

AP - 069

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BUILDING A BETTER WORLD

April 1, 2011

Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, New Mexico 87505

**RE: 2010 Annual Report for the EPNG San Juan River Plant Project
NMOCD Reference Number: AP-69-0**

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Natural Gas Company (EPNG) is submitting the enclosed *2010 Annual Report* for the San Juan River Plant project. The report presents the 2010 monitoring data and includes recommendations for 2011 activities at the Site.

If you have any questions or comments concerning the enclosed report, please contact Ian Yanagisawa (713-420-7361) or myself (303-291-2276).

Sincerely,

Jed Smith
Project Manager

cc: Brandon Powell – NMOCD, Aztec, NM
Ian Yanagisawa – EPNG
MWH Project File

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**EL PASO NATURAL GAS
COMPANY**

2 North Nevada
Colorado Springs, Colorado 80903

**2010 ANNUAL REPORT
SAN JUAN RIVER PLANT**

MARCH 2011



MWH

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Suite 2900
Denver, Colorado 80202
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LIST OF ACRONYMS

<u>Acronym</u>	<u>Explanation</u>
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
EPNG	El Paso Natural Gas Company
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NMOCD	New Mexico Oil Conservation Division
NMWQCC	New Mexico Water Quality Control Commission
ORC	Oxygen-releasing compound
SJRP	San Juan River Plant
TDS	Total dissolved solids
WGR	Western Gas Resources, Inc

EXECUTIVE SUMMARY

The San Juan River Plant (SJRP) is located in San Juan County, near Kirtland, New Mexico. The SJRP processes natural gas collected from production wells located in the San Juan Basin of New Mexico and southern Utah. In June 1992, the SJRP was sold to Western Gas Resources, Inc. (WGR), which is now a wholly owned subsidiary of Anadarko Petroleum Corporation. Closure of evaporation ponds, pits, and other potential source areas within the SJRP occurred from 1992 through 1995. Based on past groundwater, soil, and soil gas investigations, the residual groundwater plume of dissolved phase hydrocarbon impacts is associated with relatively limited soil contamination. Groundwater monitoring has been performed at the SJRP since 1995.

Hydrocarbon impacts to groundwater have been observed primarily in the vicinity of monitoring wells MW-8 and MW-9. Samples from these two wells have consistently indicated that benzene is the only hydrocarbon constituent exceeding the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards. El Paso Natural Gas (EPNG) has accordingly pursued active groundwater remediation, consisting of chemical oxygen enhancement and air sparging, to reduce the dissolved-phase benzene concentrations in this area.

Groundwater monitoring suggests that concentrations in monitoring well MW-8 have generally declined through the use of in-well oxygen-releasing compound socks. MW-8 benzene concentrations during 2010 ranged from non-detect to 0.81 µg/L (estimated result below the reporting limit). The air sparging system at MW-9 was shut down in February 2004 and remained off throughout 2010 in order to assess groundwater conditions. During this shut-down period, benzene concentrations in MW-9 essentially rebounded to pre-air sparging levels. In 2010, concentrations of benzene ranged from 70.7 µg/L to 91.8 µg/L. The rebound indicates that the residual saturated zone BTEX impacts are possibly outside the air sparging zone of influence. Further site characterization work has been proposed by EPNG, as discussed below. Further evaluation of the air sparging system has been suspended until completion of the site characterization work.

The New Mexico Oil Conservation Division (NMOCD) has requested annual monitoring of metals and inorganic parameters in all site monitoring wells as part of the current groundwater monitoring program. Elevated concentrations of some inorganic constituents, including total dissolved solids and sulfate, have historically been detected in various wells. It is possible that these elevated concentrations may be associated with past practices (particularly near the closed ponds); however, past closure activities have addressed any site-related sources and this region is also known to contain elevated total dissolved solids and sulfate concentrations. There are no known affected downgradient users of the groundwater.

EPNG has initiated a Stage I Abatement Plan to investigate hydrocarbon impacts encountered in groundwater near the Praxair lined pond. The results of the initial investigation were discussed in the Stage I Interim Report, submitted to the NMOCD on March 28, 2006. This report included a work plan for additional investigation activities. In September 2006, EPNG made slight revisions to the work plan and re-submitted it. EPNG is currently awaiting work plan approval from the NMOCD.

1.0 INTRODUCTION

This annual report has been prepared on behalf of El Paso Natural Gas Company (EPNG) to present a summary of the 2010 San Juan River Plant site activities and monitoring data. This site is located in San Juan County, Township 29N, Range 15W, Section 1, near Kirtland, New Mexico, as shown on **Figure 1**.

