.5
X	2.4	7.6	0.8	20.9	0.8	0.9
DATE	11/6/02	11/6/02	11/6/02	11/6/02	11/6/02	11/6/02



- | | |
|---------|---|
| ⊗ M1 | Approximate Monitoring Well Location and Number |
| ● SW2 | Sparge Well Location |
| ○ VW1 | Extraction Well Location |
| △ | Orc Injection Points |
| ▣ SP2 | Sparge Point |
| x — x — | Fence Line |
| — — — — | Pipe Line |
| B | Benzene ($\mu\text{g/L}$) |
| T | Toluene ($\mu\text{g/L}$) |

—10— Benzene Isoconcentration ($\mu\text{g/L}$)
(Estimated)

NOT TO SCALE

FIGURE 10

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the review of data collected at the Jaquez Site during 2002, the following conclusions are provided:

- Benzene concentrations in groundwater north of Citizens Ditch at the Jaquez Site, as defined by monitoring wells R-1 through R-6, continued to decline during 2002 as a result of on-going remediation efforts. More significantly, benzene concentrations in monitoring wells R-1 and R-2 are approaching cleanup standards with maximum benzene concentrations of 23 µg/l and 19.8 µg/l, respectively. In addition, benzene concentrations in monitoring well R-4 continued to decrease during 2002, ranging from a high of 120 µg/l (February) to less than 0.5 µg/l (May and August).
- Benzene was not detected above cleanup standards in groundwater samples collected from the area south of Citizens Ditch except for in monitoring well M-4. Benzene concentrations in this well decreased from 2001 levels, ranging from 1.2 µg/l to 51 µg/l during 2002, which is an average concentration decrease of approximately 41 percent from concentrations measured during 2001.
- Data are not yet available to evaluate the effects of the ORC injections immediately upgradient of monitoring well M-4. Groundwater monitoring scheduled during 2003 will provide necessary information regarding the effectiveness of this effort.
- Effluent air samples collected from the current Jaquez remediation system indicate that air permitting is not required because benzene and total BTEX emissions were well below the 25 tons per year limit.
- Based on surface water sampling, Citizens Ditch continues to be unimpacted by the hydrocarbon release at the Jaquez Site.

Based upon the review of data collected at the Jaquez Site during 2002, the following recommendations are provided:

- The sparge system appears to have effectively reduced benzene concentrations in groundwater beneath the area north of Citizens Ditch to levels near cleanup standards. All monitoring wells in this portion of the site had at least one sampling event during 2002 where benzene was below standards. To better address the wells with the greatest contamination (R-2 and R-4), it is recommended that the sparging system operation be evaluated and reconfigured as necessary to ensure optimal delivery of oxygen to these areas.
- When concentrations of dissolved-phase hydrocarbons in monitoring wells R-2 and R-4 are below NMWQCC standards for two consecutive quarters, it is recommended that a performance evaluation of the sparge system be conducted. Results for the performance evaluation and documentation of any system changes will be presented in the 2003 Annual Report for this site.
- Results of surface water samples collected from Citizens Ditch during the past two years indicate that the site contaminants have not impacted the conveyance. EPFS formally requests no further sampling of Citizens Ditch upstream and downstream of the site.
- Based on historically low analytical results from samples collected at monitoring wells M-1, M-2, M-5, M-6, R-3, R-5, and R-6, it is recommended that sampling of these monitoring wells should continue to be sampled annually.
- Samples should continue to be collected from monitoring wells M-3, M-4, M-7, R-1, R-2, and R-4 on a quarterly basis.
- Quarterly groundwater level measurements should be collected from all wells after the remediation systems have been shut off for 24 hours.

- Monthly dissolved oxygen measurements should be collected from monitoring wells M-4, R-1, R-2, R-3, and R-4.
- Given that all effluent air sample data indicate only negligible levels of BTEX emissions from the SVE system, it is recommended that air emission sampling be discontinued.

5.0 REFERENCES

- EPFS, 2002. *Jaquez Com C #1 and Jaquez Com E #1 Annual Report*. April 2002.
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- EPFS, 2001. *Jaquez Com C #1 and Jaquez Com E #1 Soil Vapor Extraction Remediation System*. October 2001.
- EPFS, 2001. *Jaquez Com C #1 and Jaquez Com E #1 Annual Report for Soil and Groundwater Remediation*. April 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. September 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. August 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. July 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. April 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. March 2001.
- EPFS, 2001. *Monthly Report for Jaquez Com C #1 and Jaquez Com E #1 Site*. February 2001.
- EPFS, 2001. *Jaquez Com C #1 and Jaquez Com E #1 Remediation System Evaluation*. December 2000.

APPENDIX A

2002

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Monitoring Well Abandonment or Rehabilitation

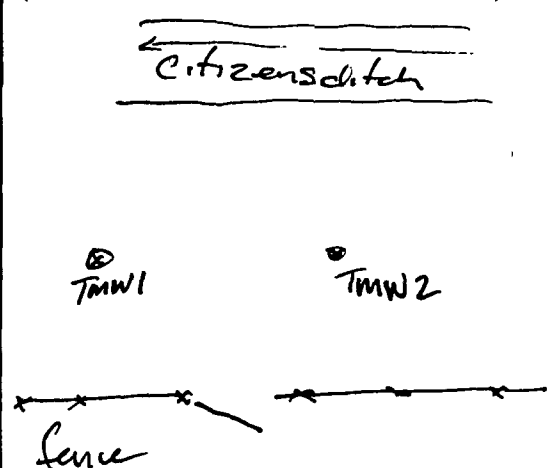
(please circle which)

Date: <u>12/20/2002</u>	Weather: <u>Cold Clear 50 F</u>
Well Loc ID: <u>TMW-1</u>	Field Personnel: <u>Muham L. Benally</u> <i>Envirotech</i>
Project #: <u>Juguez</u>	Subcontractor: <u>Envirotech</u>
Start Time: _____	End Time: _____

*K. Padilla
T. Benally*

Borehole Depth (feet): <u>NA</u>	Borehole Diameter: <u>NA</u>
Well Depth (feet): <u>NA</u>	Casing Diameter (inches): <u>NA</u>
Estimated Grout Volume: <u>NA</u>	Actual Grout Volume: <u>NA</u>
Type of Grout: <u>NA</u>	

Measured change to elevation of well casing (to nearest 0.01 foot) Indicate increase (+) or Decrease (-) in elevation: <u>NA</u>

Existing (old) Surface Completion: Asphalt Concrete Natural/Dirt Other: _____ <u>Stick-up</u> Flush-mount	New Surface Completion/ Patch: Asphalt Concrete <u>Natural/Dirt</u> Other: _____ Stick-up Flush-mount	Location Map: (show cross streets & number of houses from intersection) 
--	--	--

Reason for abandonment or rehabilitation: OCD Approved Abandonment

Abandonment Method: Overdrill Grout in place Other: Well Filled w/ Benbrite

Disposal of cuttings and materials (where, who): NA none

Pump Type and condition (if applicable): NA

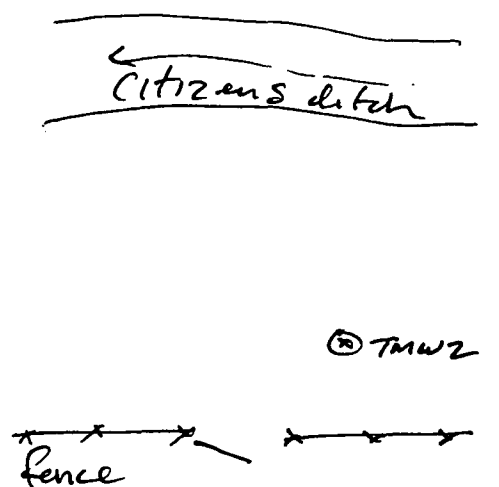
Monitoring Well Abandonment or Rehabilitation

(please circle which)

Date: <u>12/20/2002</u>	Weather: <u>Cold Clear 5°F</u>
Well Loc ID: <u>TMW2</u>	Field Personnel: <u>MWH. L. Benally</u>
Project #: <u>Jaguar</u>	Subcontractor: <u>Envirotek K. Padilla</u>
Start Time: _____	End Time: _____

Borehole Depth (feet): <u>NA</u>	Borehole Diameter: <u>NA</u>
Well Depth (feet): <u>NA</u>	Casing Diameter (inches): <u>NA</u>
Estimated Grout Volume: <u>NA</u>	Actual Grout Volume: <u>NA</u>
Type of Grout: <u>NA</u>	

Measured change to elevation of well casing (to nearest 0.01 foot) Indicate increase (+) or Decrease (-) in elevation: <u>NA</u>

Existing (old) Surface Completion: Asphalt Concrete Natural/Dirt Other: _____ <u>Stick-up</u> Flush-mount	New Surface Completion/ Patch: Asphalt Concrete <u>Natural/Dirt</u> Other: _____ Stick-up Flush-mount	Location Map: (show cross streets & number of houses from intersection) 
--	--	---

Reason for abandonment or rehabilitation: OCD Approved Abandonment

Abandonment Method: Overdrill Grout in place Other: Well Filled w/ Benally

Disposal of cuttings and materials (where, who): NA none

Pump Type and condition (if applicable): NA

Jaquez

BORING NAME: Injection Point 1

BORING DATE: Nov 14, 2002

GEOLOGIST: C.H. Benally

PROJECT NO: 4270032 ON BAS

CONTRACTOR: On-site Drilling

WEATHER: Clear, Cool

INSTRUMENT: _____

OFF BASE: ☐ TOTAL DEPTH: 15'

[illegible]

	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	☐ _____

Uguz
DIRECT PUSH GEOPROBE LOG

BORING NAME: Injection Point 2
BORING DATE: Nov 19, 2002
GEOLOGIST: L.H. Benally
PROJECT NO: 4270032 ON BAS

CONTRACTOR: ON SITE DRILLING
WEATHER: Clear, Cool
INSTRUMENT: -
OFF BASE: ☐ TOTAL DEPTH: 15'

Depth	USGS	FID/PID	Graphic log	Soil Description
5				
10				Mostly Silty clay between 0-12 feet
TD 15	OH	-	-	12' on sandy clay. Approx 30 lbs of ORC injected into Inj Pt 2. Mix was approx. one 30 lbs bag to 4-5 gal H ₂ O.
				Bottom 10-15 mix was a thick slurry/paste
				Remaining 0-10 was less viscous liquid.
				More water to ORC. ORC injection complete
				1500

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

уныны

CONTRACTOR: ON SITE DRILLING

WEATHER: Clear, cool

INSTRUMENT:

PROJECT NO: 4270032 ON BASE: ☐ OFF BASE: ☐ TOTAL DEPTH: 15'

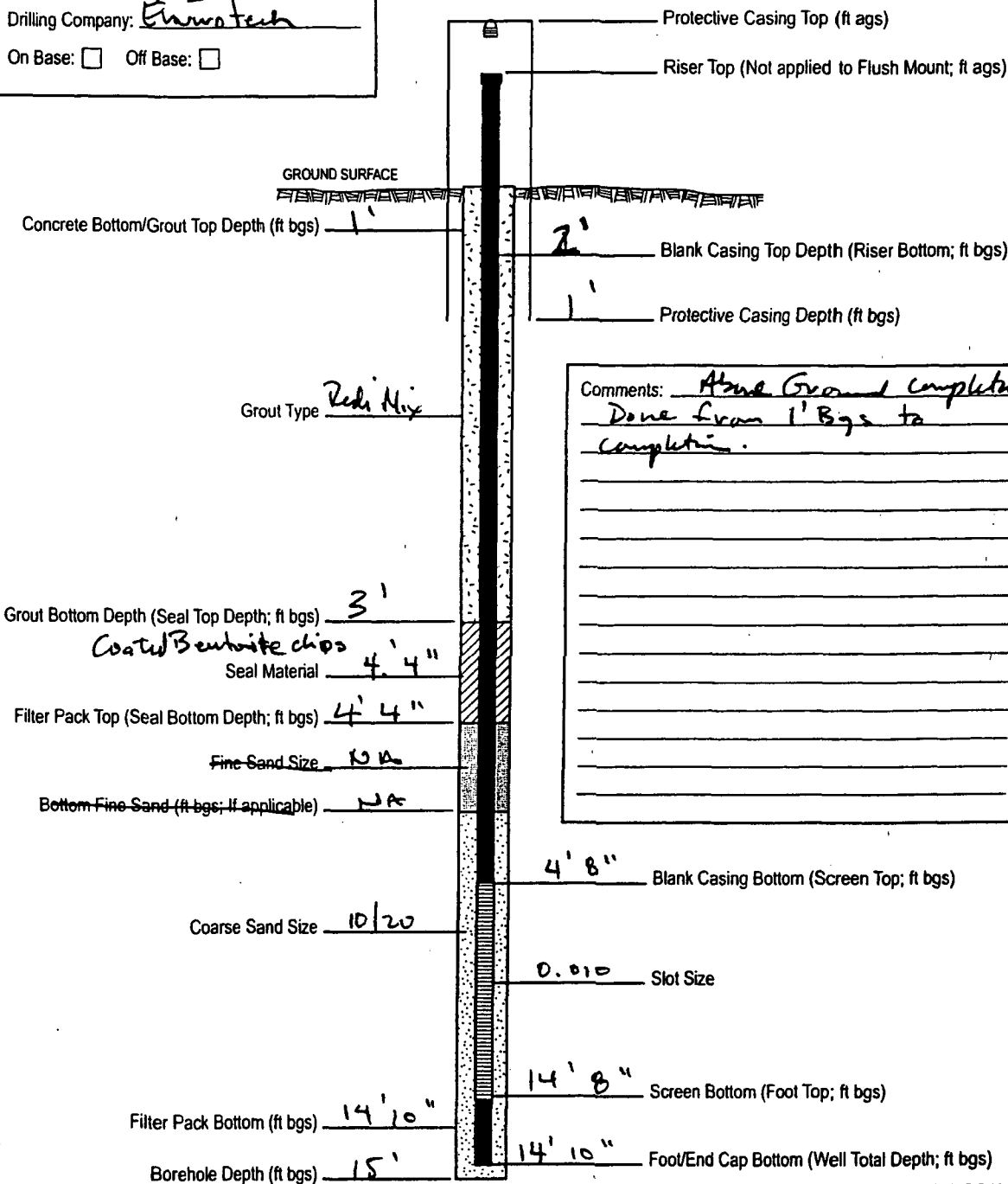
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PPG NO.

	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	☐ _____

MONITORING WELL COMPLETION FORM

Project No: 5494
 Drilling Company: Envrotech
 On Base: ☐ Off Base: ☐



Comments: Above Ground Completion
Done from 1' Bgs to
Completion.

NOT TO SCALE

Loc ID/Well ID M7 Blank Casing Material/Diameter 2in 1 PVC
 Geologist W. Benally Screen Material/Diameter 0.010 1 PVC
 Date Construction Started 12/20/2002 Protective Casing Type PVC 15' L
 Date Construction Completed 12/20/2002 Borehole Diameter 4in
 LOC Type (i.e. Monitoring Well) Monitoring Well Above Ground Completion ☒ Flush Mount ☐
 Riser Material/Diameter 2in 1 PVC USCS Classification of Screened Interval _____

PROJECT NO.

[illegible]

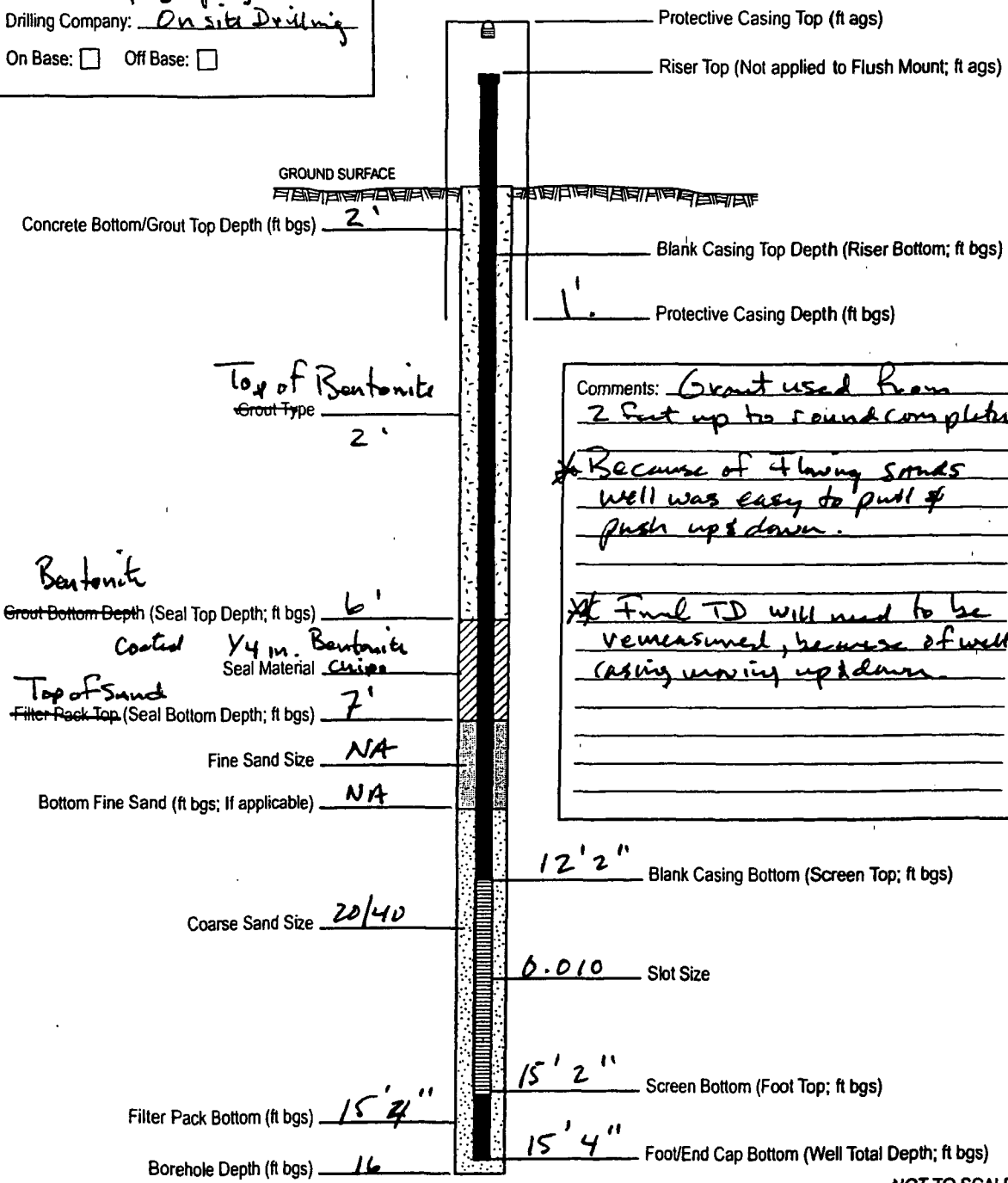
PROJECT NO.

PAGE 1 OF 1

MONITORING WELL COMPLETION FORM

> 1

Project No: Jaquez Spurge Well
 Drilling Company: On site Drilling
 On Base: ☐ Off Base: ☐



Comments: Grout used from 2 feet up to round completion.
Because of flowing sands well was easy to pull & push up & down.
At Final TD will need to be remeasured, because of well casing moving up & down.

NOT TO SCALE

Loc ID/Well ID SPI Blank Casing Material/Diameter PVC 1 in
 Geologist CH Benally Screen Material/Diameter PVC 1 in
 Date Construction Started 19 Nov 2002 Protective Casing Type PVC Steel cover
 Date Construction Completed 19 Nov 2002 Borehole Diameter 2 inch
 LOC Type (i.e. Monitoring Well) Spurge Well Above Ground Completion ☒ Flush Mount ☐
 Riser Material/Diameter PVC 1 in USCS Classification of Screened Interval _____

PROJECT NO.

SP

PROJECT NO.

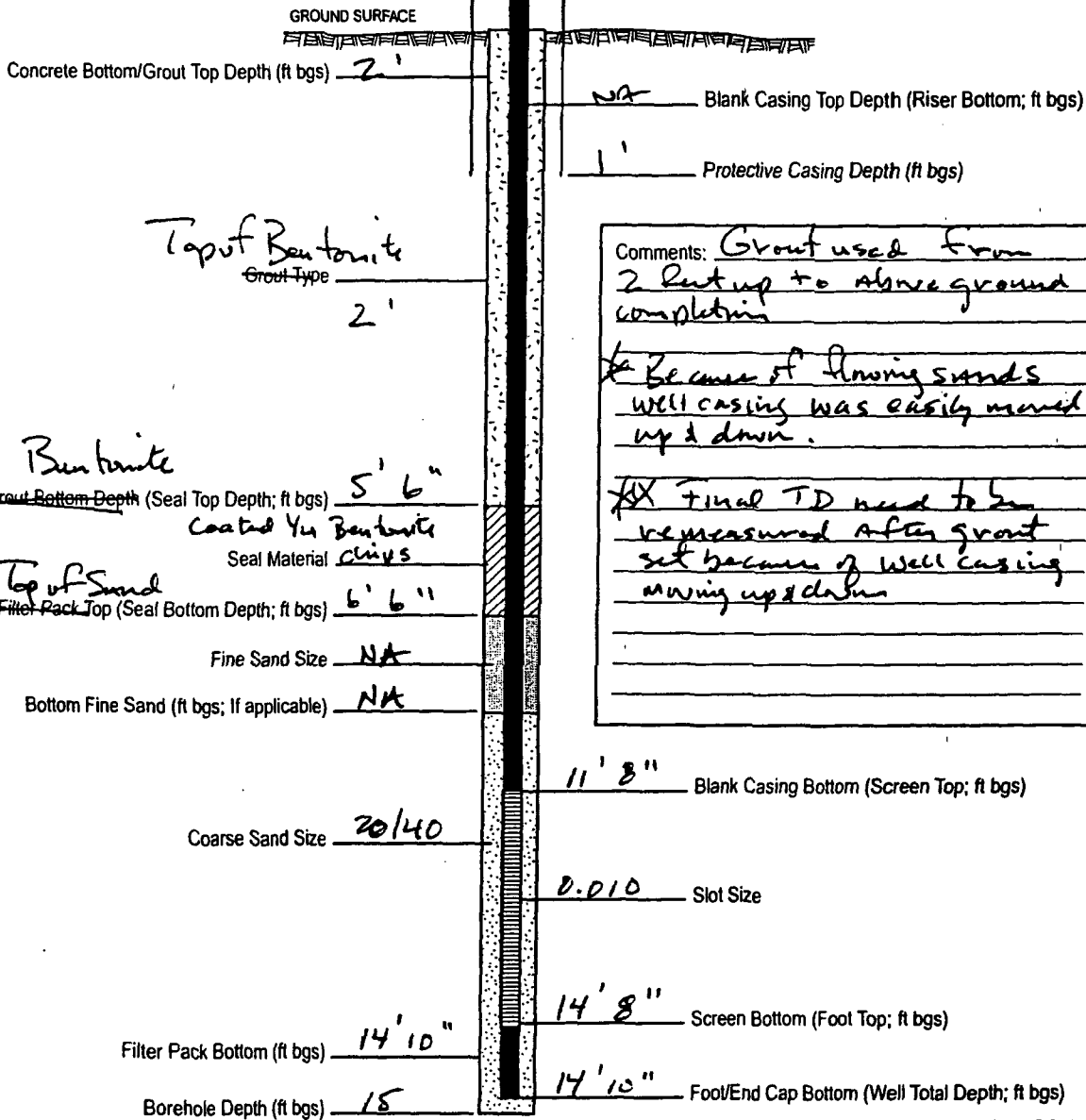
MONITORING WELL COMPLETION FORM

SP2

Project No: Laguna Spurge Well

Drilling Company: Quartz Drilling

On Base: ☐ Off Base: ☐



Comments: Grout used from 2' out up to above ground completion

Because of flowing sands well casing was easily moved up & down.

Final TD need to be re-measured after grout set because of well casing moving up & down

NOT TO SCALE

Loc ID/Well ID SP2

Geologist Lt Benally

Date Construction Started 19 Nov 2002

Date Construction Completed 19 Nov 2002

LOC Type (i.e. Monitoring Well) Spurge Well

Riser Material/Diameter PVC 1 in

Blank Casing Material/Diameter PVC 1 in

Screen Material/Diameter PVC 1 in

Protective Casing Type PVC steel cover

Borehole Diameter 2 in

Above Ground Completion ☒ Flush Mount ☐

USCS Classification of Screened Interval

PROJECT NO.

SPZ

PROJECT NO.

APPENDIX B

2002

LABORATORY REPORTS FOR

AIR EMISSION ANALYSES

(Page 1 of 2)

Imre Buttas 1-14-23
(Date/Signature)

[illegible]

DATA VALIDATION WORKSHEET

(Page 2 of 2)

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

Laboratory: APCL Batch Identification: 02-06589

Validation Criteria								
Sample ID	Jaquez Effluent Air							
Lab ID	02-06589-01							
Holding Time	A							
Analyte List	A							
Reporting Limits	A							
Trip Blank	N/A							
Equipment Rinseate Blanks	N/A							
Field Duplicate/Replicate	N/A							
Initial Calibration	N							
Initial Calibration Verification (ICV)	N							
Continuing Calibration Verification (CCV)	A							
Method Blank	A							
Laboratory Control Sample (LCS)	A							
Laboratory Control Sample Duplicate (LCSD)	N							
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A							
Surrogate Spike Recovery	A							
Retention Time Window	N							
Injection Time(s)	N							
Hardcopy vs. Chain-of-Custody	A							
EDD vs. Hardcopy	N							
EDD vs. Chain of Custody	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:

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 #: 801-026589

Received: 12/13/02

Collected by: Delbert B.

Extracted: N/A

Collected on: 12/12/02

Tested: 12/13/02

Reported: 12/26/02

Sample Description: Air

Project Description: 220013 San Juan River Basin

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				JA Jaquez
				02-06589-1
BTXE				
Dilution Factor				1
BENZENE	8021B	ppmV	0.2	0.3
ETHYLBENZENE	8021B	ppmV	0.2	0.1J
TOLUENE	8021B	ppmV	0.2	0.2J
O-XYLENE	8021B	ppmV	0.2	0.05J
M,P-XYLENE	8021B	ppmV	0.2	0.1J

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

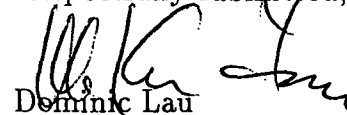
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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

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

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

MWH Contact Brian Butters

Project SAN JUAN RIVER BASIN

Project Number 220013

Date Due _____
 Sampler's Name Delbert Belais
 (print clearly)

Chain of Custody ID 06H2E01002
 Page 01 of 01
 Air Bill No. 836381676771

[illegible]

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 #: 801-026589

Collected by: Delbert B.

Collected on: 12/12/02

Sample description:

Air

Project: San Juan River Basin /220013

Received: 12/13/02

Tested: 12/13/02

Reported:

Received on

JAN 13 2003

at Montgomery Watson
801-026589QC

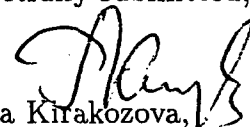
Analysis of Air

Component Name	Analysis Batch #	CCV ($\mu\text{g/L}$)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
BTXE												
Benzene	02G5005	100	103	N.D.	$\mu\text{g/L}$	18.0	88	81	80	2	68-130	31
Toluene	02G5005	100	106	N.D.	$\mu\text{g/L}$	70.0	90	83	82	2	66-133	33
Ethylbenzene	02G5005	100	109	N.D.	$\mu\text{g/L}$	18.0	97	82	80	2	65-134	35
m/p-Xylene	02G5005	200	102	N.D.	$\mu\text{g/L}$	70.0	92	80	72	10	65-134	35
o-Xylene	02G5005	100	102	N.D.	$\mu\text{g/L}$	25.0	90	80	78	2	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-2B

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: 026589

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Air

Batch No: 02G5005

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G5005-LCS-01	82	0
2		02G5005-LSD-01	83	0
3		02G5005-MB-01	86	0
4	JA JAQUEZ	02-6589-1	89	0
5	014	02-6558-1MS	87	0
6	014	02-6558-1MSD	86	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
65-135

Column to be used to flag recovery values:

* - Values outside of contract required QC Limits

D - Surrogate diluted out

I - Matrix Interference



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 #: 801-026364

Collected by: Delbert Bekis

Collected on: 11/26/02

Sample description:

Air

Project: San Juan River Basin /1166 121.061609

Received: 11/27/02

Tested: 11/27-28/02

Reported: 12/17/02

Analysis of Air

801-026364QC

Component Name	Analysis Batch #	CCV ($\mu\text{g/L}$)	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	02G4877	100	93	N.D.	$\mu\text{g/L}$	18.0	85	85*	82*	4	65-129	31
Toluene	02G4877	100	98	N.D.	$\mu\text{g/L}$	70.0	92	92*	88*	4	72-134	33
Ethylbenzene	02G4877	100	100	N.D.	$\mu\text{g/L}$	18.0	97	97*	93*	5	82-134	35
m/p-Xylene	02G4877	200	94	N.D.	$\mu\text{g/L}$	70.0	94	94*	90*	5	73-134	35
o-Xylene	02G4877	100	95	N.D.	$\mu\text{g/L}$	25.0	94	94*	90*	5	73-134	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-2B

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:

026364

Project ID: San Juan River Basin

Project No: 1166121.061609

Sample Matrix:

Air

Batch No: 02G4877

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G4877-LCS-01	88	0
2		02G4877-LSD-01	84	0
3		02G4877-MB-02	88	0
4	JA JAQUEZ	02-6364-1	88	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

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 Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

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

APCL Analytical Report

Service ID #: 801-026364

Collected by: Delbert Bekis

Collected on: 11/26/02

Sample Description: Air

Received: 11/27/02

Extracted: N/A

Tested: 11/27-28/02

Reported: 12/10/02

Project Description: 1166121.061609 San Juan River Basin

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				JA Jaquez
				02-06364-1
BTXE				
Dilution Factor				1
BENZENE	8021B	ppmV	0.2	0.40
ETHYLBENZENE	8021B	ppmV	0.2	0.1J
TOLUENE	8021B	ppmV	0.2	0.04J
O-XYLENE	8021B	ppmV	0.2	0.02J
M,P-XYLENE	8021B	ppmV	0.2	0.09J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

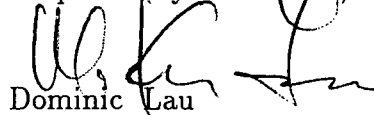
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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

Sample Receiving Checklist

APCL ServiceID: **5467**Client Name/Project: Montgomery Watson

1. Sample Arrival

Date/Time Received 10/16/02 0930 Date/Time Opened 10/16/02 0930 By (name): Paul KayCustody Transfer: ☐ Client ☐ Golden State ☐ UPS ☐ US Mail ☒ FedEx ☐ APCL Empl:

2. Chain-of-Custody (CoC)

☒ With Samples? ☐ Faxed? ☒ Client has Copy? ☒ Signed, dated? By: A.L.
☒ Project ID? ☐ Analyses Clear? ☐ Hold Samples? #on Hold # Received 1
☒ 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 5.8°C

(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^{VII} 24hr ☐ NO₃ 48hr ☐ BOD 48hr
☐ Cl₂ ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number:
 Type: ☐ plastic ☐ 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 days ☐ Std (7-10 days) ☐ Not Marked

8. Sample Matrix

☐ Drinking H₂O ☐ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☒ Air ☐ Other:
☐ Ground H₂O ☐ 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: Paul K Date: 16 Oct 2002 Time: 9:50 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.

Document ID: [unclear]

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample APCL Sub-ID	Sample ID Matrix	APCL Cont. tainer	Preser- vative	Vol, ml Am. g	# of Replica	Condition G, I, B	Collected maddy	Hold ?	Composite Group	TAT Days
1	JA Jaquez	02-05467-1	A	F		1	1	G	101502	N	0	9 ☐

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	JA Jaquez		02-05467-1	A	X ☐

Login By En-Yu Paul KouCheck By MY

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

Sample Login: Check List

02-05467 (0984_ 977) (2721900_ 977)

10/16/02

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 Basin
		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?	Paul Kou
	Receiving Date/Time:	10/16/02 0930
	CDC No.	
☐ Shipping Information	Shipping Company	Express
	Packing Information:	Cooler/Ice Chester
	Cooler Temperature:	5.8 °C
☐ Container Information	Container Provider:	Client
☐ Sampling Information	Sampling Person:	
	Sampling Company:	Client
☐ Turn-Around-Time Option:		Normal
☐ QC Option:		QC and Surro. Rep.
☐ Disposal Option:		Not specify

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 #: 801-025467

Collected by: Ashley Lowe.

Collected on: 10/15/02

Sample description:

Air

Project: San Juan River Basin /220013

Received: 10/16/02

Tested: 10/18/02

Reported: 10/24/02

Analysis of Air

801-025467QC

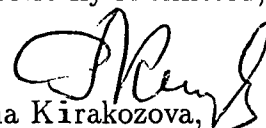
Component Name	Analysis Batch #	CCV ($\mu\text{g/L}$)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
BTXE												
Benzene	02G4289	100	97	N.D.	$\mu\text{g/L}$	18.0	91	91*	92*	1	65-129	31
Toluene	02G4289	100	99	N.D.	$\mu\text{g/L}$	70.0	91	93	99	6	66-133	33
Ethylbenzene	02G4289	100	101	N.D.	$\mu\text{g/L}$	18.0	97	91	106	16	65-134	35
m/p-Xylene	02G4289	200	94	N.D.	$\mu\text{g/L}$	70.0	93	95	111	16	65-134	35
o-Xylene	02G4289	100	96	N.D.	$\mu\text{g/L}$	25.0	92	104	130	22	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-2B

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: 025467

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Air

Batch No: 02G4289

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G4289-LCS-01	85	0
2	JA JAQUEZ	02-5467-1	90	0
3	02BBORC1WG01	02-5515-1MS	87	0
4	02BBORC1WG01	02-5515-1MSD	94	0
5		02G4289-LSD-01	86	0
6		02G4289-MB-02	87	0
7				
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

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 #: 801-025467

Collected by: Ashley Lowe.

Collected on: 10/15/02

Sample Description: Air

Project Description: 220013 San Juan River Basin

Received: 10/16/02

Extracted: N/A

Tested: 10/18/02

Reported: 10/21/02

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				JA Jaquez
				02-05467-1
BTXE				
Dilution Factor				1
BENZENE	8021B	ppmV	0.2	0.3
ETHYLBENZENE	8021B	ppmV	0.2	0.09J
TOLUENE	8021B	ppmV	0.2	0.1J
O-XYLENE	8021B	ppmV	0.2	0.03J
M,P-XYLENE	8021B	ppmV	0.2	0.09J

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

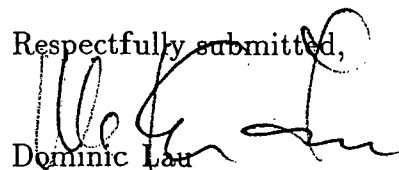
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021015AL02
Page 1 of 1
Air Bill No. 836381676680

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Butters
Project San Juan River Basin
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		
JA	Jaquez	EPFAir	10-15-02	8:15	AA		✓									

(a) Matrix: AA – Air
SO – Soil WQ – Trip Blank/
WS – Surface Water Equipment Blanks
WG – Ground Water WW – Wastewater

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

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

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:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley Lowe / AESE	Punk	10-15-02	12:00
		10/16/02	0930



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: Brain Butters

10619 South Jordan Gateway

Salt Lake City, UT 84095

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

Service ID #: 801-024332

Collected by: Ashley Lowe

Collected on: 08/08/02

Sample description:

Air

Project: San Juan River Basin /2200 13

Received: 08/12/02

Tested: 08/13/02

Reported: 08/30/02

Analysis of Air

801-024332QC

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	02G3506	100	94	N.D.	µg/L	18.0	87	88	88	0	68-130	31
Toluene	02G3506	100	96	N.D.	µg/L	70.0	92	97	97	1	66-133	33
Ethylbenzene	02G3506	100	100	N.D.	µg/L	18.0	98	97	97	0	65-134	35
m/p-Xylene	02G3506	200	92	N.D.	µg/L	70.0	94	95	96	1	65-134	35
o-Xylene	02G3506	100	93	N.D.	µg/L	25.0	94	98	98	1	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-2B

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: 024332

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Air

Batch No: 02G3506

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3506-LCS-01	84	0
2		02G3506-LSD-01	86	0
3		02G3506-MB-02	88	0
4	JA EFFAIR	02-4332-1	90	0
5	JA R6	02-4334-6MS	87	0
6	JA R6	02-4334-6MSD	88	0
7				
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)

65-135

Column to be used to flag recovery values:

* - Values outside of contract required QC Limits

D - Surrogate diluted out

I - Matrix Interference

Applied P & Ch Laboratory

13780 Magnolia Ave. Chino CA 91710

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

APCL Analytical Report

Submitted to:

Montgomery Watson Harza

Attention: Brain Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

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

Service ID #: 801-024332

Collected by: Ashley Lowe

Collected on: 08/08/02

Received: 08/12/02

Extracted: N/A

Tested: 08/13/02

Reported: 08/15/02

Sample Description: Air

Project Description: 220013 San Juan River Basin

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				JA EffAir
				02-04332-1
BTXE				1
Dilution Factor				1.0
BENZENE	8021B	ppmV	0.2	0.09J
ETHYLBENZENE	8021B	ppmV	0.2	0.99
TOLUENE	8021B	ppmV	0.2	0.1J
O-XYLENE	8021B	ppmV	0.2	0.1J
M,P-XYLENE	8021B	ppmV	0.2	

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 Analytical Report

Submitted to:

Montgomery Watson Harza

Attention: Brain Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

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

Service ID #: 801-024332

Collected by: Ashley Lowe

Collected on: 08/08/02

Sample Description: Air

Project Description: 220013 San Juan River Basin

Received: 08/12/02

Extracted: N/A

Tested: 08/13/02

Reported: 08/15/02

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				JA EffAir
				02-04332-1
BTXE				
Dilution Factor				1
BENZENE	8021B	ppmV	0.2	1.0
ETHYLBENZENE	8021B	ppmV	0.2	0.09J
TOLUENE	8021B	ppmV	0.2	0.99
O-XYLENE	8021B	ppmV	0.2	0.1J
M,P-XYLENE	8021B	ppmV	0.2	0.1J

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

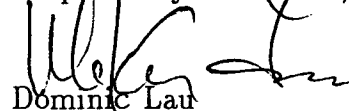
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 08/09/02
 Page 1 of 1
 Air Bill No. 834715209954

MWH
 Phone (801) 617-3200 FAX (801) 617-4200
 MWH Contact Brian Butters
 Project San Juan River Basin
 Project Number 220013
 Date Due Normal
 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		
JA	R5	24.5-15.9	08/08/02	7:57	WG	B	✓									
JA	R6	13.5-22.0	08/08/02	8:34	WG	B	✓									
JA	R4	12.8-22.2	08/08/02	9:36	WG	B	✓									
JA	R3	13.3-22.2	08/08/02	10:25	WG	B	✓									
JA	R2	12.5-22.0	08/08/02	10:57	WG	B	✓									
JA	R1	13.6-22.3	08/08/02	11:36	WG	B	✓									
JA	EFFAir	---	08/08/02	13:20	AA	WF	✓									
Trip Blank					WQ		✓									

4332

(a) Matrix: AA – Air
 SO – Soil WQ – Trip Blank/
 WS – Surface Water Equipment Blanks
 WG – Ground Water WW – Wastewater

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

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

LABORATORY USE ONLY

SAMPLES WERE:

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

Discrepancies Between Sample Labels and COC Record?

Y N
Notes:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
<u>Ashley Lowe / AESE</u>	<u>[Signature] APCL</u>	<u>08/09/02</u>	<u>9:00</u>



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 #: 801-023931
Collected by:
Collected on: 07/18/02
Sample Description: Air
Project Description: 220013 San Juan River Basin
Received: 07/19/02
Extracted: N/A
Tested: 07/19/02
Reported: 07/29/02

Analysis of Air Samples

Component Analyzed	Method	Unit	PQL	Analysis Result
				Jaquez Effluent 02-03931-1
BTXE				
Dilution Factor				1
BENZENE	8021B	ppmV	0.2	1.6
ETHYLBENZENE	8021B	ppmV	0.2	0.09J
TOLUENE	8021B	ppmV	0.2	0.66
O-XYLENE	8021B	ppmV	0.2	0.08J
M,P-XYLENE	8021B	ppmV	0.2	0.1J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

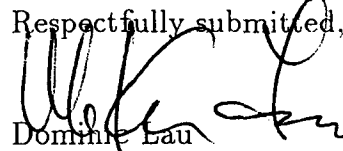
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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 #: 801-023931

Collected by:

Collected on: 07/18/02

Sample description:

Air

Project: San Juan River Basin /220013

Received: 07/19/02

Tested: 07/19/02

Reported: 07/31/02

Analysis of Air

801-023931QC

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	02G3209	100	97	N.D.	µg/L	18.0	88	88	87	1	68-130	31
Toluene	02G3209	100	98	N.D.	µg/L	70.0	96	95	93	2	66-133	33
Ethylbenzene	02G3209	100	101	N.D.	µg/L	18.0	103	97	96	1	65-134	35
m/p-Xylene	02G3209	200	93	N.D.	µg/L	70.0	101	97	94	3	65-134	35
o-Xylene	02G3209	100	96	N.D.	µg/L	25.0	100	98	95	3	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,

Kevin Xie
Kevin Xie, Ph. D.,
QA Director
Applied P & Ch Laboratory

FORM-2B

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: 023931

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Air

Batch No: 02G3209

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3209-MB-02	90	0
2	JAQUEZ EFFLUENT	02-3931-1	94	0
3		02G3209-LCS-01	90	0
4		02G3209-LSD-01	87	0
5	JAQUEZ DOWNSTREAM	02-3933-1MS	88	0
6	JAQUEZ DOWNSTREAM	02-3933-1MSD	85	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
65-135

Column to be used to flag recovery values:

* - Values outside of contract required QC Limits

D - Surrogate diluted out

I - Matrix Interference

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 07/18/02 PAGE: 1 OF 1

PLI Accession #

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: 220013		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: Ashley Lowe Time: 13:50		Signature: Time:	
PROJ. NAME: San Juan River Basin		CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Ashley Lowe Date: 07/18/02		Printed Name: Date:	
P.O. NO.:		METHANOL PRESERVATION ☐		Company: AESE		Company:	
SHIPPED VIA: FedEx		COMMENTS: FIXED FEE ☐		See reverse side (Forca Majeure)			
SAMPLE RECEIPT				RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
NO CONTAINERS				Signature: Paul K Time: 7/19/02 104		Signature: Time:	
CUSTODY SEALS Y/N/NA				Printed Name: Paul K Date: 7/19/02 104		Printed Name: Date:	
RECEIPT CONTACT				Company: APC		Pinnacle Laboratories Inc.	
BLUE ICE							



PINNACLE
LABORATORIES

7071-
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **206050**
June 21, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JACQUEZ GC #CL
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 06/14/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze air 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

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 206050
PROJECT #	: 1517000121	DATE RECEIVED	: 06/14/02
PROJECT NAME	: JACQUEZ GC #CL	REPORT DATE	: 06/21/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
06050 - 01	JA9-0206-AIR	AIR	06/13/02

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.	: 206050
ANK I. D.	: 061402	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/14/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
ROJECT NAME	: JACQUEZ GC #CL		

PARAMETER	UNITS	
ENZENE	MG/M ³	<0.05
OLUENE	MG/M ³	<0.05
THYLBENZENE	MG/M ³	<0.05
OTAL XYLENES	MG/M ³	<0.10

URROGATE:
ROMOFLUOROBENZENE (%) 96
URROGATE LIMITS: (80 - 120)
HIST NOTES:
/A

PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206050
ATCH #	: 061402	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/14/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
ROJECT NAME	: JACQUEZ GC #CL	UNITS	: MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.05	2.00	1.83	92	1.96	98	7	(80 - 120)	20
OLUENE	<0.05	2.00	1.88	94	2.00	100	6	(80 - 120)	20
THYLBENZENE	<0.05	2.00	1.91	96	2.02	101	6	(80 - 120)	20
OTAL XYLENES	<0.10	6.00	5.88	98	6.24	104	6	(80 - 120)	20

HEMIST NOTES:
/A

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

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

PINNACLE
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JACQUEZ GC #CL

PINNACLE I.D.: 206050

SAMPLE	DATE	DATE	DATE	DIL.		
J. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
	JA9-0206-AIR	AIR	06/13/02	NA	06/14/02	5

PARAMETER	DET. LIMIT	UNITS	JA9-0206-AIR
BENZENE	0.050	MG/M ³	8.2
TOLUENE	0.050	MG/M ³	< 0.25
ETHYLBENZENE	0.050	MG/M ³	0.29
TOTAL XYLENES	0.10	MG/M ³	0.80

QUANTITATE:
BROMOFLUOROBENZENE (%) 96
SURROGATE LIMITS (74 - 120)

CHEMIST NOTES:
I/A

UNSHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: 1517000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature] Time: 1600		Signature: [Signature] Time:	
PROJ. NAME: EOPS GLW proj.		CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Date:		Printed Name: Date:	
P.O. NO.:		METHANOL PRESERVATION ☐		Chris Amez 6-13-02			
SHIPPED VIA Greyhound		COMMENTS: FIXED FEE ☐		Company: AMEC		Company:	
SAMPLE RECEIPT		JAquiez GC #C1 meter # 70995		See reverse side (Force Majeure)		RECEIVED BY: 1.	
NO CONTAINERS				RECEIVED BY: (LAB) 2.			
CUSTODY SEALS				Signature: [Signature] Time: 0930			
RECEIVED IN ACT				Printed Name: Date:			
BLUE ICE				Company: [Signature] Date: 6/14/02			



PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
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Pinnacle Lab ID number **205135**
May 22, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICE
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JAQUEZ
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 05/16/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze air 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

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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 205135
PROJECT #	: 1517000121	DATE RECEIVED	: 05/16/02
PROJECT NAME	: JAQUEZ	REPORT DATE	: 05/22/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
205135 - 01	JAQ-0205-AIR	AIR	05/16/02

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
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Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 205135

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	05/16/02	NA	05/17/02	10

PARAMETER	DET. LIMIT	UNITS	JAQ-0205-AIR
BENZENE	0.05	MG/M ³	2.3
TOLUENE	0.05	MG/M ³	< 0.5
ETHYLBENZENE	0.05	MG/M ³	< 0.5
TOTAL XYLENES	0.10	MG/M ³	1.1

SURROGATE:
BROMOFLUOROBENZENE (%) 116
SURROGATE LIMITS (74 - 120)

CHEMIST NOTES:
N/A

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205135
BLANK I. D.	: 051702	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/17/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: JAQUEZ		

PARAMETER	UNITS	
BENZENE	MG/M ³	<0.05
TOLUENE	MG/M ³	<0.05
ETHYLBENZENE	MG/M ³	<0.05
TOTAL XYLENES	MG/M ³	<0.10

SURROGATE:

BROMOFLUOROBENZENE (%)

106

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A

PINNACLE
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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205135
BATCH #	: 051702	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/17/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: JAQUEZ	UNITS	: MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.05	4.00	4.26	107	4.28	107	0	(80 - 120)	20
TOLUENE	<0.05	4.00	4.30	108	4.29	107	0	(80 - 120)	20
ETHYLBENZENE	<0.05	4.00	4.37	109	4.39	110	0	(80 - 120)	20
TOTAL XYLENES	<0.10	12.0	13.4	112	13.5	113	1	(80 - 120)	20

CLIENT NOTES:
N/A

(Spike Sample Result - Sample Result)

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

(Sample Result - Duplicate Result)

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

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: <u>517000121</u>	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: <u>[Signature]</u> Time: <u>1530</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
PROJ. NAME: <u>EPF5 GLW. proj.</u>	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO.: _____	METHANOL PRESERVATION ☐	Christa MAEL <u>5-16-02</u>		Company: _____		Company: _____	
SHIPPED VIA <u>Greyhound</u>	COMMENTS: FIXED FEE ☐	See reverse side (Force Majeure)		RECEIVED BY: _____		RECEIVED BY: (LAB) _____	
SAMPLE RECEIPT		NO. CONTAINERS: <u>2</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
CUSTODY SEALS: <u>Y/N</u> <u>(NA)</u>		CUSTODY SEALS: <u>Y/N</u> <u>(NA)</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
RECEIVED INTACT: <u>YES</u>		RECEIVED INTACT: <u>YES</u>		Company: _____		Pinnacle Laboratories Inc.	
BLUE/COLORED: _____		BLUE/COLORED: _____					

JAG we2
meter # (70995)



PINNACLE
LABORATORIES

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Phone (505) 344-3777
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Pinnacle Lab ID number **204105**
May 04, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

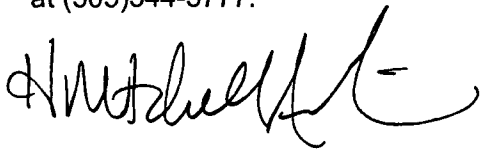
EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EFPS GW PROJECT
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 04/25/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze air 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



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Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 204105
PROJECT #	: 1517000121	DATE RECEIVED	: 04/25/02
PROJECT NAME	: EFPS GW PROJECT	REPORT DATE	: 05/04/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
204105 - 01	JAQ-0204-AIR	AIR	04/24/02

PINNACLE
LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : EFPS GW PROJECT

PINNACLE I.D.: 204105

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JAQ-0204-AIR	AIR	04/24/02	NA	04/26/02	10
PARAMETER		DET. LIMIT	UNITS	JAQ-0204-AIR		
BENZENE		0.05	MG/M ³	2.9		
TOLUENE		0.05	MG/M ³	< 0.5		
ETHYLBENZENE		0.05	MG/M ³	0.8		
TOTAL XYLENES		0.10	MG/M ³	1.9		

SURROGATE:

1,2,4-TRIFLUOROBENZENE (%)

108

SURROGATE LIMITS (74 - 120)

CHEMIST NOTES:

N/A

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204105
BLANK I. D.	: 042602	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/26/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: EFPS GW PROJECT		

PARAMETER	UNITS	
BENZENE	MG/M ³	<0.05
TOLUENE	MG/M ³	<0.05
ETHYLBENZENE	MG/M ³	<0.05
TOTAL XYLENES	MG/M ³	<0.10

SURROGATE:
BROMOFLUOROBENZENE (%) 95
SURROGATE LIMITS: (80 - 120)
CHECK NOTES:

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204105
BATCH #	: 042602	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/26/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: EFPS GW PROJECT	UNITS	: MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.05	2.00	1.81	91	1.82	91	1	(80 - 120)	20
TOLUENE	<0.05	2.00	1.91	96	1.97	99	3	(80 - 120)	20
ETHYLBENZENE	<0.05	2.00	1.98	99	2.05	103	3	(80 - 120)	20
TOTAL XYLENES	<0.10	6.00	6.08	101	6.32	105	4	(80 - 120)	20

CHEMIST NOTES:

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

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

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: LISA WINN

COMPANY: AMEC EARTH & ENVIRONMENTAL

ADDRESS: 2060 AFTON PLACE
FARMINGTON, NM 87401

PHONE: 505-327-7928

FAX: 505-326-5221

BILL TO: SCOTT POPE

COMPANY: EL PASO FIELD SERVICES

ADDRESS: 614 REILLY AVE.
FARMINGTON, NM 87401

ANALYSIS REQUEST

SAMPLE ID DATE TIME MATRIX LAB ID

JAQ-0204-AIR 4-24-02 1610 AIR OIL

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:
NUMB CONTAINERS

PROJECT INFORMATION

PROJ. NO.: 1517000121

PROJ. NAME: EPFS GW PROJECT

P.O. NO.:

SHIPPED VIA: GREYHOUND

SAMPLE RECEIPT

NO. CONTAINERS: 1

CUSTODY SEALS: (initials)

RECEIVED INTACT: Yes

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 ☐

RELINQUISHED BY:

RELINQUISHED BY:

Signature: [Signature] Time: 0935

Signature: Time:

Printed Name: ROBERT THOMPSON Date: 4-25-02

Printed Name: Date:

Company: AMEC
See reverse side (Force Majeure)

Company:

RECEIVED BY:

RECEIVED BY: (LAB)

Signature: Time:

Signature: Time: 1614

Printed Name: Date:

Printed Name: Date: 4/25/02

Company:

Pinnacle Laboratories Inc.



PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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Pinnacle Lab ID number **203077**
April 12, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

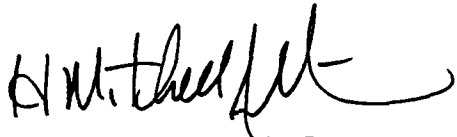
Project Name JAQUEZ GC #C1
Project Number 1517000121

Am

Attention: LISA WINN/SCOTT POPE

On 03/21/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze air 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.

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H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

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CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 203077
PROJECT #	: 1517000121	DATE RECEIVED	: 03/21/02
PROJECT NAME	: JAQUEZ GC #C1	REPORT DATE	: 04/12/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
203077 - 01	JAQ-0203-AIR	AIR	03/20/02

PINNACLE
LABORATORIES

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Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ GC #C1

PINNACLE I.D.: 203077

AMPLE	DATE	DATE	DATE	DIL.		
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	JAQ-0203-AIR	AIR	03/20/02	NA	03/21/02	5

PARAMETER	DET. LIMIT	UNITS	JAQ-0203-AIR
BENZENE	0.05	MG/M ³	4.9
TOLUENE	0.05	MG/M ³	2.4
ETHYLBENZENE	0.05	MG/M ³	< 0.3
OTAT XYLENES	0.10	MG/M ³	1.4

UNSATURATED:
REACTOFLUOROBENZENE (%) 108
SURROGATE LIMITS (74 - 120)

HEMIST NOTES:
/A

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203077
LABORATORY I.D.	: 032102	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: JAQUEZ GC #C1		

PARAMETER	UNITS	
BENZENE	MG/M ³	<0.05
TOLUENE	MG/M ³	<0.05
ETHYLBENZENE	MG/M ³	<0.05
ORTHO XYLENES	MG/M ³	<0.10

RECOVERY:
BROMOFLUOROBENZENE (%) 92

RECOVERY LIMITS: (80 - 120)

REMARKS: A

PINNACLE
LABORATORIES

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Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203077
ATCH #	: 032102	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
ROJECT NAME	: JAQUEZ GC #C1	UNITS	: MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.05	2.00	1.80	90	1.84	92	2	(80 - 120)	20
OLUENE	<0.05	2.00	1.82	91	1.85	93	2	(80 - 120)	20
THYLBENZENE	<0.05	2.00	1.78	89	1.81	91	2	(80 - 120)	20
OTAL XYLENES	<0.10	6.00	5.53	92	5.61	94	1	(80 - 120)	20
ETHYL-t-BUTYL ETHER	<0.25	2.00	1.97	99	1.90	95	4	(70 - 133)	20

HEMIST NOTES:
'A

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

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

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	PINNACLE I.D.	: 203077
ISMSD #	: 203054-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/21/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: JAQUEZ GC #C1	UNITS	: MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.05	2.00	1.83	92	1.82	91	1	(80 - 120)	20
TOLUENE	<0.05	2.00	1.82	91	1.89	95	4	(80 - 120)	20
ETHYLBENZENE	<0.05	2.00	1.77	89	1.79	90	1	(80 - 120)	20
TOTAL XYLENES	<0.10	6.00	5.52	92	5.57	93	1	(80 - 120)	20
1,1-DIETHYL-4-BUTYL ETHER	<0.25	2.00	2.02	101	1.98	99	2	(70 - 133)	20

CHEMIST NOTES:
N/A

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

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

UNSHADED AREAS ARE FOR LAB USE ONLY:

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[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: 517000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature] Time: 1500		Signature: [Signature] Time: [Blank]	
PROJ. NAME: EPS GW project		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Date: Chris A. MAEZ 3-20-02		Printed Name: Date: [Blank]	
P.O. NO.:		METHANOL PRESERVATION ☐		Company: AMEC		Company: [Blank]	
SHIPPED VIA: Grothend		COMMENTS: FIXED FEE ☐		See reverse side (Force Majeure)		[Blank]	
SAMPLE RECEIPT		JAGUEZ GC #C1 motor # (70995)		RECEIVED BY: 1.		RECEIVED BY (LAB) 2.	
NO. CONTAINERS: 1				Signature: [Signature] Time: [Blank]		Signature: [Signature] Time: 0930	
CUSTODY SEALS: YES				Printed Name: Date: [Blank]		Printed Name: Date: [Blank]	
RECEIVED INTACT: YES				Company: [Blank]		Company: [Blank]	
BLUE ICE/ICE: [Blank]				[Blank]		[Blank]	
						Pinnacle Laboratories Inc.	



PINNACLE
LABORATORIES

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

Pinnacle Lab ID number **202090**
February 28, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS GW PROJ JACQUEZ G.C. CL
Project Number 2517000121

Attention: LISA WINN/SCOTT POPE

On 02/21/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze air 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

JACQUEZ AIR
SAMPLE

PINNACLE
LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 2517000121
PROJECT NAME : EPFS GW PROJ JACQUEZ G.C. CL

PINNACLE I.D.: 202090

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	JAQ-0202-AIR	AIR	02/20/02	NA	02/22/02	1
PARAMETER		DET. LIMIT	UNITS	JAQ-0202-AIR		
BENZENE		0.05	MG/M ³	< 0.05		
TOLUENE		0.05	MG/M ³	< 0.05		
ETHYLBENZENE		0.05	MG/M ³	< 0.05		
TOTAL XYLENES		0.10	MG/M ³	< 0.10		

SURROGATE:

BROMOFLUOROBENZENE (%)

90

SURROGATE LIMITS (74 - 120)

CHEMIST NOTES:

N/A

PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 202090
PROJECT #	: 2517000121	DATE RECEIVED	: 02/21/02
PROJECT NAME	: EPFS GW PROJ JACQUEZ G.C. CL	REPORT DATE	: 02/28/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
202090 - 01	JAQ-0202-AIR	AIR	02/20/02

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

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 202090
BLANK I. D.	: 022202	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/22/02
PROJECT #	: 2517000121	SAMPLE MATRIX	: AIR
PROJECT NAME	: EPFS GW PROJ JACQUEZ G.C. CL		

PARAMETER	UNITS	
BENZENE	MG/M ³	<0.05
TOLUENE	MG/M ³	<0.05
ETHYLBENZENE	MG/M ³	<0.05
TOTAL XYLENES	MG/M ³	<0.10

SURROGATE:

BROMOFLUOROBENZENE (%)

90

SPURIOUS LIMITS: (80 - 120)

CHEMIST NOTES:

N/A

↑
PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST : EPA 8021 MODIFIED
BATCH ID# : 022202
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 2517000121
PROJECT NAME : EPFS GW PROJ JACQUEZ G.C. CL

PINNACLE I.D. : 202090
DATE EXTRACTED : N/A
DATE ANALYZED : 02/22/02
SAMPLE MATRIX : AIR
UNITS : MG/M

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.05	2.00	1.96	98	1.92	96	2	(80 - 120)	20
TOLUENE	<0.05	2.00	1.90	95	1.88	94	1	(80 - 120)	20
ETHYLBENZENE	<0.05	2.00	1.85	93	1.83	92	1	(80 - 120)	20
TOTAL XYLENES	<0.10	6.00	5.73	96	5.66	94	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO: 25/7000/21		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature] Time: 1500		Signature: _____ Time: _____	
PROJ. NAME: 605 G.W. project		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO.:		METHANOL PRESERVATION ☐		Christ Maez 2-20-02			
SHIPPED VIA: Greyhound		COMMENTS: FIXED FEE ☐		Company: AMEC		Company: _____	
SAMPLE RECEIPT				See reverse side (Force Majeure)			
NO. CONTAINERS				RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
CUSTODY SEALS				Signature: _____ Time: _____		Signature: [Signature] Time: 9:15	
RECEIVED INTACT				Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
BLUE ICE/ICE				Company: _____		Deborah Rozema 2-21-	
		JAQUEZ G.C. CI (70995)				Pinnacle Laboratories Inc.	

APPENDIX C

2002

**OPERATIONS AND MAINTENANCE
ACTIVITIES DOCUMENTATION**

Project Name San Juan Basin *JAGUOS*

Project Manager D. Betis

Page of

Project No. 820013

Client Company MWH

VENT SYSTEM	
Mag. Influent (1120")	38
Mag. Effluent (1120")	36
Inf. SCFM	24
Eff. SCFM	40
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	9
Flow Gauge - Sparge	4
Flow Gauge - Sparge	5
Flow Gauge - Sparge	12
Compressor (psi)	9

	INCHES OF WATER	VALVE High or Low
MP-1	.62	High
MP-2S	.01	High
MP-2D	.62	High
MP-3S	.01	High
MP-3D	.01	High

	MPS	FPM	Temp (°F)
VW	4.5	815	45
Influent	8.3	1142	10.1
Effluent	7.4	1350	110
SPG. 1	20	450	42.7
SPG. 4	4.5	710	44.0
SPG 5	1.2	277	42.3

	PID	DO	Temp (°C)
R-1	2.0	8.4	18.4
R-2	0	7.5	19.3
R-3	0	4.66	14.2
R-4	28.2	9.47	16.3
R-5	0	1.36	15.6
R-6	0	4.24	13.9
VE			

PID EFFLUENT

Comments Citizens Ditch not flowing - Martin Ace called Lynn Benally and advised him of situation
Per Lynn Benally's instruction, system to be turned off after O&M. Will sample ditch
when it starts flowing again. Shut down system at 1640 hrs. * System turned back on at
1650 per Martin Ace via Lynn Benally. will get air sample tomorrow 12/12/02. Ben will shut
system down. * Bubbles coming from bottom of ditch near R-1. *

Signature (s) D. Betis

Date 12/12/02

Reviewer

Date

Project Name San Juan Basin Project Manager M. Hec Project No. 220013
Client Company MWH

VENT SYSTEM	
Mag. Influent (1120")	41
Mag. Effluent (1120")	40
Inf. SCFM	26
Eff. SCFM	74
Vent Flow	38 (20-20)

SPARGE	scfm
Magnehelic Gauge (psi)	12
Flow Gauge - Sparge	22
Flow Gauge - Sparge	23.5
Flow Gauge - Sparge	23.0
Compressor (psi)	9

	INCHES OF WATER	VALVE High or Low
MP-1	.005	high
MP-2S	.03	high
MP-2D	.02	high
MP-3S	0.0	high
MP-3D	0.0	high

	MPS	FPM	Temp (°F)
VW	1.7	306	14.2
Influent	5.3	1031	4.7
Effluent	6.6	1400	30.4
SPG. 1	2.1	460	8.5
SPG. 4	1.06	213	10.1
SPG 5	1.8	336	12.4

	PID	DO	Temp (°C)
R-1	0.0		
R-2	0.0		
R-3	0.0		
R-4	0.0		
R-5	0.0		
R-6	0.0		
VE			

PID EFFLUENT 13.8

Comments System has been off since 11/18 for the Thanksgiving Holiday
Pid readings for R-1 through R-6 were recorded before the system was
turned on

Signature(s) Martinez Date 12-5-02 Reviewer _____ Date _____

AESE

Site Name

Jayuez

REMEDIATION SYSTEM DATA SHEET

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Page 1 of 1

Project Name

San Juan River Basin

Project Manager

Delbert Beckis

Project No.

220013

Client Company

MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	30
Mag. Effluent (H ₂ O")	30
Inf. SCFM	58
Eff. SCFM	74
Vent Flow	

58
74

SPARGE	scfm
Magnehelic Gauge (psi)	11
Flow Gauge - Sparge 5	3.5
Flow Gauge - Sparge 4	3.5
Flow Gauge - Sparge 1	3
Compressor (psi)	8 7

9
4
46
64
8

	INCHES OF WATER	VALVE High or Low
MP-1	.62	
MP-2S		
MP-2D		
MP-3S		
MP-3D		

	MPS	FPM	Temp (°F)
VW	1.38	239	17.4°C
Influent	4.56	1020	16.6°C
Effluent	18.1	3550	44.0°C
SPG. 1	1.94	381	15.4
SPG. 4	1.20	235	18.3°C
SPG. 5	1.7	232	22.8

	PID	DO	Temp (°C)
R-1	1.3	7.09	19.2
R-2	0.0	7.19	20.7
R-3	0.0	3.40	15.2
R-4	0.0	6.70	16.7
R-5	0.0	0.99	16.0
R-6	0.0	2.56	14.4
VE	0.0		

PID EFFLUENT 9.1

Comments

Signature (s)

Delbert Beckis

Date

17 NOV 02

Reviewer

Date

NOV-07-02 09:15 AM AESE + + + + +

5055669120

1.16



Site Name Jaquez

REMEDIATION SYSTEM-DATA SHEET

906 San Juan Blvd. Ste.D
Farmington, NM 87401
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Page 1 of 1

Project Name San Juan River Plant

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (1120")	<u>32</u>
Mag. Effluent (1120")	<u>21</u>
Infl. SCFM	<u>56</u>
Eff. SCFM	<u>72</u>
Vent Flow	

SPARGE	scfm
Magnachelic Gauge (psi)	
Flow Gauge - Sparge	
Flow Gauge - Sparge	
Flow Gauge - Sparge	
Compressor (psi)	

	INCHES OF WATER	VALVE
		High or Low
MP-1		
MP-2S		
MP-2D		
MP-3S		
MP-3D		

	MPS	FPM	Temp (°F)
VW			
Influent			
Effluent			
SPG. 1			
SPG. 4			
SPG 5			

	PID	DO	Temp (°C)
R-1			
R-2			
R-3			
R-4			
R-5			
R-6			
VE			

PID EFFLUENT

Comments 11-4-02 Sparge Compressor not running. Electric Motor is. Turned off sparge system for repair
Unable to collect any other data

Signature (s) _____ Date _____ Reviewer _____ Date _____

AESE

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Farmington, NM 87401
505.566.9116(9120fax)

Site Name

Jaquez**REMEDIATION SYSTEM DATA SHEET**Page 1 of 1Project Name San Juan River Basin

Project Manager

Ashley LoweProject No. 220013Client Company M.H.T.

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>30</u>
Mag. Effluent (H ₂ O")	<u>23</u>
Inf. SCFM	<u>58</u>
Eff. SCFM	<u>70</u>
Vent Flow	<u>✓</u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>11</u>
Flow Gauge - Sparge 5	<u>3.5</u>
Flow Gauge - Sparge 4	<u>2.5</u>
Flow Gauge - Sparge 1	<u>2.5</u>
Compressor (psi)	<u>10</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>High</u>
MP-2S	<u>0.05</u>	<u>High</u>
MP-2D	<u>0.0</u>	<u>High</u>
MP-3S	<u>0.05</u>	<u>High</u>
MP-3D	<u>0.1</u>	<u>High</u>

	MPS	FPM	Temp (°F)
VW	<u>1.8</u>	<u>358</u>	<u>78.2</u>
Influent	<u>7.4</u>	<u>1555</u>	<u>79.1</u>
Effluent	<u>15.6</u>	<u>3265</u>	<u>108.3</u>
SPG. 1	<u>1.6</u>	<u>274</u>	<u>79.8</u>
SPG. 4	<u>2.2</u>	<u>399</u>	<u>82.1</u>
SPG. 5	<u>1.7</u>	<u>374</u>	<u>86.8</u>

	PID	DO	Temp (°C)
R-1	<u>0.0</u>		
R-2	<u>0.0</u>		
R-3	<u>0.0</u>		
R-4	<u>1.2</u>		
R-5	<u>0.0</u>		
R-6	<u>0.0</u>		
VE	<u>✓</u>		

PID EFFLUENT ✓

Comments

Signature (s)

Ashley L Lowe

Date

10/30/02

Reviewer

Date

AESE

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Site Name

Jaquez**REMEDIATION SYSTEM DATA SHEET**Page 1 of 1Project Name San Juan River Basin

Project Manager

Ashley LoweProject No. 220013Client Company MWH

VENT SYSTEM	
Mag. Influent (H2O")	30
Mag. Effluent (H2O")	21
Inf. SCFM	60
Eff. SCFM	73
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	10.5
Flow Gauge - Sparge 5	3.5
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 1	3
Compressor (psi)	9

	INCHES OF WATER	VALVE High or Low
MP-1	0.0	High & Low
MP-2S	0.05	High
MP-2D	0.0	High
MP-3S	0.15	High
MP-3D	0.2	High

	MPS	FPM	Temp (°F)
VW	1.7	342	59.2
Influent	7.1	1324	62.9
Effluent	14.8	3062	104.0
SPG. 1	1.4	272	74.5
SPG. 4	2.1	413	73.2
SPG 5	1.8	378	88.2

	PID	DO	Temp (°C)
R-1	0.0		
R-2	0.0		
R-3	0.0		
R-4	3.4		
R-5	1.8		
R-6	0.0		
VE			

PID EFFLUENT 

Comments Everything looks normal except monitoring pts are still reading low

Signature (s)

Ashley L Lowe

Date

10/23/02

Reviewer

Date

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Page 1 of 1

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H2O")	<u>30</u>
Mag. Effluent (H2O")	<u>20</u>
Inf. SCFM	<u>59</u>
Eff. SCFM	<u>74</u>
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	<u>11</u>
Flow Gauge - Sparge	<u>5</u>
Flow Gauge - Sparge	<u>4</u>
Flow Gauge - Sparge	<u>2.5</u>
Flow Gauge - Sparge	<u>3.5</u>
Compressor (psi)	<u>9</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>High & Low</u>
MP-2S	<u>0.0</u>	<u>High & Low</u>
MP-2D	<u>0.0</u>	<u>High & Low</u>
MP-3S	<u>0.0</u>	<u>High & Low</u>
MP-3D	<u>0.0</u>	<u>High & Low</u>

	MPS	FPM	Temp (°F)
VW	<u>1.8</u>	<u>369</u>	<u>40.4</u>
Influent	<u>10.3</u>	<u>2033</u>	<u>39.0</u>
Effluent	<u>15.9</u>	<u>3133</u>	<u>87.0</u>
SPG. 1	<u>1.4</u>	<u>284</u>	<u>37.2</u>
SPG. 4	<u>1.3</u>	<u>260</u>	<u>39.0</u>
SPG 5	<u>2.0</u>	<u>410</u>	<u>51.9</u>

	PID	DO	Temp (°C)
R-1	<u>0.3</u>	X	
R-2	<u>0.0</u>		
R-3	<u>0.0</u>		
R-4	<u>7.2</u>		
R-5	<u>0.0</u>		
R-6	<u>1.4</u>		
VE			

PID EFFLUENT 29.2

Comments collected Eff Air Sample. Sparge compressor is vibrating more than usual. Retaped jar at compressor. Everything else looked OK. All monitoring points measured C.O air flow.
09 M conducted early ~ 8am, still cold.

Signature (s) Ashley Lowe

Date 10/15/02

Reviewer

Date

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H2O")	30
Mag. Effluent (H2O")	20
Inf. SCFM	58
Eff. SCFM	74
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	11
Flow Gauge - Sparge 5	3.5
Flow Gauge - Sparge 4	4
Flow Gauge - Sparge 1	5
Compressor (psi)	10.5

	INCHES OF WATER	VALVE High or Low
MP-1	0.0	High & Low
MP-2S	0.0	High & Low
MP-2D	0.15	High
MP-3S	0.25	High
MP-3D	0.15	High

	MPS	FPM	Temp (°F)
VW	2.2	436	63.3
Influent	6.3	1235	59.8
Effluent	12.3	2594	111.9
SPG. 1	1.6	309	72.4
SPG. 4	2.2	428	76.8
SPG 5	1.6	325	86.8

	PID	DO	Temp (°C)
R-1	0.0	7.18	18.2
R-2	0.0	6.52	20.1
R-3	0.0	1.47	16.8
R-4	7.6	8.06	18.6
R-5	1.2	0.67	16.0
R-6	0.0	3.30	16.2
VE			

Water Level (ft)

9.35
9.457
10.585
8.975
15.145
13.57

PID EFFLUENT 26.4

Comments Bailed 1 well volume from each well before measuring DO. Also collected water levels.
Forgot to bring air sample bag - will sample Eff Air next week.

Signature (s)

Ashley L Lowe

Date

10/10/02

Reviewer

Date

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>56</u>
Mag. Effluent (H ₂ O")	<u>72</u>
Inf. SCFM	<u>29</u>
Eff. SCFM	<u>20</u>
Vent Flow	<u>✓</u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>10.5</u>
Flow Gauge - Sparge	<u>5</u> <u>3.5</u>
Flow Gauge - Sparge	<u>4</u> <u>3.2</u>
Flow Gauge - Sparge	<u>1</u> <u>4.0</u>
Compressor (psi)	<u>10</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>High</u>
MP-2S	<u>0.03</u>	<u>High</u>
MP-2D	<u>0.25</u>	<u>High</u>
MP-3S	<u>0.0</u>	<u>High</u>
MP-3D		

	MPS	FPM	Temp (°F)
VW	<u>2.0</u>	<u>412</u>	<u>77.5</u>
Influent	<u>10.8</u>	<u>2152</u>	<u>67.2</u>
Effluent	<u>18.3</u>	<u>3666</u>	<u>120°F</u>
SPG. 1	<u>1.53</u>	<u>300</u>	<u>77.5</u>
SPG. 4	<u>2.2</u>	<u>447</u>	<u>86.5</u>
SPG 5	<u>1.5</u>	<u>315</u>	<u>91.2</u>

fluctuating

	PID	DO	Temp (°C)
R-1	<u>1.1</u>		
R-2	<u>0.0</u>		
R-3	<u>0.3</u>		
R-4	<u>5.3</u>		
R-5	<u>0.0</u>		
R-6	<u>0.0</u>		
VE			

PID EFFLUENT 6.4

Comments Fencing in good shape. Mark Sikelianos observed to learn procedures

Signature (s)

Ashley L Lowe

Date

10/4/02

Reviewer

Date



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Site Name

Jaquez

REMEDIATION SYSTEM DATA SHEET

Page 1 of 1

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	19
Mag. Effluent (H ₂ O")	18
Inf. SCFM	74 58
Eff. SCFM	74
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	11
Flow Gauge - Sparge 5	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 1	4
Compressor (psi)	8

	INCHES OF WATER	VALVE High or Low
MP-1	0.0	High & Low
MP-2S	0.05	High & Low
MP-2D	0.0	High & Low
MP-3S	0.0	High & Low
MP-3D	0.0	High & Low

	MPS	FPM	Temp (°F)
VW	2.0	401	73.5
Influent	12.1	2288	63.8
Effluent	17.4	3446	111.5
SPG. 1	1.3	267	63.3
SPG. 4	2.2	442	67.8
SPG 5	1.4	297	79.8

	PID	DO	Temp (°C)
R-1	1.7		
R-2	0.0		
R-3	0.0		
R-4	6.3		
R-5	0.0		
R-6	0.0		
VE			

PID EFFLUENT ☒

Comments Martin & Ashley took down old fence & put up new rope & safety fencing as requested by Lynn Benally

Signature (s)

Ashley L Lowe

Date

09/26/02

Reviewer

Date

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Page 1 of 1

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>29</u>
Mag. Effluent (H ₂ O")	<u>18</u>
Inf. SCFM	<u>58</u>
Eff. SCFM	<u>72</u>
Vent Flow	<u> </u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>10</u>
Flow Gauge - Sparge <u>5</u>	<u>3</u>
Flow Gauge - Sparge <u>4</u>	<u>3</u>
Flow Gauge - Sparge <u>1</u>	<u>0</u>
Compressor (psi)	<u>10</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>high & low</u>
MP-2S	<u>0.4</u>	<u>high</u>
MP-2D	<u>0.0</u>	<u>high & low</u>
MP-3S	<u>0.9</u>	<u>high</u>
MP-3D	<u>1.2</u>	<u>high</u>

	MPS	FPM	Temp (°F)
VW	<u>1.9</u>	<u>392</u>	<u>58.8</u>
Influent	<u>15.3</u>	<u>3002</u>	<u>61.5</u>
Effluent	<u>17.4</u>	<u>3124</u>	<u>106.1</u>
SPG. 1	<u>1.6</u>	<u>317</u>	<u>58.9</u>
SPG. 4	<u>1.0</u>	<u>215</u>	<u>56.4</u>
SPG 5	<u>1.0</u>	<u>291</u>	<u>58.4</u>

	PID	DO	Temp (°C)
R-1	<u>3.9</u>		
R-2	<u>7.6</u>		
R-3	<u>12.8</u>		
R-4	<u>15.4</u>		
R-5	<u>1.2</u>		
R-6	<u>1.5</u>		
VE			

PID EFFLUENT 11.4

Comments Reinstalled pump - turned system on at 9:20 ; set clock at 9:30 ; adjusted valves on sparge system to try to get flow in sparge 1 - nothing would only jump when 4 or 5 were turned off; then fall again. May need more time. Inches of water data are also lower than normal
Rainy weather conditions.

* This O & M was conducted immediately after sparge & vent system start up & may not be entirely

Signature (s) Ashley & Lowe

Date 09/18/02

Reviewer

Date

representative of normal conditions. Lynn Benally asked that we collect the data while we were already present at the site.



Site Name

Jaquez

REMEDIATION SYSTEM DATA SHEET

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Page 1 of 1Project Name San Juan River Basin

Project Manager

Ashley LoweProject No. 220013Client Company MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>29</u>
Mag. Effluent (H ₂ O")	<u>28</u>
Inf. SCFM	<u>58</u>
Eff. SCFM	<u>58</u>
Vent Flow	<u> </u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>0.5</u>
Flow Gauge - Sparge	<u>0</u>
Flow Gauge - Sparge	<u>0</u>
Flow Gauge - Sparge	<u>0</u>
Compressor (psi)	<u>2</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>High</u>
MP-2S		
MP-2D		
MP-3S		
MP-3D		

	MPS	FPM	Temp (°F)
VW	<u>2.0</u>	<u>262</u>	<u>254</u>
Influent	<u>13.7</u>	<u>2703</u>	<u>66.9</u>
Effluent	<u>18.1</u>	<u>3671</u>	<u>118.7</u>
SPG. 1			
SPG. 4			
SPG. 5			

	PID	DO	Temp (°C)
R-1			
R-2			
R-3			
R-4			
R-5			
R-6			
VE			

PID EFFLUENT 26.2

Comments

Sparge System is down. Electric motor is running, but compressor is not. Vent system is OK. Left vent system running, turned off electric motor to sparge system at 12:30. Will leave off until compressor is fixed. Checked fuses, timer & all seem fine. Contacted Lynn Benally about problem & he will let us know what to do.

Signature (s)

Ashley & Lowe

Date

09/11/02

Reviewer

Date

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 1220013

Client Company MWH

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>28</u>
Mag. Effluent (H ₂ O")	<u>20</u>
Inf. SCFM	<u>57</u>
Eff. SCFM	<u>72</u>
Vent Flow	<u>✓</u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>9</u>
Flow Gauge - Sparge	<u>5</u>
Flow Gauge - Sparge	<u>4</u>
Flow Gauge - Sparge	<u>1</u>
Compressor (psi)	<u>8</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.0</u>	<u>High & Low</u>
MP-2S	<u>6.09</u>	<u>High</u>
MP-2D	<u>0.22</u>	<u>High</u>
MP-3S	<u>0.005</u>	<u>High</u>
MP-3D	<u>0.0</u>	<u>High</u>

	MPS	FPM	Temp (°F)
VW	<u>2.1</u>	<u>428</u>	<u>106.5</u>
Influent	<u>13.3</u>	<u>2538</u>	<u>84.3</u>
Effluent	<u>16.8</u>	<u>3499</u>	<u>135.8</u>
SPG. 1	<u>1.8</u>	<u>354</u>	<u>105.7</u>
SPG. 4	<u>0.8</u>	<u>159</u>	<u>107.5</u>
SPG 5	<u>1.9</u>	<u>430</u>	<u>118.3</u>

	PID	DO	Temp (°C)
R-1	<u>0.0</u>	<u>7.51</u>	<u>20.6</u>
R-2	<u>0.0</u>	<u>5.82</u>	<u>25.9</u>
R-3	<u>0.0</u>	<u>0.90</u>	<u>19.2</u>
R-4	<u>0.0</u>	<u>8.83</u>	<u>18.4</u>
R-5	<u>0.0</u>	<u>0.02</u>	<u>15.5</u>
R-6	<u>0.7</u>	<u>3.17</u>	<u>15.3</u>
VE			

9.872
9.790
10.813
9.595
14.998
13.957

PID EFFLUENT 19.3

Comments Effluent air sample collected at 11:45 for BTEX analysis
Martin Nee used a hand auger on South side to dig 7' as requested by L. Benally (to see how far he could dig). Made digital photos of both sides (N & S) of site for L. Benally

Signature (s) Ashley Lowe

Date 09/05/02

Reviewer

Date

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Page 1 of 1

Project Name San Juan River Basin

Project Manager

Ashley Lowe

Project No.

220013

Client Company

Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>29.0</u>
Mag. Effluent (H ₂ O")	<u>29.0</u>
Inf. SCFM	<u>30 / 58</u>
Eff. SCFM	<u>18 / 71</u>
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	<u>105</u>
Flow Gauge - Sparge	<u>2.3</u>
Flow Gauge - Sparge	<u>2.75</u>
Flow Gauge - Sparge	<u>2.5</u>
Compressor (psi)	<u>10</u>

	INCHES OF WATER	VALVE
		High or Low
MP-1	<u>0.0</u>	<u>High & Low</u>
MP-2S	<u>0.145</u>	<u>High</u>
MP-2D	<u>.045</u>	<u>High</u>
MP-3S	<u>0.0</u>	<u>High</u>
MP-3D	<u>0.0</u>	<u>High</u>

	MPS	FPM	Temp (°F)
VW	<u>1.8</u>	<u>372</u>	<u>285</u>
Influent	<u>5.8</u>	<u>1150</u>	<u>233</u>
Effluent	<u>176</u>	<u>3500</u>	<u>50°</u>
SPG. 1	<u>.35</u>	<u>72</u>	<u>205</u>
SPG. 4	<u>.82</u>	<u>164</u>	<u>274</u>
SPG 5	<u>.44</u>	<u>86</u>	<u>352</u>

	PID	DO	Temp (°C)
R-1	<u>8.1</u>		
R-2	<u>0.0</u>		
R-3	<u>0.0</u>		
R-4	<u>11.3</u>		
R-5	<u>0.0</u>		
R-6	<u>0.0</u>		
VE	<u>17.1</u>		

PID EFFLUENT /

discharge at trailer

Comments

San Tumbleweed pile against fence. Orange fence in serious disrepair worked on fence 1/2 hr. Minor trash needs to be picked up

Signature (s)

[Signature]

Date

2/28/02

Reviewer

Date

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>2.9</u>
Mag. Effluent (H ₂ O")	<u>2.9</u>
Inf. SCFM	<u>56</u>
Eff. SCFM	<u>72</u>
Vent Flow	<u>✓</u>

SPARGE	scfm
Magnehelic Gauge (psi)	<u>10</u>
Flow Gauge - Sparge <u>5</u>	<u>3</u>
Flow Gauge - Sparge <u>4</u>	<u>3</u>
Flow Gauge - Sparge <u>1</u>	<u>3.5</u>
Compressor (psi)	<u>8</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.01</u>	<u>High</u>
MP-2S	<u>0.45</u>	<u>High</u>
MP-2D	<u>0.13</u>	<u>High</u>
MP-3S	<u>0.01</u>	<u>High</u>
MP-3D	<u>0.60</u>	<u>High</u>

	MPS	FPM	Temp (°F)
VW	<u>2.2</u>	<u>443</u>	<u>92.6</u>
Influent	<u>8.9</u>	<u>1453</u>	<u>77.3</u>
Effluent	<u>19.5</u>	<u>3966</u>	<u>125.1</u>
SPG. 1	<u>1.3</u>	<u>218</u>	<u>76.2</u>
SPG. 4	<u>1.0</u>	<u>207</u>	<u>98.2</u>
SPG 5	<u>1.2</u>	<u>278</u>	<u>110.5</u>

	PID	DO	Temp (°C)
R-1	<u>0.0</u>	<u>/</u>	<u>/</u>
R-2	<u>0.0</u>	<u>/</u>	<u>/</u>
R-3	<u>0.0</u>	<u>/</u>	<u>/</u>
R-4	<u>5.6</u>	<u>/</u>	<u>/</u>
R-5	<u>2.2</u>	<u>/</u>	<u>/</u>
R-6	<u>0.0</u>	<u>/</u>	<u>/</u>
VE			

PID EFFLUENT 31.1

Comments Repaired fence w/wire & string. PID readings falling to 0.0 - have been high since sampling 2 weeks ago.

Signature (s) Ashley Lowe

Date 08/20/02

Reviewer

Date



Site Name

Jaquez

REMEDIATION SYSTEM DATA SHEET

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Page 1 of 1Project Name San Juan River Basin Project Manager Ashley Lowe Project No. 220013Client Company Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H ₂ O")	37
Mag. Effluent (H ₂ O")	37
Inf. SCFM	56
Eff. SCFM	72
Vent Flow	✓

SPARGE	scfm
Magnehelic Gauge (psi)	10.5
Flow Gauge - Sparge 5	3.5
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 1	2.5
Compressor (psi)	8

	INCHES OF WATER	VALVE High or Low
MP-1	0.01	High
MP-2S	0.14	High
MP-2D	0.03 0.14	High
MP-3S	0.01	High
MP-3D	0.015	High

	MPS	FPM	Temp (°F)
VW	2.2	435	109.0
Influent	13.1	2421	93.3
Effluent	20.3	3978	63.3
SPG. 1	1.1	211	112.2
SPG. 4	1.3	257	118.9
SPG 5	1.2	224	120.1

	PID	DO	Temp (°C)
R-1	12.2		
R-2	2.8		
R-3	2.7		
R-4	10.2		
R-5	6.2		
R-6	0.7		
VE			

PID EFFLUENT | 136

Comments Fence had been chewed through in 2 places - repaired w/wire
PID readings high in R-wells - maybe affected by sampling last week

Signature (s)

Ashley L Lowe

Date

08/16/02

Reviewer

Date



Site Name

Jaquez

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REMEDIATION SYSTEM DATA SHEET

Page 1 of 1Project Name San Juan River BasinProject Manager Ashley LoweProject No. 220013Client Company Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>30</u>
Mag. Effluent (H ₂ O")	<u>30</u>
Inf. SCFM	<u>59</u>
Eff. SCFM	<u>70</u>
Vent Flow	

SPARGE	scfm
Magnehelic Gauge (psi)	<u>11.5</u>
Flow Gauge - Sparge <u>5</u>	<u>3</u>
Flow Gauge - Sparge <u>4</u>	<u>3</u>
Flow Gauge - Sparge <u>1</u>	<u>1</u>
Compressor (psi)	<u>0.8</u>

	INCHES OF WATER	VALVE High or Low
MP-1	<u>0.01</u>	<u>High</u>
MP-2S	<u>0.15</u>	<u>High</u>
MP-2D	<u>0.10</u>	<u>High</u>
MP-3S	<u>0.00</u>	<u>High</u>
MP-3D	<u>0.50</u>	<u>High</u>

	MPS	FPM	Temp (°F)
VW	<u>2.2</u>	<u>450</u>	<u>108.4</u>
Influent	<u>16.6</u>	<u>3316</u>	<u>91.0</u>
Effluent	<u>16.8</u>	<u>3338</u>	<u>131.5</u>
SPG. 1	<u>1.3</u>	<u>269</u>	<u>108.8</u>
SPG. 4	<u>1.1</u>	<u>220</u>	<u>118.7</u>
SPG 5	<u>1.6</u>	<u>330</u>	<u>121.2</u>

	PID	DO	Temp (°C)
R-1	<u>1.3</u>	<u>3.94</u>	<u>17.9</u>
R-2	<u>2.6</u>	<u>1.41</u>	<u>20.1</u>
R-3	<u>0.0</u>	<u>1.20</u>	<u>13.5</u>
R-4	<u>15.2</u>	<u>1.28</u>	<u>16.1</u>
R-5	<u>0.0</u>	<u>2.15</u>	<u>14.9</u>
R-6	<u>0.0</u>	<u>3.92</u>	<u>14.1</u>
VE			

PID EFFLUENT 37.4

Comments Power to systems was shut off 08/06/02 at 1344 for sampling. It was turned back on today at 14:02 09M was completed just after turning power back on. Sparge flows were very low at first. Completed rest of 09M, then came back to re-measure flows. Collected Effluent Air Sample for BTEX analysis at 13:20

Signature (s) Ashley LoweDate 08/08/02

Reviewer

Date

AESE

Site Name

Jaquez**REMEDIATION SYSTEM DATA SHEET**906 San Juan Blvd. Ste. D
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Well No.

Page 1 of 1Project Name San Juan River BasinProject Manager Ashley LoweProject No. 220013Client Company Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H ₂ O")	29
Mag. Effluent (H ₂ O")	29
Inf. SCFM	59
Eff. SCFM	74
Vent Flow	

SPARGE	
Magnehelic Gauge (psi)	10.8 psi
Flow Gauge - Sparge #5	2.8 scfm
Flow Gauge - Sparge #4	2.8 scfm
Flow Gauge - Sparge #1	2.5 scfm

Compressor =
9.7 psi

INCHES OF WATER		VALVE
		High or Low
MP-1	0.0	Low
MP-2S	0.26	High
MP-2D	0.13	High
MP-3S	0.05	High
MP-3D	0.05	High

	MPS	FPM	°F
VW	2.1	421	84.0
R-1			
R-4			
Influent	11.6	2287	71.7
Effluent	19.7	3889	123.0
PG-1 SP1	0.8	152	69.7
SPG. 4	1.2	249	88.1
SPG 5	1.3	230	93.3

used Range = 30

	PID	DO	Temp
R-1	0.0		
R-2	0.0		
R-3	0.0		
R-4	19.7		
R-5	1.4		
R-6	0.0		
VE			

WATER LEVEL DATA	
R-1	
R-2	
R-4	

PID EFFLUENT

Comments

PID not working consistently. Calibrated before measuring at each well. At R-4, measured three times & got same result of 19.7

Signature (s)

Ashley Lowe

Date

07/31/02

Reviewer

Date



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Site Name

Jaquez

REMEDIATION SYSTEM DATA SHEET

Page 1 of 1

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company Montgomery Watson Harza

VENT SYSTEM	
Mag. Influent (H2O")	29
Mag. Effluent (H2O")	29
Inf. SCFM	57
Eff. SCFM	71
Vent Flow	—

SPARGE		scfm
Magnehelic Gauge (psi)		10.5
Flow Gauge - Sparge	5	2.7
Flow Gauge - Sparge	4	2.7
Flow Gauge - Sparge	1	3.5
compressor		0.6 psi

scfm

INCHES OF WATER		VALVE
		High or Low
MP-1	0.1	Low
MP-2S	0.43	High
MP-2D	0.16	High
MP-3S	0.01	High
MP-3D	0.02	High

	MPS	FPM	T(°F)
VW	2.2	448	96.0
R-1	—	—	—
R-4	—	—	—
Influent	13.0	2522	77.1
Effluent	19.8	843	125.9
PG. 1	1.0	224	78.2
SPG. 4	1.2	233	101.4
SPG 5	1.4	285	109.3

	PID	DO	Temp °C
R-1	0.0	1.95	18.5
R-2	0.6	2.07	20.9
R-3	0.0	2.95	15.6
R-4	0.0	3.20	16.7
R-5	0.0	0.73	15.6
R-6	0.0	1.92	15.5
VE	0.0	—	—

WATER LEVEL DATA	
R-1	see other form
R-2	
R-4	

100' EFFLUENT	14.8
---------------	------

Comments fence was partially down-repaired; picked up trash in area
replaced 100' extension cord
bailed 1 well volume before measuring DO & Temp

Signature (s)

Ashley Lowe

Date

07/25/02

Reviewer

Date

906 San Juan Blvd. Ste. D

Farmington, NM 87401

505.566.9116(9120fax)

Well No.

VARIOUSPage 1 of 1

Project Name

San Juan River Basin

Project Manager

Ashley Lowe

Project No.