Current remedial action at the SJRP is limited to in-situ oxygen enhancement of groundwater through use of oxygen-releasing compound (ORC) in monitoring well MW-8. Dissolved phase groundwater impacts are monitored annually for the entire site and quarterly in the area of MW-8 and MW-9.

Site Description. EPNG owned the SJRP until June 1992. Since that time, the facility has been owned and operated by Western Gas Resources, Inc. (WGR), which is now a wholly owned subsidiary of Anadarko Petroleum Corporation. The plant processes natural gas collected from production wells located in the San Juan Basin of New Mexico and southern Utah. The SJRP is a 630-acre facility that has contained gas processing facilities, two raw water ponds (now closed), three wastewater evaporation ponds (now closed), a sulfur recovery plant, water and hydrocarbon tanks, a pigging station, flare pits, and several 16- to 24-inch-diameter natural gas pipelines that cross the facility. In 2002-2003, the Praxair Nitrogen Plant was built in the area north of the SJRP and south of monitoring wells MW-8 and MW-9. **Figure 2** presents a detailed site map of the SJRP. Closure of the evaporation ponds, flare pits, and other potential contaminant source areas was completed from 1992 through 1995. Groundwater has been monitored at this site since 1995.

Report Organization. This report is organized into six sections with supporting appendices. Section 2.0 provides a discussion of the SJRP project history. Section 3.0 includes a summary of field activities conducted at the SJRP during 2010, and Section 4.0 provides a discussion of results. Conclusions and recommendations are provided in Section 5.0, and references are listed in Section 6.0.

2.0 PROJECT HISTORY

The SJRP was previously owned by EPNG, but was sold to WGR on June 19, 1992. Investigation and remediation activities conducted at the SJRP have included the following components:

- Several investigations were conducted at the SJRP between 1985 and 1995. As a result, 24 monitoring wells have been installed at various locations at the plant.
- The north and south flare pits were closed in 1992 after removing 18,200 cubic yards (cy) and 3,520 cy of contaminated material from these pits, respectively.
- The former wastewater evaporation ponds were closed during 1995 and early 1996. The pit and pond closure activities included capping the ponds with compacted, low-permeability soils.
- EPNG abandoned 17 monitoring wells, upgraded two wells, installed five new monitoring wells, and conducted a soil gas investigation during the summer of 1995. Results of the soil gas investigation indicated shallow hydrocarbon contamination near monitoring wells MW-8 and MW-9.
- EPNG submitted a groundwater remediation work plan to the NMOCD in January 2001 to address elevated benzene in monitoring wells MW-8 and MW-9, and received approval to begin remedial actions on June 4, 2001. The work plan included provisions to install an air sparging system with two air sparging wells; one injection point located within 10 feet of each monitoring well.
- The air sparging system air injection wells (SW-8 and SW-9) were installed on October 30, 2001. Both wells were developed on November 12, 2001.
- A pre-pilot air sparging test was conducted at both wells on November 13, 2001. Results from this test indicated good communication between SW-9 and MW-9 but poor communication between SW-8 and MW-8.
- Because of poor communication between SW-8 and MW-8, an ORC sock consisting of magnesium peroxide and manufactured by Regenesys, Inc., was recommended for remediation in this area. The ORC sock was installed in MW-8 on November 14, 2001.
- The air sparging pilot test was initiated on November 14, 2001. With the exception of a 48-hour shutdown prior to the four-week sampling event on December 26, 2001, the air sparging system operated continuously from November 14, 2001 to January 18, 2002. The air sparging pilot test culminated with a sampling event on January 25, 2002. An additional sampling event was performed on February 21, 2002, to evaluate the potential for contaminant concentration rebound following a four-week shutdown.
- From February 2002 through December 2002, site activities included continued operation and maintenance (O&M) of the air sparging system, which was placed into continuous operation following the pilot test, and site-wide annual groundwater monitoring.