Client Company

Montgomery Watson

VENT SYSTEM	
Mag. Influent (H ₂ O")	<u>28</u>
Mag. Effluent (H ₂ O")	<u>28</u>
Inf. SCFM	<u>58</u>
Eff. SCFM	<u>70</u>
Vent Flow	<u> </u>

SPARGE	
Magnehelic Gauge (psi)	<u>10.4</u>
Flow Gauge - Sparge	<u>5</u> <u>3.2</u>
Flow Gauge - Sparge	<u>4</u> <u>3.5</u>
Flow Gauge - Sparge	<u>1</u> <u>3.0</u>

psi = 9

INCHES OF WATER		VALVE
		High or Low
MP-1	<u>0.5</u>	<u>High</u>
MP-2S	<u>0.46</u>	<u>High</u>
MP-2D	<u>0.17</u>	<u>High</u>
MP-3S	<u>0.0</u>	<u>High</u>
MP-3D	<u>0.75</u>	<u>Low</u>

	FEET FPM	Temp °F	MPS
VW	<u>438</u>	<u>89.7</u>	<u>2.2</u>
R-1	<u> </u>	<u> </u>	<u> </u>
R-4	<u> </u>	<u> </u>	<u> </u>
Influent	<u>1496</u>	<u>75.7</u>	<u>7.7</u>
Effluent	<u>3953</u>	<u>124.8</u>	<u>19.7</u>
PG. 1	<u> </u>	<u> </u>	<u> </u>
SPG. 4	<u>225</u>	<u>96.7</u>	<u>1.1</u>
SPG 5	<u>183</u>	<u>106.8</u>	<u>0.9</u>
SP1	<u>184</u>	<u>74.8</u>	<u>0.9</u>

	PID	DO	Temp
R-1	<u>0.0</u>	<u> </u>	<u> </u>
R-2	<u>0.0</u>	<u> </u>	<u> </u>
R-3	<u>0.0</u>	<u> </u>	<u> </u>
R-4	<u>0.0</u>	<u> </u>	<u> </u>
R-5	<u>0.0</u>	<u> </u>	<u> </u>
R-6	<u>0.0</u>	<u> </u>	<u> </u>
VE	<u>3.7</u>	<u> </u>	<u> </u>

WATER LEVEL DATA	
R-1	<u>see</u>
R-2	<u>other form</u>
R-4	<u> </u>

EFFLUENT 42.4

Comments

Ashley Lowe, Martin Nee, Lynn Benally met w/Chris Maez (AMEC) to learn O&M procedures at this site. Took effluent air sample (sent to lab). DO readings are taken every other week - completed last week by AMEC, will be taken next week by AESE. Vent flow has not been measured by AMEC in past. Repaired fencing. Need new 100' extension cord for site.

Signature (s)

Ashley Lowe

Date

07/18/02

Reviewer

Date

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517600121

Project Name - Jaquez SVE O&M

Date/Time - 7-12-02/0845

Project Manager - Lisa Winn

Technician - R. THOMPSON

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	56
Eff. SCFM	70
Vent Flow	

Spargers	
Magnehelic Gauge (psi)	10.5
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	3

Water Level	73.6
-------------	------

READINGS FROM THERMO ANEMOMETER			
	MPS	TEMP	TEMP (F)
VW	1.8	373	83.6
R-1			
R-4			
INFLUENT	17.1	3357	84.5
EFFLUENT	17.4	3450	130.4
SPG. 1	1.3	260	89.2
SPG. 4	1.2	238	105.2
SPG. 5	1.3	268	111.5

WATER LEVEL DATA	
R-1	9.33
R-2	9.05
R-4	8.90

SITE NOTES: _____

PRESSURES AT MANIFOLD		VALVE
		High or Low
MP-1	0.00	H
MP-2S	0.05	H
MP-2D	0.05	H
MP-3S	0.00	H
MP-3D	0.41	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

	PH	Flow (gpm)	Flow (gpm)	Flow (gpm)
R-1	17.2		7.33	19.9
R-2	0.0		7.92	23.6
R-3	0.2		2.57	16.1
R-4	178		9.45	17.0
R-5	0.0		0.54	14.8
R-6	0.0		7.39	15.3
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1S17000121

Project Name - Jaquez SVE O&M

Date/Time - 7-3-02 / 1430

Project Manager - Lisa Winn

Technician - R. THOMPSON

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	27
Mag. Effluent (H2O")	27
Inf. SCFM	54
Eff. SCFM	68
Vent Flow	

Sparge	
Magnehelic Gauge (psi)	8
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	3

Pipe Entry: 94.5

INCHES OF WATER		VALVE
MP-1	0.00	H
MP-2S	0.00	H
MP-2D	0.02	H
MP-3S	0.00	H
MP-3D	0.09	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as possitive if hose is on "High" valve

READINGS FROM THERMO-ANEMOMETER			
	MPG	PPM	TEMP (F)
VW	2.1	430	91.9
R-1			
R-4			
INFLUENT	14.6	2880	99.3
EFFLUENT	17.6	3466	146.2
SPG. 1	1.8	370	105.2
SPG. 4	1.3	270	103.9
SPG. 5	2.1	422	107.7

WATER LEVEL DATA	
R-1	11.50
R-2	9.95
R-4	11.14

SITE NOTES: _____

	PIPE	AVAIL. GROUND	DO (mg/L)	TEMP (F)
R-1	49.2			
R-2	17.2			
R-3	6.3			
R-4	202			
R-5	1.3			
R-6	4.7			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 6/28/02

Project Manager - Lisa Winn

Technician - Winn

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	<u>29</u>
Mag. Effluent (H2O")	<u>29</u>
Inf. SCFM	<u>56</u>
Eff. SCFM	<u>70</u>
Vent Flow	<u>14</u>

Sparge	
Magnehelic Gauge (psi)	<u>10</u>
Flow Gauge - Sparge 1	<u>3</u>
Flow Gauge - Sparge 4	<u>4</u>
Flow Gauge - Sparge 5	<u>4</u>

PID Effluent	<u>92.0</u>
--------------	-------------

INCHES OF WATER		VALVE
		High or Low
MP-1		<u>N</u>
MP-2S		<u>N</u>
MP-2D		<u>N</u>
MP-3S		<u>N</u>
MP-3D		<u>N</u>

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as possitive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPS	FPM	TEMP (F)
VW	<u>2.3</u>	<u>461</u>	<u>100.9</u>
R-1			
R-4			
INFLUENT	<u>9.1</u>	<u>1847</u>	<u>95.9</u>
EFFLUENT	<u>16.3</u>	<u>3297</u>	<u>152.0</u>
SPG. 1	<u>2.0</u>	<u>401</u>	<u>117.1</u>
SPG. 4	<u>1.5</u>	<u>212</u>	<u>109.5</u>
SPG. 5	<u>1.2</u>	<u>351</u>	<u>112.2</u>

	PID	Avail. Screen	DO (ppm)	Temp (°f)
R-1	<u>56.3</u>		<u>1.96</u>	<u>18.1</u>
R-2	<u>3.7</u>		<u>0.51</u>	<u>19.4</u>
R-3	<u>9.6</u>		<u>2.72</u>	<u>12.6</u>
R-4	<u>293</u>		<u>0.4</u>	<u>14.5</u>
R-5	<u>0.0</u>		<u>1.63</u>	<u>13.2</u>
R-6	<u>0.2</u>		<u>7.21</u>	<u>11.9</u>
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	
R-2	
R-4	

SITE NOTES: _____



EPFS Jaquez Remediation System Data Sheet and Field Notes

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 6-21-02

Project Manager - Lisa Winn

Technician - R. THOMPSON

Breathing Zone (ppm) - 0.0

Variable	
Mag. Influent (H2O")	27
Mag. Effluent (H2O")	27
Inf. SCFM	56
Eff. SCFM	68
Vent Flow	12

Sparger	
Magnehelic Gauge (psi)	8
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	3

Flow Rate	108
-----------	-----

INCHES OF WATER	VALVE
MP-1	0.00 H
MP-2S	0.02 H
MP-2D	0.00 H
MP-3S	0.00 H
MP-3D	0.16 H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMOANEMOMETER			
	MPS	FPM	TEMP (°F)
VW	2.1	431	94.8
R-1			
R-4			
INFLUENT	16.8	3357	96.7
EFFLUENT	17.6	3470	143.4
SPG. 1	2.0	404	112.8
SPG. 4	1.2	230	113.5
SPG. 5	2.5	517	124.5

	FID	Avail. Screen	DO (ppm)	Temp (°F)
R-1	66.7			
R-2	2.5			
R-3	0.4			
R-4	179			
R-5	0.0			
R-6	0.0			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	9.94
R-2	9.31
R-4	9.84

SITE NOTES: _____

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 6-13-02 1340

Project Manager - Lisa Winn

Technician - Chris MAEZ

Breathing Zone (ppm) - 0.0

WATER SYSTEM	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	56
Eff. SCFM	20
Vent Flow	14

OST 6

Sparging	
Magnehelic Gauge (psi)	9
Flow Gauge - Sparge 1	5
Flow Gauge - Sparge 4	2
Flow Gauge - Sparge 5	7

WIDE AREA 135 ppm

	INCHES OF WATER	VALVE
		High or Low
MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.52	H
MP-3S	0.0	H
MP-3D		

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPH	PPM	TEMP (F)
VW	2.3	463	103.2
R-1			
R-4			
INFLUENT	9.2	1835	96.0
EFFLUENT	16.4	3363	145.2
SPG. 1	2.0	404	115.1
SPG. 4	1.0	204	109.7
SPG. 5	1.7	343	120.0

WATER LEVEL DATA	
R-1	
R-2	
R-4	

SITE NOTES:

	RD	Avg. Speed	DO (ppm)	TEMP (F)
R-1	18.4			
R-2	0.08			
R-3	0.02			
R-4	106			
R-5	0.4			
R-6	0.2			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 517000/21

Project Name - Jaquez SVE O&M

Date/Time - 6-6-02 0830

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) - 0.0

Water System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	22
Vent Flow	14

PSI 6

Spargers	
Magnehelic Gauge (psi)	7
Flow Gauge - Sparge 1	2
Flow Gauge - Sparge 4	2
Flow Gauge - Sparge 5	4
Flow Gauge	106

INCHES OF WATER	VALVE
MP-1	0.0 H
MP-2S	0.0 H
MP-2D	0.01 H
MP-3S	0.0 H
MP-3D	0.27 H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMID-ANEMOMETER			
	MPS	MPH	TEMP (C)
VW	2.5	510	78.4
R-1			
R-4			
INFLUENT	9.2	1841	72.3
EFFLUENT	14.8	3907	122.3
SPG. 1	1.5	306	69.7
SPG. 4	1.1	226	94.5
SPG. 5	1.5	308	93.1

WATER LEVEL DATA	
R-1	11.13
R-2	9.93
R-4	10.46

SITE NOTES: Sunny, Breezy
pid along Fence Line
0.0 1030 Turned Sparge off
1200 Turned Sparge ON

	FD	Aveil. Spargin	DO (mg/L)	Temp (C)
R-1	9.1		2.09	18.3
R-2	0.3		0.22	19.3
R-3	0.0		1.73	12.4
R-4	14.6		8.20	14.8
R-5	0.1		1.09	14.0
R-6	0.0		5.70	12.1
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 5-30-02

Project Manager - Lisa Winn

Technician - C. MAER

Breathing Zone (ppm) - 0.0

VARI SYSTEM	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

PST 6

Spurge	
Magnèhellic Gauge (psi)	2
Flow Gauge - Spurge 1	2
Flow Gauge - Spurge 4	2
Flow Gauge - Spurge 5	4.5

Pressure	95.6
----------	------

INCHES OF WATER		VALVE
		High or Low
MP-1	0.0	H
MP-2S	0.05	H
MP-2D	0.35	H
MP-3S	0.01	H
MP-3D	0.28	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO-ANEMOMETER			
	MPH	PPM	TEMP (F)
VW	2.7	545	96.7
R-1			
R-4			
INFLUENT	5.7	1141	75.3
EFFLUENT	20.0	3951	124.8
SPG. 1	0.9	183	72.8
SPG. 4	0.8	160	92.4
SPG. 5	1.9	376	104.7

WATER LEVEL DATA	
R-1	10.84
R-2	9.74
R-4	10.22

SITE NOTES: P&ID Readings walking around site 0.0 Turned off Spurge System to get H₂O Levels

	PID	Avg. Spurge	DO (ppm)	Temp (F)
R-1	9.5			
R-2	0.0			
R-3	0.0			
R-4	3.0			
R-5	0.0			
R-6	0.0			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 5-22-02 1400

Project Manager - Lisa Winn

Technician - C. MAERZ

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

PSI GAUGE 6	
Sparge	
Magnehelic Gauge (psi)	7
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	6.5
Pressure	127

INCHES OF WATER		VALVE
		High or Low
MP-1	0.0	H
MP-2S	0.03	H
MP-2D	0.20	H
MP-3S	0.09	H
MP-3D	0.16	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPH	PM	TEMP (F)
VW	2.0	410	78.6
R-1			
R-4			
INFLUENT	12.4	2440	68.7
EFFLUENT	8.9	1748	120.1
SPG. 1	1.0	217	87.4
SPG. 4	0.9	183	86.5
SPG. 5	2.1	422	99.1

WATER LEVEL DATA	
R-1	
R-2	
R-4	

SITE NOTES: Turned system
off sampling R1-R6 1445
Breezy conditions did readings
Along fence line 0.0

	FID	Aval Sugar	DO (ppm)	Temp (F)
R-1	15.7			
R-2	0.8			
R-3	0.5			
R-4	98.7			
R-5	0.2			
R-6	0.1			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 5-16-02 0900

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) - 0.0

VARY SYSTEM	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

D.57 6.5	
Spurge	
Magnehelic Gauge (psi)	8
Flow Gauge - Spurge 1	2
Flow Gauge - Spurge 4	2
Flow Gauge - Spurge 5	7
126	

INCHES OF WATER		VALVE
		High or Low
MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.83	H
MP-3S	0.01	H
MP-3D	0.25	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO-ANEMOMETER			
	MPH	FEW	TEMP (°F)
VW	2.2	442	99.1
R-1			
R-4			
INFLUENT	7.0	1398	70.5
EFFLUENT	20.8	4116	121.4
SPG. 1	0.9	181	94.3
SPG. 4	1.0	215	97.3
SPG. 5	2.1	421	111.0

	FLD	Avg. Spurge	DO (ppm)	Temp (°F)
R-1	31.1		1.74	17.7
R-2	1.1		0.43	19.1
R-3	0.3		2.88	12.4
R-4	57.2		9.73	14.5
R-5	0.5		1.65	13.8
R-6	0.1		6.96	11.2
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	10.65
R-2	9.86
R-4	10.21

SITE NOTES: SHUT DOWN spurge system 1010 Did H2O Levels & DO.
Turned System Back on 1230
Repaired fence

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 5/10/02

Project Manager - Lisa Winn

Technician - LWinn

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	29
Mag. Effluent (H2O")	29
Inf. SCFM	56
Eff. SCFM	72
Vent Flow	16

Sparge	
Magnehelic Gauge (psi)	10
Flow Gauge - Sparge 1	6
Flow Gauge - Sparge 4	6
Flow Gauge - Sparge 5	8

PID Effluent	115
--------------	-----

INCHES OF WATER		VALVE
		High or Low
MP-1	0.0	H
MP-2S	0.03	N
MP-2D	0.03	H
MP-3S	0.01	H
MP-3D	0.10	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as possitive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPS	FRPM	TEMP (F)
VW	2.1	418	85.8
R-1			
R-4			
INFLUENT	6.4	915	81.6
EFFLUENT	21.6	3913	129.5
SPG. 1	1.3	260	82.5
SPG. 4	1.6	319	85.2
SPG. 5	1.1	230	91.9

WATER LEVEL DATA	
R-1	9.83
R-2	9.49
R-4	9.71

SITE NOTES: _____

	PID	Avail. Screen	DO (ppm)	Temp (°F)
R-1	81.5			
R-2	10.1			
R-3	5.6			
R-4	294			
R-5	-			
R-6	-			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

next week

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 5-2-02 / 1430

Project Manager - Lisa Winn

Technician - R. Thompson

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	56
Eff. SCFM	72
Vent Flow	16

Sparge	
Magnehelic Gauge (psi)	12
Flow Gauge - Sparge 1	5
Flow Gauge - Sparge 4	5
Flow Gauge - Sparge 5	5

Pressure	150
----------	-----

INCHES OF WATER		VALVE
MP-1	0.01	H
MP-2S	0.01	H
MP-2D	0.01	H
MP-3S	0.01	H
MP-3D	0.00	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPH	PPM	TEMP (°F)
VW	2.2	434	76.4
R-1			
R-4			
INFLUENT	20.0	3963	120.1
EFFLUENT	18.8	3709	73.0
SPG. 1	2.6	526	84.1
SPG. 4	1.3	260	90.1
SPG. 5	1.7	328	94.0

	PID	Avail. Sparge	DO (ppm)	Temp (°F)
R-1	84.9		5.34	17.7
R-2	0.7		5.90	21.1
R-3	1.2		3.80	12.8
R-4	155		7.13	14.4
R-5	0.7		0.40	13.8
R-6	3.8		7.24	10.5
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	9.25
R-2	9.24
R-4	9.01

SITE NOTES: _____

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 4-19-02

Project Manager - Lisa Winn

Technician - ROBERT THOMPSON

Breathing Zone (ppm) - 0.0

Vent System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	56
Eff. SCFM	72
Vent Flow	

Sparge	
Magnehelic Gauge (psi)	12
Flow Gauge - Sparge 1	4.5
Flow Gauge - Sparge 4	4.5
Flow Gauge - Sparge 5	4.5

DO (ppm)	197
----------	-----

INCHES OF WATER		VALVE
		High or Low
MP-1	0.01	H
MP-2S	0.03	H
MP-2D	0.09	H
MP-3S	0.01	H
MP-3D	0.01	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPH	PPM	TEMP (°F)
VW	2.0	410	78.0
R-1			
R-4			
INFLUENT	13.4	2655	77.3
EFFLUENT	18.2	3402	122.8
SPG. 1	2.2	434	87.9
SPG. 4	1.4	290	94.8
SPG. 5	1.4	290	95.8

	RID	Avail. Screen	DO (ppm)	Temp (°F)
R-1	92.6		7.12	17.1
R-2	1.3		7.94	19.8
R-3	0.07		2.01	12.2
R-4	227		10.04	13.9
R-5	0.06		0.43	13.8
R-6	0.06		9.71	10.4
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	9.62
R-2	9.41
R-4	9.44

SITE NOTES: _____

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 4/11/02

Project Manager - Lisa Winn

Technician - Robert Thompson

Breathing Zone (ppm) - 0

Vent System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	56
Eff. SCFM	72
Vent Flow	

Sparge	
Magnehelic Gauge (psi)	13
Flow Gauge - Sparge 1	4
Flow Gauge - Sparge 4	4
Flow Gauge - Sparge 5	4

POH Level	227
-----------	-----

INCHES OF WATER	VALVE
	High or Low
MP-1	
MP-2S	
MP-2D	
MP-3S	
MP-3D	

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO ANEMOMETER			
	MPS	PPM	TEMP (°F)
VW			
R-1			
R-4			
INFLUENT			
EFFLUENT			
SPG. 1			
SPG. 4			
SPG. 5			

	PID	Val Screen	DO (ppm)	Temp (°F)
R-1	89.3 PPM			
R-2	123 PPM			
R-3	8.4 PPM			
R-4	594 PPM			
R-5	15.4 PPM			
R-6	0 PPM			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	10.99
R-2	9.56
R-4	9.97

SITE NOTES:

FENCE PERIMETER - 0 PPM

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 0915 4-4-02

Project Manager - Lisa Winn

Technician - C. Macz

Breathing Zone (ppm) - 0.0

Water System	
Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	74
Vent Flow	16

Sparge	
Magnehelic Gauge (psi)	
Flow Gauge - Sparge 1	
Flow Gauge - Sparge 4	
Flow Gauge - Sparge 5	

Pressure	216
----------	-----

INCHES OF WATER		VALVE
MP-1	0.0	H
MP-2S	0.03	H
MP-2D	0.06	H
MP-3S	0.0	H
MP-3D		

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

READINGS FROM THERMO-ANEMOMETER			
	MPG	FT/MIN	TEMP (F)
VW	2.0	401	77.1
R-1			
R-4			
INFLUENT	9.9	1971	70.8
EFFLUENT	20.6	4070	117.6
SPG. 1			
SPG. 4			
SPG. 5			

	PID	Avail. Screen	DO (ppm)	Temp (F)
R-1	2.2		0.32	18.4
R-2	1.3		2.28	19.3
R-3	0.6		2.91	12.4
R-4	4.9		8.25	14.5
R-5	0.0		2.19	14.1
R-6	0.0		8.84	11.9
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

WATER LEVEL DATA	
R-1	16.06
R-2	14.93
R-4	15.22

SITE NOTES: Pid Readings Along
Fence line 0.0 Breezy conditions
Ditch running full. Rubber gear
on Blower motor Broken. Turned
off Sparge System.

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 11/5 3-28-02

Project Manager - Lisa Winn

Technician - C. Maniz

Breathing Zone (ppm) - 0.1

Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

0.5F	7
Magnehelic Gauge (psi)	6
Flow Gauge - Sparge 1	2
Flow Gauge - Sparge 4	3.5
Flow Gauge - Sparge 5	7
	867

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.07	H
MP-3S	0.03	H
MP-3D	0.02	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.3	458	77.7
R-1			
R-4			
INFLUENT	9.8	1939	78.2
FLUENT	19.1	5779	121.6
SPG. 1	1.2	254	85
SPG. 4	1.3	265	84.1
SPG. 5	0.9	193	91

R-1	40.9			
R-2	1.4			
R-3	1.8			
R-4	85.4			
R-5	0.2			
R-6	0.1			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

		SITE NOTES: Did Readings and
R-1	12.71	Fence line 0.0 Breezy conditions
R-2	12.46	Spargers Mag Dropping Turned up
R-4	12.10	to 8

F-554

P-22/30

T-188

+505-590-2235

From EL PASO FIELD SVS

Mar-11-03 04:55pm

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 3-21-02 0930

Breathing Zone (ppm) - 00

Project Manager - Lisa Winn

Technician - C MAE2

Mag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

OST	6.5
Magnetic Gauge (psi)	17.5
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	2
Flow Gauge - Sparge 5	5

	195
--	-----

MP-1	0.0	H
MP-2S	0.0	L
MP-2D	0.09	H
MP-3S	0.02	H
MP-3D	0.02	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.2	542	72.6
R-1			
R-4			
INFLUENT	8.7	1221	39.7
FLUENT	20.6	4075	111.3
SPG. 1	1.4	285	29.8
SPG. 4	1.9	385	80.4
SPG. 5	1.0	210	98.3

R-1 S	69.3		858	18.0
R-2 4	1.0		0.34	19.7
R-3 3	0.9		1.82	12.6
R-4 6	99.6		10.62	14.7
R-5 2	0.0		2.59	14.5
R-6 1	0.0		6.74	12.5
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

SITE NOTES: Ditch Flowing
Low Oil Readings around
Pence line 0.0 windy conditions

R-1	14.10
R-2	13.44
R-4	12.36

F-554
P. 20/30
T-188
+505-508-2235
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Mar-11-03 04:54pm

EPFS Jaquez Remediation System Data Sheet and Field Notes

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Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 3/14/02

Breathing Zone (ppm) - 0.0

Project Manager - Lisa Winn

Technician - C MAEL

'ag. Influent (H2O")	28
Mag. Effluent (H2O")	28
Inf. SCFM	58
Eff. SCFM	72
Vent Flow	14

DSI	8
Magnehelic Gauge (psi)	8.5
Flow Gauge - Sparge 1	4
Flow Gauge - Sparge 4	2
Flow Gauge - Sparge 5	4.5
	93.4

MP-1	0.0	H
MP-2S	0.0	L
MP-2D	0.0	L
MP-3S	0.0	L
MP-3D	0.0	L

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	1.9	391	45.3
R-1			
R-4			
INFLUENT	9.1	1009	43.5
EFFLUENT	18.2	3620	91.9
SPG. 1	1.6	317	46.5
SPG. 4	0.7	191	48.9
SPG. 5	0.9	186	54.1

R-1	15.45
R-2	15.03
R-4	13.75

SITE NOTES: Did Readings
along fence line 0 Readings
Due to windy conditions

R-1	123 ppm			
R-2	0.0 ppm			
R-3	0.0 ppm			
R-4	641 ppm			
R-5	0.0 ppm			
R-6	0.0 ppm			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

amec

12 00

amec

EPFS Jaquez Remediation System Data Sheet and Field Notes

Project Number -

Project Name - Jaquez SVE O&MDate/Time - 0845 3-7-02Project Manager - Lisa WinnTechnician - C. MaazBreathing Zone (ppm) - 0.0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	20
Inf. SCFM	44
Eff. SCFM	86
Vent Flow	

Magnehelic Gauge (psi)	4
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	5
	296

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.0	H
MP-3S	0.20	L
MP-3D	0.01	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.4	482	64.7
R-1			
R-4			
INFLUENT	8.4	1637	61.5
EFFLUENT	19.2	3813	109
SPG. 1	1.4	296	67.6
SPG. 4	1.0	199	71.7
SPG. 5	0.9	182	68.7

R-1	6	96.4		2.75	17.9
R-2	5	0.0		2.28	20.3
R-3	4	1.1		2.24	13.0
R-4	3	15.1		9.46	15.1
R-5	2	0.0		2.97	14.7
R-6	1	0.0		2.18	12.7
VE					
M-1					
M-2					
M-3					
M-4					
M-5					
M-6					

R-1	1349	SITE NOTES: Ditch empty
R-2	12.96	windy conditions pid
R-4	12.24	Readings Along Fence line
		0.0 Readings

F-554

P. 15/30

T-188

+505-598-2235

From EL PASO FIELD SVS

Mar-11-03 04:52pm

EPFS Jaquez Remediation System Data Sheet and Field Notes

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Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 3-5-02 0840

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) -

0.51 9

Magnetic Gauge (psi)	9
Flow Gauge - Sparge 1	3
Flow Gauge - Sparge 4	2
Flow Gauge - Sparge 5	4

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	20
Inf. SCFM	44
Eff. SCFM	86
Vent Flow	

MP-1		
MP-2S		
MP-2D		
MP-3S		
MP-3D		

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW			
R-1			
R-4			
INFLUENT			
EFFLUENT			
SPG. 1			
SPG. 4			
SPG. 5			

R-1				
R-2				
R-3				
R-4				
R-5				
R-6				
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

SITE NOTES: STARTED SPARGING
1000 LET System Run 30 min
STARTED Adjusting Flow meters
to Sp1, Sp2, Sp3 Ditch
empty for annual maintenance

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FROM EL PASO FIELD SVS

Mar-11-03 04:52pm

EPFS Jaquez Remediation System Data Sheet and Field Notes

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Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 5-2-02 0800

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) - 0.0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	20
Inf. SCFM	56
Eff. SCFM	74
Vent Flow	

Magnetic Gauge (psi)	
Flow Gauge - Sparge 1	
Flow Gauge - Sparge 4	
Flow Gauge - Sparge 5	

walked around Fence
line 0.0

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.0	H
MP-3S	0.20	L
MP-3D	0.0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	3.7	735	35.7
R-1			
R-4			
INFLUENT	10.4	1965	25.5
EFFLUENT	20	3946	61.8
SPG. 1			
SPG. 4			
SPG. 5			

R-1	15.27
R-2	14.10
R-4	14.56

SITE NOTES: Horses knocked down
fence post by R# Blower motor
still being repaired

R-1	25.4			
R-2	0.0			
R-3	0.0			
R-4	0.0			
R-5	0.0			
R-6	0.0			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

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P. 12/30
T-188

+805-589-2235

From EL PASO FIELD SVS

Mar-11-03 04:51 PM

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 1100 2-20-02

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) - 0.0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	20
Inf. SCFM	44
Eff. SCFM	86
Vent Flow	

Magnetic Gauge (psi)	
Flow Gauge - Sparge 1	
Flow Gauge - Sparge 4	
Flow Gauge - Sparge 5	
	0.0

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.0	H
MP-3S	0.0	H
MP-3D	0.0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	5.4	1077	54.2
R-1			
R-4			
INFLUENT	2.9	1507	57.9
EFFLUENT	16.3	3236	105.2
SPG. 1			
SPG. 4			
SPG. 5			

		SITE NOTES: Sparge System
R-1	15.14	Shut Down for Repairs
R-2	13.98	Walked around location with pid
R-4	14.43	O Readings collected air sample.

R-1	20		0.17	19.3
R-2	0.0		0.14	22.6
R-3	0.0		1.97	13.7
R-4	0.0		0.24	15.4
R-5	0.1		2.30	15.0
R-6	0.0		12.86	12.9
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 02/15/02 900

Project Manager - Lisa Winn

Technician - JACEY MSECURTAIN

Breathing Zone (ppm) - 0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	22
Inf. SCFM	48
Eff. SCFM	86
Vent Flow	38

Magnehelic Gauge (psi)	0
Flow Gauge - Sparge 1	0
Flow Gauge - Sparge 4	0
Flow Gauge - Sparge 5	0
	3.9

MP-1	0	H
MP-2S	0	H
MP-2D	0	H
MP-3S	0	H
MP-3D	0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.8	581	SD.1
R-1			
R-4			
INFLUENT	17.1	3686	42.6
EFFLUENT	1----	1----	78.6
SPG. 1	0	0	
SPG. 4	0	0	
SPG. 5	0	0	

		SITE NOTES: <u>SPARGE NOT</u>
R-1	15.14	RUNNING
R-2	14.03	
R-4	14.46	

R-1	133 ppm			
R-2	0.9 ppm			
R-3	0 ppm			
R-4	0 ppm			
R-5	0 ppm			
R-6	0 ppm			
VE	11			
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 02-08-02 1000

Project Manager - Lisa Winn

Technician - JACEY MSECURTAIN

Breathing Zone (ppm) - 0.0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	20
Inf. SCFM	44
Eff. SCFM	88
Vent Flow	44

Magneheic Gauge (psi)	0
Flow Gauge - Sparge 1	0
Flow Gauge - Sparge 4	0
Flow Gauge - Sparge 5	0

	0
--	---

MP-1	0	H
MP-2S	0	H
MP-2D	0	H
MP-3S	0	H
MP-3D	0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	5.1	1105	55.3
R-1			
R-4			
INFLUENT	18.6	3608	62.9
EFFLUENT	2.0	404	105.6
SPG. 1			
SPG. 4			
SPG. 5			

SITE NOTES: <u>SPARGE SYS.</u>	
R-1	15.12 NOT RUNNING.
R-2	13.95
R-4	14.88

36

R-1	0.7	0.20	19.0C
R-2	0.0	0.92	20.5C
R-3	0.0	0.62	13.8C
R-4	1.4	0.26	16.2C
R-5	1.4	1.40	15.2C
R-6	0.8	6.08	13.2C
VE			
M-1			
M-2			
M-3			
M-4			
M-5			
M-6			

EPFS Jaquez Remediation System Data Sheet and Field Notes

1311-1315
amec

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 01-31-02 1311

Project Manager - Lisa Winn

Technician - JACEY MCCRATTIN

Breathing Zone (ppm) - 0.00

PSI 10.0

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	21
Inf. SCFM	48
Eff. SCFM	86
Vent Flow	38

Magnehelic Gauge (psi)	10
Flow Gauge - Sparge 1	8
Flow Gauge - Sparge 4	4
Flow Gauge - Sparge 5	9.0
	75.1

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	.29	H
MP-3S	0.0	H
MP-3D	0.0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	4.1	820	35.0
R-1			
R-4			
INFLUENT	5.9	1202	42.2
EFFLUENT	3.3	755	85.8
SPG. 1	2.4	486	36.4
SPG. 4	1.1	230	28.9
SPG. 5	1.3	262	39.9

R-1	10.44
R-2	10.45
R-4	10.45

SITE NOTES: System running
upon arrival

R-1	101 ppm			
R-2	15.4 ppm			
R-3	8.0 ppm			
R-4	26.2 ppm			
R-5	7.6 ppm			
R-6	0.0 ppm			
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

F-554

P.09/30

T-188

+505-500-2235

FROM EL PASO FIELD SVS

Mar-11-03 04:50pm

EPFS Jaquez Remediation System Data Sheet and Field Notes



Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 01-24-02

Project Manager - Lisa Winn

Technician - JACEY MSECURTAIN

Breathing Zone (ppm) - 0.0

PSI 10.5

Mag. Influent (H2O")	20
Mag. Effluent (H2O")	22
Inf. SCFM	48
Eff. SCFM	86
Vent Flow	38

Magnehelic Gauge (psi)	10.5
Flow Gauge - Sparge 1	7
Flow Gauge - Sparge 4	4
Flow Gauge - Sparge 5	8.5
	72.3

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	.38	H
MP-3S	0.0	H
MP-3D	0.0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.2	445	37.5
R-1			
R-4			
INFLUENT	4.1	842	41.5
EFFLUENT	18.0	3473	81.4
JPG. 1	1.7	339	38.6
SPG. 4	1.0	202	40.4
SPG. 5	1.2	258	58.2

SITE NOTES: SYSTEM RUNNING

R-1	9.40	UPON ARRIVAL
R-2	9.92	
R-4	8.68	

R-1	436 ppm		8.35	
R-2	38.7 ppm		5.41	
R-3	7.5 ppm		3.40	
R-4	152 ppm		8.00	
R-5	1.5 ppm		2.41	
R-6	0.0 ppm		5.54	
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

F-554

P. 07/30

T-188

+505-598-2235

From-EL PASO FIELD SVS

Mar-11-03 04:49pm

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number - 1517000121

Project Name - Jaquez SVE O&M

Date/Time - 01-17-02 1110

Project Manager - Lisa Winn

Technician - JACEY MSCURTAIN

Breathing Zone (ppm) - 0.0

PSI 9.0

Mag. Influent (H2O")	22
Mag. Effluent (H2O")	22
Inf. SCFM	48
Eff. SCFM	86
Vent Flow	38

Magnetic Gauge (psi)	10
Flow Gauge - Sparge 1	5
Flow Gauge - Sparge 4	3
Flow Gauge - Sparge 5	8

	70.8
--	------

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.0	H
MP-3S	0.0	H
MP-3D	0.0	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW			
R-1			
R-4			
INFLUENT			
EFFLUENT			
SPG. 1			
SPG. 4			
SPG. 5			

R-1	125 ppm		
R-2	29.3 ppm		
R-3	11.2 ppm		
R-4	30.6 ppm		
R-5	8.0 ppm		
R-6	0.9 ppm		
VE			
M-1			
M-2			
M-3			
M-4			
M-5			
M-6			

SITE NOTES: SYSTEM RUNNING

R-1	10.05	UPON ARRIVAL
R-2	10.05	NO ANEMOMETER TO TAKE
R-4	9.94	READINGS

F-854

P. 05/30

T-188

+505-598-2235

From-EL PASO FIELD SVS

Mar-11-03 04:49pm

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number - 2517000001

Project Name - Jaquez SVE O&M

Date/Time - 1-14-02 0845

Project Manager - Lisa Winn

Technician - C. Maez

Breathing Zone (ppm) - 0.0

Mag. Influent (H2O")	22
Mag. Effluent (H2O")	22
Inf. SCFM	50
Eff. SCFM	84
Vent Flow	34

Magnetohelic Gauge (psi)	
Flow Gauge - Sparge 1	
Flow Gauge - Sparge 4	
Flow Gauge - Sparge 5	

Time 0907

Time 1005 AFTER 2103

VW			
R-1			
R-4			
INFLUENT			
EFFLUENT			
SPG. 1			
SPG. 4			
SPG. 5			

SITE NOTES:	
R-1	
R-2	
R-4	

MP-1		
MP-2S		
MP-2D		
MP-3S		
MP-3D		

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

R-1				
R-2				
R-3				
R-4				
R-5				
R-6				
VE				
M-1				
M-2				
M-3				
M-4				
M-5				
M-6				

amec

EPFS Jaquez Remediation System Data Sheet and Field Notes

amec

Project Number -

Project Name - Jaquez SVE O&M

Date/Time - 0845 1-9-02

Project Manager - Lisa Winn

Technician - C. MAEZ

Breathing Zone (ppm) - 0.0

Mag. Influent (H2O")	29
Mag. Effluent (H2O")	29
Inf. SCFM	54
Eff. SCFM	74
Vent Flow	16

Magnehelic Gauge (psi)	10
Flow Gauge - Sparge 1	5
Flow Gauge - Sparge 4	4.5
Flow Gauge - Sparge 5	7
	130

MP-1	0.0	H
MP-2S	0.0	H
MP-2D	0.71	H
MP-3S	0.0	H
MP-3D	0.01	H

Note: Record pressure as negative if hose is on "Low" valve

Record pressure as positive if hose is on "High" valve

VW	2.1	420	47.6
R-1			
R-4			
INFLUENT	6.3	1254	54.6
EFFLUENT	19.9	3925	107
SPG. 1	2.4	477	48.7
SPG. 4	1.3	200	49
SPG. 5	1.3	265	53.9

R-1	117	7.83	19.3
R-2	9.4	4.84	21.7
R-3	1.9	3.92	14.8
R-4	21.9	9.26	16.3
R-5	0.3	0.70	15.8
R-6	0.3	5.46	13.8
VE			
M-1			
M-2			
M-3			
M-4			
M-5			
M-6			

R-1	11.51
R-2	11.49
R-4	9.16

SITE NOTES:

F-554

P.02

T-188

+505-590-2235

From EL PASO FIELD SVS

Mar-11-03 04:48pm

APPENDIX D
2002
FIELD SAMPLING DOCUMENTATION

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Jaquz Well No: R-1 Development ☐ Sampling ☒
 Project Manager: Ashley Lowe Date: 11-6-02 Start Time: 12:22 Weather: 47° Sunny
 Depth to Water: 14.175 Depth to Product: NA Product Thickness: NA Measuring Point: TDC
 Water Column Height: 7.9 Well Dia: 4" TD: 22.075

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>0.05 x 7.9</u>	<u>5.1 x 3</u>		<u>15.4 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>12:25</u>	<u>0.25</u>	<u>4030</u>	<u>19.9</u>				<u>1</u>	<u>cloudy, tan color</u>
	<u>0.02</u>	<u>4120</u>	<u>21.0</u>				<u>4</u>	<u>v. black, silty, strong odor</u>
	<u>1.44</u>	<u>4380</u>	<u>20.8</u>				<u>6</u>	
	<u>1.18</u>	<u>4350</u>	<u>20.3</u>				<u>7</u>	<u>v. black, opaque</u>
	<u>1.25</u>	<u>4320</u>	<u>20.6</u>				<u>8</u>	
	<u>1.80</u>	<u>4050</u>	<u>20.7</u>				<u>9</u>	
	<u>4.07</u>	<u>4070</u>	<u>20.6</u>				<u>9.5</u>	<u>going dry</u>
	<u>4.26</u>	<u>4060</u>	<u>20.5</u>				<u>11</u>	<u>clearer, light brown</u>
	<u>4.29</u>	<u>3610</u>	<u>20.2</u>				<u>12</u>	
	<u>4.30</u>	<u>3610</u>	<u>20.2</u>				<u>12.5</u>	
	<u>4.38</u>	<u>3610</u>	<u>19.9</u>				<u>13.5</u>	
	<u>4.39</u>	<u>3620</u>	<u>20.0</u>				<u>15</u>	
	<u>4.36</u>	<u>3610</u>	<u>20.0</u>				<u>15.5</u>	

Final:
 Time: 12:45 pH: 4.36 SC: 3610 Temp: 20.0 Eh-ORP: D.O.: Turbidity: Ferrous Iron: Vol Evac.: 15.5 Comments/Flow rate:

COMMENTS: pH meter not functioning well. Stratified water column
3-10' = v. black, silty water

INSTRUMENTATION: pH Meter ☒ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☒ Other ☐
 Water Disposal: Kutz Plant
 Sample ID: Jaquz R-1 Sample Time: 12:45 BTEX ☒ VOCs ☐ Alkalinity ☐
 TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ MS/MSD BD BD Name/Time TB TB02110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: NWH
Location: Jagwz Well No: R-2 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 11-6-02 Start Time 11:58 Weather 45° Sunny
Depth to Water 12.99 Depth to Product NA Product Thickness NA Measuring Point TDC
Water Column Height 9.57 Well Dia. 4" TD 22.5

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 dr v

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	
0.65×9.57	6.18×3		18.5 gal

[illegible]**Final:**

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
12:10	3.91	2330	20.4					9 gal	

COMMENTS: pH meter not functioning well. Well went dry prior to purging 3 well volumes.

INSTRUMENTATION:

pH Meter ☒

DO Monitor

Conductivity Meter

Temperature Meter

Other

Water Disposal

Kurz Plant

Sample ID

Jagur R-2

Sample Time 12:10

BTEX ☒ VOCs ☐ Alkalinity ☐

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

Total Phosphorus ☐ ☐ ☐ ☐ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB TB0211060

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Jaquz Well No: R-3 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 11-6-02 Start Time 11:22 Weather 45° Sunny
 Depth to Water 13.89 Depth to Product NA Product Thickness NA Measuring Point TDC
 Water Column Height 8.3 Well Dia. 4" TD 22.168

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 8.3</u>	<u>5.38 x 3</u>		<u>16 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>11:25</u>	<u>3.83</u>	<u>3130</u>	<u>18.6</u>				<u>1</u>	<u>light brown color; biomass</u>
	<u>3.93</u>	<u>3070</u>	<u>18.3</u>				<u>3</u>	
	<u>3.21</u>	<u>3180</u>	<u>18.4</u>				<u>5</u>	<u>v. Cloudy, dark brown</u>
	<u>4.19</u>	<u>3330</u>	<u>18.3</u>				<u>7</u>	
	<u>4.19</u>	<u>3250</u>	<u>18.2</u>				<u>10</u>	
	<u>4.29</u>	<u>3130</u>	<u>17.9</u>				<u>11</u>	
	<u>4.31</u>	<u>3090</u>	<u>17.2</u>				<u>11.6</u>	
	<u>4.14</u>	<u>3190</u>	<u>16.9</u>				<u>12.5</u>	<u>clear, bailing down</u>
	<u>4.22</u>	<u>3100</u>	<u>17.1</u>				<u>13</u>	
	<u>4.30</u>	<u>3110</u>	<u>17.3</u>				<u>14.5</u>	
	<u>4.34</u>	<u>3110</u>	<u>17.4</u>				<u>15</u>	
	<u>4.32</u>	<u>3110</u>	<u>17.5</u>				<u>16</u>	<u>dry</u>

Final: Time 11:45 pH 4.32 SC 3110 Temp 17.5 Eh-ORP D.O. Turbidity Ferrous Iron Vol Evac. 16 gal Comments/Flow rate

COMMENTS: pH meter is not functioning properly.