- During 2003, site activities included periodic O&M of the air sparging system, replacement of ORC socks into MW-8, quarterly sampling of MW-8 and MW-9, and site-wide annual groundwater monitoring.
- Based on benzene, toluene, ethylbenzene and total xylenes (BTEX) concentrations below New Mexico Water Quality Control Commission (NMWQCC) standards, the air sparging system was shut down in February 2004 to assess static groundwater conditions at the site.
- During 2004 through 2006, site activities included replacement of ORC socks into MW-8, quarterly sampling of MW-8 and MW-9, and site-wide annual groundwater monitoring.
- EPNG submitted a Stage I Abatement Plan to NMOCD in November 2005 to investigate hydrocarbon impacts encountered in groundwater near the Praxair evaporation pond at the SJRP. Approval was received on January 23, 2006 to begin investigative actions. Results of this investigation are detailed in the Stage I Interim Report, submitted March 28, 2006, which recommended that further investigation be conducted via hollow-stem auger, as the effectiveness of direct push technology at the site was found to be limited.
- The air sparge system has remained off since system shut down in 2004. Site activities have primarily consisted of quarterly sampling of MW-8 and MW-9, annual site-wide annual groundwater monitoring, and annual replacement of the ORC socks in MW-8.
- In May 2007, monitoring well MW-7, which was located immediately adjacent to the Praxair facility, was plugged and abandoned at Praxair's request, in order to facilitate new process construction.
- During the May 2008 sampling event, field personnel noted that monitoring well MW-5 had been destroyed in conjunction with subsurface coal mining activities. Destruction of the well is believed to have occurred between February and May 2008.

3.0 SUMMARY OF 2010 ACTIVITIES

The current environmental program at the SJRP consists of dissolved-phase hydrocarbon remediation (oxygen enhancement) and site-wide groundwater monitoring. The following section details site activities conducted at the SJRP during 2010.

3.1 GROUNDWATER MONITORING PROGRAM

The groundwater monitoring program included the following components during 2010:

- Groundwater monitoring wells MW-8 and MW-9 were sampled quarterly in February, May, August, and November 2010 and analyzed for BTEX compounds to evaluate the effectiveness of both previous and ongoing hydrocarbon remediation activities in this area.
- On August 26, 2010, Site monitoring wells MW-4, MW-6, MW-8, MW-9, and MW-2 were sampled for BTEX compounds, NMWQCC metals, total dissolved solids (TDS), alkalinity, nitrate/nitrite, chloride, and sulfate.
- Site-wide groundwater elevation measurements were collected quarterly at each well.

All groundwater monitoring activities during 2010 were conducted by LT Environmental, Inc. of Durango, Colorado. Laboratory analyses were performed by Accutest Laboratories in Houston, Texas.

3.2 HYDROCARBON REMEDIATION

Since 2002, dissolved phase hydrocarbon remediation activities at the SJRP have included oxygen enhancement using ORC socks in MW-8 (2002-Present) and air sparging in the vicinity of MW-9 (until 2004). The following paragraphs describe remediation activities performed in 2010.

ORC Enhancement. Dissolved oxygen was measured in MW-8 on a quarterly basis. The February dissolved oxygen measurement of 4.6 mg/L was conducted on purge water immediately prior to collecting the February groundwater sample. The ORC socks had been removed from MW-8 seven days prior to this sampling event. The May, August, and November 2010 dissolved oxygen measurements were conducted in-situ immediately after pulling the ORC socks for inspection. The dissolved oxygen concentrations measured on these three occasions were, predictably, elevated, ranging from approximately 12.9 to 19.7 mg/L). The 2010 dissolved oxygen data indicate that sufficient oxygen is available near MW-8 for biodegradation.

The ORC socks in MW-8 were replaced on November 3, 2010. ORC socks will generally be replaced annually, or as-needed, based on periodic monitoring of dissolved oxygen and BTEX concentrations in this well.

Air Sparging System. As described in **Section 2.0**, air sparging has not been conducted at the site since January 2004. Pending additional source material investigation in the vicinity of MW-8 and MW-9, the system will remain off.

4.0 DISCUSSION OF 2010 RESULTS

This section presents and discusses the results of monitoring activities conducted at the SJRP during 2010. The section is divided into two discussions, the first covering the site-wide groundwater monitoring activities; and the second covering the additional quarterly sampling for BTEX that was conducted only at monitoring wells MW-8 and MW-9.

Field documentation from the 2010 groundwater monitoring activities is included in **Appendix A**; and the analytical laboratory reports are included in **Appendix B**.

4.1 SITE-WIDE GROUNDWATER MONITORING RESULTS

Groundwater Elevation Monitoring. Site-wide groundwater elevation maps for each quarter are presented in **Figures 3** through **6**. Groundwater flows radially outward from the topographic rise on which the SJRP is located. In the north plant area, groundwater flows towards the northwest. Groundwater beneath the southern portion of the plant generally flows to the southwest.

BTEX Sampling Results. BTEX results from the annual samples collected during August 2010 are presented in **Table 1** and on **Figure 5**. Historic BTEX data are also summarized on **Table 2**. During the annual sampling event, BTEX compounds were detected in monitoring wells MW-8 and MW-9 and were not detected in monitoring wells W-2, MW-4, and MW-6. These results are consistent with previous site-wide monitoring data from 2002 through 2009. The BTEX detections in MW-8 and MW-9 are discussed in **Section 4.2** along with the quarterly BTEX results for these two wells.

Inorganic Sampling Results. The inorganic results from the annual site-wide groundwater sampling are presented in **Table 2**. Historic data are summarized in **Table 3**. Elevated concentrations of general chemistry inorganics were detected in all five wells. TDS and sulfate were elevated above their NMWQCC standards (1,000 mg/L and 600 mg/L, respectively) in all five wells. Isoconcentration maps for TDS and sulfate concentrations in groundwater are presented as **Figures 7** and **8**, respectively. Chloride was elevated above its standard of 250 mg/L in every well except MW-8. Regionally, TDS, sulfate, and chloride in groundwater are known to be elevated.

Nitrate/nitrite was elevated above its NMWQCC standard of 10 mg/L in two wells, MW-6 (57.0 mg/L) and W-2 (19.5 mg/L). Alkalinity varied widely among the 5 wells; however, there is no standard established for alkalinity.

With respect to total metals concentrations in the five wells sampled, the NMWQCC groundwater standards were exceeded for: aluminum (4 wells); cadmium (1 well); cobalt (three wells); iron (5 wells); manganese (4 wells); nickel (3 wells); and selenium (2 wells). The samples were not field filtered, and fines were likely a major contributor to the total metals concentrations. Monitor wells MW-6 and MW-9 had the highest number of metals analytes exceeding standards, with 7 and 5 exceedances, respectively. These two wells also contained the highest concentrations of sulfate, TDS, and chloride. It is possible that some of these groundwater metals constituents are related to the industrial activity; however, the contributions from fines in the samples have not yet been isolated.

Overall, concentrations of the various general chemistry inorganics and metals were similar to previous years' results.

4.2 QUARTERLY SAMPLING RESULTS

Quarterly groundwater sampling BTEX results are shown on **Table 1** and on **Figures 3** through **6**. During 2010, the groundwater quality in MW-8 continued to achieve the NMWQCC BTEX standards. The only BTEX detection in MW-8 was an estimated benzene concentration of 0.81 µg/L in May 2010. Static water levels in this well stabilized in 2010 after a rapid decline during 2009, likely associated with the subsurface coal mining activities.

Benzene concentrations in MW-9 remained elevated above the NMWQCC standard of 10 µg/L throughout 2010. The quarterly benzene levels were 70.7 µg/L, 91.8 µg/L, 72.3 µg/L, and 86.6 µg/L, respectively. Toluene was barely detectable (in one sample); and concentrations of ethylbenzene and xylenes ranged from 4.5 µg/L to 18.8 µg/L during 2010, far below their respective standards of 750 µg/L and 620 µg/L, respectively.

Figures 9, 10, and 11 depict long-term trends in the three wells subject to quarterly monitoring (i.e., MW-5, which was destroyed in 2008, MW-8, and MW-9). **Table 2** summarizes these data as well. The trends indicate that: 1) BTEX concentrations in MW-5 appeared to fluctuate with water level, rising slightly during elevated water table periods; 2) BTEX concentrations in MW-8 have attenuated gradually over the period of monitoring; and 3) air sparging near MW-9 was effective when operational, though it is unclear whether or not sparging would be able to sufficiently remediate the area so as to prevent rebound.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are provided based on the information presented in this report.

5.1 SITE-WIDE GROUNDWATER MONITORING PROGRAM

Groundwater sampling performed as part of the site-wide groundwater monitoring at SJRP resulted in the following conclusions and recommendations:

- Groundwater flows radially away from the topographic rise on which SJRP is located. In the north plant area, groundwater flow is towards the northwest; in the south plant area, groundwater flow is primarily towards the southwest.
- The remaining groundwater impacts in excess of BTEX standards appear to be in the area near MW-9.
- Consistent with historic monitoring, inorganic constituents were measured above NMWQCC standards during the August 2010 sampling event. The elevated concentrations of inorganics, particularly near the closed ponds may result from past site practices; however, regional levels of chloride, sulfate, and TDS are also elevated, and the metals contributions due to sample fines have not yet been isolated. It is recommended that dissolved phase metals be analyzed during the 2011 annual sampling event.
- Monitoring well MW-5 was destroyed during the spring of 2008. Due to its location down gradient of MW-8 and MW-9, replacement of this well is recommended, once ground shifting due to underground mining activity has ceased and a clear trend in static groundwater level elevations has been established. Based on the 2009 and 2010 water level data, it appears that stability may have been attained. El Paso will check with the mining company regarding future activities and confirm this recommended well replacement with the OCD.