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

Water Disposal Kutz Plant
 Sample ID Jaquz R-3 Sample Time 11:45 BTEX ☒ VOCs ☐ Alkalinity ☐
 TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ ☐ ☐ ☐ ☐ ☐ ☐
 MS/MSD BD BD Name/Time TB TB02-110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Jaguarz Well No: R-4 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 11-6-02 Start Time 10:52 Weather 42° Sunny
Depth to Water 13.375 Depth to Product NA Product Thickness NA Measuring Point TOC
Water Column Height 8.8 Well Dia. 4' TD 22.196

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 8.8	5.7 x 3		17.2 oz

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
11:06	4.18	3110	18.4					8.4	

COMMENTS: pH meter is not functioning properly. Well went dry prior to purging 3 well volumes

INSTRUMENTATION: pH Meter ☒ _____
DO Monitor ☒ _____
Conductivity Meter ☒ _____

Temperature Meter ☒ _____
Other ☐ _____

Water Disposal Rutz Plant

Sample ID Jagwz R-4 Sample Time 11:06

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

Total Phosphorus ☐ ☐ ☐ ☐ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB TB0211060

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Jaquz Well No: R-5 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 11-6-02 Start Time 9:45 Weather 40°, Sunny
Depth to Water 16.245 Depth to Product NA Product Thickness NA Measuring Point TDC
Water Column Height 8.24 Well Dia. 4" TD 24.48

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 8.24	5.35 x 3		6 oz

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
10:15	3.92	2200	16.1					9.4	

COMMENTS: pH meter was frozen overnight & is not functioning properly. Well went dry before 3 well volumes could be purged

INSTRUMENTATION: pH Meter ☒ _____
DO Monitor ☒ _____
Conductivity Meter ☒ _____

Temperature Meter ☒ _____
Other ☐ _____

Water Disposal Kutz Plant

Sample ID Jaquz R-5 Sample Time 10:15 BTEX ☒ VOCs ☐ Alkalinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____

MS/MSD _____ BD _____ BD Name/Time _____ TB 1002110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: nwl
 Location: Jaguaz Well No: R-6 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 11-6-02 Start Time 10:28 Weather 40° Sunny
 Depth to Water 14.76 Depth to Product NA Product Thickness NA Measuring Point TOC
 Water Column Height 7.28 Well Dia. 4' TD 22.04

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

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
10:45	3.71	2130	15.4					7.8	

COMMENTS: pH meter is not functioning properly - froze overnight. Well went dry prior to purging 3 well volumes

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

Waste Disposal Kutz Plant

Well ID Jagwz R-6 Sample Time 10:45 BTEX ☒ VOCs ☐ Alkalinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____

MS/MSD _____ BD _____ BD Name/Time _____ TB TB02110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Jagwz Well No: MW-1 Development ☐ Sampling ☒
District Manager Ashley Lowe Date 11-6-02 Start Time 14:37 Weather 48° Sunny
Depth to Water 4.04 Depth to Product NA Product Thickness NA Measuring Point TOC
Water Column Height 11.25 Well Dia. 4" TD 15.29

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 11.25	7.3 x 3		22 oz

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
14:48	4.01	1200	13.9					7.5g/L	

COMMENTS: pH meter is not functioning well. Well went dry prior to purging 3 well volumes

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

Water Disposal Kutz Plant

Sample ID Jaquz MW-1 Sample Time 14:48 BTEX ☒ VOCs ☐ Alkalinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____

IMS/MSD BD BD Name/Time _____ TB 1B0211060

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Jaquz Well No: MW-2 Development ☐ Sampling ☒
 Manager: Ashley Lowe Date: 11-6-02 Start Time: 13:28 Weather: 47° Sunny
 Depth to Water: 3.87 Depth to Product: NA Product Thickness: NA Measuring Point: TOC
 Water Column Height: 11.08 Well Dia: 4" TD: 14.95

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 11.08</u>	<u>7.2 x 3</u>		<u>21.6 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>13:30</u>	<u>4.66</u>	<u>1300</u>	<u>16.3</u>				<u>1</u>	<u>clear water</u>
<u>4:67</u>		<u>1320</u>	<u>15.4</u>				<u>4</u>	<u>some silt</u>
<u>4:55</u>		<u>1400</u>	<u>14.9</u>				<u>6</u>	
<u>4:67</u>		<u>1400</u>	<u>14.9</u>				<u>10</u>	
<u>4:60</u>		<u>1460</u>	<u>15.0</u>				<u>13</u>	<u>v. black & silty</u>
<u>4:62</u>		<u>1420</u>	<u>14.7</u>				<u>15</u>	
<u>4:60</u>		<u>1470</u>	<u>14.7</u>				<u>18</u>	<u>brown, cloudy</u>
<u>4:62</u>		<u>1420</u>	<u>14.5</u>				<u>20</u>	
<u>4:60</u>		<u>1430</u>	<u>14.4</u>				<u>22</u>	

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
<u>13:45</u>	<u>4.60</u>	<u>1430</u>	<u>14.4</u>					<u>22 gal</u>	

COMMENTS: pH meter is not functioning well. Stratified water column
12-17' = v. black & silty

INSTRUMENTATION: pH Meter ☒ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☒ Other ☐
 Water Disposal: Kutz Plant
 ID: Jaquz MW-2 Sample Time: 13:45 BTEX ☒ VOCs ☐ Alkalinity ☐
 Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ S/MSD ☐ BD ☐ BD Name/Time ☐ TB TB02110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Jaquz Well No: MW-3 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 11-6-02 Start Time 14:15 Weather 48° Sunny
Depth to Water 4.365 Depth to Product NA Product Thickness NA Measuring Point TDC
Water Column Height 10.7 Well Dia. 4" TD 15.02

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	
0.65×10.7	6.9×3		21 gal

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
14:25	4.91	1080	13.5					21 gal	

COMMENTS: pH meter is not functioning properly. Measured water level prior to removing ORC socks

INSTRUMENTATION:

pH Meter ☒

DO Monitor

Conductivity Meter

Temperature Meter [

Other [

Water Disposal

Kurz Plant

Sample ID Jagwz MW-3 Sample Time 14:35

BTEX ☒ VOCs ☐ Alkalinity ☐

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

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

MS/MSD _____ BD _____ BD Name/Time _____ TB TB02110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
Location: Jaguar Well No: MW-4 Development ☐ Sampling ☒
Project Manager Ashley Lowe Date 11-6-02 Start Time 14:07 Weather 48°, Sunny
Depth to Water 5.12 Depth to Product NA Product Thickness NA Measuring Point TOC
Water Column Height 10.19 Well Dia. 4" TD 15.31

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

[illegible]

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
15:05	4.23	2350	15.9					7.5 gal	

COMMENTS: pH meter is not functioning well. Well went dry prior to purging. Removed ORC socks at 14:07, then allowed water level to become static. Returned to sample at 14:55

INSTRUMENTATION:

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

Sample ID Jaquartz MW-4 Sample Time 15:05 BTEX ☒ VOCs ☐ Alkalinity ☐

TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐
MS/MSD _____ BD _____ BD Name/Time _____ TB TB0211060

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Jaquz Well No: MW-5 Development ☐ Sampling ☒
 Project Manager: Ashley Lowe Date: 11-6-02 Start Time: 13:50 Weather: 48°, Sunny
 Depth to Water: 4.22 Depth to Product: NA Product Thickness: NA Measuring Point: TDC
 Water Column Height: 10.78 Well Dia: 4" TD: 15.00

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 10.78</u>	<u>7 x 3</u>		<u>21 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>13:55</u>	<u>4.54</u>	<u>1730</u>	<u>14.1</u>				<u>1</u>	<u>clear, some silt</u>
	<u>4.53</u>	<u>1860</u>	<u>14.5</u>				<u>3</u>	<u>cloudier, biomass</u>
	<u>4.55</u>	<u>1890</u>	<u>14.7</u>				<u>6</u>	
	<u>4.49</u>	<u>1870</u>	<u>14.8</u>				<u>8</u>	
	<u>4.55</u>	<u>1880</u>	<u>15.1</u>				<u>11</u>	<u>blackish color</u>
	<u>4.56</u>	<u>1890</u>	<u>15.0</u>				<u>12</u>	<u>going dry</u>
	<u>4.56</u>	<u>1870</u>	<u>15.1</u>				<u>12.5</u>	

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
<u>14:05</u>	<u>4.56</u>	<u>1870</u>	<u>15.1</u>					<u>12.5 gal</u>	

COMMENTS: pH meter is not functioning well; Well went dry prior to purging 3 well volumes

INSTRUMENTATION: pH Meter ☒ Temperature Meter ☒
 DO Monitor ☒ Other ☐
 Conductivity Meter ☒
 Water Disposal: Kutz Plant
 ID: Jaquz MW-5 Sample Time: 14:05 BTEX ☒ VOCs ☐ Alkalinity ☐
 Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐
 MS/MSD: BD BD Name/Time: TB02110601

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH
 Location: Jaquez Well No: MW-6 Development ☐ Sampling ☒
 Project Manager Ashley Lowe Date 11-6-02 Start Time 13:15 Weather 48° Sunny
 Depth to Water 7.49 Depth to Product NA Product Thickness NA Measuring Point TDC
 Water Column Height 10.47 Well Dia. 4" TD 17.96

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 10.47</u>	<u>6.8 x 3</u>		<u>20.4 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>4.71</u>		<u>2060</u>	<u>14.9</u>				<u>1</u>	<u>clear, some grass</u>
<u>4.66</u>		<u>2090</u>	<u>15.6</u>				<u>4</u>	<u>cloudier</u>
<u>4.73</u>		<u>2170</u>	<u>15.5</u>				<u>5</u>	
<u>4.80</u>		<u>2250</u>	<u>15.8</u>				<u>8</u>	<u>dark brown, cloudy</u>
<u>4.75</u>		<u>2240</u>	<u>15.8</u>				<u>10</u>	<u>v. silty</u>
<u>4.76</u>		<u>2210</u>	<u>15.7</u>				<u>12</u>	<u>bailing down</u>
<u>4.78</u>		<u>2200</u>	<u>15.3</u>				<u>13.5</u>	
<u>4.56</u>		<u>2110</u>	<u>15</u>				<u>15</u>	
<u>4.55</u>		<u>2130</u>	<u>15.5</u>				<u>15.5</u>	
<u>4.53</u>		<u>2030</u>	<u>15.7</u>				<u>15.7</u>	
<u>4.60</u>		<u>2080</u>	<u>16</u>				<u>16</u>	
<u>4.57</u>		<u>2090</u>	<u>16.2</u>				<u>16.2</u>	<u>leaves in water</u>
<u>4.77</u>		<u>2100</u>	<u>17.5</u>				<u>17.5</u>	
<u>4.68</u>		<u>2070</u>	<u>18.5</u>				<u>18.5</u>	
<u>4.69</u>		<u>2000</u>	<u>19</u>				<u>19</u>	
<u>4.69</u>		<u>2060</u>	<u>20</u>				<u>20</u>	
<u>4.75</u>		<u>2050</u>	<u>20.5</u>				<u>20.5</u>	

Final:
 Time 15:42 pH 4.75 SC 2050 Temp 20.5 Eh-ORP _____ D.O. _____ Turbidity _____ Ferrous Iron _____ Vol Evac. 20.5 Comments/Flow rate _____

COMMENTS: pH meter is not functioning well. Alerted Ms. Jaquez we will be behind her house to sample

INSTRUMENTATION: pH Meter ☒ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☒ Other ☐
 Water Disposal Kutz Plant
 Sample ID Jaquez MW-6 Sample Time 15:42 BTEX ☒ VOCs ☐ Alkalinity ☐
 TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐
 Total Phosphorus ☐ _____ MS/MSD _____ BD _____ BD Name/Time _____ TB TB02110601

Product Recovery and Well Observation Data

Project Name: San Juan River Basin

Project Manager: Ashley Lowe

Client Company: MWH

Site Name: Jaquez

Project No: 220013

Date: 11-6-02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
R-5	9:45	16.245	—	24.48	—	—	DO = 2.29 mg/L
R-6	10:45	14.76	—	22.04	—	—	DO = 4.24 mg/L
R-4	10:52	13.75	—	22.196	—	—	DO = 1.29 mg/L
R-3	11:22	13.89	—	22.168	—	—	DO = 1.78 mg/L
R-2	11:58	12.99	—	22.5	—	—	DO = 1.48 mg/L
R-1	12:22	14.175	—	22.075	—	—	DO = 3.75 mg/L
MW-2	13:28	3.87	—	14.95	—	—	
MW-5	13:50	4.22	—	15.00	—	—	
MW-4	14:55	5.12	—	15.31	—	—	
MW-3	14:15	4.365	—	15.02	—	—	

COMMENTS: _____

.....

Signature: Whitley A Lowe

Date: 11-6-02

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Ashley Lowe
Client Company: MWH
Site Name: Jaquez

Project No: 220013

Date: 11-6-02

[illegible]

COMMENTS: _____

Signature: Wesley L. Lowe

Date: 11-6-02

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021106AL01

Page 1 of 1

Air Bill No. 836381676602

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

MWH Contact Brian Butters
 Project San Juan River Basin
 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 (a)	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		
JA 11-6-02	MW-6		11-6-02	1542	WG	B	✓									
JA	MW-1		11-6-02	1448	WG	B	✓									
JA	MW-3		11-6-02	1435	WG	B	✓									
JA	MW-4		11-6-02	1505	WG	B	✓									
JA	MW-5		11-6-02	1405	WG	B	✓									
JA	MW-2		11-6-02	1345	WG	B	✓									
JA	R-1		11-6-02	1245	WG	B	✓									
JA	R-2		11-6-02	1210	WG	B	✓									
JA	R-3		11-6-02	1145	WG	B	✓									
JA	R-4		11-6-02	1106	WG	B	✓									
JA	R-6		11-6-02	1045	WG	B	✓									
JA	R-5		11-6-02	1015	WG	B	✓									
TB02110601			11-6-02				✓									

(a) Matrix: AA - Air
 SO - Soil
 WS - Surface Water
 WG - Ground Water
 WQ - Trip Blank/
 Equipment Blanks
 WW - Wastewater

(a) 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
 Blst=BI
 Jaquez=JA

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

LABORATORY USE ONLY

SAMPLES WERE:

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

Discrepancies Between Sample Labels and COC Record?
Y N

Notes:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley & Lowe / ASES		11-7-02	4:00

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 02/07/02
Page 1 of 1
Air Bill No. 834715209954

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

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix (a)	Sampling Technique (a)	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		
JA	R5	24.5-15.9	05/05/02	7:57	WG	B	✓									
JA	R6	13.5-22.0	05/05/02	8:34	WG	B	✓									
JA	R4	12.8-22.2	05/05/02	9:36	WG	B	✓									
JA	R3	13.3-22.2	05/05/02	10:25	WG	B	✓									
JA	R2	12.5-22.0	05/05/02	10:57	WG	B	✓									
JA	R1	11.6-22.2	05/05/02	11:36	WG	B	✓									
JA	Eff Air	—	05/05/02	13:20	AA	WF	✓									
Trip Blank					WR		✓									

(a) Matrix: AA - Air
SO - Soil
WS - Surface Water
WG - Ground Water
WW - Wastewater
WQ - Trip Blank/
Equipment Blanks

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

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

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

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:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
<u>Ashley Lowe / MESA</u>		<u>02/07/02</u>	<u>7:00</u>

AESE

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number Jaquez R-1

Development

Purging**WELL DEVELOPMENT AND PURGING DATA**Page 1 of 2Project Name San Juan River BasinProject Manager Ashley LoweProject No. 220013Client Company Montgomery Watson Harza

Phase/Task No. _____

Site Name Jaquez

Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal☐ Stabilization of Indicator Parameters☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) 22.252Initial Depth to Water (feet) 13.649Height of Water Column in Well (feet) 8.6Diameter (inches): Well 4" Gravel Pack _____

Instruments

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

Serial No. (if applicable) _____

Methods of Development

Pump

☐ Centrifugal☐ Submersible☐ Peristaltic

Bailer

☒ Bottom Valve☐ Double Check Valve☐ Stainless-steel Kemmerer☐ Other _____

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
$0.65 \times 8.6 =$	$5.6 \times 3 =$		16.7 gal
Total			

Water Disposal

Kutz Plant

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (nmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02	10:57		✓		1 gal	24.5	5.64	9080		tan color, relatively clear
					2.5	23.3	5.64	9310		
					3	22.0	5.64	9570		very black, silty
					5	21.3	5.64	9320		
					6	20.6	5.64	8960		strong odor
		d(in)	gal/ft		7.5	20.5	5.65	7760		bailing down - low recovery
		2	0.16		8	20.3	5.66	7330		
		4	0.65		8.4	19.6	5.66	6950		lighter color - brown
		6	1.47		9	19.6	5.66	6810		

Circle the date and time that the development criteria are met.

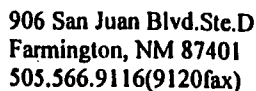
Comments _____

Developer's Signature (s) _____

Date _____

Reviewer _____

Date _____



Jaquez R-1

Development
Purging

WELL DEVELOPMENT AND PURGING DATA

Page 2 of 2

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company MWH

Phase.Task No.

Site Name Jaquez

Site Address

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) See page 1

Initial Depth to Water (feet)

Height of Water Column in Well (feet).

Diameter (inches):	Well	Gravel Pack
--------------------	------	-------------

Instruments

☒ pH Meter

Serial No. (if applicable)

☒ DO Monitor☒ Conductivity Meter☒ Temperature Meter☐ Other

Water Disposal

Kutz Plant

Methods of Development

Pump

Bailer

- ☐ Centrifugal
☐ Submersible
☐ Peristaltic

☐ Other

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (munhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02					10	20.4	5.67	6770		
					11	20.1	5.70	6830		
					12	20.3	5.72	6800		almost dry - waiting to recover
					12.5	20.1	5.73	6840		
					13	20.0	5.73	6820	3.94	stable parameters - will sample when recovers - sample at 11:36
		d(in)	gal/ft							
		2	0.16							
		4	0.65							
		6	1.47							

Circle the date and time that the development criteria are met.

Comments Bailed down quickly. Stratified water column - black silty layer between 3 & 8 gallons bailed.
Took 3 tries to get samples due to bubbles in vial

Developer's Signature (s) Ashley L Lowe

Date 08/08/02

Reviewer

Date _____

AESE

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number

Jaquez R-2

Development

Purging**WELL DEVELOPMENT AND PURGING DATA**Page 1 of 1Project Name San Juan River Basin

Project Manager

Ashley LoweProject No. 220013Client Company Montgomery Watson Harza

Phase/Task No. _____

Site Name Jaquez

Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal☐ Stabilization of Indicator Parameters☒ Other ex bail dry

Water Volume Calculation

Initial Depth of Well (feet) 22.01' BTDCInitial Depth to Water (feet) 12.45' BTDCHeight of Water Column in Well (feet) 9.57'Diameter (inches): Well 4" Gravel Pack _____

Instruments

☒ PH Meter☒ DO Monitor☒ Conductivity Meter☒ Temperature Meter☐ Other _____

Serial No. (if applicable) _____

Methods of Development

Pump

☐ Centrifugal☐ Submersible☐ Peristaltic

Bailer

☒ Bottom Valve☐ Double Check Valve☐ Stainless-steel Kemmerer☐ Other _____

Water Disposal

Kutz Plant

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02	10:37		☒		1	25.0	5.49	6110		light brown color, slight odor
					3	24.7	5.46	6640		
					5	22.5	5.41	6590		very black, silty
					7	22.0	5.42	6420		
					9	21.7	5.45	6150		almost opaque
		d(in)	gal/n		9.5	21.1	5.47	5430		clearer, bailing down
		2	0.16		10	21.6	5.51	5000		
		4	0.65		10.4	21.4	5.51	4999		almost dry - waited to let recover enough to sam.
		6	1.47		11	21.5	5.52	4999	1.41	sample at 10:57

Circle the date and time that the development criteria are met.

Comments Stratified water column - very dark, silty layer between 5 & 9 gallons during bailing. Well was not recovering, but parameters stabilized at 11 gallons & collected sample

Developer's Signature (s)

Ashley Lowe

Date

08/08/02

Reviewer _____

Date _____

AES
906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116 (9120fax)

Well Number

Jaquez R-3

Development

Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 2

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. _____

Client Company Montgomery Watson Harza

Phase/Task No. 220013

Site Name Jaquez

Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☐ Stabilization of Indicator Parameters

☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) 22.15' BTDC

Initial Depth to Water (feet) 13.26' BTDC

Height of Water Column in Well (feet) 8.89

Diameter (inches): Well 4" Gravel Pack _____

Instruments

☒ pH Meter

☐ DO Monitor

☒ Conductivity Meter

☒ Temperature Meter

☐ Other _____

Serial No. (if applicable) _____

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

☐ Other _____

Water Disposal

Kutz Separator

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02	9:50		☒		1 gal	19.5	5.52	4010		tan color, floating silt
					3	18.7	5.46	3810		
					5	18.0	5.40	3970		orange color
					7	16.9	5.38	4040		
					9	16.4	5.39	4000		lost bailer - fished out w/ wire
		d(in)	gal/ft		12	18.7	5.42	4030		
		2	0.16		14	17.5	5.42	4120		very clear again
		4	0.65		16	16.8	5.42	3910		
		6	1.47		18	16.6	5.43	3590		

Circle the date and time that the development criteria are met.

Comments _____

Developer's Signature (s)

Ashley Lowe

Date

08/08/02

Reviewer _____

Date _____

AES

Well Number

Jaquez R-3

Development

Purging

WELL DEVELOPMENT AND PURGING DATA906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)Page 2 of 2Project Name San Juan River BasinProject Manager Ashley LoweProject No. 220013Client Company MWH

Phase/Task No. _____

Site Name Jaquez

Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal☐ Stabilization of Indicator Parameters☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) See page 1

Initial Depth to Water (feet) _____

Height of Water Column in Well (feet) _____

Diameter (inches): Well _____ Gravel Pack _____

Instruments

☒ PH Meter☒ DO Monitor☒ Conductivity Meter☒ Temperature Meter☐ Other _____

Serial No. (if applicable) _____

Methods of Development

Pump

- ☐
- Centrifugal
-
- ☐
- Submersible
-
- ☐
- Peristaltic

Bailer

- ☐
- Bottom Valve
-
- ☐
- Double Check Valve
-
- ☐
- Stainless-steel Kemmerer

☐ Other _____

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
Total			

Water Disposal

Kutz Separator

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02			✓		19	16.4	5.43	3580		
					20	16.4	5.43	3570		
					21	16.3	5.44	3570		
									1.20	sample at 10:25
		d(in)	gal/ft							
		2	0.16							
		4	0.65							
		6	1.47							

Circle the date and time that the development criteria are met.

Comments _____

Developer's Signature (s)

Ashley Lowe

Date

08/08/02

Reviewer _____

Date _____



906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number

Jaquez R-4

Development
Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 3

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company Montgomery Watson Harza

Phase/Task No. _____

Site Name Jaquez

Site Address _____

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) 22.16' BTDC

Initial Depth to Water (feet) 12.84' BTDC

Height of Water Column in Well (feet) 9.32

Diameter (inches): Well 4" Gravel Pack _____

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
$9.32 \times 0.65 =$	$6.1 \times 3 =$		<u>18.2 gal</u>
Total			

Instruments

☒ PH Meter

Serial No. (if applicable) _____

☐ DO Monitor

☒ Conductivity Meter

☒ Temperature Meter

☐ Other _____

Water Disposal

Kutz Disposal

Methods of Development

Pump

- ☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer

- ☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other _____

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02	8:50		☒		1 gal	19.4	5.30	6030		tan color
					3	18.7	5.29	5930		
					5	17.8	5.29	6080		darker brown, light film on top
					7	17.4	5.29	6480		black silt in water
					7.5	17.1	5.30	6440		bailing down - let recover
		d(in)	gal/ft		8	17.0	5.29	6380		
		2	0.16		8.8	16.7	5.29	6460		
		4	0.65		9.0	16.6	5.30	6420		clearer
		6	1.47		9.5	16.7	5.31	6650		not recovering

Circle the date and time that the development criteria are met.

Comments _____

Developer's Signature (s)

Ashley Lowe

Date

08/08/02

Reviewer _____

Date _____

**906 San Juan Blvd.Ste.D
Farmington, NM 87401
505.566.9116(9120fax)**

Well Number

Jaquez R-4

Development
Purging

WELL DEVELOPMENT AND PURGING DATA

Page 2 of 3

Project Name San Juan River Basin

Project Manager

Ashley Lowe

Project No. 220013

Client Company MWH

Phase.Task No.

Site Name Jaquez

Site Address

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☒ Other *er bail dry*

Methods of Development

Pump

Bailer

- ☐ Centrifugal
☐ Submersible
☐ Peristaltic

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) see pg 1

Initial Depth to Water (feet)

Height of Water Column in Well (feet)

Diameter (inches):	Well	Gravel Pack
--------------------	------	-------------

Gal/ft × ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
Total			

Instruments

Serial No. (if applicable)

☒ PH Meter

☒ DO Monitor☒ Conductivity Meter

☒ Temperature Meter

☐ Other

Water Disposal

Kutz Separator

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
8/8/02			✓		9.8	16.8	5.31	6510		
					10	16.6	5.31	6710		
					10.5	16.7	5.31	6730		
					11	16.7	5.31	6800		
					11.5	16.6	5.32	6850		
		d(in)	gal/ft		12	16.7	5.30	6950		conductivity keeps rising
		2	0.16		13	16.7	5.32	7050		
		4	0.65		14	16.5	5.32	7080		
		6	1.47		14.4	16.4	5.33	7120		

Circle the date and time that the development criteria are met.

Comments Recovery very low, but conductivity not stable

Developer's Signature (s)

Ashley & Lowe

Date _____

08/08/02

Reviewer

Date _____

AES

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number

Jaquez
R-5

Development

Purging**WELL DEVELOPMENT AND PURGING DATA**Page 1 of 1Project Name San Juan River BasinProject Manager Ashley LoweProject No. 220013Client Company Montgomery Watson Harza

Phase/Task No. _____

Site Name Jaquez

Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal☐ Stabilization of Indicator Parameters☒ Other or bail dry

Water Volume Calculation

Initial Depth of Well (feet) 24.44' BTDCInitial Depth to Water (feet) 15.88' BTDCHeight of Water Column in Well (feet) 8.56'Diameter (inches): Well 4" Gravel Pack _____

Instruments

☒ PH Meter☒ DO Monitor☒ Conductivity Meter☒ Temperature Meter☐ Other _____

Serial No. (if applicable) _____

Methods of Development

Pump

☐ Centrifugal☐ Submersible☐ Peristaltic

Bailer

☒ Bottom Valve☐ Double Check Valve☐ Stainless-steel Kemmerer☐ Other _____

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
$8.56 \times 0.65 =$	$5.56 \times 3 =$		<u>16.7 gal</u>
Total			

Water Disposal

Kutz Separator

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
<u>8/8/02</u>	<u>7:40</u>		☒		<u>1 gal</u>	<u>16.8</u>	<u>5.01</u>	<u>7700</u>		<u>clear</u>
					<u>3</u>	<u>16.2</u>	<u>4.92</u>	<u>5900</u>		
					<u>5</u>	<u>15.9</u>	<u>4.99</u>	<u>6200</u>		<u>light brown color, cloudy</u>
					<u>7</u>	<u>15.7</u>	<u>5.03</u>	<u>6600</u>		
					<u>8</u>	<u>15.4</u>	<u>5.06</u>	<u>6600</u>		
		d(in)	gal/ft		<u>8.4</u>	<u>15.4</u>	<u>5.08</u>	<u>6600</u>		<u>bailing down</u>
		<u>2</u>	<u>0.16</u>		<u>8.6</u>	<u>15.4</u>	<u>5.08</u>	<u>6500</u>		<u>almost dry - will sample</u>
	<u>7:57</u>	<u>4</u>	<u>0.65</u>							<u>sample</u>
		<u>6</u>	<u>1.47</u>						<u>2.15</u>	<u>T = 14.9°C</u>

Circle the date and time that the development criteria are met.

Comments Well began bailing down rapidly. Almost bailed dry, so sampled before bailing 3 well volumes

Developer's Signature (s)

Ashley L. LoweDate 08/08/02

Reviewer _____

Date _____



906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number

R-6
Jaquez

Development
Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name San Juan River Basin

Project Manager Ashley Lowe

Project No. 220013

Client Company Montgomery Watson Harza

Phase/Task No.

Site Name Jaquez

Site Address

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☐ Stabilization of Indicator Parameters

☒ Other or bail dry

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 22.04' BTOC

Initial Depth to Water (feet) 13.44' BTOC

Height of Water Column in Well (feet) 8.6'

Diameter (inches): Well 4" Gravel Pack

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
$8.6 \times 0.65 =$	$5.59 \times 3 =$		16.77 gal
Total			

Instruments

☒ PH Meter

☒ DO Monitor

☒ Conductivity Meter

☒ Temperature Meter

☐ Other

Water Disposal

Kutz Disposal

Water Removal Data

Date	Time	Development Method		Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer	Increment	Cumulative					
08/08/02	8:15		☒		1	17.4	5.20	2770		clear, some sand in suspension
					3	16.8	5.20	2500		
					4.5	16.3	5.21	2600		light brown color
					6	15.8	5.18	2700		
					8	15.8	5.20	2800		slight odor, cloudier & darker color
		d(in)	gal/ft		8.5	15.4	5.23	2310		
		2	0.16		9	15.4	5.23	2270		
		4	0.65		9.2	15.3	5.24	2230		bailing down
		6	1.47		9.4	15.2	5.25	2220	3.92	sample at 8:34

Circle the date and time that the development criteria are met.

Comments Water started bailing down rapidly, water quality was relatively stable, so sampled before bailing 3 well volumes

Developer's Signature (s) Ashley & Lowe

Date 08/08/02

Reviewer

Date

AESE

WELL OBSERVATION DATA

906 San Juan Blvd.Ste.D
Farmington, NM 87401
505.566.9116(9120fax)

Project Name San Juan River Basin

Project No. 220013

Project Manager Ashley Lowe

Date 08/08/02

Client Company Montgomery Watson Harza

Site Name Jaquez

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Comments
R-5	7:40	15.88	—		—	sampled; DO = 2.15 mg/L
R-6	8:15	13.44	—		—	sampled; DO = 3.92 mg/L
R-4	8:50	12.84	—		—	sampled; DO = 1.28 mg/L
R-3	9:50	13.26	—		—	sampled; DO = 1.20 mg/L
R-2	10:37	12.45	—		—	sampled; DO = 1.41 mg/L
R-1	11:05	13.65	—		—	sampled; DO = 3.94 mg/L
MW-2	11:52	3.71	—	14.94	—	
MW-5	11:59	3.97	—	15.00	—	
MW-4	12:07	5.78	—	15.31	—	ORC inspection
MW-3	12:22	4.92	—	15.02	—	ORC inspection

Comments

MW-4 ORC inspection: socks are resting on well bottom. Very hard removed socks before measured water level; socks look very clean

MW-3 ORC inspection: very hard, very dirty socks; ~~5~~ only top 5 are dirty, bottom 3 are clean

Signature Ashley L Lowe

Date 08/08/02

AESE**WELL OBSERVATION DATA**

906 San Juan Blvd. Ste. D
 Farmington, NM 87401
 505.566.9116(9120fax)

Project Name San Juan River BasinProject No. 220013Project Manager Ashley LoweDate 08/08/02Client Company Montgomery Watson HarzaSite Name Jaquez

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Comments
MW-1	12:40	4.03	—	15.29	—	
TMW-1	12:46	3.318	—	7.67	—	very strong odor - blackish gray silt on probe - no survey mark - measured from N side
TMW-2	12:53	2.42	—	6.92	—	no survey mark - measured from N side

Comments _____

Signature Ashley Lowe Date 08/08/02

AESE**WELL OBSERVATION DATA**

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116 (9120fax)

Project Name San Juan River BasinProject No. 220013Project Manager Ashley LoweDate 07/25/02Client Company Montgomery Watson HarzaSite Name Jaquez

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	water Product Thickness (ft)	Comments
R-1	10:42 12:52	13.872		22.075	8.203	Bailed 5.5 gal - water is light brown, cloudy; After 5 gal, lots of silt, black cloudy water, slight odor
R-2	10:42 12:16	11.52		22.5	10.98	bailed 7 gal of clear, light brown water; cloudier after 6 th gal was bailed
R-3	11:47	11.522		22.17	10.65	bailed 7 gal; bright orange color, slightly cloudy
R-4	11:16	11.158		22.19	11.03	bailed 7.5 gal; clear water until 5 gal removed, then turned black & cloudy; contained a lot of silt; lost recovery & bailer hit bottom of well
R-5	10:12	15.230		24.48	9.25	bailed 6 gal; clear film on top of 1 st bailer full; some floating particles; otherwise very clear
R-6	10:42	12.720		22.05	9.33	bailed 6 gal; light brown color, cloudy contained large amount of silt & mud

Comments Purged 1 well volume & measured DO & temperature
Disposed & purge water into canister in truck

Signature Ashley & LoweDate 07/25/02

AESE

WELL OBSERVATION DATA

906 San Juan Blvd.Ste.D
Farmington, NM 87401
505.566.9116(9120fax)

Project Name San Juan River Basin

Project No. _____

Project Manager Ashley Lowe

Date 07/18/02

Client Company Montgomery Watson Harza

Site Name Inquez

[illegible]

Comments

decontaminated water-oil interface probe prior to measuring depths in each well

Signature Ashley Lowe

Date 07/18/02

SHADED AREAS ARE FOR LAB USE ONLY

PROJECT MANAGER: Ashley Lowe

COMPANY: AESE

ADDRESS: 906 San Juan Blvd, Ste D
Farmington, NM 87401

PHONE: 505-566-9116

FAX: 505-566-9120

BILL TO: Montgomery Watson Harza

COMPANY: _____

ADDRESS: _____

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.
Jaquez Downstream	07/18/02	8:25	H ₂ O	
Jaquez Upstream	07/18/02	8:34	H ₂ O	
Lat 3B-39 MW-1	07/18/02	11:58	H ₂ O	
Air Sample	07/18/02	9:02	Air	

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 (825/8270)																			
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																			

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:	1.	RELINQUISHED BY:	2.
PROJ. NO.: <u>220013</u>		(RUSH) ☐ 12hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: <u>Ashley Lowe</u>	Time: <u>13:50</u>	Signature: _____	Time: _____
PROJ. NAME: <u>San Juan River Basin</u>		CERTIFICATION REQUIRED ☐ NM ☐ SOWA ☐ OTHER		Printed Name: <u>Ashley Lowe</u>	Date: <u>07/18/02</u>	Printed Name: _____	Date: _____
P.O. NO.:		METHANOL PRESERVATION ☐		Company: <u>AESE</u>		Company: _____	
SHIPPED VIA: <u>FedEx</u>		COMMENTS: FIXED FEE ☐		See reverse side (Force Majeure)			
SAMPLE RECEIPT				RECEIVED BY:		RECEIVED BY: (LAB)	
NO. CONTAINERS				Signature: _____	Time: _____	Signature: _____	Time: _____
CUSTOMER'S				Printed Name: _____	Date: _____	Printed Name: _____	Date: _____
RECEIVED CONTACT				Company: _____		Company: _____	
BRIDGE/ICE							

amec

Project No.: 1517000121

Task:

Date: 7-12-02

[illegible]

Comments:

Signature:

Date: 7-12-02

amec

Project No.: 1517000121

Task: _____

Date: 7-3-02

[illegible]

Comments:

Date: 7-3-02

amec

Project No.: 1517000121

Task
Cost Code: 1

Date: 6/28/02

[illegible]

Comments: _____

Winn

Date:

6/28/22

amec

Project No.: 1517000121

Task: /

Date: 6-21-02

Journal of Management Education 36(7) 809-826

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

Date: 6-21-02

amec

Project No.: 1517000121

Task:

Date: 6-13-02

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

Signature: Chris A. G. M. W. Date: 6-13-02

Signature: Chris A. G. M. W. Date: 6-13-02

amec

Project No.: 1517000121

Task: _____

Date: 6-6-02

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

Signature: Chris A. Miller Date: 6-6-02

Signature: Chris A. Miller Date: 6-6-02

amec

Project No.: 15/7000121

Task: 1

Date: 5-30-02

Date: 5-30-02

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

Signature: *[Signature]* Date: 5-30-02

Date: 5-30-02



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 5-28-02 PAGE: 1 OF 1

FILE ACCESSION

SHADED AREAS ARE FOR LAB USE ONLY

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 page

COMPANY: El Paso Field Services

ADDRESS: 614 Reilly AVE
Farmington N.M. 87401

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	X		X	X	X	X	X	X	X	X	X	X	X	X	X
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:															

JAG-0205-R1	52302	1315	H ₂ O
JAG-0205-R2	52302	1245	H ₂ O
JAG-0205-R3	52302	1200	H ₂ O
JAG-0205-R4	52302	1020	H ₂ O
JAG-0205-R5	52302	1100	H ₂ O
JAG-0205-R6	52302	0935	H ₂ O

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		SCHEDULING		SIGNATURES		RECEIPT	
PROJ. NO.: K170002121	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: [Signature] Time: 1530		Signature: [Signature] Time: []		Signature: [Signature] Time: []	
PROJ. NAME: EFS G.W. Proj.	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Printed Name: Chris A. Macz Date: 5-23-02		Printed Name: [] Date: []		Printed Name: [] Date: []	
P.O. NO.:	METHANOL PRESERVATION ☐	Company: AMEC		Company: []		Company: []	
SHIPPED VIA: Greyhound	COMMENTS: FIXED FEE ☐	See reverse side (For Majeure)		[]		[]	
JAGuez GC #C1		[]		[]		[]	
meter # (70995)		[]		[]		[]	

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number: R 1.

Page 1 of 1

Project Name EpFS G.W. protect

Project Manager LISA WIRTH

Project No. 1517060121

Client Company El Paso Field Services

Site Name Jaquez G.C. #C1 (70995)

Site Address Blanco N.M.

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal.
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

- | | |
|--------------------------------------|---|
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Water Volume Calculation

Initial Depth of Well (feet) 22.09
Initial Depth to Water (feet) 13.63
Height of Water Column in Well (feet) 8.46
Diameter (inches): Well _____ Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.46	5.52 x 3	16.56
Gravel Pack			
Drilling Fluids			
Total			16.56

Instruments

- ☒ pH Meter YSI 63
- ☒ DO Monitor. YSI 95
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

Serial No. (If applicable)

Water Disposal

Kutz Separator Bloomfield NM.

Water Removal Data

[illegible]

Comments AFTER Bailing Approximately 7 gal Bailed well Dry LET Recover Sampled
For BTEX 1315

Developer's Signature(s) Ph: & M. /

Date 8-23-02

Reviewer Nmm Date 6/3/02

☒ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R 2

Page 1 of 1

Project Name EPFS G.W. project

Project Manager List Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name JAGWEL G.C. #C1 (20995)

Site Address Blanco N.M.

Development Criteria

- ☒ (3) to 5 Casing Volumes of Water Removal.
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 22.12
Initial Depth to Water (feet) 12.46
Height of Water Column in Well (feet) 9.66
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.66	6.30 X 3	18.9
Gravel Pack			
Drilling Fluids			
Total			18.9

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
☒ DO Monitor YSI 95
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other _____

Water Disposal

KUTZ Separator Bloom Field N.M.

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					
5-23-02	1228						4	4			21.7	7.13	673		Cloudy light yellow
	1233						4	8			20.1	7.25	684		that, septic odor
	1237					21.11	2	10			—	—	—	0.81	Cloudy DARK Grey Septic odor
															no change

Comments AFTER Bailing Approximately 10 gal. Bailed well Dry LET Recover Sampled for BTEX 1245

Developer's Signature(s) Chris A. May

Date 5-23-02

Reviewer J. Winn

Date 6/3/02



☒ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R 3

Page 1 of 1

Project Name EPFS G.W. PROJECT

Project Manager List Winn

Project No. 1517000121

Client Company EL PASO FIELD SERVICES

Site Name Jaquez G.C. #C1 (0995)

Site Address Rural SAN JUAN 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) 22.20

Initial Depth to Water (feet) 13.25

Height of Water Column in Well (feet) 8.95

Diameter (inches): Well _____ Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	8.95	5.84 X 3	17.52
Gravel Pack			
Drilling Fluids			
Total			17.52

Instruments

Serial No. (if applicable)

☒ pH Meter

YSI 63

☒ DO Monitor

YSI 95

☒ Conductivity Meter

YSI 63

☒ Temperature Meter

YSI 63

☐ Other _____

Water Disposal

with Separator 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					
5-23-02	1136		X				3.75	3.75			14.2	6.88	389.8		Cloudy, orange tint, no odor
	1140		X				3.75	7.5			12.7	7.13	382.7		Cloudy, orange tint, no odor
	1145		X				3.75	11.25			12.9	7.12	196.8		Cloudy, light orange tint, no odor
	1149		X				3.75	15			12.4	7.20	373.1		Cloudy no odor
	1153		X			1926	3.75	18.75			12.5	7.23	369.9	1.13	no Change

Comments SAMPLES FOR BTEX 1200

Developer's Signature(s) Chris A. M...

Date 5-23-02

Reviewer J. Winn

Date 6/3/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R. 4

Page - 1 of 1

Project Name EpFS G.W. Protect

Project Manager LISA WIRTH

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaquez G.C. #C1 (70995)

Site Address Blanco N.M.

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal.
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

- | | |
|--------------------------------------|---|
| ☐ Pump | ☐ Boiler |
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Water Volume Calculation

Initial Depth of Well (feet) 22.22

Initial Depth to Water (feet) 12.88

Height of Water Column in Well (feet) 9.34Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.34	609X3	18.27
Gravel Pack			
Drilling Fluids			
Total			18.27

Instruments

- ☒ pH Meter YSI 63
- ☒ DO Monitor. YSI 95
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

Serial No. (If applicable)

Water Disposal

Water Disposal
Lutz Separator Bloomfield N.M.

Water Removal Data

[illegible]

Comments After Bailing Approximately 9 gal Bailed well Dry Let Recover Sampled for
BTEX 1020

Developer's Signature(s)

Date 5-23-02

Reviewed

Date 01/31/06

ameo

Well Number: R 5:

Page 1 of 1

Project Manager Lisa Winn

Project No. 15/7000121

Site Name Jagwe2 GC #C1 (70995)

Site Address Blanco N.M.

Water Volume Calculation

- Initial Depth of Well (feet) 24.48
Initial Depth to Water (feet) 15.99
Height of Water Column in Well (feet) 8.49
Diameter (inches): Well 4" Gravel Pack

Serial No. (If applicable)

- ☒ pH Meter YSI 63
- ☒ DO Monitor YSI 95
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

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

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	8.49	5.54 X 3	16.62
Gravel Pack			
Drilling Fluids			
Total			16.62

Water Disposal

Water Disposal
kWT Separator Bloomfield NM.

[illegible]

Comments After Bailing Approximately 10.5 gal Bailed well Dry, Let Recover Sampled for BTEX 1100

Developer's Signature(s) Philo A. Mc

Date 5-23-02

Reviewed

Date 6/5/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R 6

Page 1 of 1

Project Name EPFS GW PROJECT

Project Manager LISA WILSON

Project No. 1517060121

Client Company EL PASO FIELD SERVICES

Site Name JANUZZI GC # C1 (00995)

Site Address BLANCO N.M.

Development Criteria

- ☒ (3) to 5 Casing Volumes of Water Removal.
☒ Stabilization of Indicator Parameters:
☐ Other _____

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 21.94
Initial Depth to Water (feet) 12.75
Height of Water Column in Well (feet) 9.19
Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.19	5.99X3	17.97
Gravel Pack			
Drilling Fluids			
Total			17.97

Instruments

- ☒ pH Meter YSI 63
☒ DO Monitor YSI 95
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other _____

Serial No. (If applicable)

Water Disposal

KWZ Separator Bloomfield N.M.

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					
5-23-02	0921		X				3.75	3.75			12.5	6.60	265.3		Clear No odor
	0924		X				3.75	7.5			11.7	6.95	282.3		" "
	0929		X			21.18	3.75	11.25			11.6	7.15	273.1	6.59	Cloudy, light brown No odor

Comments AFTER Bailing Approximately 11.25 gal. Bailed well Dry Let Recover Sampled for BTEX 0935

Developer's Signature(s) Ph: A. May

Date 5-23-02

Reviewer J. Wilson Date 6/3/02



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 5-23-02 PAGE: 1 OF 1

P.L. Accession

UNLabeled AREAS ARE FOR LAB USE ONLY

PROJECT MANAGER: LISA WINN

COMPANY: AMEC

ADDRESS: 20 GO AFTON place
Farmington N.M. 87401

PHONE: (505) 327-7929

FAX: (505) 326 5721

BILL TO: SCOTT POPE

COMPANY: El Paso Field Services

ADDRESS: 614 Reilly AVE
Farmington N.M.

ANALYSIS REQUEST																									CONTAINERS	
Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	Total Nitrites	(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																					
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PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		TURNAROUND TIME		TECHNICALITY		REMOVED BY	
PROJ. NO.: 1517000121	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: [Signature] Time: 1530		Signature: _____ Time: _____		Signature: _____ Time: _____	
PROJ. NAME: EPFS GWR PROJ	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Printed Name: Chris AMEZ Date: 5-23-02		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO.:	METHANOL PRESERVATION ☐	Company: IMEC		Company: _____		Company: _____	
SHIPPED VIA: Greyhound	COMMENTS: FIXED FEE ☐	See reverse side (Force Majeure)		Signature: _____ Time: _____		Signature: _____ Time: _____	
SAMPLE RECEIVED		JAMEZ (70995)		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
CUSTOMER'S				Company: _____		Company: _____	

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number: M1

Page 1 of 1

Project Name EpFS Gw. project

Project Manager Lisa Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaquez

Site Address Blanco N.M.

Development Criteria

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

Methods of Development

- | | |
|--------------------------------------|---|
| ☐ Pump | ☒ Boiler |
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Water Volume Calculation

Initial Depth of Well (feet) 15.36
Initial Depth to Water (feet) 3.38
Height of Water Column in Well (feet) 11.98
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	11.99	7.92 x 3	23.46
Gravel Pack			
Drilling Fluids			
Total			23.46

Instruments

- ☒ pH Meter XSI 63
☒ DO Monitor XSI 95
☒ Conductivity Meter XSI 63
☒ Temperature Meter XSI 63
☐ Other _____

Serial No. (If applicable)

Water Disposal

Lutz Separator Bloomfield N.M.

Water Removal Data

[illegible]

Comments AFTER Bailing Approximately 9.5 gal. Bailed well Dry Let Recover sample for
Brex 0922

Developer's Signature(s) Chris A. Mc

Date 5-22-02

Reviews

Date 6/3/02

- ☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

amco

Well Number M 2

Page 1 of 1

Project Name EPES GW project

Project Manager Lisa Winn

Project No. 1517000121

Client Company EL Paso Field Services

Site Name Jaquez

Site Address Blanco N.M.

Development Criteria

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

Methods of Development

- Pump _____ Boiler _____
☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 15.09
Initial Depth to Water (feet) 2.97
Height of Water Column in Well (feet) _____
Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>12.12</u>	<u>7.91 x 3</u>	<u>23.73</u>
Gravel Pack			
Drilling Fluids			
Total			<u>23.73</u>

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
☒ DO Monitor YSI 95
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 95
☐ Other _____

Water Disposal

KUTZ Separator Bloomfield N.M.

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	Boiler				Increment	Cumulative	Increment	Cumulative					
5-22-02	0945		X				4.75	4.75			11.9	7.25	351.3		Clear, NO odor
	0949		X				4.75	9.5			10.9	7.14	342.4		" "
	0955		X				4.75	14.25			10.6	7.06	329.7		" "
	0959		X				4.75	19			10.6	7.07	322.9		" "
	1004		X			3.24	4.75	23.75			10.5	7.09	304.2	0.51	no Change

Comments SAMPLED for BTEX 10/10

Developer's Signature(s) Rita L. May

Date 5-22-02

Reviewer L. Winn

Date 6/3/02

- ☐ Development
☐ Purging



WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M3

Page 1 of 1

Project Name EpFS G.W. project

Project Manager LISA Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaques

Site Address Blanco N.M.

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 15.13
Initial Depth to Water (feet) 3.10
Height of Water Column in Well (feet) 12.03
Diameter (inches): Well _____ Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	12.03	7.85 x 3	23.55
Gravel Pack			
Drilling Fluids			
Total			23.55

Instruments

Serial No. (If applicable)

- ☒ pH Meter XSL 63
☒ DO Monitor XSL 95
☒ Conductivity Meter XSL 63
☒ Temperature Meter XSL 63
☐ Other _____

Water Disposal

KUTZ Separator Bloomfield N.M.

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					
5-22-02	1149		X				4.75	4.75			13.9	7.87	296.4		Cloudy NO odor
	1153		X				4.75	9.5			12.2	7.35	270.1		" "
	1157		X				4.75	14.25			11.6	7.20	273.3		" "
	1201		X				4.75	19			11.3	7.15	258.9		" "
	1202		X			4.65	4.75	23.75			11.6	7.15	259.1	1.72	NO Change

Comments SAMPLED for BTEX 1220

Developer's Signature(s) Chris A. May

Date 5-22-02

Reviewer L. Winn

Date 6/3/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M 4

Page 1 of 1

Project Name EPFS G.W. project

Project Manager Lisa Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaquez

Site Address Blanco N.M.

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) 15.37

Initial Depth to Water (feet) 1.4

Height of Water Column in Well (feet) 13.97

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	13.97	9.11 X 3	27.33
Gravel Pack			
Drilling Fluids			
Total			27.33

Instruments

Serial No. (If applicable)

☒ pH Meter

YSI 63

☒ DO Monitor

YSI 95

☒ Conductivity Meter

YSI 63

☒ Temperature Meter

YSI 63

☐ Other _____

Water Disposal

Water Separator Bloomfield N.M.

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					
5-22-02	1118		X				5	5			16	9.73	695		Cloudy, NO Odor
	1123		X				10	10			14.1	9.53	701		" "
	1127		X			14.26	1.5	11.5			—	—	—	2.41	no Change

Comments Water Level 0.87 Above Ground Level. AFTER Bailing Approximately 11.5 gal Bailed well Dry Let Recover SAMPLED for BTEX & NITRATES 1215

Developer's Signature(s) Chris A. May

Date 5-22-02

Reviewer J Winn

Date 6/3/02

- ☐ Development
☒ Purging

amoc

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M 5

Page 1 of 1

Project Name EpFS GW Project

Project Manager Lisa Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaquez

Site Address Blanco N.M.

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 15.06
Initial Depth to Water (feet) 2.94
Height of Water Column in Well (feet) 12.12
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>12.12</u>	<u>7.91 X 3</u>	<u>23.73</u>
Gravel Pack			
Drilling Fluids			
Total			<u>23.73</u>

Instruments

- ☒ pH Meter YSI 63
☒ DO Monitor YSI 95
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other _____

Serial No. (if applicable)

Water Disposal

Lutz separator 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					
<u>5-22-02</u>	<u>1031</u>		☒				<u>4.75</u>	<u>4.75</u>			<u>14.5</u>	<u>7.60</u>	<u>309.0</u>		<u>Clear, NO odor</u>
	<u>1035</u>		☒				<u>4.75</u>	<u>9.5</u>			<u>12.0</u>	<u>7.21</u>	<u>324.1</u>		<u>" "</u>
	<u>1040</u>		☒				<u>4.75</u>	<u>14.25</u>			<u>11.2</u>	<u>7.22</u>	<u>306.0</u>		<u>" "</u>
	<u>1045</u>		☒				<u>4.75</u>	<u>19</u>			<u>11.4</u>	<u>7.24</u>	<u>320.4</u>		<u>NO Change</u>
	<u>1051</u>		☒			<u>11.3</u>	<u>4.75</u>	<u>23.75</u>			<u>11.3</u>	<u>7.22</u>	<u>365.1</u>		<u>Cloudy, light Brown</u>

Comments SAMPLED For BTEX 1055

Developer's Signature(s) Rain + Ma

Date 5-22-02

Reviewer J Winn

Date 6/3/02

☐ Development
☒ Purging

amco

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M 6

Page 1 of 1

Project Name EpFS G.W. project

Project Manager Lisa Winn

Project No. 1517000121

Client Company El Paso Field Services

Site Name Jaqmez

Site Address Blanco N.M.

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) 17.89

Initial Depth to Water (feet) 6.67

Height of Water Column in Well (feet) 11.22

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>11.22</u>	<u>7.32 x 3</u>	<u>21.96</u>
Gravel Pack			
Drilling Fluids			
Total			<u>21.96</u>

Instruments

Serial No. (If applicable)

☒ pH Meter

YSI 63

☒ DO Monitor

YSI 95

☒ Conductivity Meter

YSI 63

☒ Temperature Meter

YSI 63

☐ Other _____

Water Disposal

Kuiz Separator Bloomfield N.M.

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					
<u>5-22-02</u>	<u>1311</u>		<u>X</u>				<u>4.5</u>	<u>4.5</u>			<u>12.1</u>	<u>7.12</u>	<u>545</u>		<u>Cloudy, vegetation</u>
	<u>1315</u>		<u>X</u>				<u>4.5</u>	<u>9</u>			<u>9.9</u>	<u>7.23</u>	<u>543</u>		<u>1</u>
	<u>1321</u>		<u>X</u>				<u>4.5</u>	<u>13.5</u>			<u>9.4</u>	<u>7.31</u>	<u>518</u>		<u>1</u>
	<u>1327</u>		<u>X</u>			<u>15.34</u>	<u>4.5</u>	<u>18</u>			<u>9.2</u>	<u>7.44</u>	<u>481</u>	<u>3.57</u>	<u>no change</u>

Comments AFTER Bailing Approximately 18 gal. Bailed well Dry LET Recover Sampled for
ISTEX 1345

Developer's Signature(s) Christina M.

Date 5-22-02

Reviewer

Lisa Winn Date 6/3/02

amec

Project No.: 15/7000121

Task: 2

Date: 5-22-02

1. *Chlorophyll a* (Chl *a*) and *Chlorophyll b* (Chl *b*) were determined by the method of Arar and Collins (1987). The concentration of Chl *a* and Chl *b* was expressed as $\mu\text{g mL}^{-1}$ of the sample.

[illegible]

Comments: _____

Signature: Chris A. Marx Date: 5-22-02

Date: 5-22-02

amec

Project No.: LS/2000/21

Task: _____

Date: 5-16-02

1. *Chlorophyll a* (Chl *a*) and *Chlorophyll b* (Chl *b*) were determined using the method of Arar and Collins (1987). The concentration of Chl *a* and Chl *b* was expressed as $\mu\text{g mL}^{-1}$ of the sample.

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

Signature: Philo M. Man Date: 5-16-02

Date: 5-16-02

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		REQUISITION #	REQUISITIONED BY
PROJ. NO. <u>51000121</u>	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: <u>[Signature]</u> Time: <u>1530</u>	Signature: _____ Time: _____
PROJ. NAME <u>EPIS GL. PROJ.</u>	CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER	Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
P.O. NO. _____	METHANOL PRESERVATION ☐	<u>Christ Muel</u> <u>5-16-02</u>	Company: _____
SHIPPED VIA <u>Greyhound</u>	COMMENTS: FIXED FEE ☐	Company: <u>AMEC</u> See reverse side (Force Majeure)	Company: _____
NO. CONTAINERS _____	<u>JAQ 602</u> <u>METER # (70995)</u>	Signature: _____ Time: _____	<u>RECEIVED BY</u> <u>[Signature]</u>
CUSTOMER # _____		Printed Name: _____ Date: _____	
DEPT. NAME _____		Company: _____	
DATE _____			

amec

Project No.: 1517000121

Task: 3

Date: 5-10-02

100

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

Signature: Det. (K) Hansson Date: 5-10-02

Signature: Robert J. Harrison Date: 5-10-02

amec

Project No.: 1517000121

Task:

Date: 5-2-02

[illegible]

Comments:

Robert Thompson

Date: 5-2-02

amec

Project No.: 1517000121

Task: . . .

Date: 4-24-02

Site Name: JAQUEZ

[illegible]

Comments: _____

Art Chapman

Date: 4-24-02

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		HIGH AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1		RELINQUISHED BY: 2	
PROJ. NO.: 1517000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature] Time: 0935		Signature: Time:	
PROJ. NAME: EPFS BW PROJECT		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Date: 4-25-02		Printed Name: Date:	
P.O. NO.:		METHANOL PRESERVATION ☐		ROBERT THOMPSON			
SHIPPED VIA: GREYHOUND		COMMENTS: FIXED FEE ☐		Company: AMEC See reverse side (Force Majeure)		Company:	
SAMPLE RECEIPT				RECEIVED BY: 1		RECEIVED BY (LAB) 2	
NO. CONTAINERS				Signature: Time:		Signature: Time:	
CUSTODY SEALS		37 N/A		Printed Name: Date:		Printed Name: Date:	
RECEIVED INTACT				Company:		Pinnacle Laboratories Inc	
BLUE ICE							

amec

Project No.: 1517000121

Task:

Date: 4-19-02

[illegible]

Comments:

Date:

Robert Thompson

amec

Project No.: _____

Task:

Date: 4-11-02

[illegible]

Comments: _____

Date: 4-11-02

amec

Project No.: 15/7000121 .

Task: /

Date: 4-4-02

Date: 4-4-02

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

Signature: Christ Mac Date: 9-9-02

Signature: Christ Mac Date: 9-9-02

1230

amec

Project No. 1517000121

Task: 1

Date: 3-29-02

[illegible]

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

Comments.

Date: 3-28-02

amec

Site Name. JAG 2 GC^{II} CI (70995)

[illegible]

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

Comments: _____

Signature: Chris May

Date. 2-14-02

ameco

Project No.: 1512000121

Task 1

Date: 3-2-02

[illegible]

Comments:

Signature: [Signature] Date: 3-2-02

- ☒ Develo
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number: MI

Page 1 of 1

Project Name EPFS G.W. PROJECT

Project Manager LISA Wynn

Project No. 15/7000/21

Client Company EL Paso Field Services

Site Name J. Alvarez

Site Address Blanco N.M.

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) 15.36
Initial Depth to Water (feet) 4.94
Height of Water Column in Well (feet) 10.42
Diameter (inches): Well 4' Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	10.42	6.80 x 3	20.4
Gravel Pack			
Drilling Fluids			
Total			20.4

Instruments

- ☒ pH Meter YSE 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter YSE 63
- ☒ Temperature Meter YSE 63
- ☐ Other _____

Serial No. (If applicable)

Water Disposal

KUTZ Separator Bloomfield NM

Water Removal Data

[illegible]

Comments After Bailing Approximately 8.5 gal Bailed well Dry Let Recover Sampled for Brex/300. 20th Sample Collected Duplicate

Developer's Signature(s) Chris M.

Date 2-22-62

Reviewed Shim Date 02/26/02

- ☐ Development
☒ Purging



WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M2 Page 1 of 1
Project Name EPFS G.W. project Project Manager Lisa Winn Project No. 1517000121
Client Company El Paso Field Services
Site Name Jacquez Site Address Blanco N.M.

Development Criteria

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

Methods of Development

- Pump _____ Bailor _____
☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 15.09
Initial Depth to Water (feet) 4.76
Height of Water Column in Well (feet) 10.33
Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>10.33</u>	<u>6.74X3</u>	<u>20.22</u>
Gravel Pack			
Drilling Fluids			
Total			<u>20.22</u>

Instruments

☒ pH Meter

☐ DO Monitor

☒ Conductivity Meter

☒ Temperature Meter

☐ Other _____

Serial No. (if applicable)

YSI 63

YSI 63

YSI 63

Water Disposal

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	Bailor				Increment	Cumulative	Increment	Cumulative					
<u>2-22-02</u>	<u>1152</u>						<u>4.25</u>	<u>4.25</u>			<u>6.3</u>	<u>7.13</u>	<u>346.1</u>		<u>Clear no odor</u>
	<u>1157</u>						<u>4.25</u>	<u>8.5</u>			<u>5.2</u>	<u>7.10</u>	<u>333.4</u>		<u>" "</u>
	<u>1203</u>						<u>4.25</u>	<u>12.75</u>			<u>4.9</u>	<u>7.02</u>	<u>328.1</u>		<u>" "</u>
	<u>1208</u>						<u>4.25</u>	<u>17</u>			<u>4.8</u>	<u>7.04</u>	<u>326.9</u>		<u>" "</u>
	<u>1214</u>					<u>5.22</u>	<u>4.25</u>	<u>21.25</u>			<u>4.8</u>	<u>7.06</u>	<u>320.8</u>		<u>no change</u>

Comments Sampled for BTEX 12 20

Developer's Signature(s) Chris A. Mann

Date 2-22-02

Reviewer L. Winn Date 02/26/02

- ☐ Development
☒ Purging

amc

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number M3

Page 1 of 1

Project Name EpFS G.W. project

Project Manager LISA Winn

Project No. 1517000121

Client Company EL paso Field Services

Site Name Jaquez

Site Address Blanco N.M.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 15.13
Initial Depth to Water (feet) 5.07
Height of Water Column in Well (feet) 10.06
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>10.06</u>	<u>6.56 x 3</u>	<u>19.5</u>
Gravel Pack			
Drilling Fluids			
Total			<u>19.5</u>

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
☐ DO Monitor
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other _____

Methods of Development

- Pump _____ Boiler _____
☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other _____

Water Disposal

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	Boiler				Increment	Cumulative	Increment	Cumulative					
2-22-02	0926						4	4			6.4	6.95	2357		Clear to Cloudy
	0930						4	8			6.0	7.39	2038		Mild Sulfur Odor
	0935						4	12			5.7	7.48	1910		"
	0940						4	16			5.7	7.49	184.3		"
	0945					5.87	4	20			5.7	7.52	184.3		No Change

Comments SAMPLED for BTEX 0952

Developer's Signature(s) [Signature]

Date 2-22-02

Reviewer [Signature]

Date 2/22/02

amc

Well Number: M4

Page 1 of 1

Project Name EPFS Gw project

Project Manager List Winn

Project No. 15/7000/21

Client Company EL PASO Field Services

Site Name Jaqwez

Site Address Branco N.M.

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) 15.37

Initial Depth to Water (feet) 4

Height of Water Column in Well (feet) 11.37

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	11.37	7.42 x 3	22.26
Gravel Pack			
Drilling Fluids			
Total			22.26

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

Water Disposal

KUTZ Separator Bloomfield N.M.

Water Removal Data

[illegible]

Comments: AFTER Bailing approximately 9 gal Bailed well Dry, LAT Recover Sampled For BTEX & Nitrates (OS)

Developer's Signature(s) Chris A. May

Date 2-22-62

Reviewers

Date 2/2/02

ameco

Well Number MS

Page- 1 of 1

Project Name EPFS G.W. PROJECT

Project Manager LISA Winn

Project No. 15/200012

Client Company Eh Paso Field Services

Site Name JAG WEZ

Site Address Blanco N.M

Water Volume Calculation

4 ③ to 5 Casing Volumes of Water Removal.

☒ Stabilization of Indicator Parameters

☐ Other

Initial Depth of Well (feet) 15.06

Initial Depth to Water (feet) 5.21Height of Water Column in Well (feet) 9.85

Diameter (inches): Well 4" Gravel Pack

Methods of Development

Pump

Bailer

- ☐ Centrifugal

☒ Bottom Valve

☐ Submersible

☐ Double Check Valve

☐ Peristaltic

☐ Stainless-steel Kemmerer

☐ Other

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.88	6.43 X 3	19.29
Gravel Pack			
Drilling Fluids			
Total			19.29

Instruments

Serial No. (If applicable)

☒ pH Meter

NSI 63

☐ DO Monitor

☒ Conductivity Meter 45163

☒ Temperature Meter YSI 63

☐ Other

Water Disposal

Water Disposal
Kuntz Separator 13100m³/d NM.

Water Removal Data

[illegible]

Comments: After Bailing Approximately 14.5 gal Bailed well Dry, Let Recover sampled for BTEX 1/41

Developer's Signature(s) Christ-Mary

Date 2-22-02

Reviews

Date: 2/21/02

- ☐ Develop
☒ Purging

ame

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MC Page 1 of 1
Project Name EPFS GW project Project Manager Lisa Winn Project No. 1517000121
Client Company El Paso Field Services
Site Name JAQUEZ Site Address Blanco NM

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) 17.89
Initial Depth to Water (feet) 8.4
Height of Water Column in Well (feet) 9.49
Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.49	6.19	18.57
Gravel Pack			
Drilling Fluids			
Total			18.57

Instruments

- ☒ pH Meter Serial No. (if applicable) YSL 63
☐ DO Monitor _____
☒ Conductivity Meter YSL 63
☒ Temperature Meter YSL 63
☐ Other _____

Water Disposal

K-12 Separator 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					
2-22-02	1317		X				3.75	3.75			9.3	7.04	493		Clear Vegetation no odor
	1320		X				3.75	7.5			8.9	7.13	493		Cloudy Light Brown Vegetation no odor
	1327		X				3.75	11.25			9.0	7.24	461		no change
	1330		X			16.94	2.5	13.75			—	—	—		

Comments AFTER Bailing Approximately 13.75 gal Bailed well Dry LOT Recover Sampled for BTEX 1340

Developer's Signature(s) Chris & Mary Date 2-22-02 Reviewer L. Winn Date 02/26/02

amec

Project No.: 1517000/21

Task: 2

Date: 2 22- 02

[illegible]

Comments: _____

Date: 2-22-02



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 2-22-02 PAGE: 1 OF 1

BLV Accession

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: 64 Reilly Ave
Farmington NM 87401

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	Total Nitrates	(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
					X																				
					X																				
		X			X																				
		X			X																				
					X																				
					X																				
					X																				
					X																				
					X																				

SAMPLE	DATE	TIME	WATER	FIELD
JA9-0202-M1	2-22-02	1300	H ₂ O	
JA9-0202-M2	2-22-02	1220	H ₂ O	
JA9-0202-M3	2-22-02	0952	H ₂ O	
JA9-0202-M4	2-22-02	1051	H ₂ O	
JA9-0202-M5	2-22-02	1141	H ₂ O	
JA9-0202-M6	2-22-02	1340	H ₂ O	
JA9-0202-M51	2-22-02	1300	H ₂ O	

PROJECT INFORMATION		DELIVERY METHOD: (RUSH) ☐ 24hr. ☐ 48hr. ☐ 72hr. ☐ 1 WEEK (NORMAL) ☒		RECEIVED BY		RECEIVED BY	
PROJ. NO: 1572000/21	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Signature: [Signature] Time: 1500		Signature: _____ Time: _____		Signature: _____ Time: _____	
PROJ. NAME: EDES GW PROJECT	METHANOL PRESERVATION ☐	Printed Name: Chris Lopez Date: 2-26-02		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO:	COMMENTS: FIXED FEE ☐	Company: AMEC		Company: _____		Company: _____	
SHIPPED VIA: Ground		See reverse side (For Major)		Signature: _____ Time: _____		Signature: _____ Time: _____	
SAMPLE RECEIPT		Signature: _____ Time: _____		Signature: _____ Time: _____		Signature: _____ Time: _____	
JA9-02		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
		Company: _____		Company: _____		Company: _____	

SHADED AREAS REFER TO ABUSE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

amco

Well Number R1

Page 1 of 1

Project Name EpFS Gw project

Project Manager List Winn

Project No. 15/7000/21

Client Company El Paso Field Services

Site Name JAGW 82 G.C. CI (70995)

Site Address Blanco N.M.

Water Volume Calculation

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

Initial Depth of Well (feet) 22.09
Initial Depth to Water (feet) 15.14
Height of Water Column in Well (feet) 6.95
Diameter (inches): Well 4" Gravel Pack

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

Water Disposal

KUTZ Separator Bloomfield N.M.

- | | |
|--------------------------------------|---|
| Pump | Boiler |
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	6.95	4,53X3	13.59
Gravel Pack			
Drilling Fluids			
Total			13.59

Water Removal Data

[illegible]

Comments AFTER Bailing, Approximately 5.5 Bailed well Dry, Let RECOVER Sampled for
BTex 1410

Developer's Signature(s) Chris M.

Date 2-21-01

Reviewer Wiam Date 21/07/2020

☐ Developing

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number: R2

Page 1 of 1

Project Name EpFS Gw project

Project Manager Lisa Winn

Project No. 15 17 000/21

Client Company Ech Paso Field Services

Site Name Jaquez G.C. (70995)

Site Address Blanco NM.

Development Criteria

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

Methods of Development

- | | |
|--------------------------------------|---|
| Pump | Boiler |
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Water Volume Calculation

Initial Depth of Well (feet) 22.12
Initial Depth to Water (feet) 13.98
Height of Water Column in Well (feet) 8.14
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	8.14	5.31 x 3	15.93
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter YSL 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter YSL 63
- ☒ Temperature Meter YSL 63
- ☐ Other _____

Serial No. (If applicable)

Water Disposal

Kutz Separator Bloomfield N.M.

Water Removal Data

[illegible]

Comments AFTER Bailing Approximately 9.75 gal Bailed well Dry, Let RECOVER Samples for BTEX 1340.

Developer's Signature(s) Chris A. M.

Date 2-24-01

Reviewer J. Minn Date 02/26/02

ameo

Well Number R3

Page 1 of 1

Project Name EPFS G.W. protect

Project Manager Lisa Minor

Project No. 1517 00012

Client Company El Paso Field Services

Site Name JAGUEZ G.C. CI (7D995)

Site Address Blanco N.M.

Water Volume Calculation

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

Initial Depth of Well (feet) 22.20
Initial Depth to Water (feet) 14.99
Height of Water Column in Well (feet) 7.26
Diameter (inches): Well 4" Gravel Pack

Instruments

Serial No. (If applicable)

- ☒ pH Meter YSI 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter YSI 63
- ☒ Temperature Meter YSI 63
- ☐ Other _____

Methods of Development

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

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	2.26	4.23 x 3	14.19
Gravel Pack			
Drilling Fluids			
Total			14.19

Water Disposal

WATER DISPOSAL
WATER SEPARATOR Bloomfield NM.

Water Removal Data

[illegible]

Comments After Bailing Approximately 9 gal Bailed well Dry, Let Recover Sampled for Brex Boo

Developer's Signature(s) Chris M.

Date 2-21-02

Reviewed Winn Date 02/26/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R 4 Page 1 of 1
Project Name EPFS G.W. project Project Manager Lisa Winn Project No. 1512000121
Client Company EL Paso Field Services
Site Name Jaguar G.C. #1 (70995) Site Address Blanco N.M.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 22.22
Initial Depth to Water (feet) 14.43
Height of Water Column in Well (feet) 7.79
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	7.79	508 x 3	15.24
Gravel Pack			
Drilling Fluids			
Total			15.24

Instruments

Serial No. (if applicable)

- ☒ pH Meter YSI 63
☐ DO Monitor _____
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other _____

Methods of Development

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

Water Disposal

Kurtz Separator Bloomfield N.M.

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					
2-21-02	11:19		X				3.25	3.25			14.6	6.93	873		Cloudy milky septic odor
	11:25					21.22	3.25	6.50			14.6	6.98	920		Cloudy light grey milky septic odor
							3.25	9.75							

Comments AFTER Bailing Approximately 6.5 gal Bailed well Dry let Recover Sampled for BTEX 1140

Developer's Signature(s) Chris M.

Date 2-21-02

Reviewed L. Winn Date 2/26/02

- ☐ Development
☒ Purging



WELL DEVELOPMENT AND PURGING DATA FORM

Well Number R 5 Page 1 of 1
Project Name EPF3 Gw project Project Manager LISA Minn Project No. 1517000121
Client Company EL Paso Field Services
Site Name Jaquez GC CI (70945) Site Address Blanco N.M.

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) 24.48
Initial Depth to Water (feet) 17.29
Height of Water Column in Well (feet) 7.19
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>7.19</u>	<u>4.69 x 3</u>	<u>14.07</u>
Gravel Pack			
Drilling Fluids			
Total			<u>14.07</u>

Instruments

- ☒ pH Meter

Serial No. (if applicable)

YSI 63

- ☐ DO Monitor

- ☒ Conductivity Meter

YSI 63

- ☒ Temperature Meter

YSI 63

- ☐ Other _____

Water Disposal

KUTZ Separator Bloomfield N.M.

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					
2-21-02	1152		X				3	3			13.7	7.02	1488		cloudy, no odor
	1156		X				3	6			13.9	7.00	1539		"
	1201		X			23.51	3	9			13.7	7.03	1535		no change

Comments AFTER Bailing Approximately 9 gal Bailed well Dry, LOT Recover Sampled for BTEX 1210

Developer's Signature(s) Chris May

Date 2-21-02

Reviewed J Minn Date 02/26/02

ameco

Well-Number: 26

Page 1 of 1

Project Name EPFS G.W. project

Project Manager LISA WINN

Project No. 151700012

Client Company El Paso Field Services

Site Name JAG WE2 GC. C1 (70995)

Site Address Blanco N.M.

Water Volume Calculation

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

Initial Depth of Well (feet) 21.94
Initial Depth to Water (feet) 16.84
Height of Water Column in Well (feet) 5.1
Diameter (inches): Well 4" Gravel Pack

Serial No. (If applicable)

- ☒ pH Meter y 5 I 63
- ☐ DO Monitor _____
- ☒ Conductivity Meter y 5 I 63
- ☒ Temperature Meter y 5 I 63
- ☐ Other _____

Methods of Development

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

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.1	3.32 x 3	9.96
Gravel Pack			
Drilling Fluids			
Total			9.96

Water Disposal

Water Disposal
Rutz Separator Bloomfield N.M.

Water Removal Data

[illegible]

Comments AFTER Bailing approximately 6 gal Bailed well Dry, let Recover Sampled for BTEX
1100

Developer's Signature(s) Chris A. Macer

Date 2-21-02

Reviewer J. Miller Date 02/26/02

SHADED AREAS ARE FOR LAB USE ONLY

PROJECT MANAGER: LISA WINN

COMPANY: AMEC

ADDRESS: 2060 AETON place
FARMINGTON NM. 87401

PHONE: (505) 327-7928

FAX: (505) 326-5741

BILL TO: SCOTT POPE

COMPANY: EL PASO Field Services

ADDRESS: 614 Reilly AVE
FARMINGTON NM.

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	ANALYST	PETROLEUM HYDROCARBONS (418.1) TRPH (MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTX)/8015 (Gasoline) MTBE	8021 (BTX) ☐ 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)	Polymeric 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
JAQ-0202-R1	2-21-02	1410	H ₂ O				X																				
JAQ-0202-R2	2-21-02	1340	H ₂ O				X																				
JAQ-0202-R3	2-21-02	1300	H ₂ O				X																				
JAQ-0202-R4	2-21-02	1140	H ₂ O				X																				
JAQ-0202-R5	2-21-02	1210	H ₂ O				X																				
JAQ-0202-R6	2-21-02	1100	H ₂ O				X																				

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION		ANALYSIS REQUEST		RECEIVED BY		RECEIVED BY	
PROJ. NO: <u>01517000121</u>	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	Signature: <u>[Signature]</u> Time: <u>1530</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
PROJ. NAME: <u>EP15 GW. project</u>	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Printed Name: <u>Chick Mac</u> Date: <u>2-21-02</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO: _____	METHANOL PRESERVATION ☐	Company: <u>AMEC</u> See reverse side (Force Majeure)		Company: _____		Company: _____	
SHIPPED VIA: <u>Greyhound</u>	COMMENTS: ☐ FIXED FEE ☐	Signature: _____ Time: _____		Signature: _____ Time: _____		Signature: _____ Time: _____	
SAMPLE RECEIPT		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
<u>JAQ-0202 GC CL</u> <u>(70995)</u>		Company: _____		Company: _____		Company: _____	



Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE 02-20-02 PAGE 1 OF 1

PROJECT MANAGER: SA Winn

COMPANY: AMEC

ADDRESS: 2060 ALTON place
Farmington N.M. 87401

PHONE: (505) 327-7928

FAX: (505) 326-5721

BILL TO: SCOTT POPE

COMPANY: EL PASO Field Services

ADDRESS: 614 REXLEY AVE
Farmington N.M.

Petroleum Hydrocarbons (418.1) TRPH	
(MOD 8015) Diesel/Direct Inject	
(M8015) Gas/Purge & Grab	
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 (825/8270)	
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:	

SA-0202-ATR 2/20/02 1200 ATR

PLEASE FILL THIS FORM IN COMPLETELY.

PROJ NO: <u>2517000121</u>	(RUSH ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK ☐ NORMAL ☒	Signature: <u>[Signature]</u> Time: <u>1500</u>	Signature: _____ Time: _____
PROJ NAME: <u>E25 GW project</u>	CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER ☐	Printed Name: <u>Heidi Maez</u> Date: <u>2-20-02</u>	Printed Name: _____ Date: _____
P.O. NO. _____	METHANOL PRESERVATION ☐	Company: <u>AMEC</u>	Company: _____
SHIPPED VIA: <u>Overland</u>	COMMENTS: <u>FIXED FEE</u>	Signature: _____ Time: _____	Signature: _____ Time: _____
<u>JAG-uez GC C1</u> <u>(70995)</u>		Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
		Company: _____	Company: _____

amec[®][illegible]

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

Comments.

Signature.

Jacey McCurtain

Date _____

02-08-02

WELL OBSERVATION DATA

amec

Project Name: EPFS Gw Project

Project No.: 1517022121

Project Mngr: LISA WILSON

Task 1

Client Co.: EL Paso Field Services

Date. 1-9-01

Site Name: JAGGED GC #C1 (70995)

[illegible]

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

Comments: _____

Signature: Christ-May Date: 1-9-02

Date: 1-9-02

APPENDIX E

2002

LABORATORY REPORTS FOR
GROUNDWATER SAMPLES

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021106AL01
Page 1 of 1
Air Bill No. 8303816760

MWH
Phone (801) 417-3200 FAX (801) 617-4200
MWH Contact Brian Butters
Project San Juan River Basin
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									
							STEX GW-448 8021B	Alkalinity SM 2320B	TDS USEPA 100.1	NM WQCC Metals SW-445 8010B & 7470A	Cadmium GW-446 8010B	Arson USEPA 300.0	Nitrate USEPA 300.0	Nitrite USEPA 300.0		
JA 220013	MW-6		11-6-02	1542	WG	B	✓									
JA	MW-1		11-6-02	1448	WG	B	✓									
JA	MW-3		11-6-02	1435	WG	B	✓									
JA	MW-4		11-6-02	1505	WG	B	✓									
JA	MW-5		11-6-02	1405	WG	B	✓									
JA	MW-2		11-6-02	1345	WG	B	✓									
JA	R-1		11-6-02	1245	WG	B	✓									
JA	R-2		11-6-02	1210	WG	B	✓									
JA	R-3		11-6-02	1145	WG	B	✓									
JA	R-4		11-6-02	1106	WG	B	✓									
JA	R-6		11-6-02	1045	WG	B	✓									
JA	R-5		11-6-02	1015	WG	B	✓									
TB02110601			11-6-02				✓									

(a) Matrix: AA - Air
SO - Soil
WS - Surface Water
WG - Ground Water
WV - Wastewater

WQ - Trip Blank/
Equipment Blanks

(b) Sampling Technique:
Composites=C
Grab=G
Hand Auger=HA

Submersible Pump=SP
Bladder Pump=BP
Bailer=B
Wellhead Faucet=WF
Hydroponch=HP

Location IDs:
Groundwater Sites=GW
Bios=B1
Jaquez=JA

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

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

Discrepancies Between Sample Labels and COC Record?

Y N
Notes:

Relinquished by/Signature	Received by/Signature	Date	Time
<u>Ashley Lowe / ASE</u>		11-7-02	4:00

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 021106ALD1
Page 1 of 1
Air Bill No. 826381676602

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Butters
Project San Juan River Basin
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 6021B	Alkalinity SM 2320B	TDS USEPA 160.1	NM WQCC Metals SW-846 6010B & 7470A	Calcium SW-846 6010B	Antimony USEPA 300.0	Nitrate USEPA 300.0	Nitrite USEPA 300.0		
JA APCL	MW-6		11-6-02	1542	WG	B	✓									
JA	MW-1		11-6-02	1448	WG	B	✓									
JA	MW-3		11-6-02	1435	WG	B	✓									
JA	MW-4		11-6-02	1505	WG	B	✓									
JA	MW-5		11-6-02	1405	WG	B	✓									
JA	MW-2		11-6-02	1345	WG	B	✓									
JA	R-1		11-6-02	1245	WG	B	✓									
JA	R-2		11-6-02	1210	WG	B	✓									
JA	R-3		11-6-02	1145	WG	B	✓									
JA	R-4		11-6-02	1106	WG	B	✓									
JA	R-6		11-6-02	1045	WG	B	✓									
JA	R-5		11-6-02	1015	WG	B	✓									
TB02110601			11-6-02				✓									

(a) Matrix: AA - Air
SO - Soil WQ - Trip Blank/
WS - Surface Water Equipment Blanks
WG - Ground Water WW - Wastewater

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

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

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:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley Lowe / AESE	APCL	11-7-02	4:00
		11/8/02	1000

Logged 11-14-02

6019

Applied P & Ch Laboratory

13700 Magnolia Ave., Chino CA 91710

Tel: (909) 580-1828 Fax: (909) 590-1498

Sample Receiving Checklist

APCL ServiceID:

6019

Client Name/Project:

San Juan

1. Sample Arrival

Date/Time Received 11/8/02 1000 Date/Time Opened 11/8/02 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 Lane
☐ Project ID? ☒ Analyses Clear? ☐ Hold Samples? #on Hold # Received 12
☐ 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 3.2

(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^V 24hr ☐ NO₃⁻ 48hr ☐ BOD 48hr
☐ Cl₂ ASAP ☐ Turbidity 48hr ☐ DO ASAP ☐ Fe(II) ASAP
☐ HT Expired? ☐ Client notified?

6. Sample Container Condition

☒ Intact? ☐ Broken? ☐ Documented? Number:
 Type: ☐ plastic ☒ 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 H₂O ☐ Other Liq ☐ Soil ☐ Wipe ☐ Polymer ☐ Air ☐ Other:
☒ Ground H₂O ☐ 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:) Data/Time:

Received/Checked by: Date: 8 Nov 2002 Time: 9:54 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.

Document File: [local:exfiles]empcl.htm

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

Sample Login: Check List

02-06019 (0984_ 992) (2721900_ 992)

11/11/02

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 Basin
		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 Wandland
	Receiving Date/Time:	11/08/02 1000
	GOC No.	
☐ Shipping Information	Shipping Company	Express
	Packing Information:	Cooler/Ice Chest
	Cooler Temperature:	3.2 °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 APCL Sub-ID	Sample ID	Matrix	Cont. tainer	Preser. vative	Vol. ml Am. g	# of Replica	Condition G. I., R	Collected mmddyy	Hold ?	Composite Group	TAI Days
1	JA MW-6	VOA	02-06019-6	W	V	C	40	2	G	110602	N	0	7 ☐
2	JA MW-1	VOA	02-06019-1	W	V	C	40	2	G	110602	N	0	7 ☐
3	JA MW-3	VOA	02-06019-3	W	V	C	40	2	G	110602	N	0	7 ☐
4	JA MW-4	VOA	02-06019-4	W	V	C	40	2	G	110602	N	0	7 ☐
5	JA MW-5	VOA	02-06019-5	W	V	C	40	2	G	110602	N	0	7 ☐
6	JA MW-2	VOA	02-06019-2	W	V	C	40	2	G	110602	N	0	7 ☐
7	JA R-1	VOA	02-06019-7	W	V	C	40	2	G	110602	N	0	7 ☐
8	JA R-2	VOA	02-06019-8	W	V	C	40	2	G	110602	N	0	7 ☐
9	JA R-3	VOA	02-06019-9	W	V	C	40	2	G	110602	N	0	7 ☐
10	JA R-4	VOA	02-06019-10	W	V	C	40	2	G	110602	N	0	7 ☐
11	JA R-6	VOA	02-06019-12	W	V	C	40	2	G	110602	N	0	7 ☐
12	JA R-5	VOA	02-06019-11	W	V	C	40	2	G	110602	N	0	7 ☐
13	TH02110601	VOA	02-06019-13	W	V	C	40	2	G	110602	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	JA MW-6	VOA	02-06019-6	W	X	☐
2	JA MW-1	VOA	02-06019-1	W	X	☐
3	JA MW-3	VOA	02-06019-3	W	X	☐
4	JA MW-4	VOA	02-06019-4	W	X	☐
5	JA MW-5	VOA	02-06019-5	W	X	☐
6	JA MW-2	VOA	02-06019-2	W	X	☐
7	JA R-1	VOA	02-06019-7	W	X	☐
8	JA R-2	VOA	02-06019-8	W	X	☐
9	JA R-3	VOA	02-06019-9	W	X	☐
10	JA R-4	VOA	02-06019-10	W	X	☐
11	JA R-6	VOA	02-06019-12	W	X	☐
12	JA R-5	VOA	02-06019-11	W	X	☐
13	TH02110601	VOA	02-06019-13	W	X	☐

Login By En-Yu Paul KouCheck By WLB

DATA VALIDATION WORKSHEET

(Page 1 of 3)

Analytical Method/Analytes:	SW-846 8021B (BTEX)	Sample Collection Date(s):	11/06/02
Laboratory:	APCL	MWH Job Number:	EPC-SJRB (Jaquez)
Batch Identification:	02-06019	Matrix:	Water
MS/MSD Parent(s) ^(a) :	02-06019-01	Field Replicate Parent(s):	None
Validation Complete:		12-10-02 (Date/Signature)	

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	Jaquez	MW-1	02-06019-01	Y	UB	m/p-Xylene @ 1T µg/l
1	Jaquez	MW-2	02-06019-02	Y	UB UB	Ethylbenzene @ 0.8 µg/l m/p-Xylene @ 0.7T µg/l
1	Jaquez	MW-3	02-06019-03	Y	UB	m/p-Xylene @ 0.5T µg/l
1	Jaquez	MW-4	02-06019-04	Y	UB	m/p-Xylene @ 0.7T µg/l
1	Jaquez	MW-5	02-06019-05	Y	UB	m/p-Xylene @ 0.7T µg/l
1	Jaquez	MW-6	02-06019-06	Y	UB UB	Ethylbenzene @ 1.1 µg/l m/p-Xylene @ 1 µg/l
1	Jaquez	R-1	02-06019-07	Y	UB UB	Ethylbenzene @ 1.1 µg/l m/p-Xylene @ 2 µg/l
1	Jaquez	R-2	02-06019-08	Y	UB B	Ethylbenzene @ 1.6 µg/l m/p-Xylene @ 6.1 µg/l
1	Jaquez	R-3	02-06019-09	Y	UB	m/p-Xylene @ 0.8T µg/l
1	Jaquez	R-4	02-06019-10		UB B	Ethylbenzene @ 0.9 µg/l m/p-Xylene @ 14 µg/l
1	Jaquez	R-5	02-06019-11		UB	m/p-Xylene @ 0.8T µg/l
1	Jaquez	R-6	02-06019-12		UB	m/p-Xylene @ 0.9T µg/l
1	QC	TB02110601	02-06019-13			Ethylbenzene @ 0.9 µg/l m/p-Xylene @ 1 µg/l

DATA VALIDATION WORKSHEET

(Page 2 of 3)

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

Laboratory: APCL Batch Identification: 02-06019

Validation Criteria								
Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	R-1	R-2
Lab ID	02-06019-01	02-06019-02	02-06019-03	02-06019-04	02-06019-05	02-06019-06	02-06019-07	02-06019-08
Hardcopy vs. Chain-of-Custody	A	A	A	A	A	A	A	A
Holding Time	A	A	A	A	A	A	A	A
Analyte List	A	A	A	A	A	A	A	A
Reporting Limits	A	A	A	A	A	A	A	A
Method Blank	A	A	A	A	A	A	A	A
Trip Blank	A ¹	A ¹	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	N/A	N/A
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Initial Calibration	N	N	N	N	N	N	N	N
Initial Calibration Verification (ICV)	N	N	N	N	N	N	N	N
Continuing Calibration Verification (CCV)	A	A	A	A	A	A	A	A
Laboratory Control Sample (LCS)	A	A	A	A	A	A	A	A
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N	N	N	N
Matrix Spike/Matrix Spike Dup. (MS/MSD)	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Surrogate Spike Recovery	A	A	A	A	A	A	A	A
Retention Time Window	N	N	N	N	N	N	N	N
Injection Time(s)	N	N	N	N	N	N	N	N
EDD vs. Hardcopy	N	N	N	N	N	N	N	N
EDD vs. Chain of Custody	N	N	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

DATA VALIDATION WORKSHEET

(Page 3 of 3)

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

Laboratory: APCL Batch Identification: 02-06019

Validation Criteria	R-3	R-4	R-5	R-6	TB 02110601			
Sample ID								
Lab ID	02-06019-09	02-06019-10	02-06019-11	02-06019-12	02-06019-13			
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	N/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 @ 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) 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 Juan River Basin

Chain of Custody ID 021106AL01
 Page 1 of 1
 Air Bill No. 836381676602

MWH

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

MWH Contact Brian Butters

Project San Juan River Basin

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				
JA APCL	MW-6		11-6-02	1542	WG	B	✓											
JA	MW-1		11-6-02	1448	WG	B	✓											
JA	MW-3		11-6-02	1435	WG	B	✓											
JA	MW-4		11-6-02	1505	WG	B	✓											
JA	MW-5		11-6-02	1405	WG	B	✓											
JA	MW-2		11-6-02	1345	WG	B	✓											
JA	R-1		11-6-02	1245	WG	B	✓											
JA	R-2		11-6-02	1210	WG	B	✓											
JA	R-3		11-6-02	1145	WG	B	✓											
JA	R-4		11-6-02	1106	WG	B	✓											
JA	R-6		11-6-02	1045	WG	B	✓											
JA	R-5		11-6-02	1015	WG	B	✓											
TB02110601			11-6-02				✓											

6019

(a) Matrix: AA - Air
 SO - Soil WQ - Trip Blank/
 WS - Surface Water Equipment Blanks
 WG - Ground Water WW - Wastewater

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

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

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:

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley & Lowe / AESE	[Signature] APCL	11-7-02	4:00
		11/8/02	1000

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 #: 801-026019

Collected by: Ashley Lowe

Collected on: 11/06/02

Received: 11/08/02

Extracted: N/A

Tested: 11/13/02

Reported: 11/15/02

Sample Description: Water

Project Description: 220013 San Juan River Basin

Analysis of Water Samples

Jaquez

Component Analyzed	Method	Unit	PQL	Analysis Result			
				JA MW-1 02-06019-1	JA MW-2 02-06019-2	JA MW-3 02-06019-3	JA MW-4 02-06019-4
BTXE							
Dilution Factor				1	1	1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5	0.7	1.2
ETHYLBENZENE	8021B	µg/L	0.5	<0.5	0.8	<0.5	<0.5
TOLUENE	8021B	µg/L	0.5	<0.5	<0.5	0.4J	<0.5
O-XYLENE	8021B	µg/L	0.5	<0.5	<0.5	0.8	<0.5
M,P-XYLENE	8021B	µg/L	1	1J	0.7J	0.5J	0.7J

Component Analyzed	Method	Unit	PQL	Analysis Result		
				JA MW-5 02-06019-5	JA MW-6 02-06019-6	JA R-1 02-06019-7
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5	6.0
ETHYLBENZENE	8021B	µg/L	0.5	<0.5	1.1	1.1
TOLUENE	8021B	µg/L	0.5	<0.5	0.4J	0.5J
O-XYLENE	8021B	µg/L	0.5	<0.5	0.3J	0.4J
M,P-XYLENE	8021B	µg/L	1	0.7J	1	2

Component Analyzed	Method	Unit	PQL	Analysis Result		
				JA R-2 02-06019-8	JA R-3 02-06019-9	JA R-4 02-06019-10
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	19.8	<0.5	15.8
ETHYLBENZENE	8021B	µg/L	0.5	1.6	<0.5	0.9
TOLUENE	8021B	µg/L	0.5	0.6	<0.5	0.6
O-XYLENE	8021B	µg/L	0.5	1.5	<0.5	6.9
M,P-XYLENE	8021B	µg/L	1	6.1	0.8J	14

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result		
				JA R-5	JA R-6	TB02110601
				02-06019-11	02-06019-12	02-06019-13
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	<0.5	<0.5	0.9
TOLUENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5
O-XYLENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5
M,P-XYLENE	8021B	µg/L	1	0.8J	0.9J	1

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

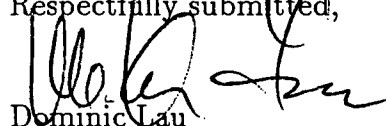
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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 #: 801-026019

Collected by: Ashley Lowe

Collected on: 11/06/02

Sample description:

Water

Project: San Juan River Basin /220013

Received: 11/08/02

Tested: 11/13/02

Reported: 12/03/02

Analysis of Water

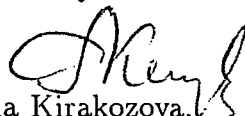
801-026019QC

Component Name	Analysis Batch #	CCV ($\mu\text{g/L}$)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	%Diff
BTXE												
Benzene	02G4657	100	102	N.D.	$\mu\text{g/L}$	18.0	88	88	86	2	68-130	31
Toluene	02G4657	100	102	N.D.	$\mu\text{g/L}$	70.0	91	94	97	3	66-133	33
Ethylbenzene	02G4657	100	107	N.D.	$\mu\text{g/L}$	18.0	96	100	103	3	65-134	35
m/p-Xylene	02G4657	200	99	N.D.	$\mu\text{g/L}$	70.0	93	94	98	4	65-134	35
o-Xylene	02G4657	100	100	N.D.	$\mu\text{g/L}$	25.0	92	96	100	4	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:

026019

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix:

Water

Batch No: 02G4657

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G4657-LCS-01	87	0
2		02G4657-LSD-01	85	0
3		02G4657-MB-02	88	0
4	TB02110601	02-6019-13	90	0
5	JA MW-1	02-6019-1	89	0
6	JA MW-2	02-6019-2	89	0
7	JA MW-3	02-6019-3	92	0
8	JA MW-4	02-6019-4	92	0
9	JA MW-5	02-6019-5	89	0
10	JA MW-6	02-6019-6	90	0
11	JA R-1	02-6019-7	92	0
12	JA R-2	02-6019-8	93	0
13	JA R-3	02-6019-9	88	0
14	JA R-4	02-6019-10	91	0
15	JA R-5	02-6019-11	89	0
16	JA R-6	02-6019-12	89	0
17	JA MW-1	02-6019-1MS	87	0
18	JA MW-1	02-6019-1MSD	88	0
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



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 Butters
10619 South Jordan Gateway
Salt Lake City UT 84095
Tel: (801) 617-3200 Fax: (801) 617-4200

Service ID #: 801-024334
Collected by: Ashley Lowe
Collected on: 08/08/02
Sample Description: Water
Project Description: 220013 San Juan River Basin

Received: 08/12/02
Extracted: NA
Tested: 08/13/02
Reported: 08/20/02

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				JA R1	JA R2	JA R3
				02-04334-1	02-04334-2	02-04334-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	0.4J	11.4	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	1.2	2.0	0.9
TOLUENE	8021B	µg/L	0.5	2.5	0.6	0.5J
O-XYLENE	8021B	µg/L	0.5	0.4J	1.8	<0.5
M,P-XYLENE	8021B	µg/L	1	2	7.5	1J

Component Analyzed	Method	Unit	PQL	Analysis Result			
				JA R4	JA R5	JA R6	Trip Blank
				02-04334-4	02-04334-5	02-04334-6	02-04334-7
BTXE							
Dilution Factor				1	1	1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	0.8	0.9	0.9	0.9
TOLUENE	8021B	µg/L	0.5	0.4J	0.4J	0.4J	0.4J
O-XYLENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
M,P-XYLENE	8021B	µg/L	1	0.7J	0.9J	1J	0.9J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

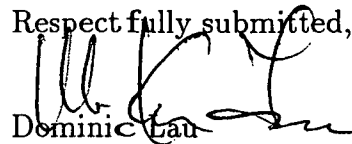
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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

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

Chain of Custody ID 09/09/02
Page 1 of 1
Air Bill No. 834715209954

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

MWH Contact Brian Butters

Project San Juan River Basin

Project Number 220013

Date Due Normal

Sampler's Name Ashley Lowe
(print clearly)

[illegible]

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

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley Lowe / AESE	 APCU	08/09/02	9:00
		8/12/02	

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

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 #: 801-024334

Collected by: Ashley Lowe

Collected on: 08/08/02

Sample description:

Water

Project: San Juan River Basin /2200 13

Received: 08/12/02

Tested: 08/13/02

Reported: 09/03/02

Analysis of Water

801-024334QC

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	02G3506	100	94	N.D.	µg/L	18.0	87	88	88	0	68-130	31
Toluene	02G3506	100	96	N.D.	µg/L	70.0	92	97	97	1	66-133	33
Ethylbenzene	02G3506	100	100	N.D.	µg/L	18.0	98	97	97	0	65-134	35
m/p-Xylene	02G3506	200	92	N.D.	µg/L	70.0	94	95	96	1	65-134	35
o-Xylene	02G3506	100	93	N.D.	µg/L	25.0	94	98	98	1	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:

024334

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix:

Water

Batch No: 02G3506

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3506-LCS-01	85	0
2		02G3506-LSD-01	86	0
3		02G3506-MB-02	88	0
4	TRIP BLANK	02-4334-7	93	0
5	JA R6	02-4334-6MS	87	0
6	JA R6	02-4334-6MSD	88	0
7	JA R1	02-4334-1	93	0
8	JA R2	02-4334-2	94	0
9	JA R3	02-4334-3	89	0
10	JA R4	02-4334-4	93	0
11	JA R5	02-4334-5	90	0
12	JA R6	02-4334-6	91	0
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