5.2 HYDROCARBON REMEDIATION PROGRAM

The following conclusions and recommendations are provided regarding the hydrocarbon remediation performed near wells MW-8 and MW-9:

- Benzene concentrations in MW-9 have remained above standards. The benzene concentrations in MW-8 were non-detect during 2010, except for an estimated concentration of 0.81 µg/L in May 2010.
- EPNG recommends continuation of quarterly BTEX monitoring at MW-8 and MW-9.
- ORC socks will be replaced in MW-8, as needed, based on periodic monitoring of dissolved oxygen, water levels, and BTEX concentrations.
- In November 2005, EPNG submitted a Stage I Abatement Plan to NMOCD to investigate hydrocarbon impacts encountered in groundwater near the Praxair evaporation pond at the SJRP. Approval of this abatement plan was received from NMOCD on January 23, 2006, and the investigation was performed in February 2006. Results of the initial investigation were detailed in the Stage I Interim Report submitted by March 28, 2006. Revisions to the work plan for additional investigation included in the Stage I Interim Report were submitted on September 28, 2006. The MW-9 area will be evaluated following OCD's approval of the work plan.

6.0 REFERENCES

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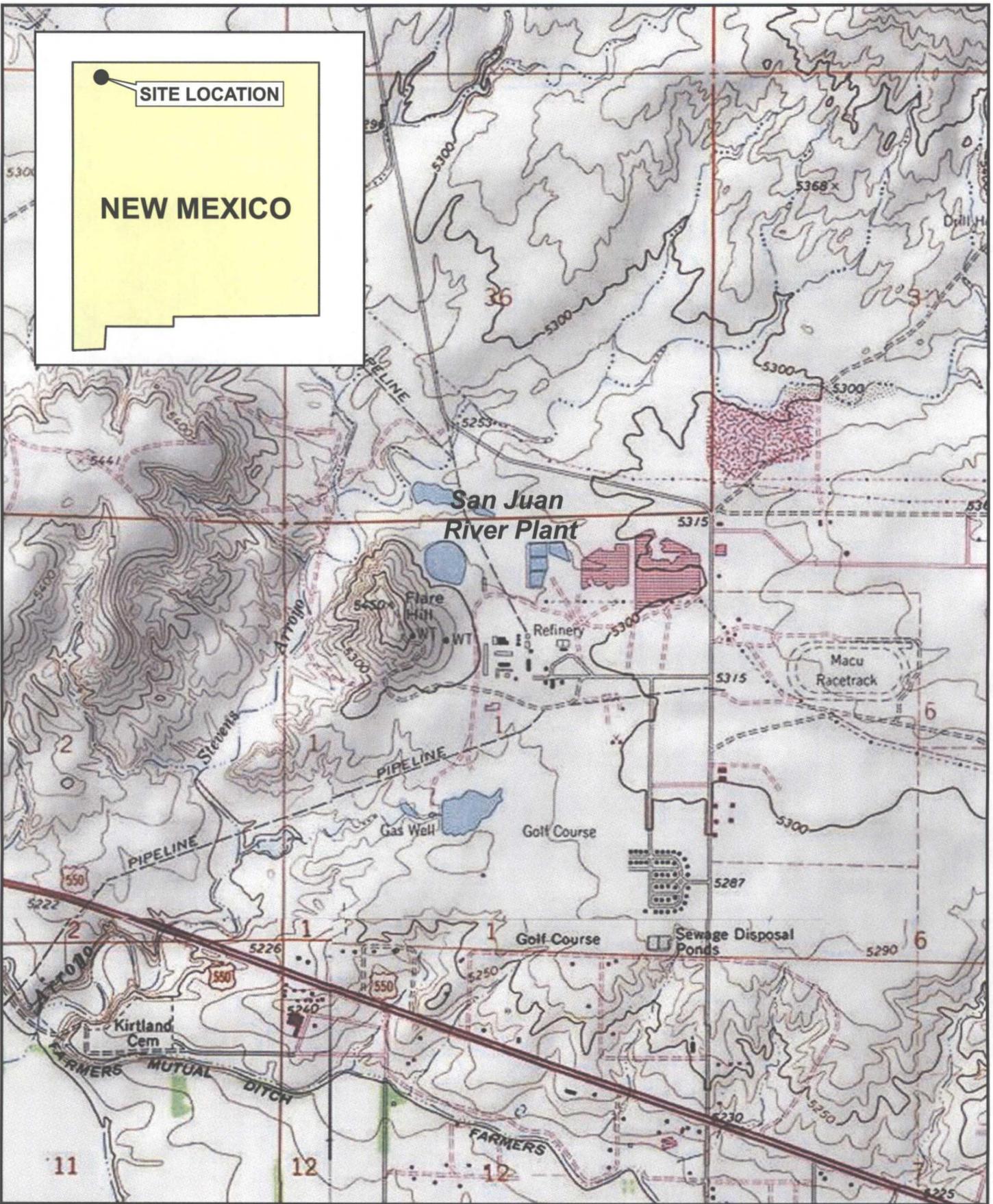
New Mexico Oil Conservation Division, June 4, 2001. Letter to Mr. Scott Pope, El Paso Energy Corporation, Case #GW039R, *Groundwater Monitoring Results and Remediation Work Plan*, San Juan River Plant, Kirtland, New Mexico.