DLI 03 2002 THU 03:54 PM HHH
THU NOV 01 01:17:200
11 02

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 #: 801-024334

Collected by: Ashley Lowe

Collected on: 08/08/02

Sample Description: Water

Project Description: 220013

Received: 08/12/02

Extracted: NA

Tested: 08/13/02

Reported: 08/20/02

San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result		
				JA R1	JA R2	JA R3
				02-04334-1	02-04334-2	02-04334-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	0.4J	11.4	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	1.2	2.0	0.9
TOLUENE	8021B	µg/L	0.5	2.5	0.6	0.5J
O-XYLENE	8021B	µg/L	0.5	0.4J	1.8	<0.5
M,P-XYLENE	8021B	µg/L	1	2	7.5	1J

Component Analyzed	Method	Unit	PQL	Analysis Result			
				JA R4	JA R5	JA R6	Trip Blank
				02-04334-4	02-04334-5	02-04334-6	02-04334-7
BTXE							
Dilution Factor				1	1	1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	0.8	0.9	0.9	0.9
TOLUENE	8021B	µg/L	0.5	0.4J	0.4J	0.4J	0.4J
O-XYLENE	8021B	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
M,P-XYLENE	8021B	µg/L	1	0.7J	0.9J	1J	0.9J

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

ORDL: 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



PINNACLE
LABORATORIES

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Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **205205**
June 12, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JAQUEZ
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 05/24/02 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.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

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

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Phone (505) 344-3777
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CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE ID : 205205
DATE RECEIVED : 05/24/02
REPORT DATE : 06/12/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
05205 - 01	JAQ-0205-M1	AQUEOUS	05/22/02
05205 - 02	JAQ-0205-M2	AQUEOUS	05/22/02
05205 - 03	JAQ-0205-M3	AQUEOUS	05/22/02
05205 - 04	JAQ-0205-M4	AQUEOUS	05/22/02
05205 - 05	JAQ-0205-M5	AQUEOUS	05/22/02
05205 - 06	JAQ-0205-M6	AQUEOUS	05/22/02
05205 - 07	JAQ-0205-MS1	AQUEOUS	05/22/02

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 205205

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JAQ-0205-M1	AQUEOUS	05/22/02	NA	05/28/02	1
02	JAQ-0205-M2	AQUEOUS	05/22/02	NA	05/28/02	1
03	JAQ-0205-M3	AQUEOUS	05/22/02	NA	05/28/02	1
PARAMETER		DET. LIMIT	UNITS	JAQ-0205-M1	JAQ-0205-M2	JAQ-0205-M3
BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	< 1.0	1.0
METHYL-t-BUTYL ETHER		2.5	UG/L	< 2.5	< 2.5	< 2.5

SURROGATE:
BROMOFLUOROBENZENE (%) 106 101 97
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A

PINNACLE
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 205205

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
14	JAQ-0205-M4	AQUEOUS	05/22/02	NA	05/28/02	1
15	JAQ-0205-M5	AQUEOUS	05/22/02	NA	05/28/02	1
16	JAQ-0205-M6	AQUEOUS	05/22/02	NA	05/28/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0205-M4	JAQ-0205-M5	JAQ-0205-M6
BENZENE	0.5	UG/L	51	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
MONOXYLENES	1.0	UG/L	2.2	< 1.0	< 1.0

SURROGATE:

BROMOFLUOROBENZENE (%)	98	100	104
SURROGATE LIMITS (80 - 120)			

CHEMIST NOTES:

N/A

PINNACLE
LABORATORIES

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 205205

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
07	JAQ-0205-MS1	AQUEOUS	05/22/02	NA	05/28/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0205-MS1
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 99
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A

PINNACLE
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205205
LAB I. D.	: 052802	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ		

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

URROGATE:
ROMOFLUOROBENZENE (%) 98
URROGATE LIMITS: (80 - 120)
H T NOTES:
/A

PINNACLE
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Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205205
BATCH #	: 052802	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ	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	21.6	108	21.2	106	2	(80 - 120)	20
TOLUENE	<0.5	20.0	21.8	109	21.4	107	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.2	111	21.8	109	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	68.5	114	67.3	112	2	(80 - 120)	20

ANALYST NOTES:
N/A

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

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

↑
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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205205
ISMSD #	: 205205-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ	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	20.7	104	21.2	106	2	(80 - 120)	20
TOLUENE	<0.5	20.0	21.1	106	21.6	108	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.5	108	22.1	111	3	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	66.3	111	68.2	114	3	(80 - 120)	20

ANALYST NOTES:
I/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
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Pinnacle Lab ID number **205206**
June 06, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JAQUEZ G.C. #C1
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 05/24/02 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

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ G.C. #C1

PINNACLE ID : 205206
DATE RECEIVED : 05/24/02
REPORT DATE : 06/06/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
205206 - 01	JAQ-0205-R1	AQUEOUS	05/23/02
205206 - 02	JAQ-0205-R2	AQUEOUS	05/23/02
205206 - 03	JAQ-0205-R3	AQUEOUS	05/23/02
205206 - 04	JAQ-0205-R4	AQUEOUS	05/23/02
205206 - 05	JAQ-0205-R5	AQUEOUS	05/23/02
205206 - 06	JAQ-0205-R6	AQUEOUS	05/23/02

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ G.C. #C1

PINNACLE I.D.: 205206

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	JAQ-0205-R1	AQUEOUS	05/23/02	NA	05/28/02	1
2	JAQ-0205-R2	AQUEOUS	05/23/02	NA	05/28/02	1
3	JAQ-0205-R3	AQUEOUS	05/23/02	NA	05/28/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0205-R1	JAQ-0205-R2	JAQ-0205-R3
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
OLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	2.4	< 0.5
OT XYLENES	1.0	UG/L	< 1.0	30	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 102 115 103
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
I/A

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ G.C. #C1

PINNACLE I.D.: 205206

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	JAQ-0205-R4	AQUEOUS	05/23/02	NA	05/28/02	1
05	JAQ-0205-R5	AQUEOUS	05/23/02	NA	05/28/02	1
06	JAQ-0205-R6	AQUEOUS	05/23/02	NA	05/28/02	1
PARAMETER		DET. LIMIT	UNITS	JAQ-0205-R4	JAQ-0205-R5	JAQ-0205-R6
BENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE XYLENES		1.0	UG/L	< 1.0	< 1.0	< 1.0

SURROGATE:

BROMOFLUOROBENZENE (%)	103	100	99
SURROGATE LIMITS (80 - 120)			

CHEMIST NOTES:

N/A

↑
PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205206
BLANK I. D.	: 052802	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ G.C. #C1		

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

SURROGATE:

3-BROMOFLUOROBENZENE (%)	98
--------------------------	----

3-BROMOFLUOROBENZENE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A

PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205206
ATCH #	: 052802	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ G.C. #C1	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	21.6	108	21.2	106	2	(80 - 120)	20
OLUENE	<0.5	20.0	21.8	109	21.4	107	2	(80 - 120)	20
THYLBENZENE	<0.5	20.0	22.2	111	21.8	109	2	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	68.5	114	67.3	112	2	(80 - 120)	20

HEAT NOTES:
/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
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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 205206
ISMSD #	: 205205-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 05/28/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ G.C. #C1	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	20.7	104	21.2	106	2	(80 - 120)	20
TOLUENE	<0.5	20.0	21.1	106	21.6	108	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.5	108	22.1	111	3	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	66.3	111	68.2	114	3	(80 - 120)	20

ANALYST NOTES:
N/A

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

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

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: K17000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: <i>Chris 19M</i> Time: 1530		Signature: _____ Time: _____	
PROJ. NAME: <i>EpFS G.W. proj.</i>		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
P.O. NO.:		METHANOL PRESERVATION ☐		<i>Chris A. Maerz</i> 5-23-02			
SHIPPED VIA: <i>Grayhound</i>		COMMENTS: ☐ FIXED FEE		Company: <i>AMEC</i> See reverse side (Forc. Majure)		Company: _____	
SAMPLE RECEIPT		<i>Jaquez G.C. #C1 meter # (20995)</i>		RECEIVED BY:		RECEIVED BY: (LAB) 2.	
NO. CONTAINERS: <i>12</i>				Signature: _____ Time: _____		Signature: <i>Francine Torrio</i> Time: 1030	
CUSTODY SEALS: <i>1 (NA)</i>				Printed Name: _____ Date: _____		Printed Name: <i>Francine Torrio</i> Date: 5/24/02	
RECEIVED INTACT: <i>✓</i>				Company: _____		Pinnacle Laboratories Inc.	
BLUE/CECE: <i>4758</i>							



SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-05532

Received: 25 MAY 02

Reported: 05 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 205205

Project: 205205, AMEC-JAQUEZ

Sampled By: Client

Code: 09182065

Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
05532-1	JAQ-0205-M3/205205-03	05-22-02/12:20
05532-2	JAQ-0205-M4/205205-04	05-22-02/12:15
PARAMETER	05532-1	05532-2
Nitrate + Nitrite-N (353.2), mg/l	0.31	16
Dilution Factor	1	5
Analysis Date	06.03.02	06.03.02
Batch ID	N3W29B	N3W29B
Analyst	CR	CR

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-05532

Received: 25 MAY 02

Reported: 05 JUN 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Client PO. No.: 205205

Project: 205205, AMEC-JAQUEZ

Sampled By: Client

Code: 09182065

Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
05532-3	Method Blank			
05532-4	Lab Control Standard % Recovery			
05532-5	Matrix Spike % Recovery			
05532-6	Matrix Spike Duplicate % Recovery			
PARAMETER	05532-3	05532-4	05532-5	05532-6
Nitrate + Nitrite-N (353.2), mg/l	<0.10	107 %	100 %	105 %
Dilution Factor	1	---	---	---
Analysis Date	06.03.02	---	---	---
Batch ID	N3W29B	N3W29B	N3W29B	N3W29B
Analyst	CR	---	---	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data from any samples that do not meet client, federal, or state sample acceptance criteria (collection, preservation, or holding time) will be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF).


Lance Larson, Project Manager

Final Page Of Report

STL Pensacola Data Qualifiers for Final Report

B	The analyte was detected in the associated method blank and in the client's sample.
C	The compound has been quantitated against a one point calibration.
D	Recovery is not calculable due to dilution.
E	Estimated value because the analyte concentration exceeds the upper calibration range of the instrument or method.
I	Estimated value because the analyte concentration is less than the lower calibration range of the instrument but is at the method detection limit or greater than the method detection limit.
H	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit.
J1	A sample surrogate or an LCS target compound recovered above the upper control limit (UCL). Compounds qualified with a J1 may be biased high.
J2	A sample surrogate or an LCS target compound recovered outside the lower control limit (LCL). Compounds qualified with a J2 may be biased low.
M1	A matrix effect was present.
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers).
R1	Internal standard area exceeds the acceptance criteria
R2	Calibration verification exceeds the acceptance criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not included in the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The analyte was not detected at or above the MDL or the RL, whichever is entered next to the "U" value.
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.

When the laboratory receives a sample that does not meet EPA requirements for sample collection, preservation or holding time, the laboratory is required to reject the samples. The client must be notified and asked whether the lab should proceed with analysis. Data from any samples that do not meet sample acceptance criteria (collection, preservation and holding time), must be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF) in an unambiguous manner clearly defining the nature and substance of the variation. NPDES samples from North Carolina that do not meet EPA requirements for sample collection, preservation or holding time are non-reportable for NPDES compliance monitoring.

Abbreviations

ND	Not Detected at or above the STL Pensacola reporting limit (RL)
NS	Not Submitted
NA	Not Applicable
MDL	STL Pensacola Method Detection Limit
RL	STL Pensacola Reporting Limit
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)

Florida Projects Inorganic/Organic

Refer to FL DEP 62-160.700(7); Table 7 Data Qualifier Codes. FL DEP Rule 62-160.670(1)(h) states that laboratories shall include the analytical result for each analysis with applicable data qualifiers. FL DEP Rule 62-160.700(7), Table 7 lists the FL DEP data qualifiers. FL DEP Rule 62-160.700(3), Table 3 lists the Florida sites which require data qualifiers.

AFCEE QAPP Projects

Refer to AFCEE QAPP for appropriate data qualifiers (AFCEE QAPP Version will be specified by client for the project).

Arizona DEQ Projects

Any qualified data submitted to Arizona DEQ (ADEQ) after January 1, 2001 must be designated using the Arizona Data Qualifiers as developed by the Arizona ELAC technical subcommittee. Refer to the ADEQ qualifier list.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers. CLP SOW to be followed must be specified to client.

STL PENSACOLA

Certifications, Memberships & Affiliations

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/02

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/11/03

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/20/03

California Department of Health Services, NELAP Laboratory ID No. 01128CA (Hazardous Waste and Wastewater), expires 03/31/02

Connecticut Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/03

Florida DOH, NELAP Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/02

Florida DEP/DOH CompQAP # 980156

Kansas Department of Health & Environment, NELAP Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/02

Kentucky NR&EPC, Laboratory ID No. 90043 (Drinking Water), expires 12/31/02.

Louisiana DEQ, LELAP, NELAP Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental), expires 6/30/02

Maryland DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/02

Massachusetts DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/02

Michigan Bureau of E&Occh, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/02

New Hampshire DES ELAP, NELAP Laboratory ID No. 250501 (Wastewater), expires 08/16/02

New Jersey DEP&E, NELAP Laboratory ID No. FL006 (Wastewater and Hazardous Waster), expires 06/30/02.

New York State Department of Health, NELAP Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 03/31/02

North Carolina DENR, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/02.

North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/02

Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/02

Pennsylvania Department of Environmental Resources, NELAP Laboratory ID No. 68-467 (Drinking Water & Wastewater), expires 12/01/02

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/02

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/02

Washington Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/02

West Virginia DOE, Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater), expires 04/30/02.

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704, expires April 1, 2004. Participant in AIHA sponsored Laboratory PAT Rounds

EPA ICR (Information Collection Rule) Approved Laboratory, Laboratory ID No. ICRFL031

Naval Facilities Engineering Services Center (NFESC), expires July 5, 2002.

United States Army Corps. of Engineers (USACE), MRD, expires July 5, 2002.

STL Pensacola also has a foreign soil permit to accept soils from locations other than the continental United States. Permit No. S-37599

certlist\condcert.lst revised 05/14/2002

STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: C205532 Date Received: S-25-02

- | | |
|---|--|
| <p>1. Was there a Chain of Custody? ☒ Yes ☐ No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? ☒ Yes ☐ No*</p> <p>3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP) ☒ Yes ☐ No* N/A</p> <p>4. Were all samples properly labeled and identified? ☒ Yes ☐ No*</p> <p>5. Did samples require splitting or compositing*? Yes* ☒ No</p> <p>Req By: PM Client Other*</p> <p>6. Were samples received in proper containers for analysis requested? ☒ Yes ☐ No*</p> <p>7. Were all sample containers received intact? ☒ Yes ☐ No*</p> | <p>8. Were samples checked for preservative? (Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* ☒ Yes ☐ No* N/A</p> <p>9. Is there sufficient volume for analysis requested? ☒ Yes ☐ No* N/A (Can)</p> <p>10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) ☒ Yes ☐ No*</p> <p>11. Is Headspace visible > ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes* ☐ No ☒ N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes ☐ No* ☒ N/A</p> <p>13. Was Project Manager notified of problems? (initials: _____) Yes ☐ No* ☒ N/A</p> |
|---|--|

Airbill Number(s): 12 878 168 44 4317 0385

Shipped By: UPS

Cooler Number(s): Client

Shipping Charges: N/A

Cooler Weight(s): 11 #

Cooler Temp(s) (°C): 4.0°C

CCKS

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: SAD Date: S-25-02 Logged By: pac Date: 5/25/02

- * Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O₂, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.
- * If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- * All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).
- * According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).



Pinnacle Laboratories, Inc.

Interlab Chain of Custody

Date: 5/24/02 Page: 1 of 1

Network Project Manager: Jacinta A. Tenorio					ANALYSIS REQUEST																				
Pinnacle Laboratories, Inc. 2709-D Pan American Freeway, NE Albuquerque, New Mexico 87107 (505) 344-3777 Fax (505) 344-4413 205532					Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry: Total NO ₂ /NO ₃	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
SAMPLE ID	DATE	TIME	MATRIX	LAB ID																					
Jaq-0205-M3/205205-03	5/22/02	1220	AQ	1							X														
Jaq-0205-M4/205205-04	"	1215	"	2							X														

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY: 1		RELINQUISHED BY: 2	
PROJECT #:	205205	Total Number of Containers		PENSACOLA - STL-FL	X	Signature:	Time:	Signature:	Time:
PROJ. NAME:	AMEC	Chain of Custody Seals		ESL - OR		Signature:	Time:	Signature:	Time:
QC LEVEL:	STD. IV	Received Intact?		STL - CT		Printed Name:	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - AZ		Printed Name:	Date:	Printed Name:	Date:
TAT:	STANDARD RUSHII	LAB NUMBER:		ATEL - MARION		Pinnacle Laboratories, Inc.		Company	
				ATEL - MELMORE		RECEIVED BY: 1		RECEIVED BY: 2	
DUE DATE:	6/7	COMMENTS:		BARRINGER		Signature:	Time:	Signature:	Time:
RUSH SURCHARGE:	-			ENVIRO TEST LABS		Signature:	Time:	Signature:	Time:
CLIENT DISCOUNT:	-			WCAS		Printed Name:	Date:	Printed Name:	Date:
SPECIAL CERTIFICATION				WOHL		Printed Name:	Date:	Printed Name:	Date:
REQUIRED: YES NO						Company		Company	

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1		RELINQUISHED BY: 2	
PROJ. NO.: 1617000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature] Time: 1530		Signature: [Signature] Time: [Blank]	
PROJ. NAME: EPFS GLW proj.		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Date: Chris AMAEZ 5-23-62		Printed Name: Date: [Blank]	
P.O. NO.:		METHANOL PRESERVATION ☐		Company: IMEC		Company: [Blank]	
SHIPPED VIA: Greyhound		COMMENTS: FIXED FEE ☐		See reverse side (Force Majeure)		[Blank]	
SAMPLE RECEIPT		JAEZ (70995)		RECEIVED BY: 1		RECEIVED BY: (LAB) 2	
NO. CONTAINERS: 18				Signature: [Signature] Time: [Blank]		Signature: [Signature] Time: 1630	
CUSTODY SEALS: YLN (NA)				Printed Name: Date: [Blank]		Printed Name: Date: Phancine Trivio 5/24/02	
RECEIVED INTACT: YES				Company: [Blank]		Pinnacle Laboratories Inc.	
BLUE ICE: 47°C				[Blank]		[Blank]	



PINNACLE
LABORATORIES

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

Pinnacle Lab ID number **202102**
March 20, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JAQUEZ G.C. CL
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 02/22/02 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	: 202102
PROJECT #	: 1517000121	DATE RECEIVED	: 02/22/02
PROJECT NAME	: JAQUEZ G.C. CL	REPORT DATE	: 03/20/02

ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
02102 - 01	JAQ-0202-R1	AQUEOUS	02/21/02
02102 - 02	JAQ-0202-R2	AQUEOUS	02/21/02
02102 - 03	JAQ-0202-R3	AQUEOUS	02/21/02
02102 - 04	JAQ-0202-R4	AQUEOUS	02/21/02
02102 - 05	JAQ-0202-R5	AQUEOUS	02/21/02
02102 - 06	JAQ-0202-R6	AQUEOUS	02/21/02

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GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ G.C. CL

PINNACLE I.D.: 202102

AMPLE			DATE	DATE	DATE	DIL.
J. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	JAQ-0202-R1	AQUEOUS	02/21/02	NA	02/25/02	1
2	JAQ-0202-R2	AQUEOUS	02/21/02	NA	02/25/02	1
3	JAQ-0202-R3	AQUEOUS	02/21/02	NA	02/25/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0202-R1	JAQ-0202-R2	JAQ-0202-R3
ENZENE	0.5	UG/L	23	< 20*	< 0.5
OLUENE	0.5	UG/L	1.3	1.0	< 0.5
THYLBENZENE	0.5	UG/L	2.1	3.1	< 0.5
XYLENES	1.0	UG/L	6.1	35	< 1.0

URROGATE:
ROMOFLUOROBENZENE (%) 94 94 90
URROGATE LIMITS (80 - 120)

HEMIST NOTES:

Due to significant interference, sample cannot be quantified below assigned value. Sample would require CMS for resolution.

GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ G.C. CL

PINNACLE I.D.: 202102

AMPLE			DATE	DATE	DATE	DIL.
J. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
4	JAQ-0202-R4	AQUEOUS	02/21/02	NA	02/25/02	1
5	JAQ-0202-R5	AQUEOUS	02/21/02	NA	02/25/02	1
6	JAQ-0202-R6	AQUEOUS	02/21/02	NA	02/25/02	1
PARAMETER		DET. LIMIT	UNITS	JAQ-0202-R4	JAQ-0202-R5	JAQ-0202-R6
BENZENE		0.5	UG/L	120	< 0.5	< 0.5
TOLUENE		0.5	UG/L	2.6	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	0.56	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	7.5	< 1.0	< 1.0

URROGATE:

ROMOFLUOROBENZENE (%)

94

93

87

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.	: 202102
ANK I. D.	: 022502	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/25/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: JAQUEZ G.C. CL		

PARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<1.0

URROGATE:
ROMOFLUOROBENZENE (%) 87
URROGATE LIMITS: (80 - 120)
HEAVY METALS:
/A

PINNACLE
LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 202102
ATCH #	: 022502	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/25/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: JAQUEZ G.C. CL	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD. LIMITS
ENZENE	<0.5	20.0	18.8	94	18.3	92	3	(80 - 120)	20
OLUENE	<0.5	20.0	18.9	95	17.9	90	5	(80 - 120)	20
THYLBENZENE	<0.5	20.0	17.9	90	17.3	87	3	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	55.7	93	53.6	89	4	(80 - 120)	20

HEAVY METALS NOTES:
/A

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

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

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 202102
MS/MSD #	: 202102-03	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/25/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ G.C. CL	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	19.1	96	22.0	110	14	(80 - 120)	20
TOLUENE	<0.5	20.0	18.8	94	25.7	129	31	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	18.3	92	20.5	103	11	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	56.6	94	63.1	105	11	(80 - 120)	20

CHEMIST NOTES:

The MSD spike recovery and the RPD for Toluene are out of criteria due to matrix interference.

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

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

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: LISA WINN

COMPANY: AMEC
ADDRESS: 2060 AETON place
Farmington NM. 87401
PHONE: (505) 327-7929
FAX: (505) 326-5741
BILL TO: SCOTT POPE
COMPANY: El Paso Field Services
ADDRESS: 614 Reilly AVE
Farmington NM.

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	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:	NUMB	CONTAINERS
JAQ-0202-R1	2-21-02	1410	H ₂ O	501		X																			2	2
JAQ-0202-R2	2-21-02	1340	H ₂ O	502		X																			2	2
JAQ-0202-R3	2-21-02	1300	H ₂ O	503		X																			2	2
JAQ-0202-R4	2-21-02	1140	H ₂ O	504		X																			2	2
JAQ-0202-R5	2-21-02	1210	H ₂ O	505		X																			2	2
JAQ-0202-R6	2-21-02	1100	H ₂ O	506		X																			2	2
TRIP BLANK	1126	1445	AB	507		X																			1	1

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.: 1517000121		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: [Signature]	Time: 1530	Signature:	Time:
PROJ. NAME: EPT5 GW. project		CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Chris A. Macz	Date: 2-21-02	Printed Name:	Date:
P.O. NO.:		METHANOL PRESERVATION ☐		Company: AMEC		Company:	
SHIPPED VIA: Greyhound		COMMENTS: FIXED FEE ☐		See reverse side (Force Majeure)			
SAMPLE RECEIPT				RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
NO. CONTAINERS: 12		JAQ uer2 G.C. CI (70995) TRIP BLANK received pathhold the		Signature:	Time:	Signature:	Time:
CUSTODY SEALS: DN/NA				Printed Name:	Date:	Printed Name:	Date:
RECEIVED INTACT: Y				Printed Name:	Date:	Printed Name:	Date:
BLUE ICE: 5-8				Company:		Company:	



PINNACLE
LABORATORIES

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

Pinnacle Lab ID number **202123**
March 18, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name JAQUEZ
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 02/27/02 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	: 202123
PROJECT #	: 1517000121	DATE RECEIVED	: 02/27/02
PROJECT NAME	: JAQUEZ	REPORT DATE	: 03/18/02
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
202123 - 01	JAQ-0202-M1	AQUEOUS	02/22/02
202123 - 02	JAQ-0202-M2	AQUEOUS	02/22/02
202123 - 03	JAQ-0202-M3	AQUEOUS	02/22/02
202123 - 04	JAQ-0202-M4	AQUEOUS	02/22/02
202123 - 05	JAQ-0202-M5	AQUEOUS	02/22/02
202123 - 06	JAQ-0202-M6	AQUEOUS	02/22/02
202123 - 07	JAQ-0202-MS1	AQUEOUS	02/22/02

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 202123

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JAQ-0202-M1	AQUEOUS	02/22/02	NA	02/27/02	1
02	JAQ-0202-M2	AQUEOUS	02/22/02	NA	02/27/02	1
03	JAQ-0202-M3	AQUEOUS	02/22/02	NA	02/27/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0202-M1	JAQ-0202-M2	JAQ-0202-M3
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
THYXYLENES	1.0	UG/L	< 1.0	< 1.0	1.1

SURROGATE:
BROMOFLUOROBENZENE (%) 87 94 98
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 202123

SAMPLE			DATE	DATE	DATE	DIL.
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
4	JAQ-0202-M4	AQUEOUS	02/22/02	NA	02/27/02	1
5	JAQ-0202-M5	AQUEOUS	02/22/02	NA	02/27/02	1
6	JAQ-0202-M6	AQUEOUS	02/22/02	NA	02/27/02	1
PARAMETER	DET. LIMIT		UNITS	JAQ-0202-M4	JAQ-0202-M5	JAQ-0202-M6
BENZENE	0.5		UG/L	34	< 0.5	< 0.5
OLUENE	0.5		UG/L	< 0.5	< 0.5	< 0.5
THYLBENZENE	0.5		UG/L	< 0.5	< 0.5	< 0.5
OT XYLENES	1.0		UG/L	3.4	< 1.0	< 1.0

CURROGATE:
ROMOFLUOROBENZENE (%) 93 87 92
CURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
//A

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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D.: 202123

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
07	JAQ-0202-MS1	AQUEOUS	02/22/02	NA	02/27/02	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0202-MS1
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	1.0	UG/L	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 94
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 202123
BLANK I. D.	: 022702	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/27/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ		

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

SURROGATE:

PERFLUOROBENZENE (%)

92

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 202123
BATCH #	: 022702	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 02/27/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: JAQUEZ	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	19.5	98	19.6	98	1	(80 - 120)	20
TOLUENE	<0.5	20.0	19.0	95	19.2	96	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	18.7	94	18.7	94	0	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	57.4	96	57.9	97	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST : EPA 8021 MODIFIED
MSMSD # : 202123-01
CLIENT : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : JAQUEZ

PINNACLE I.D. : 202123
DATE EXTRACTED : N/A
DATE ANALYZED : 02/27/02
SAMPLE MATRIX : AQUEOUS
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	20.1	101	19.5	98	3	(80 - 120)	20
TOLUENE	<0.5	20.0	19.7	99	19.1	96	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.2	96	18.7	94	3	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	59.2	99	57.5	96	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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



Enviro-Test Laboratories LLC.

Chemical Analysis Report

PINNACLE LABORATORIES, INC

Date: 13 MAR 2002

Attn: PROJECT MANAGER

2709D PAN AMERICAN FREEWAY NE

ALBUQUERQUE NM 87107

Lab Work Order #: L4707

Date Received: 01 MAR 2002

Project P.O. #: 202123

Project Reference: AMEC

Comments:

APPROVED BY: _____

Dave Demorest

Project Manager



Enviro • Test
LABORATORIES LLC

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0301

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



Sample Delivery Group Narrative

March 12, 2002

Customer: Pinnacle Laboratories, Inc.

ETL LLC Job Number: L4707

The following information is pertinent to the interpretation of the data.

The samples were received and analyzed without incident.

If you have any questions regarding the analysis of these samples, please call us at (307) 235-5741 or (800) 666-0306.



Michelle Puder
Project Manager

Chemical Analysis Report

Page: 2 of 4

PINNACLE LABORATORIES, INC
909D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: AMEC
Purchase Order: 202123

Report Date: 13-MAR-02
Work Order: L4707
Lab Sample ID: L4707-1
Client Sample ID: JAQ-0202-M3/202123-03
Date Collected: 22-FEB-02
Sampled By: CLIENT
Date Received: 01-MAR-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Nitrate+Nitrite-N	0.32		0.01		mg/L		R16507	11-MAR-02 11:30	AM



Enviro • Test
LABORATORIES LLC

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ENVIRO-TEST QC REPORT

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Page 1 of 2

Report Date: Mar. 13, 2002

Workorder: L4707

Contact: PROJECT MANAGER

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
<u>NO2NO3-CA</u>		<u>Water</u>					
<u>Batch</u>	<u>R16507</u>						
<u>WG12835-1</u>	<u>BLANK</u>						
Nitrate+Nitrite-N			<0.01		mg/L		11-MAR-02
<u>WG12835-3</u>	<u>DUP</u>	<u>L4704-2</u>					
Nitrate+Nitrite-N		0.01	0.01	RPD-NA	mg/L	RPD 9.5 20	11-MAR-02
<u>WG12835-2</u>	<u>LCS</u>						
Nitrate+Nitrite-N			91		%	Amount 226 80-120	11-MAR-02
<u>WG12835-4</u>	<u>MS</u>	<u>L4704-3</u>					
Nitrate+Nitrite-N			100		%	Amount 0.452 75-125	11-MAR-02

Product - Batch and Sample Number Relations:

NO2NO3-CA	R16507	1	L4707-1	L4707-2
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Enviro • Test
LABORATORIES LLC.

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0306

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



Chemical Analysis Report

PINNACLE LABORATORIES, INC
99D PAN AMERICAN FREEWAY NE
BUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: AMEC
Purchase Order: 202123

Page: 3 of 4

Report Date: 13-MAR-02
Work Order: L4707
Lab Sample ID: L4707-2
Client Sample ID: JAQ-0202-M4/202123-04
Date Collected: 22-FEB-02
Sampled By: CLIENT
Date Received: 05-MAR-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Nitrate+Nitrite-N	27.2		0.01		mg/L	25	R16507	11-MAR-02 11:30	AM

Reference Information

Page 2 of 2
Report Date: Mar. 13, 2002
Work Order L4707

The following is a description of Sample types that where applicable:

BLANK	Laboratory Blank
DUP	Duplicate
LCS	Laboratory Control Spike
MS	Matrix Spike

The following is a description of sample Qualifiers that where applicable:

RPD-NA	Relative Percent Difference Not Available due to DL
--------	---

Reference Information

Page: 4 of 4
Report Date: 13-MAR-02
Work Order: L4707

The following is the Description of sample Qualifiers where applicable:

The following Preparation/Extraction Methods were performed:

ETL Test Code and Matrix	Test Description	Methodology Reference (Based On)
NO2NO3-CA Water	Nitrate + Nitrite by AutoAnalyzer	

The following Analytical Methods were performed:

ETL Test Code and Matrix	Test Description	Methodology Reference (Based On)
NO2NO3-CA Water	Nitrate + Nitrite by AutoAnalyzer	EPA 353.2

Client	<u>Pinnacle</u>	Job Number	<u>L4707</u>
--------	-----------------	------------	--------------

Samples Shipped	<u>UPS</u>	Federal Express	Airborn:
Samples Hand Delivered	Client	ETL Lab Courier	Other:

*Air Bill #: <u>128781680143873027</u>	# of Packages Received: <u>1</u>
--	----------------------------------

	Yes	No	N/A	Comments
1. Chain - of - Custody present?	☒			If no, please fill one out.
2. Are the COC and sample labels legible?	☒			
3. Custody Seal on shipping container?		☒		
If yes, intact on shipping container?				
4. Custody seals on sample containers?		☒		
If yes, intact on sample container?				
5. Samples chilled?	☒			
Is temperature of cooler: $4 \pm 2^{\circ}\text{C}$?	☒			*Record temp: <u>+4°C</u>
6. Samples received intact (good condition)?	☒			
If volatiles required, any with headspace?				
7. Adequate sample volume provided?				
8. Samples preserved correctly?	☒			<u>Na₂S₂O₃, ZnAc, HNO₃, HCl</u>
Circle preservative types in shipment				<u>H₂SO₄</u> , <u>NaOH</u> , <u>Plain</u> , Other
9. Correct containers used?	☒			
10. Samples received within holding time?	☒			
11. Agreement between COC and sample labels?	☒			
12. Gamma Screen $\mu\text{R}/\text{Hr}$ @ surface within Bkg?	☒			FOR INTERNAL USE ONLY <u>6 Bkg</u>
13. Samples OK to release to Lab/Screening?	☒			

Additional Comments: _____

Sample Container (size/material): 4) 125 P

Received and inspected by: JKS

Date/Time: 3/5/02

* = for multiple packages, see attached page(s) for shipping numbers and temperatures.

APPENDIX F

SUMMARY OF HISTORICAL GROUNDWATER DATA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 1 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-1	N30974	08-Sep-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	N31062	05-Oct-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	N31245	11-Nov-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	N31389	16-Dec-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	940032	13-Jan-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	940239	10-Feb-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	940497	07-Mar-1994	<0.5	<0.5	<0.5	<0.5	N/A	ND	NA
M-1	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
M-1	941009	13-Jun-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-1	941262	07-Sep-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	941624	15-Dec-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	950103	09-Feb-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	950566	08-May-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	950899	25-Aug-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	951183	02-Nov-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	960099	05-Feb-1996	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-1	960483	28-May-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
M-1	960690	06-Aug-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
M-1	960906	28-Oct-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-1	961013	20-Nov-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-1	970128	19-Feb-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-1	970505	28-May-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-1	970920	21-Aug-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-1	971200	10-Nov-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-1	980168	18-Feb-1998	5.08	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-1	980408	19-May-1998	<1.0	<1.0	<1.0	<3.0	<6.0	ND	<0.1
M-1	990257	25-May-1999	0.5	0.5	0.5	1.5	3	ND	0.05

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 2 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-1	JQ0001MO-1-1	19-Jan-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0005-MW1	30-May-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0006-MW1	22-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0008-M1	22-Aug-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0011-M1	17-Nov-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0201-M1	14-Feb-2001	10	<0.5	<0.5	<0.5	10	ND	NA
M-1	JAQ-0105-MW1	31-May-2001	1	<0.5	<0.5	0.6	1.6	ND	NA
M-1	JAQ-0801-M1	21-Aug-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0111-M1	28-Nov-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0202-M1	22-Feb-2002	<0.5	<1.0	<0.5	<0.5	ND	ND	NA
M-1	JAQ-0205-M1	22-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
M-1	02-6019-1	06-Nov-2002	<0.5	<0.5	<0.5	1	1	ND	NA
M-2	N30975	08-Sep-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-2	N31063	05-Oct-1993	2	2	<2.0	<2.0	4	ND	NA
M-2	N31246	11-Nov-1993	2.3	2	<2.0	<2.0	4.3	ND	NA
M-2	N31390	16-Dec-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-2	940033	13-Jan-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-2	940240	10-Feb-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-2	940498	07-Mar-1994	<0.5	<0.5	<0.5	<0.5	N/A	ND	NA
M-2	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
M-2	941010	13-Jun-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-2	941263	07-Sep-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	941625	15-Dec-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	950104	09-Feb-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	950567	05-May-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	950900	25-Aug-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 3 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-2	951184	02-Nov-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	960100	05-Feb-1996	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-2	960484	28-May-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
M-2	960691	06-Aug-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
M-2	960907	28-Oct-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-2	961014	20-Nov-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-2	970129	19-Feb-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-2	970506	28-May-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-2	970921	21-Aug-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-2	971201	10-Nov-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-2	980169	18-Feb-1998	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-2	980409	19-May-1998	<1.0	<1.0	<1.0	<3.0	<6	ND	<0.1
M-2	990258	25-May-1999	0.5	0.5	0.5	1.5	3	ND	0.05
M-2	JQ0001MO-2-1	19-Jan-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0005-MW2	30-May-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0006-MW2	22-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0008-M2	22-Aug-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0011-M2	20-Nov-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0201-M2	14-Feb-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0105-MW2	31-May-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0801-M2	21-Aug-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0111-M2	28-Nov-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0202-M2	22-Feb-2002	<0.5	<1.0	<0.5	<0.5	ND	ND	NA
M-2	JAQ-0205-M2	22-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
M-2	02-6019-2	06-Nov-2002	<0.5	<0.5	<0.5	1	1	ND	NA
M-3	N30976	08-Sep-1993	116	<2.0	3	37.6	157	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 4 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-3	N31064	05-Oct-1993	306	<2.0	4	19	329	ND	NA
M-3	N31247	11-Nov-1993	8.4	5.3	<2.0	2.6	16	ND	NA
M-3	N31391	16-Dec-1993	42	<2.0	<2.0	<2.0	42	ND	NA
M-3	940034	13-Jan-1994	19	2.1	<2.0	<2.0	21	ND	NA
M-3	940241	10-Feb-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-3	940499	07-Mar-1994	<0.5	<0.5	<0.5	2.5	3	ND	NA
M-3	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
M-3	941011	13-Jun-1994	3.65	<2.0	<2.0	<2.0	4	ND	NA
M-3	941264	07-Sep-1994	2.87	<2.5	<2.5	2.5	5	ND	NA
M-3	941626	15-Dec-1994	<2.5	<2.5	<2.5	5.61	6	ND	NA
M-3	950105	09-Feb-1995	11.4	<2.5	<2.5	<2.5	11	ND	NA
M-3	950568	08-May-1995	180	67.2	<2.5	53.9	301	ND	NA
M-3	950901	25-Aug-1995	11.8	<2.5	<2.5	16.8	29	ND	NA
M-3	951185	02-Nov-1995	<2.5	<2.5	<2.5	5.03	5	ND	NA
M-3	960101	05-Feb-1996	236	<2.5	5.77	22.2	264	ND	NA
M-3	960485	28-May-1996	88.4	<1.0	5.93	20.3	115	ND	NA
M-3	960692	06-Aug-1996	96.4	<1.0	2.5	3.27	102	ND	NA
M-3	960908	29-Oct-1996	17.4	<1.0	1.55	2.23	21	ND	NA
M-3	961015	20-Nov-1996	70.2	<1.0	1.89	<3	72	ND	NA
M-3	970130	19-Feb-1997	2.44	<1.0	2.61	7.43	12	ND	NA
M-3	970507	28-May-1997	38	6.1	<1	13.5	58	ND	20.1
M-3	970922	21-Aug-1997	<1	<1	<1	7.68	8	ND	<1.2
M-3	971202	10-Nov-1997	<1	<1	<1	7.68	8	ND	<1.2
M-3	980170	18-Feb-1998	<1	<1	<1	<3	<6	ND	<1.2
M-3	980410	19-May-1998	26.7	<1	<1	2.52	29	ND	0.32
M-3	980589	26-Aug-1998	<1	2.8	<1	<3	3	ND	0.3

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 5 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-3	980786	05-Nov-1998	1.93	3.2	<1	<3	5	ND	NA
M-3	990259	25-May-1999	4.2	0.8	0.5	1.5	7	ND	0.05
M-3	990352	05-Aug-1999	<1	1.8	<1	<3	<6	ND	<.1
M-3	990454	12-Nov-1999	6	2.2	1.7	5.4	15	ND	ND
M-3	JQ0001MO-3-1	19-Jan-2000	4.1	2.8	1.6	3.7	12.2	ND	NA
M-3	JAQ-0002MW3	24-Feb-2000	30	21	2.3	9.4	62.7	ND	NA
M-3	JAQ-0005-MW3	30-May-2000	2.1	<0.5	0.9	2.2	5.2	ND	<0.1
M-3	JAQ-0006-MW3	22-Jun-2000	0.6	<0.5	<0.5	<0.5	0.6	ND	0.14
M-3	JAQ-0007-MW3	25-Jul-2000	<0.5	<0.5	<0.5	1.1	1.1	ND	NA
M-3	JAQ-0008-MW3	22-Aug-2000	0.6	<0.5	<0.5	2.2	2.8	ND	<0.05
M-3	JAQ-0011-M3	20-Nov-2000	1.1	<0.5	<0.5	3.4	4.5	ND	<0.05
M-3	JAQ-0201-M3	14-Feb-2001	0.6	<0.5	<0.5	0.6	1.2	ND	<0.05
M-3	JAQ-0105-MW3	31-May-2001	1.2	<0.5	<0.5	1.7	2.9	ND	0.18
M-3	JAQ-0801-M3	21-Aug-2001	1.6	<0.5	1.2	4.5	7.3	ND	0.15
M-3	JAQ-0111-MW03	29-Nov-2001	0.7	<0.5	<0.5	<0.5	0.7	ND	0.23
M-3	JAQ-0202-MW	22-Feb-2002	<0.5	<0.5	<0.5	1.1	1.1	ND	0.32
M-3	JAQ-0205-M3	22-May-2002	<0.5	<0.5	<0.5	1	1	ND	0.31
M-3	02-6019-3	06-Nov-2002	0.7	0.4	<0.5	1.2	2.3	ND	NA
M-4	N30977	08-Sep-1993	213	13.3	58	519	803	ND	NA
M-4	N31065	05-Oct-1993	302	2	55	395	754	ND	NA
M-4	N31248	11-Nov-1993	234	2	56	383	675	ND	NA
M-4	N31392	16-Dec-1993	171	<2.0	34.3	244	449	ND	NA
M-4	940035	13-Jan-1994	175	2.5	38	288	504	ND	NA
M-4	940242	10-Feb-1994	137	<2.0	29.8	192	359	ND	NA
M-4	940500	07-Mar-1994	120	<2.5	27	220	367	ND	NA
M-4	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 6 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-4	941012	13-Jun-1994	151	<2.0	28.4	246	425	ND	NA
M-4	941265	07-Sep-1994	145	<2.5	24.1	231	400	ND	NA
M-4	941628	15-Dec-1994	184	<2.5	22.3	215	421	ND	NA
M-4	950106	09-Feb-1995	160	<2.5	19.6	186	366	ND	NA
M-4	950569	08-May-1995	108	<2.5	11.7	119	239	ND	NA
M-4	950902	25-Aug-1995	29.3	<2.5	13	116	158	ND	NA
M-4	951187	02-Nov-1995	15.1	<2.5	12.9	136	164	ND	NA
M-4	960102	05-Feb-1996	33.5	<2.5	19.3	209	262	ND	NA
M-4	960486	28-May-1996	17	<1.0	8.93	93.6	120	ND	NA
M-4	960693	06-Aug-1996	2.77	<1.0	3.5	38.5	45	ND	NA
M-4	960909	29-Oct-1996	1.03	<1.0	3.66	55.5	60	ND	NA
M-4	961016	22-Nov-1996	3.28	<1.0	7.77	90.3	101	ND	NA
M-4	970131	19-Feb-1997	17.7	1.5	8.3	54	82	ND	NA
M-4	970508	28-May-1997	53.6	11.6	43.4	366	475	ND	225
M-4	971203	10-Nov-1997	44.8	<1.0	<1.0	71	116	ND	1.31
M-4	980171	18-Feb-1998	91	<1.0	1.1	74.9	167	ND	<1.2
M-4	980411	19-May-1998	46.6	<1.0	2.81	83.1	133	ND	0.21
M-4	980590	26-Aug-1998	51	2.6	2.08	45.1	101	ND	43.9
M-4	980787	05-Nov-1998	69	<1.0	<1.0	33	102	ND	NA
M-4	990048	23-Feb-1999	133	<1	1.31	59.3	194	ND	283
M-4	990260	25-May-1999	230	1.8	1.2	63	296	ND	190
M-4	990353	05-Aug-1999	100	<2	<2	15.3	115	ND	54.9
M-4	990455	12-Nov-1999	110	<2.5	<2.5	56	166	ND	57
M-4	JQ0001MO-4-1	19-Jan-2000	27	<0.5	<0.5	9.7	37.7	ND	NA
M-4	JAQ-0002-MW4	24-Feb-2000	11	<0.5	5.6	5.5	22.1	ND	NA
M-4	JAQ-0005-MW4	30-May-2000	38	1.1	<0.5	23	62.1	ND	<0.1

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 7 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-4	JAQ-0006-MW4	22-Jun-2000	44	1.6	8.9	16	70.5	ND	<0.1
M-4	JAQ-0007-MW4	25-Jul-2000	51	0.6	<0.5	13	64.6	ND	NA
M-4	JAQ-0008-MW4	22-Aug-2000	87	0.5	1.2	32	120.7	ND	1.66
M-4	JAQ-0011-M4	17-Nov-2000	99	<0.5	0.5	5	104.5	ND	2.66
M-4	JAQ-0201-M4	14-Feb-2001	94	<0.5	0.7	13	107.7	ND	3.37
M-4	JAQ-0105-MW4	31-May-2001	78	<0.5	<0.5	<0.5	78	ND	9.4
M-4	JAQ-0801-M4	21-Aug-2001	30	<0.5	1.4	7.8	39.2	ND	5
M-4	JAQ-0111-MW04	29-Nov-2001	78	<0.5	11	78	167	ND	66
M-4	970923	01-Aug-1997	39.7	3.2	1.51	100	145	ND	20.8
M-4	JAQ-0202-MW	22-Feb-2002	34	<0.5	<0.5	3.4	37.4	ND	27.2
M-4	JAQ-0205-M4	22-May-2002	51	<0.5	<0.5	2.2	53.2	ND	16
M-4	02-6019-4	06-Nov-2002	1.2	<0.5	<0.5	0.7	1.9	ND	NA
M-5	N30979	08-Sep-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	N31066	05-Oct-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	N31250	11-Nov-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	N31393	16-Dec-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	940036	13-Jan-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	940243	10-Feb-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	940501	07-Mar-1994	<0.5	<0.5	<0.5	<0.5	N/A	ND	NA
M-5	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
M-5	941013	13-Jun-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
M-5	941267	07-Sep-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	941629	15-Dec-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	950107	09-Feb-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	950570	08-May-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	950904	25-Aug-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 8 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
M-5	951188	02-Nov-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	960103	05-Feb-1996	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
M-5	960487	28-May-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
M-5	960694	06-Aug-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-5	960910	29-Oct-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-5	961017	21-Nov-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-5	970132	19-Feb-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
M-5	970509	28-May-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-5	970925	21-Aug-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-5	971204	21-Aug-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-5	980172	18-Feb-1998	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
M-5	980413	19-May-1998	<1.0	<1.0	<1.0	<3.0	<6	ND	<0.1
M-5	990262	25-May-1999	0.5	0.5	0.5	1.5	3	ND	0.05
M-5	JQ0001MO-5-1	19-Jan-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-5	JAQ-0005-MW5	30-May-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-5	JAQ-0006-MW5	22-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-5	JAQ-0008-MW5	22-Aug-2000	43	<0.5	<0.5	<0.5	43	ND	NA
M-5	JAQ-0011-M5	17-Nov-2000	2.6	<0.5	<0.5	<0.5	2.6	ND	NA
M-5	JAQ-0201-M5	14-Feb-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-5	JAQ-0105-MW5	31-May-2001	0.6	<0.5	<0.5	<0.5	0.6	ND	NA
M-5	JAQ-0801-M5	21-Aug-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
M-5	JAQ-0111-M5	29-Nov-2001	5.6	<0.5	<0.5	<0.5	5.6	ND	NA
M-5	JAQ-0202-M5	22-Feb-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
M-5	JAQ-0205-M5	22-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
M-5	02-6019-5	06-Nov-2002	<0.5	<0.5	<0.5	0.7	0.7	ND	NA

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
(Page 9 of 17)

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TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 10 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-1	N/A	28-May-1996	No Test	No Test	No Test	No Test	No Test	4.8"	NA
R-1	960684	06-Aug-1996	2970	3080	130	1200	7380	TR	NA
R-1	960900	28-Oct-1996	1690	1970	60.8	800	4520	ND	NA
R-1	961007	20-Nov-1996	1240	1540	61.9	600	3450	ND	NA
R-1	N/A	19-Feb-1997	No Test	No Test	No Test	No Test	No Test	29.76"	NA
R-1	N/A	24-Feb-1999	No Test	No Test	No Test	No Test	No Test	.09'	NA
R-1	N/A	25-May-1999	No Test	No Test	No Test	No Test	No Test	TR	NA
R-1	JQ0001R01-1	20-Jan-2000	2500	3800	180	1900	8380	NO	NA
R-1	JAQ-0005-R1	31-May-2000	2300	1000	120	2000	5420	TR	NA
R-1	JAQ-0006-R1	26-Jun-2000	2400	690	150	2000	5420	TR	NA
R-1	JAQ-0007-R1	26-Jul-2000	4900	2900	150	3100	11050	TR	NA
R-1	JAQ-0008-R1	23-Aug-2000	2500	1400	180	2200	6280	TR	NA
R-1	JAQ-0011-R1	20-Nov-2000	3500	2700	210	2900	9310	TR	NA
R-1	JAQ-0201-R1	15-Feb-2001	120	<10	<10	190	310	NO	NA
R-1	JAQ-0106-R1	01-Jun-2001	17	<2.5	<2.5	19	36	ND	NA
R-1	JAQ-0107-R1	05-Jul-2001	17	1.8	1.2	18	38	ND	NA
R-1	JAQ-0108-R1	23-Aug-2001	22	1.2	1	4.2	28.4	ND	NA
R-1	JAQ-0111-R1	28-Nov-2001	100	17	3.9	24	144.9	ND	NA
R-1	JAQ-0202-R1	21-Feb-2002	23	1.3	2.1	6.1	32.5	ND	NA
R-1	JAQ-0205-R1	23-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-1	02-4334-1	08-Aug-2002	0.4	2.5	1.2	2.4	6.5	ND	NA
R-1	02-6019-7	06-Nov-2002	6	0.5	1.1	2.4	10	ND	NA
R-2	N30970	07-Sep-1993	278	651	59	538	1526	ND	NA
R-2	N31057	04-Oct-1993	509	789	73	741	2112	ND	NA
R-2	N31241	10-Nov-1993	284	470	38	401	1193	ND	NA
R-2	N31385	15-Dec-1993	529	864	65.3	709	2167	1"	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 11 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-2	940027	12-Jan-1994	1722	2501	150	1702	6075	24"	NA
R-2	940234	09-Feb-1994	2806	3667	89.5	1520	8083	26"	NA
R-2	940492	07-Mar-1994	5600	6800	290	2700	15390	4"	NA
R-2	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	7"	NA
R-2	941004	13-Jun-1994	3210	3790	139	1670	8809	7"	NA
R-2	N/A	07-Sep-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
R-2	941620	15-Dec-1994	1140	2200	148	1520	5008	0.6"	NA
R-2	N/A	25-Aug-1995	No Test	No Test	No Test	No Test	No Test	TR	NA
R-2	951179	02-Nov-1995	1250	2030	116	1010	4406	TR	NA
R-2	N/A	05-Feb-1996	No Test	No Test	No Test	No Test	No Test	2.52	NA
R-2	N/A	28-May-1996	No Test	No Test	No Test	No Test	No Test	2.04"	NA
R-2	960685	06-Aug-1996	2610	3960	165	1540	8275	0.72"	NA
R-2	960901	28-Oct-1996	1100	2300	85.4	1100	4585	0.96"	NA
R-2	961009	20-Nov-1996	428	1340	87.3	821	2680	0.48"	NA
R-2	N/A	19-Feb-1997	No Test	No Test	No Test	No Test	No Test	NA	NA
R-2	N/A	24-Feb-1999	No Test	No Test	No Test	No Test	No Test	0.07	NA
R-2	N/A	25-May-1999	No Test	No Test	No Test	No Test	No Test	TR	NA
R-2	JQ0001R02-1	20-Jan-2000	1200	2000	<130	1500	4700	NO	NA
R-2	JAQ-0005-R2	31-May-2000	2300	3200	280	3000	8780	TR	NA
R-2	JAQ-0006-R2	26-Jun-2000	1300	1300	79	1100	3779	TR	NA
R-2	JAQ-0007-R2	26-Jul-2000	3600	3200	150	2300	9250	TR	NA
R-2	JAQ-0008-R2	23-Aug-2000	1600	1500	82	1100	4282	TR	NA
R-2	JAQ-0011-R2	20-Nov-2000	770	1300	170	1500	3740	TR	NA
R-2	JAQ-0201-R2	15-Feb-2001	620	400	43	440	1503	0.03	NA
R-2	JAQ-0106-R2	01-Jun-2001	120	12	15	70	217	ND	NA
R-2	JAQ-0107-R2	05-Jul-2001	39	31	18	220	308	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 12 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-2	JAQ-0108-R2	23-Aug-2001	<2.5	22	22	310	354	ND	NA
R-2	JAQ-0111-R2	28-Nov-2001	26	5.8	<5.0	85	116.8	ND	NA
R-2	JAQ-0202-R2	21-Feb-2002	<20	1.0	<3.1	35	36	ND	NA
R-2	JAQ-0205-R2	23-May-2002	<0.5	<0.5	2.4	30	32.4	ND	NA
R-2	02-4334-2	08-Aug-2002	11.4	0.6	2	9.3	23.3	ND	NA
R-2	02-6019-8	06-Nov-2002	19.8	0.6	1.6	7.6	29.6	ND	NA
R-3	N30971	07-Sep-1993	<2.0	61.4	22	207	290	ND	NA
R-3	N31058	04-Oct-1993	21	179	32	310	542	ND	NA
R-3	N31242	10-Nov-1993	6.19	27.7	10.4	89.2	134	ND	NA
R-3	N31386	15-Dec-1993	26	88.4	19.4	178	312	ND	NA
R-3	940028	12-Jan-1994	4.4	2.9	2.7	18	28	ND	NA
R-3	940235	09-Feb-1994	<2.0	10.9	8.3	59.6	79	ND	NA
R-3	940493	07-Mar-1994	7.7	43	24	220	295	ND	NA
R-3	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
R-3	941005	13-Jun-1994	3.03	41.4	18.4	188	251	ND	NA
R-3	941259	07-Sep-1994	<2.5	18	6.9	67.9	93	ND	NA
R-3	941621	15-Dec-1994	11.7	12.2	12.4	114	150	ND	NA
R-3	950099	09-Feb-1995	7.36	2.7	2.68	20.8	34	ND	NA
R-3	950562	08-May-1995	16.6	11.7	13.9	126	168	ND	NA
R-3	950896	25-Aug-1995	<2.5	15.2	13.6	101	130	ND	NA
R-3	951180	02-Nov-1995	<2.5	14	9.3	82	105	ND	NA
R-3	960095	05-Feb-1996	5.34	14	12.8	108	140	ND	NA
R-3	960479	28-May-1996	1.05	18.7	22.9	203	246	ND	NA
R-3	960686	06-Aug-1996	1.24	24.7	25.9	236	288	ND	NA
R-3	960902	28-Oct-1996	<1.0	10.7	12.6	109	132	ND	NA
R-3	961010	20-Nov-1996	<1.0	12.5	12.4	114	139	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 13 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-3	970124	19-Feb-1997	2.12	1.9	2.29	12.6	19	ND	NA
R-3	970501	28-May-1997	<1.0	15.3	13.5	130	159	ND	<1.2
R-3	970917	21-Aug-1997	<1.0	20.8	18.6	176	215	ND	<1.2
R-3	971196	10-Nov-1997	<1.0	13.6	17.2	149	180	ND	<1.2
R-3	980164	18-Feb-1998	<1.0	<1.0	<1.0	<3	<6	ND	<1.2
R-3	980405	19-May-1998	<1.0	11.9	12.5	125	150	ND	NA
R-3	990254	25-May-1999	0.5	3.3	6.3	26	36	ND	NA
R-3	JQ0001R03-1	20-Jan-2000	<0.5	<0.5	0.5	5.2	5.7	ND	NA
R-3	JAQ-0005-R3	31-May-2000	1	1.4	0.5	5.4	8.3	ND	NA
R-3	JAQ-0007-R3	26-Jul-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0008-R3	23-Aug-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0011-R3	20-Nov-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0201-R3	15-Feb-2001	2.2	<0.5	<0.5	<0.5	2.2	ND	NA
R-3	JAQ-0106-R3	01-Jun-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0107-R3	05-Jul-2001	<0.5	<0.5	<0.5	1.8	1.8	ND	NA
R-3	JAQ-0108-R3	23-Aug-2001	1.3	<0.5	<0.5	<0.5	1.3	ND	NA
R-3	JAQ-0111-R3	28-Nov-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0006-R3	26-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-3	JAQ-0202-R3	21-Feb-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-3	JAQ-0205-R3	23-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-3	02-4334-3	08-Aug-2002	<0.5	0.5	0.9	1	2.4	ND	NA
R-3	02-6019-9	06-Nov-2002	<0.5	<0.5	<0.5	0.8	0.8	ND	NA
R-4	N30972	07-Sep-1993	104	267	39.9	370	781	ND	NA
R-4	N31060	04-Oct-1993	118	266	41	364	789	ND	NA
R-4	N31243	10-Nov-1993	93.6	132	40.4	347	613	ND	NA
R-4	N31387	15-Dec-1993	102	161	48.4	418	729	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 14 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-4	940030	12-Jan-1994	124	101	38.5	353	617	ND	NA
R-4	940237	09-Feb-1994	120	51.4	20.8	150	342	ND	NA
R-4	940494	07-Mar-1994	150	63	20	190	423	ND	NA
R-4	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
R-4	941007	13-Jun-1994	179	60.6	17.2	176	433	ND	NA
R-4	941260	07-Sep-1994	238	102	26	218	584	ND	NA
R-4	941622	15-Dec-1994	222	63.3	26.9	213	525	ND	NA
R-4	950100	09-Feb-1995	273	61	20.4	165	519	ND	NA
R-4	950564	08-May-1995	278	251	23.1	220	772	ND	NA
R-4	950897	25-Aug-1995	646	278	50.8	544	1519	ND	NA
R-4	951181	02-Nov-1995	343	60.4	35.1	284	723	ND	NA
R-4	960097	05-Feb-1996	218	43.3	23.1	200	484	ND	NA
R-4	960481	28-May-1996	716	199	36.6	394	1346	ND	NA
R-4	960687	06-Aug-1996	384	156	24	275	839	ND	NA
R-4	960904	28-Oct-1996	320	53.4	20.1	237	631	ND	NA
R-4	9601011	20-Nov-1996	289	31.2	19.3	220	560	ND	NA
R-4	970125	19-Feb-1997	162	65.9	34.4	337	599	ND	NA
R-4	970503	28-May-1997	189	92.5	13.3	144	439	ND	<1.2
R-4	970918	21-Aug-1997	343	377	45.5	408	1174	ND	<1.2
R-4	971197	10-Nov-1997	542	129	31.1	267	969	ND	<1.2
R-4	980166	18-Feb-1998	98	15.9	10	79.3	203	ND	<1.2
R-4	980406	19-May-1998	916	244	38.1	304	1502	ND	NA
R-4	990255	25-May-1999	110	63	15	144	332	ND	NA
R-4	JQ0001R04-1	20-Jan-2000	280	89	60	690	1,119	ND	NA
R-4	JAQ-0005-R4	31-May-2000	960	980	29	1900	3869	ND	NA
R-4	JAQ-0006-R4	26-Jun-2000	950	1000	43	2500	4493	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 15 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-4	JAQ-0007-R4	26-Jul-2000	520	400	50	1600	2570	ND	NA
R-4	JAQ-0008-R4	23-Aug-2000	1500	1800	110	1800	5210	ND	NA
R-4	JAQ-0011-R4	20-Nov-2000	590	580	110	1800	3080	ND	NA
R-4	JAQ-0201-R4	15-Feb-2001	19	<10	<10	36	55	ND	NA
R-4	JAQ-0106-R4	01-Jun-2001	3.4	0.5	<0.5	2.2	6.1	ND	NA
R-4	JAQ-0107-R4	05-Jul-2001	370	85	<2.5	14	469	ND	NA
R-4	JAQ-0108-R4	23-Aug-2001	86	20	<2.5	12	118	ND	NA
R-4	JAQ-0111-R4	28-Nov-2001	79	0.5	1.5	13	94	ND	NA
R-4	JAQ-0202-R4	21-Feb-2002	120	2.6	0.56	7.5	130.66	ND	NA
R-4	JAQ-0205-R4	23-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-4	02-4334-4	08-Aug-2002	<0.5	0.4	0.8	0.7	1.9	ND	NA
R-4	02-6019-10	06-Nov-2002	15.8	0.6	0.9	20.9	38.2	ND	NA
R-5	N30973	07-Sep-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	N31061	04-Oct-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	N31244	10-Nov-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	N31388	15-Dec-1993	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	940031	12-Jan-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	940238	09-Feb-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	940496	07-Mar-1994	<0.5	<0.5	<0.5	<0.5	N/A	ND	NA
R-5	N/A	17-May-1994	No Test	No Test	No Test	No Test	No Test	ND	NA
R-5	941008	13-Jun-1994	<2.0	<2.0	<2.0	<2.0	N/A	ND	NA
R-5	941261	07-Sep-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	941623	15-Dec-1994	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	950102	09-Feb-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	950565	08-May-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	950898	25-Aug-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA

TABLE F-1

SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
 (Page 16 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-5	951182	02-Nov-1995	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	960098	05-Feb-1996	<2.5	<2.5	<2.5	<2.5	N/A	ND	NA
R-5	960482	28-May-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
R-5	960689	06-Aug-1996	<1.0	<1.0	<1.0	<1.0	N/A	ND	NA
R-5	960905	28-Oct-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
R-5	961012	20-Nov-1996	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
R-5	970127	19-Feb-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	NA
R-5	970504	28-May-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
R-5	970919	21-Aug-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
R-5	971199	10-Nov-1997	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
R-5	980167	18-Feb-1998	<1.0	<1.0	<1.0	<3.0	N/A	ND	<1.2
R-5	980407	19-May-1998	<1.0	<1.0	<1.0	<3.0	<6	ND	NA
R-5	990256	25-May-1999	0.5	0.5	0.5	1.5	3	ND	NA
R-5	JQ0001R05-1	20-Jan-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0005-R5	31-May-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0006-R5	26-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0008-R5	23-Aug-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0011-R5	20-Nov-2000	<0.5	<0.5	<0.5	0.9	0.9	ND	NA
R-5	JAQ-0201-R5	15-Feb-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0106-R5	01-Jun-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0107-R5	05-Jul-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0108-R5	23-Aug-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0111-R5	28-Nov-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0202-R5	21-Feb-2002	<0.5	<1.0	<0.5	<0.5	ND	ND	NA
R-5	JAQ-0205-R5	23-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-5	02-4334-5	08-Aug-2002	<0.5	0.4	0.9	0.9	2.2	ND	NA
R-5	02-6019-11	06-Nov-2002	<0.5	<0.5	<0.5	0.8	0.8	ND	NA

TABLE F-1

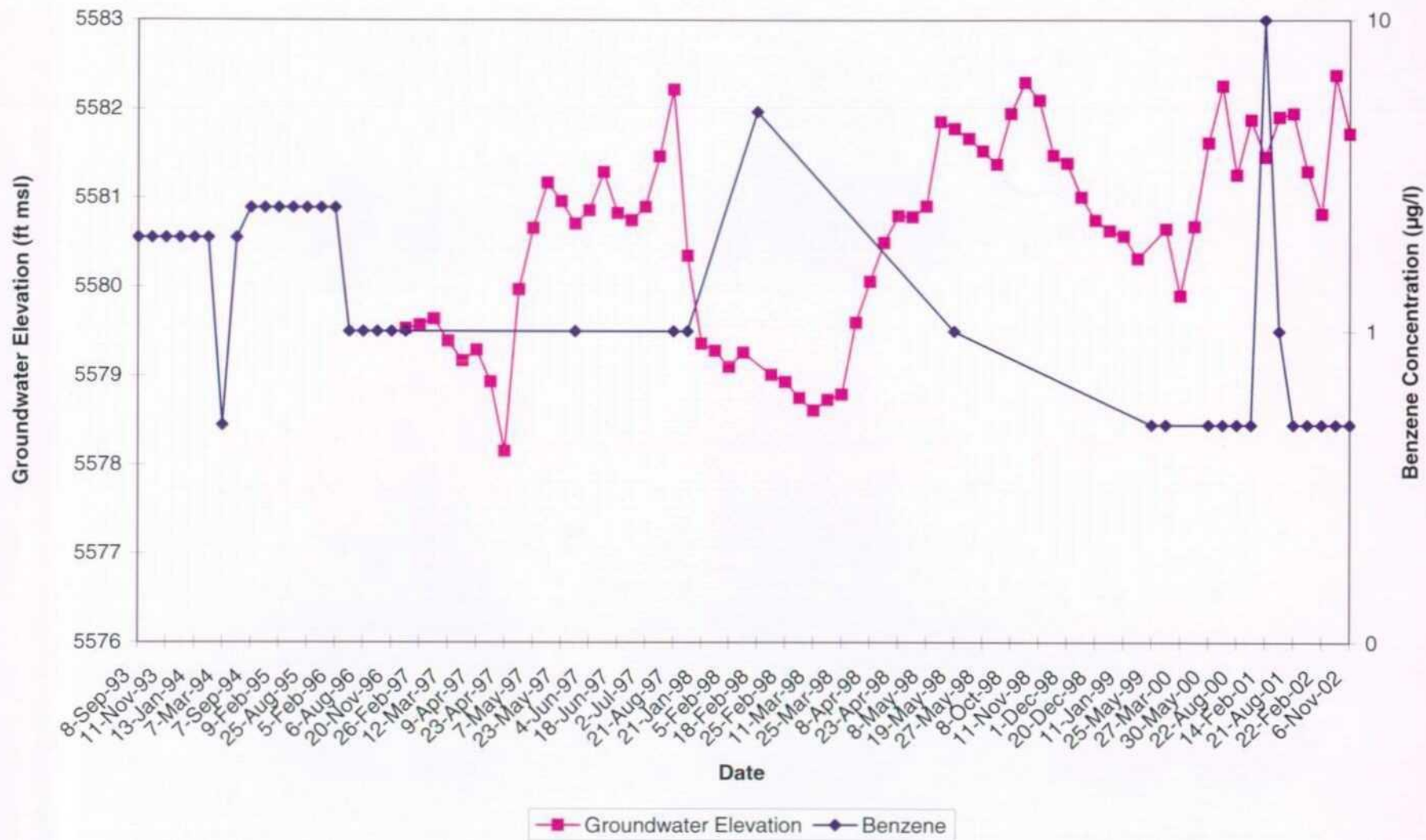
SUMMARY OF HISTORICAL ANALYTICAL RESULTS
JAQUEZ COM. C#1 JAQUEZ COM. E#1
(Page 17 of 17)

Well Identification	Sample Number	Sample Date	Benzene (µg/l)	Toluene (µg /l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Total BTEX (µg/l)	Floating Product (inches)	Nitrates (mg/l)
R-6	JQ0001R06-1	20-Jan-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0005-R6	31-May-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0006-R6	26-Jun-2000	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0008-R6	23-Aug-2000	<0.5	<0.5	2.6	13	15.6	ND	NA
R-6	JAQ-0011-R6	20-Nov-2000	<0.5	<0.5	<0.5	0.5	0.5	ND	NA
R-6	JAQ-0201-R6	15-Feb-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0106-R6	01-Jun-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0107-R6	05-Jul-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0108-R6	23-Aug-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0111-R6	28-Nov-2001	<0.5	<0.5	<0.5	<0.5	ND	ND	NA
R-6	JAQ-0202-R6	21-Feb-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-6	JAQ-0205-R6	23-May-2002	<0.5	<0.5	<0.5	<1.0	ND	ND	NA
R-6	02-4334-6	08-Aug-2002	<0.5	0.4	0.9	1	2.3	ND	NA
R-6	02-6019-12	06-Nov-2002	<0.5	<0.5	<0.5	0.9	0.9	ND	NA

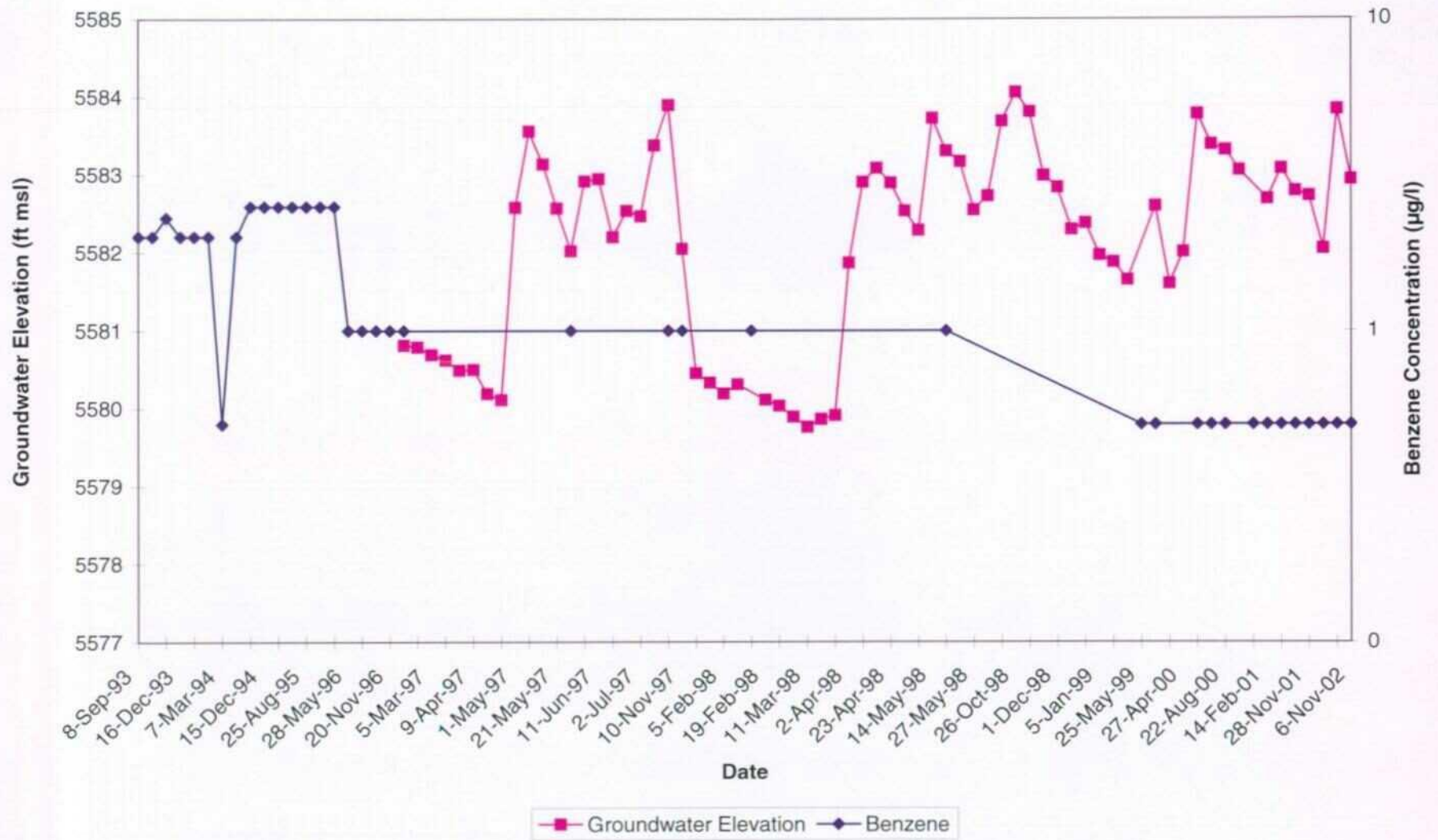
APPENDIX G

**BENZENE CONCENTRATION AND
GROUNDWATER ELEVATION VS. TIME**

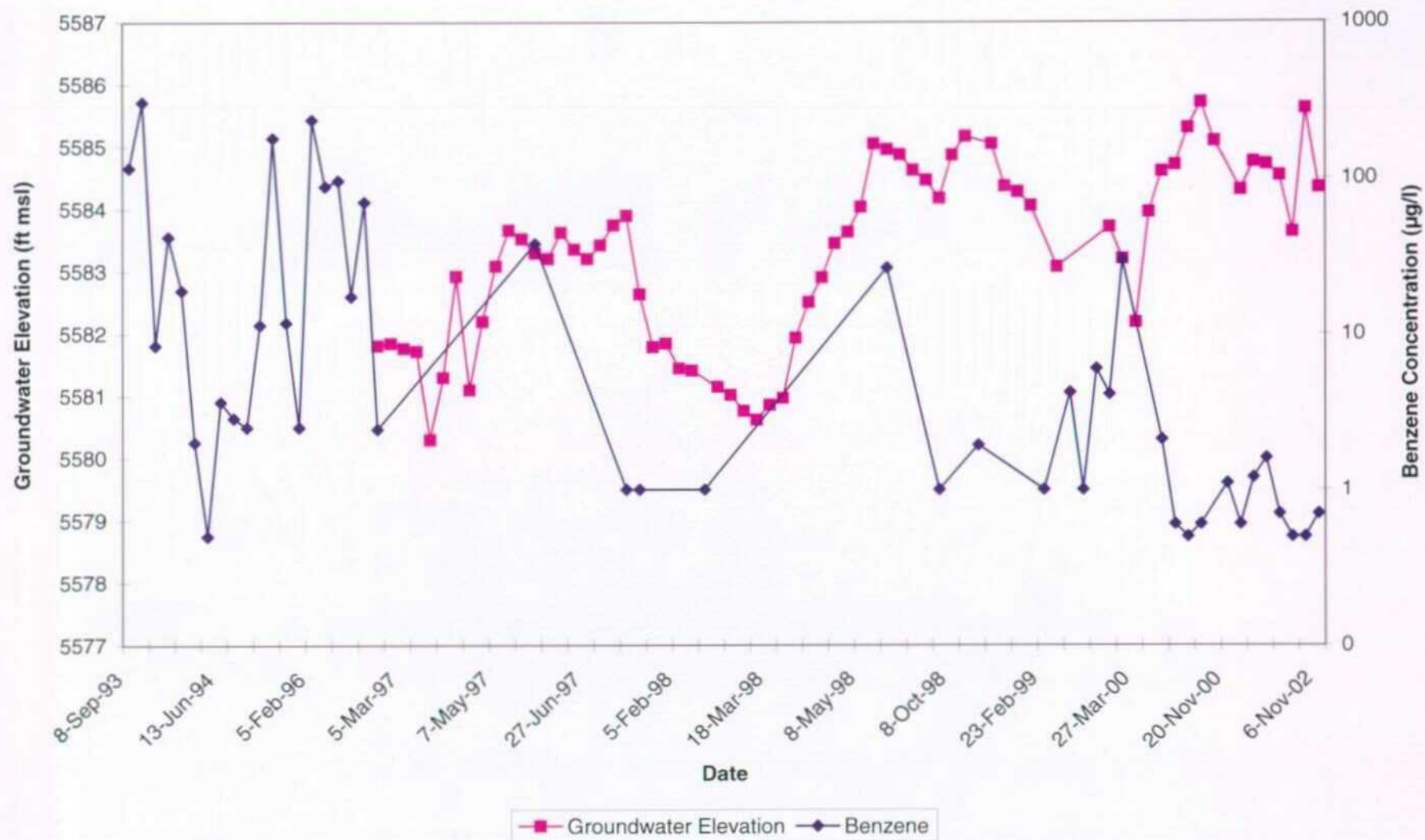
**Benzene Concentration and Groundwater Elevation vs. Time
M-1**



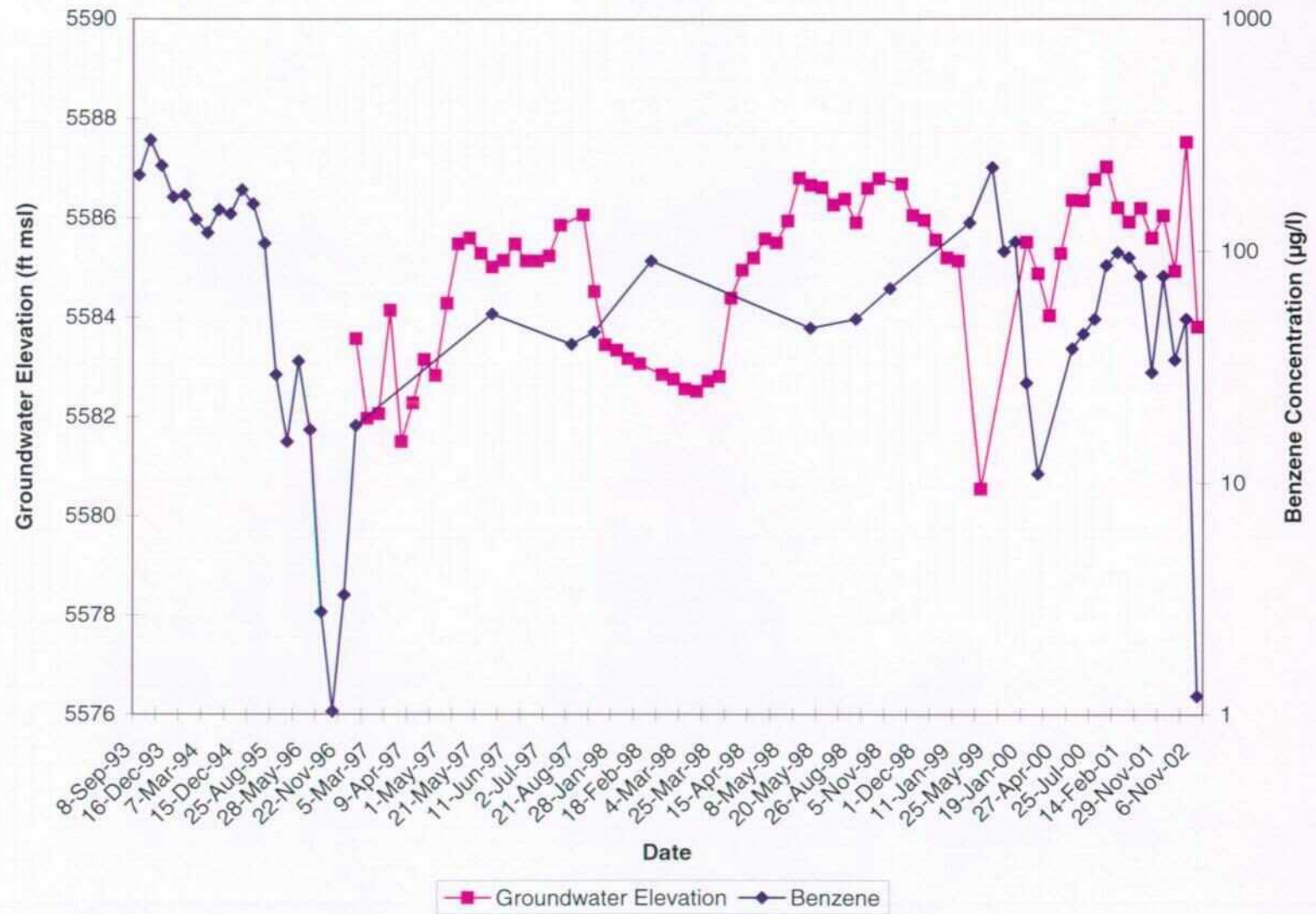
Benzene Concentration and Groundwater Elevation vs. Time
M-2



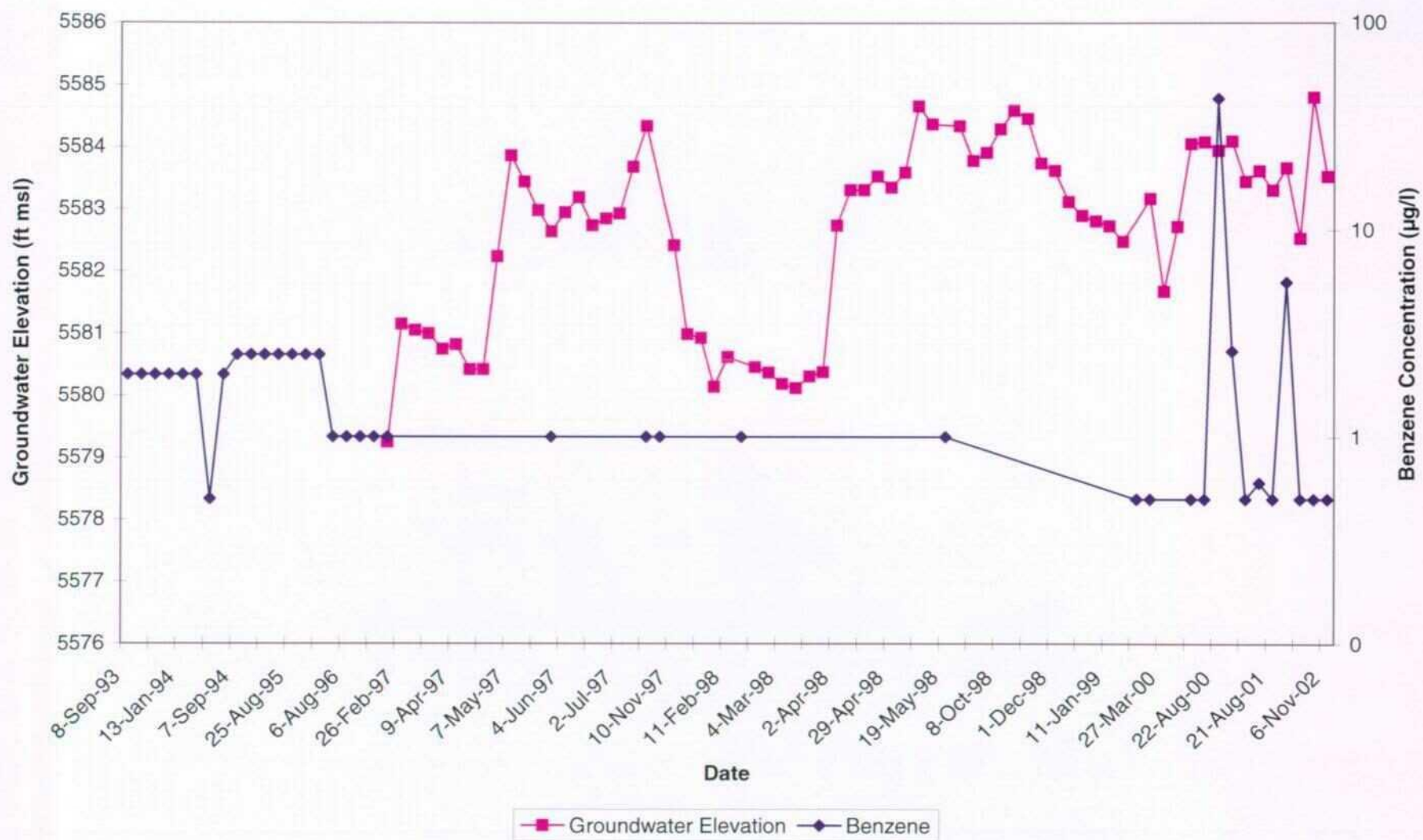
Benzene Concentration and Groundwater Elevation vs. Time
M-3



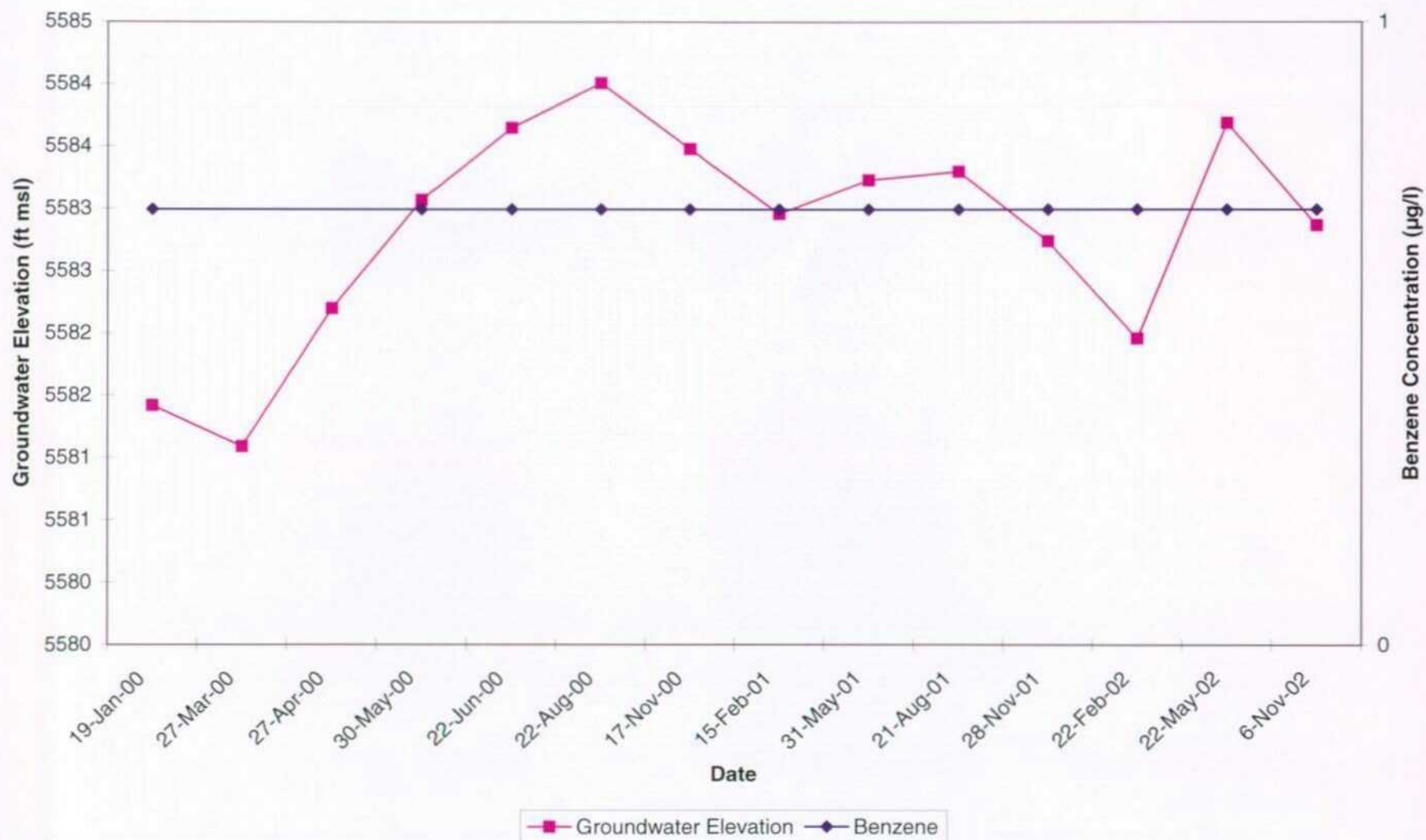
Benzene Concentration and Groundwater Elevation vs. Time
M-4



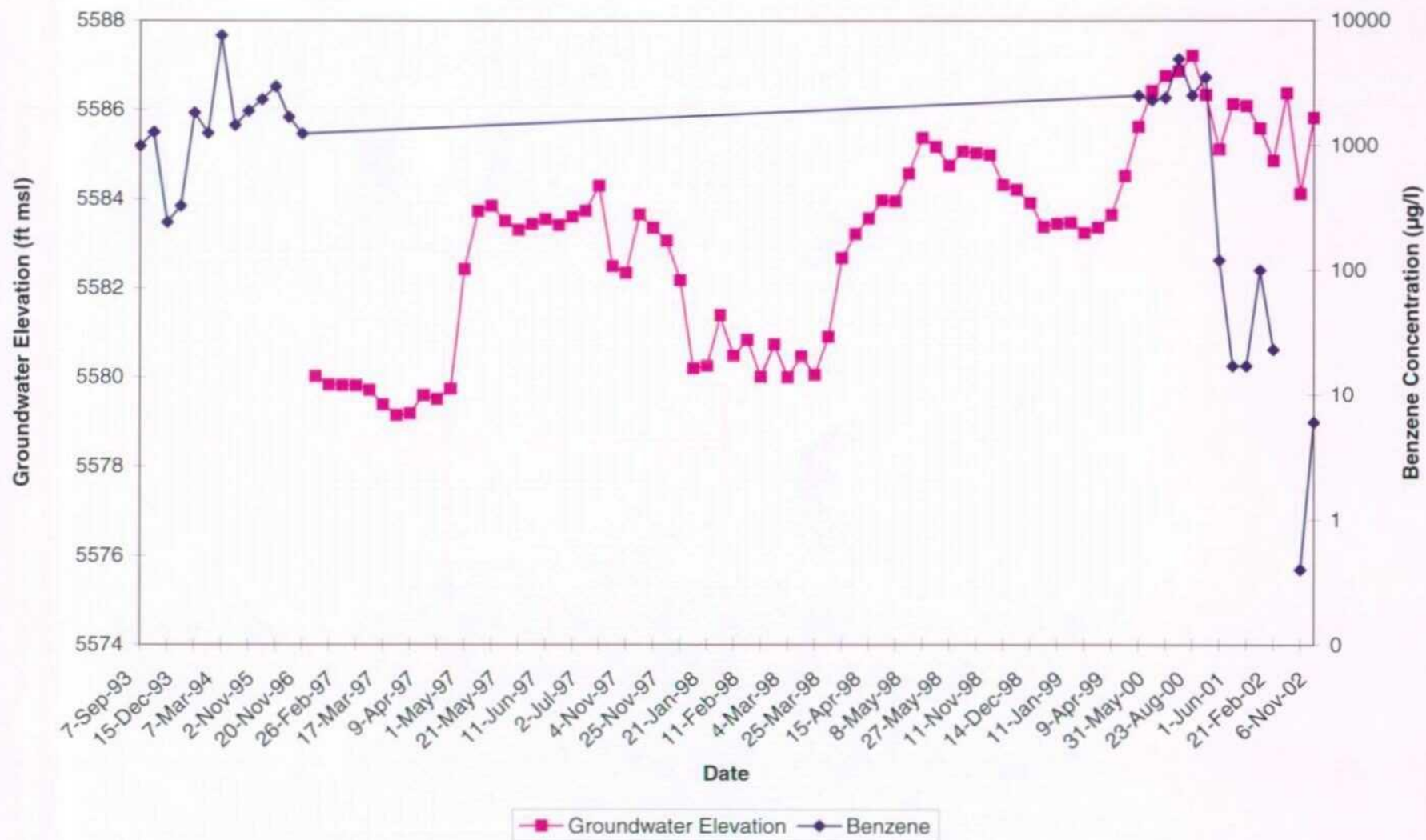
Benzene Concentration and Groundwater Elevation vs. Time **M-5**



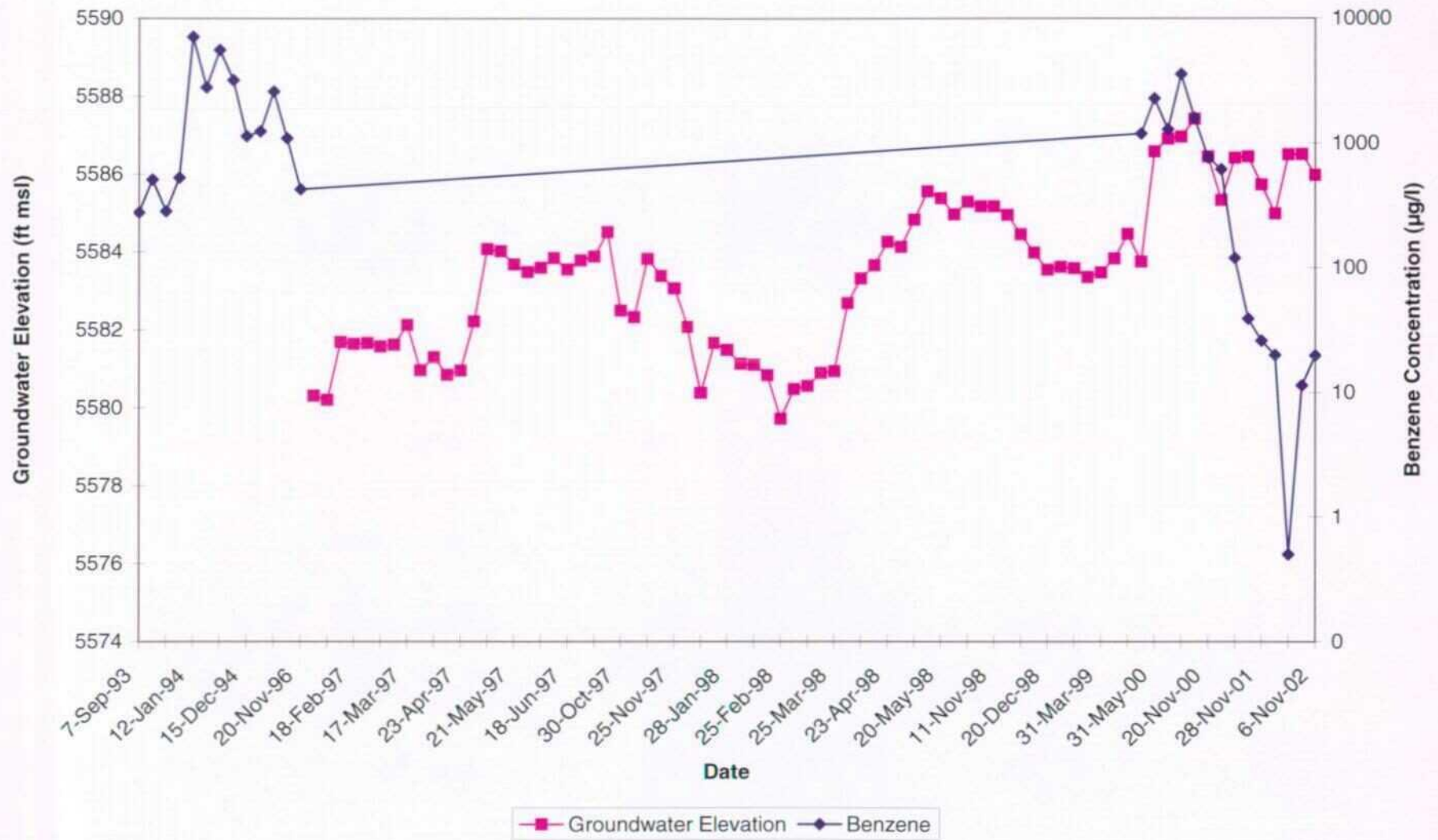
Benzene Concentration and Groundwater Elevation vs. Time
M-6