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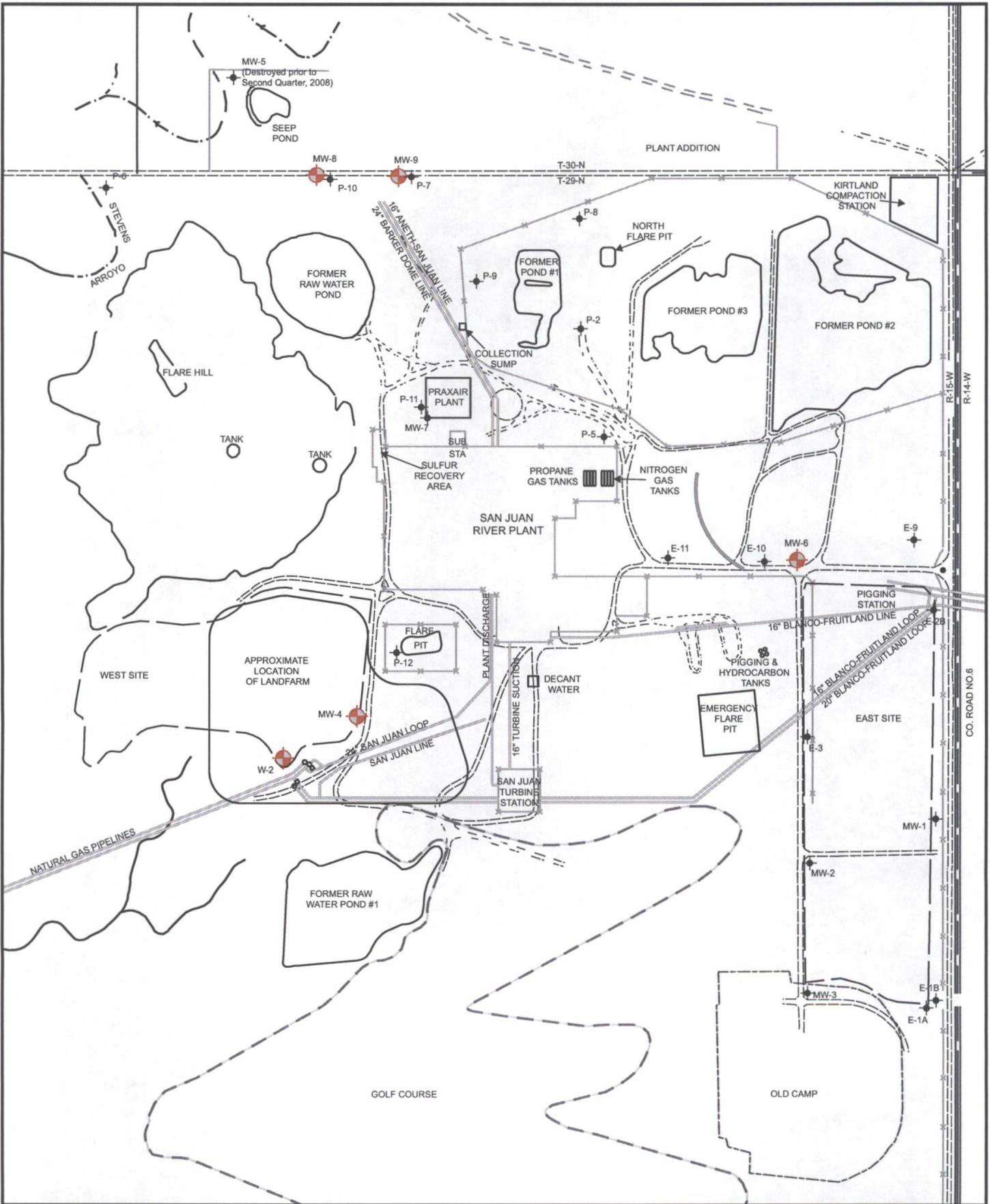
SOURCE