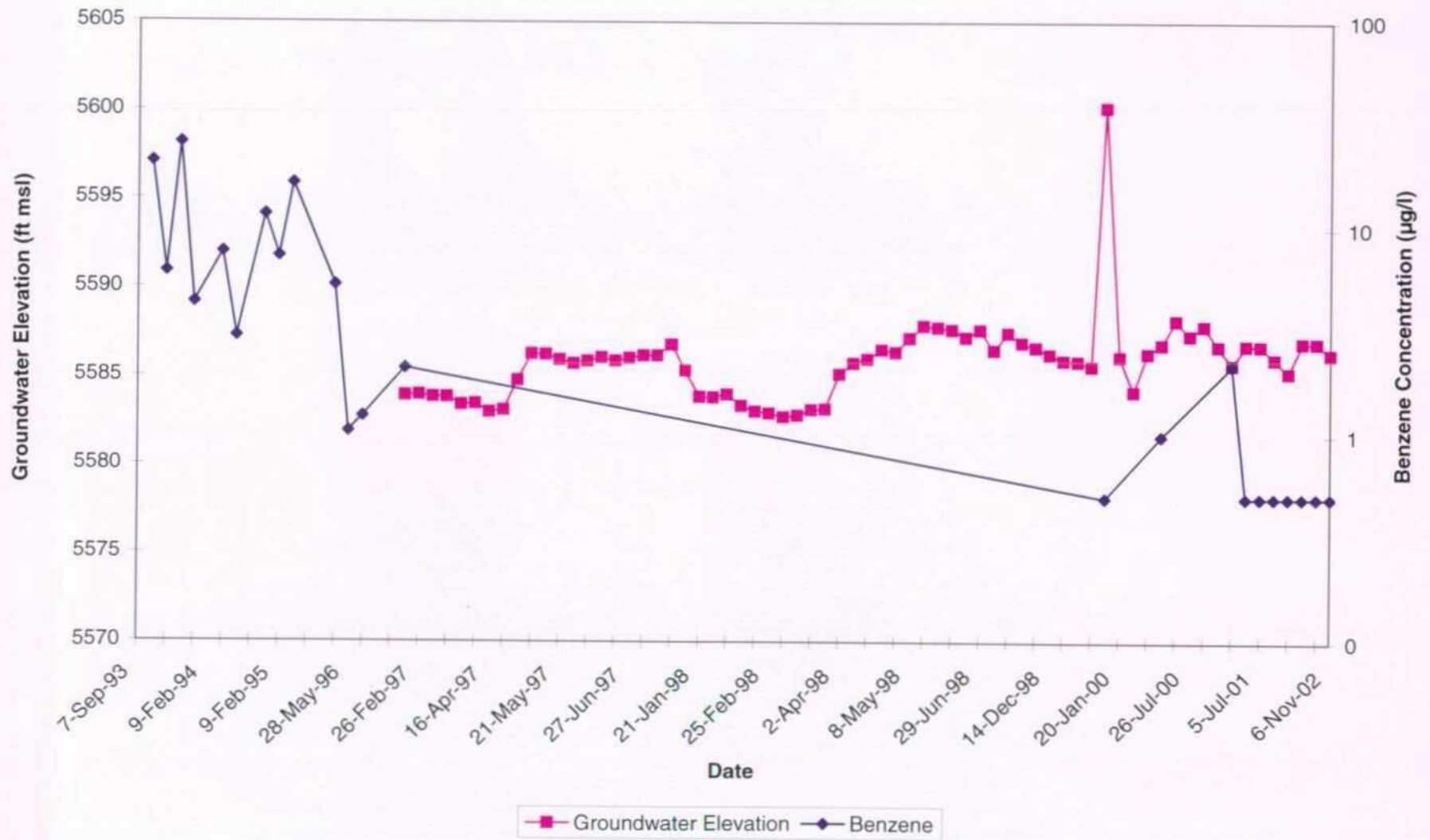
Benzene Concentration and Groundwater Elevation vs. Time
R-1



Benzene Concentration and Groundwater Elevation vs. Time
R-2



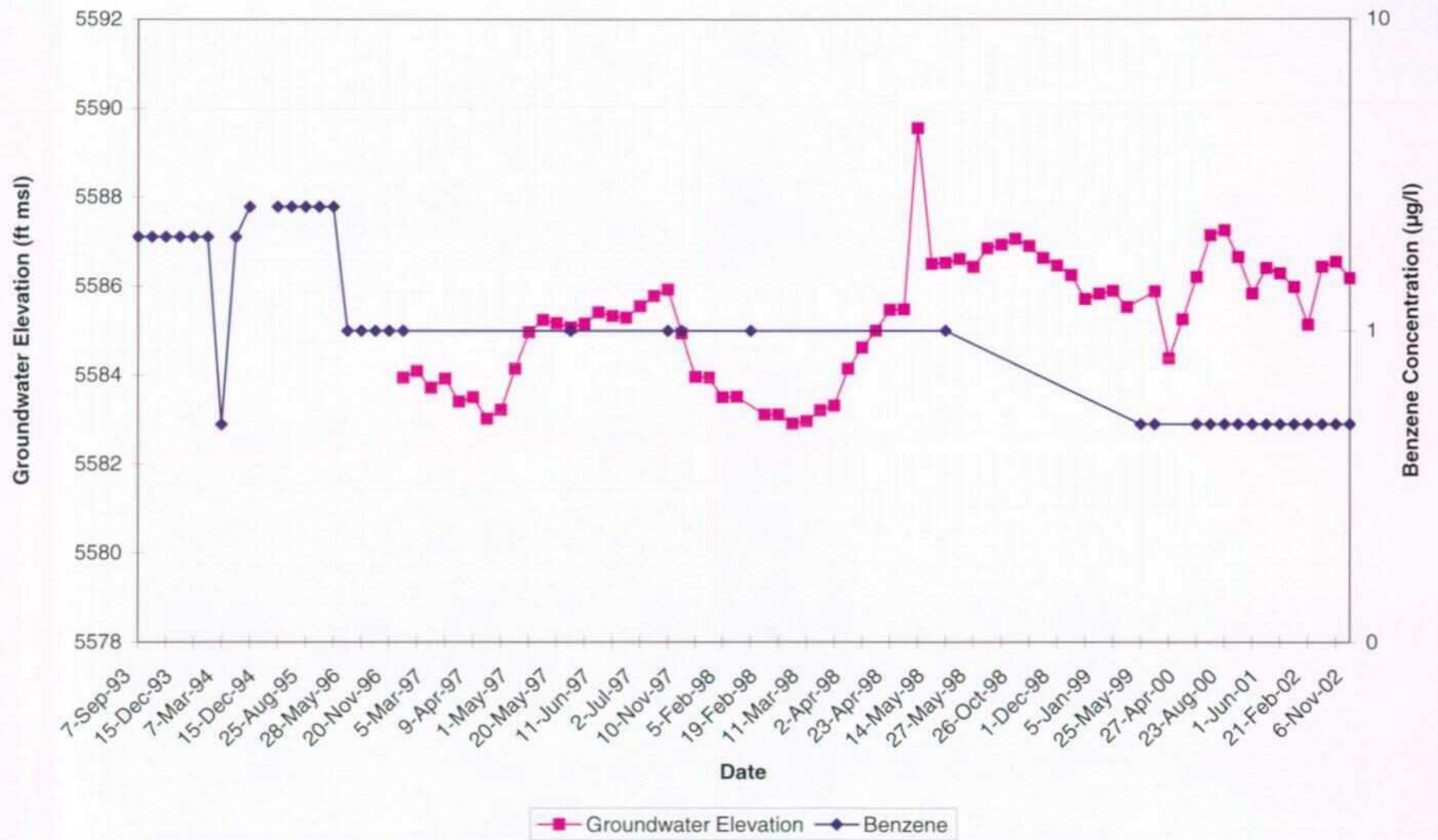
Benzene Concentration and Groundwater Elevation vs. Time
R-3



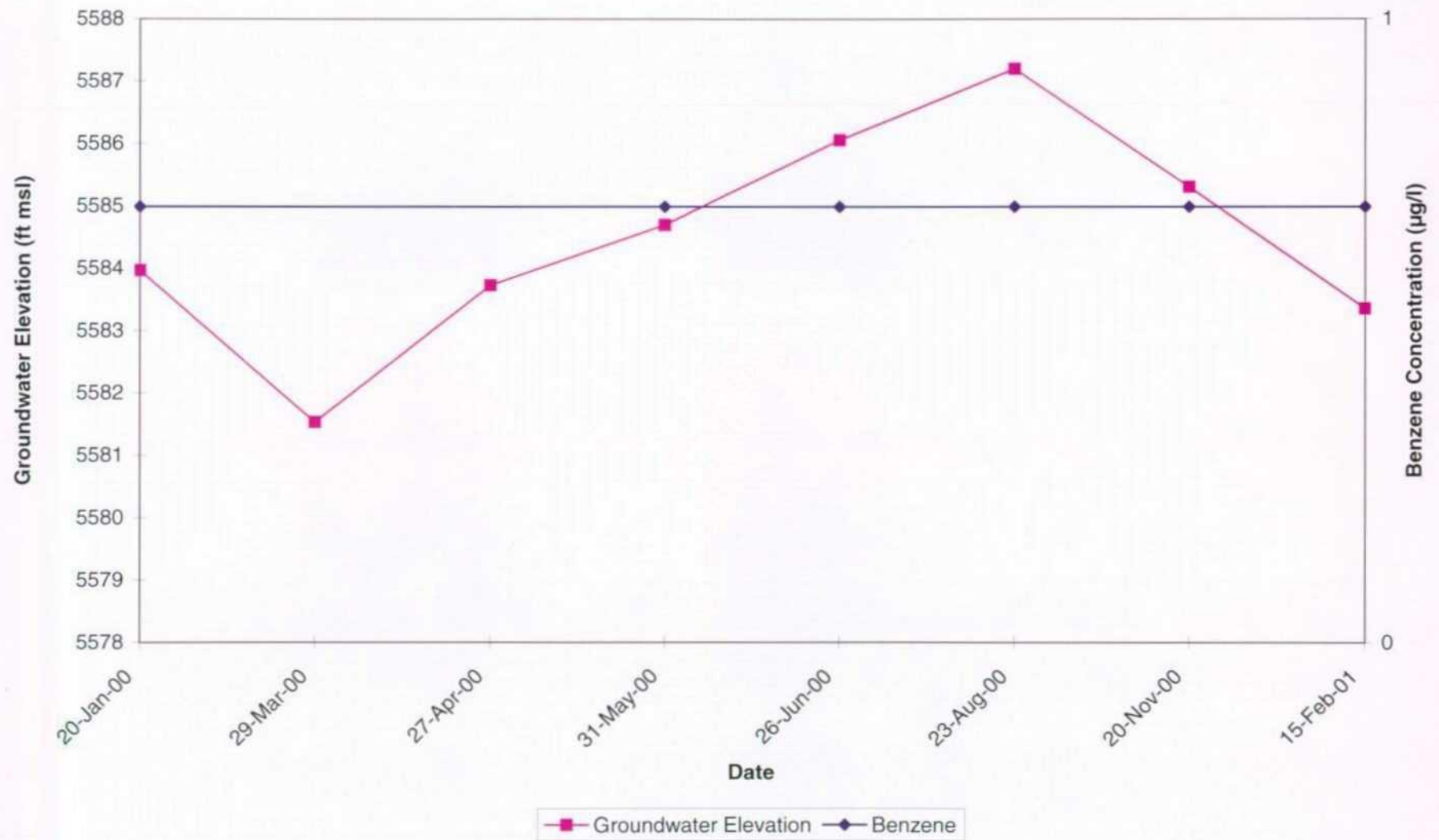
Benzene Concentration and Groundwater Elevation vs. Time
R-4



Benzene Concentration and Groundwater Elevation vs. Time
R-5



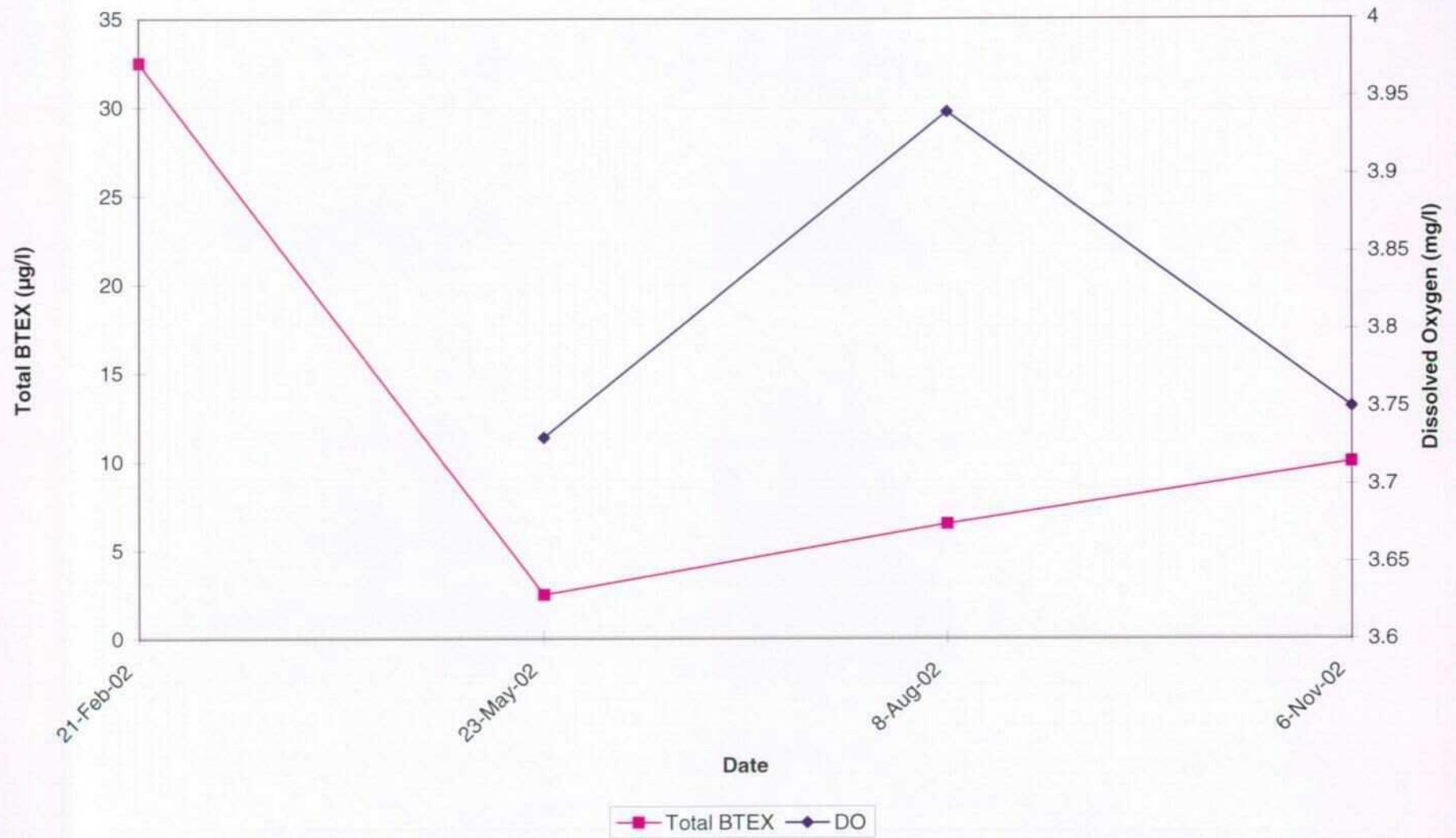
Benzene Concentration and Groundwater Elevation vs. Time
R-6



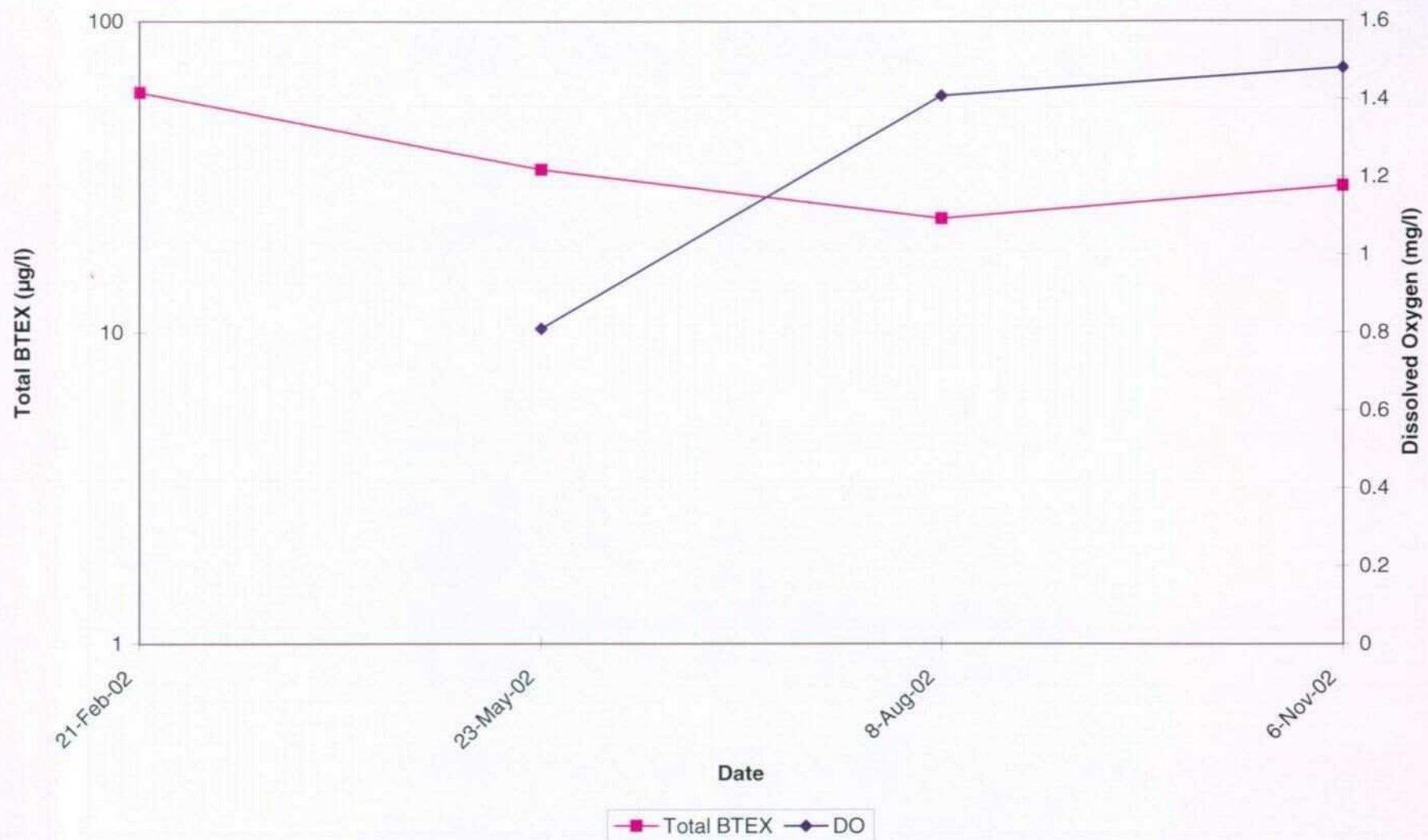
APPENDIX H

BENZENE CONCENTRATION AND DISSOLVED OXYGEN CONCENTRATION VS. TIME

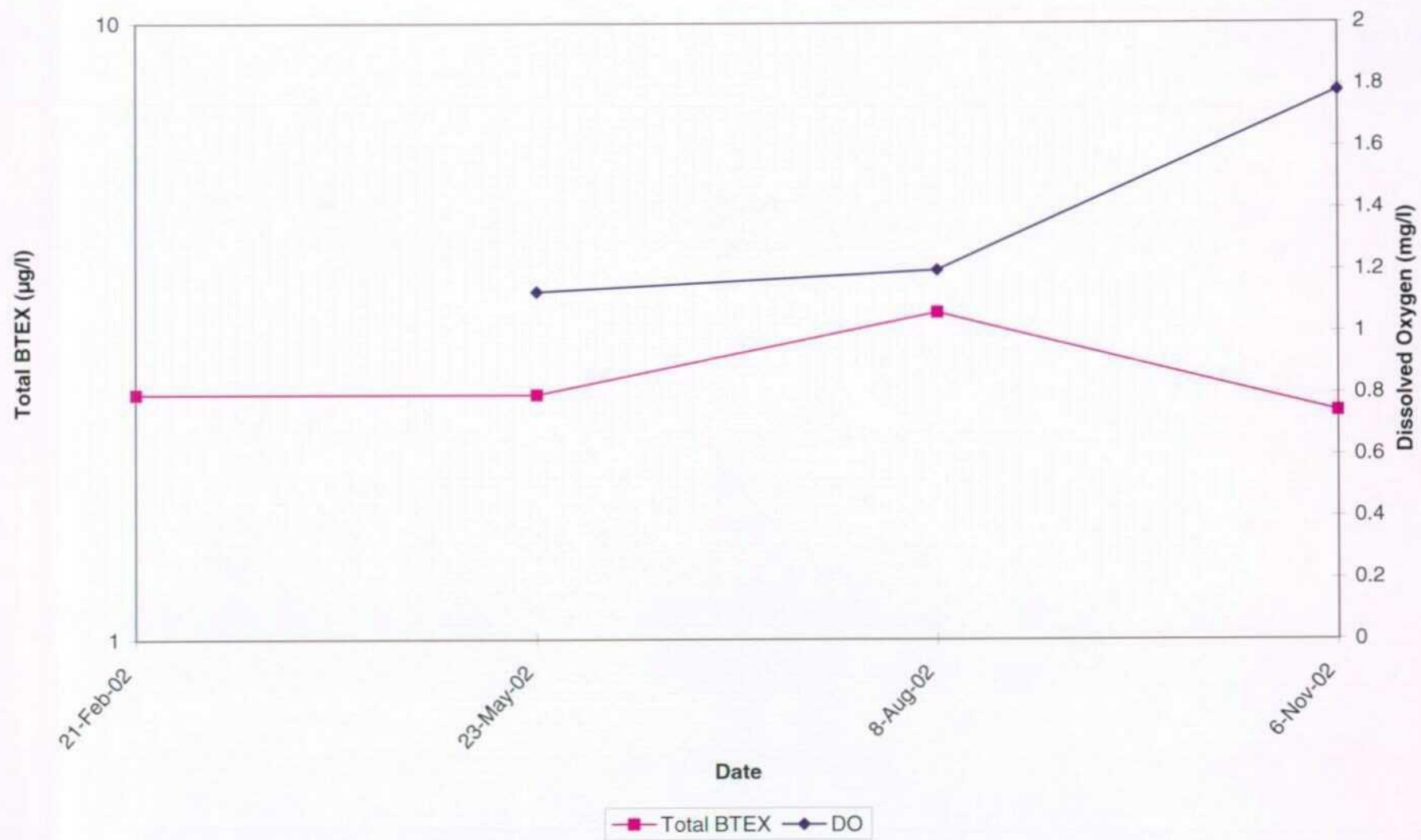
Total BTEX and Dissolved Oxygen Concentration vs. Time
R-1



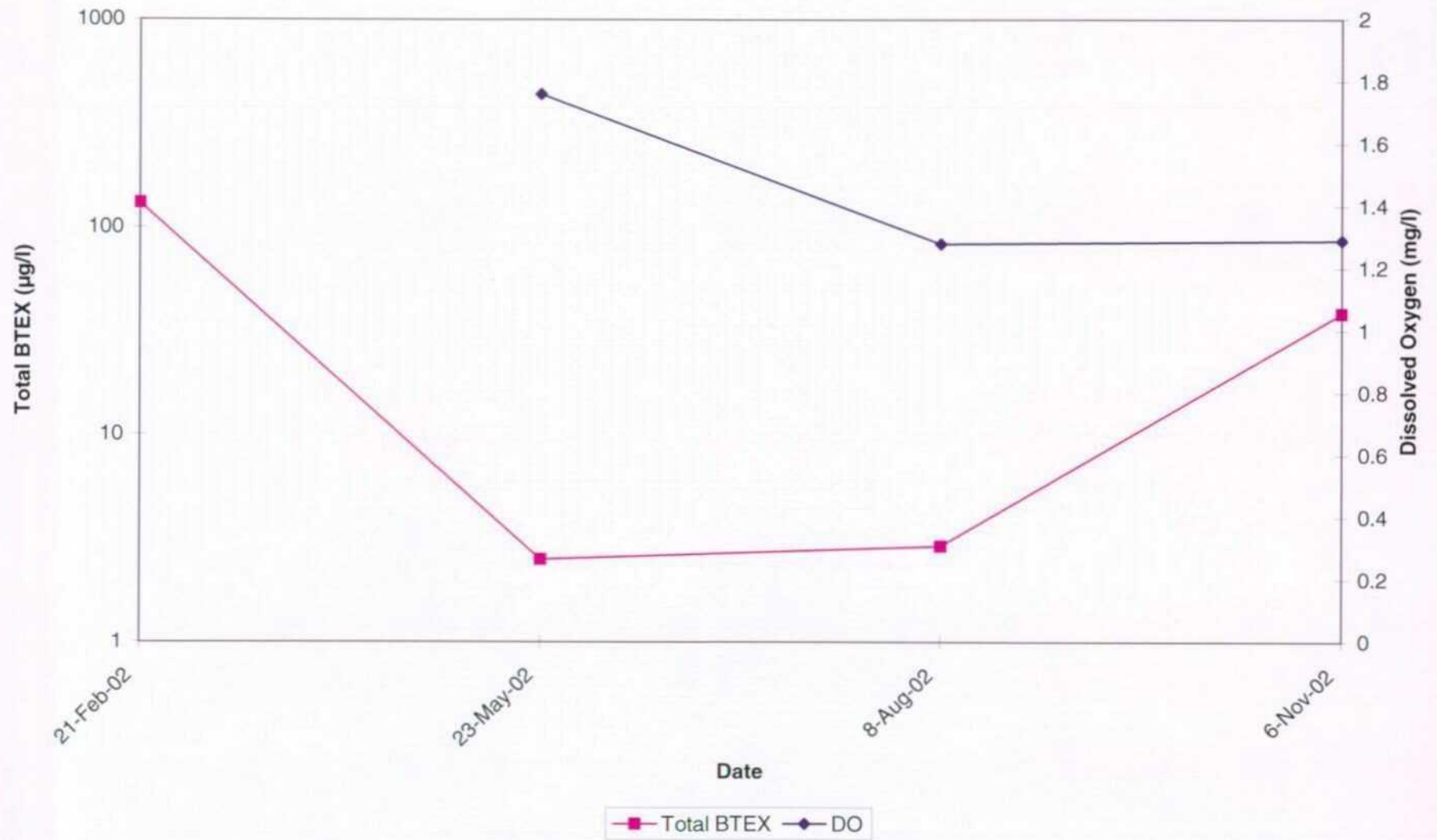
Total BTEX and Dissolved Oxygen Concentration vs. Time
R-2



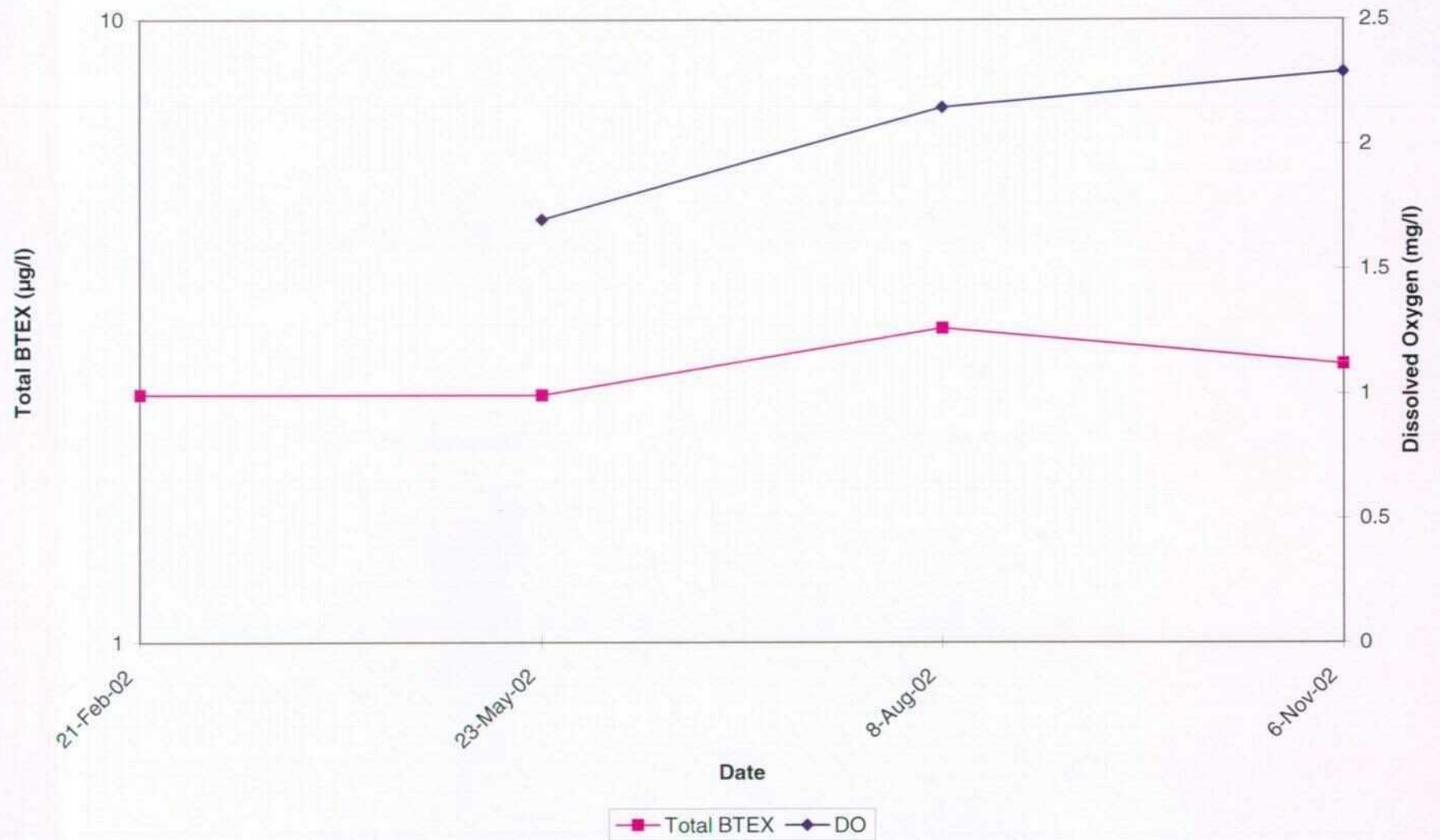
Total BTEX and Dissolved Oxygen Concentrations vs. Time
R-3



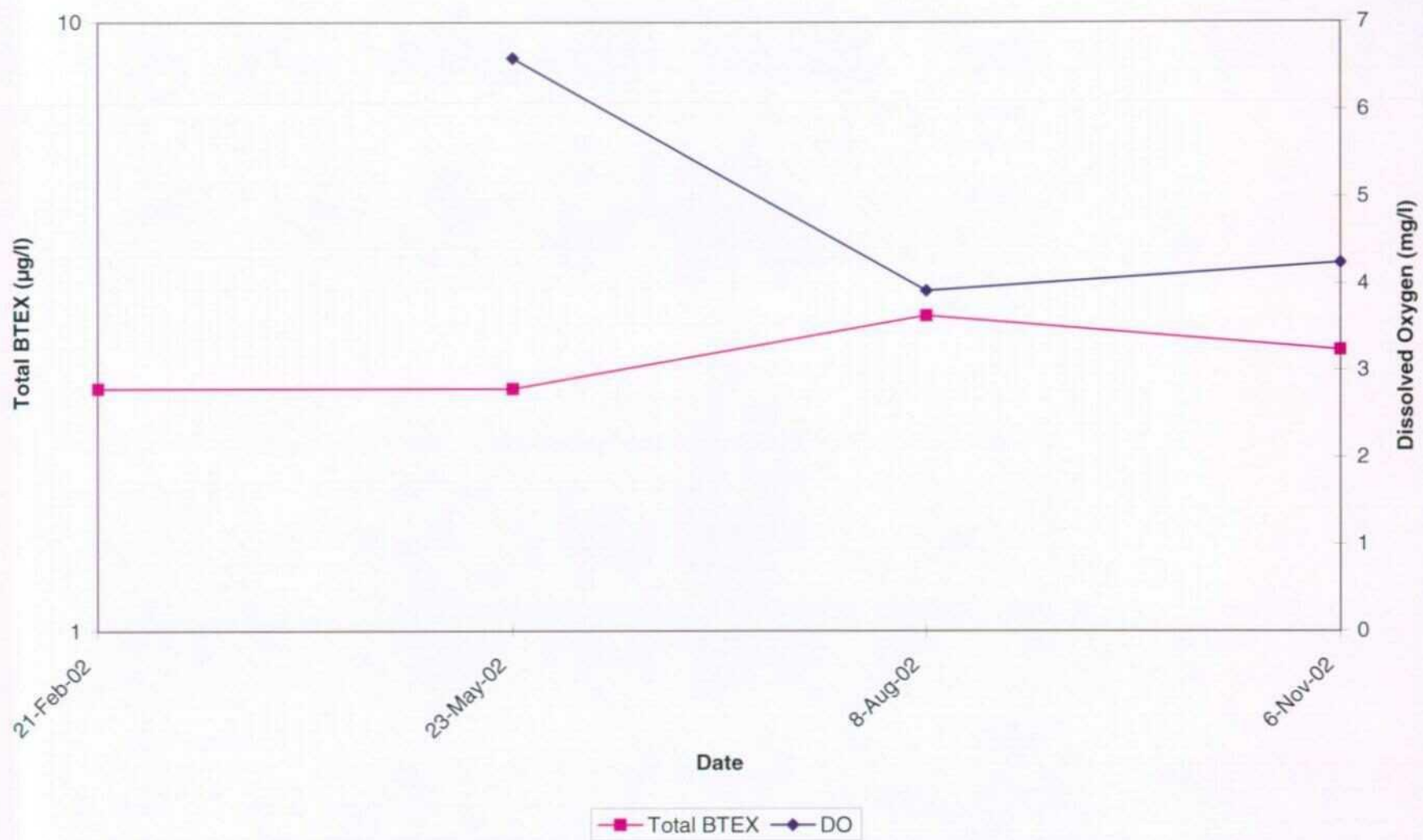
Total BTEX and Dissolved Oxygen Concentration vs. Time
R-4



Total BTEX and Dissolved Oxygen Concentration vs. Time
R-5



Total BTEX and Dissolved Oxygen Concentration vs. Time
R-6



APPENDIX I

2002

LABORATORY REPORTS FOR

SURFACE WATER SAMPLES

(Page 1 of 2)

Ingr. Butters 2-12-03
(Date/Signature)

[illegible]

DATA VALIDATION WORKSHEET

(Page 2 of 2)

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

Laboratory: APCL Batch Identification: 03-01070

Validation Criteria								
Sample ID	Down gradient Ditch	Up gradient Ditch						
Lab ID	03-01070- 01	03-01070- 02						
Holding Time	A	A						
Analyte List	A	A						
Reporting Limits	A	A						
Trip Blank	N/A	N/A						
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						
Method Blank	A	A						
Laboratory Control Sample (LCS)	A	A						
Laboratory Control Sample Duplicate (LCSD)	N	N						
Matrix Spike/Matrix Spike Dup. (MS/MSD)	A	N/A						
Surrogate Spike Recovery	A	A						
Retention Time Window	N	N						
Injection Time(s)	N	N						
Hardcopy vs. Chain-of-Custody	A	A						
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:

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 Buttars

10619 South Jordan Gateway

Salt Lake City UT 84095

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

APCL Analytical Report

Service ID #: 801-031070

Collected by: Delbert Bekis.

Collected on: 01/08/03

Received: 01/09/03

Extracted: N/A

Tested: 01/09/03

Reported: 01/15/03

Sample Description: Water

Project Description: 220013 San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				JA DowngradientDitch	JA Upgradient Ditch
				03-01070-1	03-01070-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	< 0.5	< 0.5
ETHYLBENZENE	8021B	µg/L	0.5	< 0.5	< 0.5
TOLUENE	8021B	µg/L	0.5	< 0.5	< 0.5
O-XYLENE	8021B	µg/L	0.5	< 0.5	< 0.5
M,P-XYLENE	8021B	µg/L	1	0.9J	1

PQL: Practical Quantitation Limit.

MDL: Method Detection Limit.

CRDL: Contract Required Detection Limit

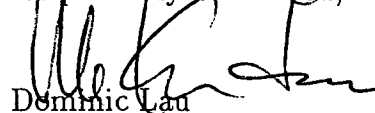
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

B,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

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

Chain of Custody ID 010803 DBJz
Page 1 of 1
Air Bill No. 836381676749

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

MWH Contact Brian Butters

Project San Juan River Basin

Project Number 220013

Date Due 21 days

Date Due _____
Sampler's Name Delbert Belci's
(print clearly)

[illegible]

(a) **Matrix:** AA – Air
SO – Soil WQ – Trip Blank/
WS – Surface Water Equipment Blanks
WG – Ground Water WW – Wastewater

(b) **Sampling Technique:** Submersible Pump=SP
Composite=C Bladder Pump=BP
Grab=G Bailer=B
Hand Auger=HA 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
Delmont Beckin / AESE	<i>[Signature]</i>	01/08/03	1445
		1/9/03 1000	

LABORATORY USE ONLY

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

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

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

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 #: 801-031070

Collected by: Delbert Bekis.

Collected on: 01/08/03

Sample description:

Water

Project: San Juan River Basin /220013

Received: 01/09/03

Tested: 01/09/03

Reported: 02/04/03

Analysis of Water

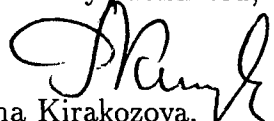
801-031070QC

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	03G1049	100	100	N.D.	µg/L	18.0	83	84	84	1	68-130	31
Toluene	03G1049	100	103	N.D.	µg/L	70.0	82	84	83	1	66-133	33
Ethylbenzene	03G1049	100	105	N.D.	µg/L	18.0	87	89	89	1	65-134	35
m/p-Xylene	03G1049	200	99	N.D.	µg/L	70.0	81	84	82	2	65-134	35
o-Xylene	03G1049	100	98	N.D.	µg/L	25.0	79	83	83	1	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:

031070

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix:

Water

Batch No: 03G1049

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		03G1049-LCS-01	83	0
2		03G1049-LSD-01	83	0
3		03G1049-MB-02	87	0
4	JA DOWNGRADIENDITCH	03-1070-1	89	0
5	JA UPGRADIENT DITCH	03-1070-2	89	0
6	JA DOWNGRADIENDITCH	03-1070-1MS	84	0
7	JA DOWNGRADIENDITCH	03-1070-1MSD	85	0
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



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 #: 801-023933
Collected by:
Collected on: 07/18/02
Sample Description: Water
Project Description: 220013 San Juan River Basin
Received: 07/19/02
Extracted: N/A
Tested: 07/19-26/02
Reported: 07/29/02

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				Jaquez Downstream	Jaquez Upstream
				02-03933-1	02-03933-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	0.7	1
TOLUENE	8021B	µg/L	0.5	0.4J	0.6
O-XYLENE	8021B	µg/L	0.5	<0.5	0.3J
M,P-XYLENE	8021B	µg/L	1	0.9J	1

Component Analyzed	Method	Unit	PQL	Analysis Result	
				Lat 3B-39 MW-1	Trip Blank
				02-03933-3	02-03933-4
BTXE					
Dilution Factor				20	1
BENZENE	8021B	µg/L	0.5	29	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	651	0.8
TOLUENE	8021B	µg/L	0.5	72	<0.5
O-XYLENE	8021B	µg/L	0.5	209	0.6
M,P-XYLENE	8021B	µg/L	1	3,630	0.8J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

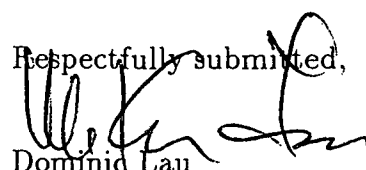
N.D.: Not Detected or less than the practical quantitation limit.

"-": 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 Butters

10619 South Jordan Gateway

Salt Lake City, UT 84095

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

Service ID #: 801-023933

Collected by:

Collected on: 07/18/02

Sample description:

Water

Project: San Juan River Basin /220013

Received: 07/19/02

Tested: 07/19-26/02

Reported: 07/31/02

Analysis of Water

801-023933QC

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	02G3209	100	97	N.D.	µg/L	18.0	88	88	87	1	68-130	31
Toluene	02G3209	100	98	N.D.	µg/L	70.0	96	95	93	2	66-133	33
Ethylbenzene	02G3209	100	101	N.D.	µg/L	18.0	103	97	96	1	65-134	35
m/p-Xylene	02G3209	200	93	N.D.	µg/L	70.0	101	97	94	3	65-134	35
o-Xylene	02G3209	100	96	N.D.	µg/L	25.0	100	98	95	3	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	02G3233	100	98	N.D.	µg/L	360	82	79	80	2	68-130	31
Toluene	02G3233	100	99	N.D.	µg/L	1400	94	92	94	2	66-133	33
Ethylbenzene	02G3233	100	101	N.D.	µg/L	18.0	104	104*	103*	1	82-134	35
m/p-Xylene	02G3233	200	93	N.D.	µg/L	70.0	99	99*	99*	0	73-134	35
o-Xylene	02G3233	100	96	N.D.	µg/L	500	100	95	100	5	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	02G3281	100	96	N.D.	µg/L	18.0	92	93	93	0	68-130	31
Toluene	02G3281	100	98	N.D.	µg/L	70.0	93	95	95	0	66-133	33
Ethylbenzene	02G3281	100	100	N.D.	µg/L	18.0	96	100	100	1	65-134	35
m/p-Xylene	02G3281	200	93	N.D.	µg/L	70.0	93	94	95	1	65-134	35
o-Xylene	02G3281	100	94	N.D.	µg/L	25.0	95	97	98	1	65-134	35

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

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

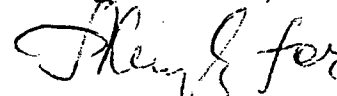
APCL QA/QC Report

*: 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,



Kevin Xie, Ph. D.,
QA 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: 023933

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Water

Batch No: 02G3209

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3209-MB-02	90	0
2	JAQUEZ DOWNSTREAM	02-3933-1	91	0
3	JAQUEZ UPSTREAM	02-3933-2	90	0
4		02G3209-LCS-01	90	0
5		02G3209-LSD-01	87	0
6	JAQUEZ DOWNSTREAM	02-3933-1MS	88	0
7	JAQUEZ DOWNSTREAM	02-3933-1MSD	85	0
8				
9				
10				
11				
12				
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14				
15				
16				
17				
18				
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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: 023922

Project ID: San Juan River Basin

Project No:

Sample Matrix: Water

Batch No: 02G3209

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3209-MB-02	90	0
2	COLDIRON COM MW-1	02-3922-1	169 I	1
3	TRIP BLANK	02-3922-3	89	0
4		02G3209-LCS-01	90	0
5		02G3209-LSD-01	87	0
6	JAQUEZ DOWNSTREAM	02-3933-1MS	88	0
7	JAQUEZ DOWNSTREAM	02-3933-1MSD	85	0
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8				
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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: 023933

Project ID: San Juan River Basin

Project No: 220013

Sample Matrix: Water

Batch No: 02G3281

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G3281-LCS-01	85	0
2		02G3281-LSD-01	84	0
3		02G3281-MB-01	87	0
4	TRIP BLANK	02-3933-4	90	0
5	EFF24JUL02	02-4018-1MS	85	0
6	EFF24JUL02	02-4018-1MSD	87	0
7				
8				
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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

CHAIN OF CUSTODY

DATE: 07/18/02 PAGE: 1 OF 1

PLI Accession #:

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:		1.		RELINQUISHED BY:		2.	
PROJ. NO.: 220013		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒		Signature: Ashley Lowe		Time: 13:50		Signature:		Time:	
PROJ. NAME: San Juan River Basin		CERTIFICATION REQUIRED ☐ NM ☐ SDWA ☐ OTHER		Printed Name: Ashley Lowe		Date: 07/18/02		Printed Name:		Date:	
P.O. NO.:		METHANOL PRESERVATION ☐		Company: AESE		See reverse side (Force Majeure)		Company:			
SHIPPED VIA: FedEx		COMMENTS: FIXED FEE ☐		RECEIVED BY:		1.		RECEIVED BY: (LAB)		2.	
SAMPLE RECEIPT				Signature: Paul K		Time: 7/19/02 10:00		Signature:		Time:	
NO CONTAINERS				Printed Name: Paul K		Date: 7/19/02 10:00		Printed Name:		Date:	
CUSTODY SEALS Y/N/NA				Company: APC				Pinnacle Laboratories Inc.			
RECEIVED INTACT											
BLUE IC											