National Geographic TOPOI, 2009, National Geographic Holdings, Inc.,
 USGS Topographic maps, Youngs Lake NM Quad



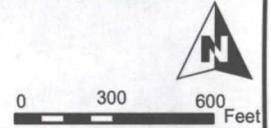
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 MWH		PROJECT:	SAN JUAN RIVER PLANT	FIGURE:	1
		TITLE:	Site Location Map		

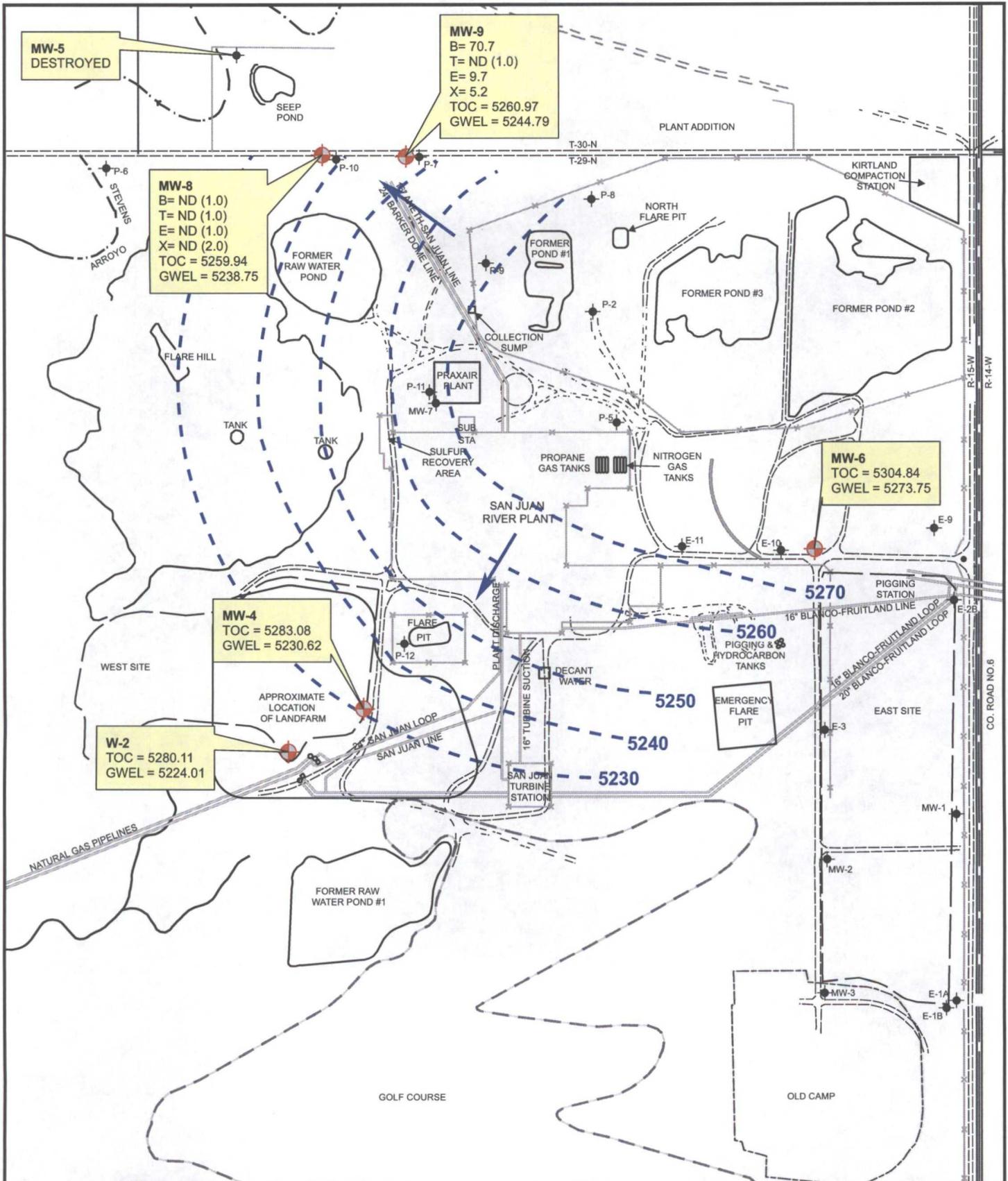


LEGEND

- MW-4  Existing Monitoring / Observation Well
- P-01  Abandoned Monitoring Well



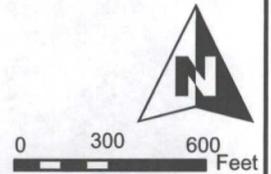
		PROJECT: SAN JUAN RIVER PLANT	FIGURE:
		TITLE: Site Layout Map	2



LEGEND

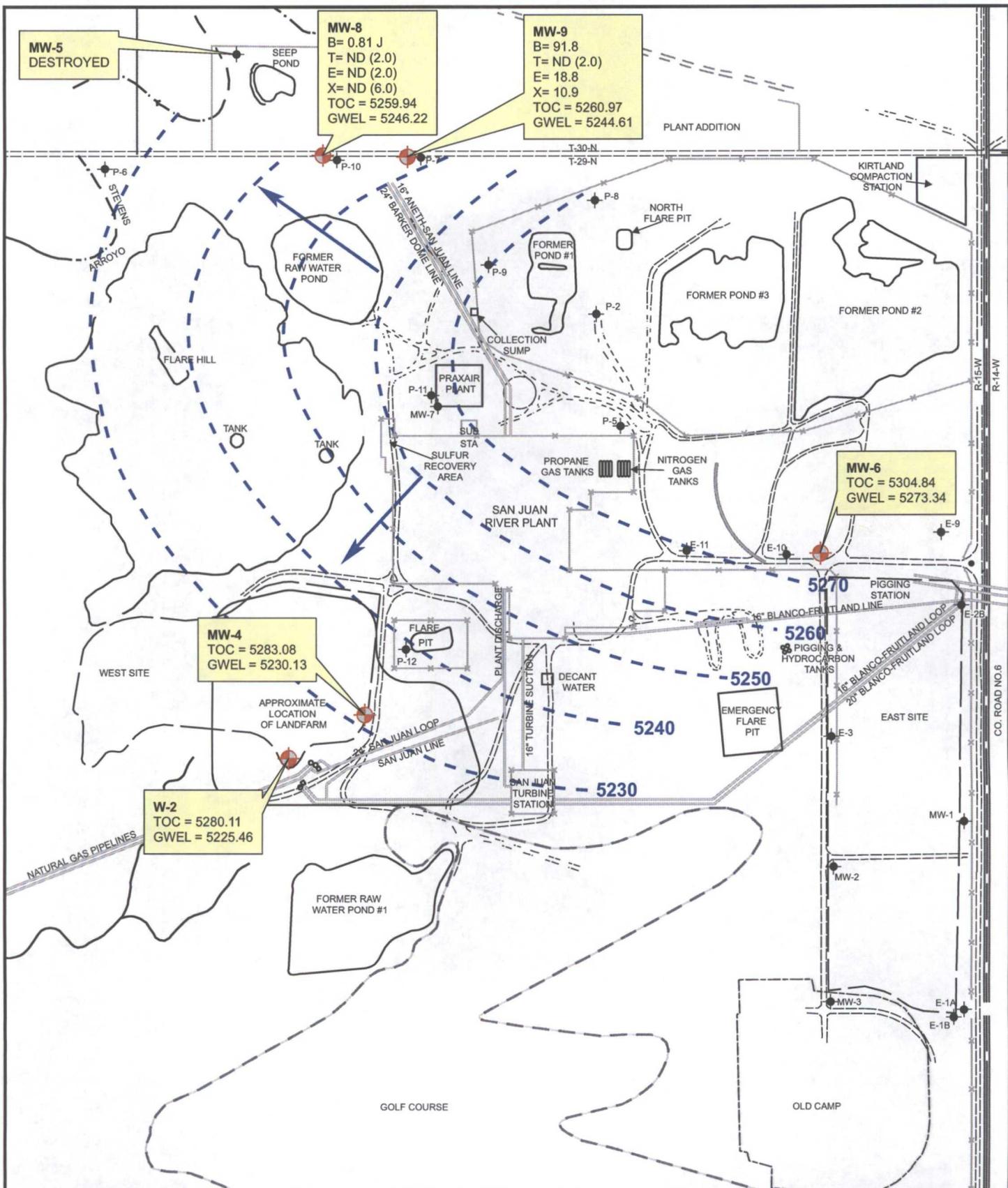
- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)



PROJECT: SAN JUAN RIVER PLANT
 TITLE: Groundwater Potentiometric Surface Map and BTEX Concentrations - February 18, 2010

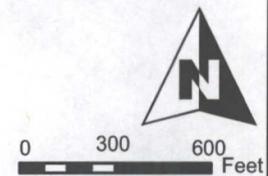
FIGURE: 3



LEGEND

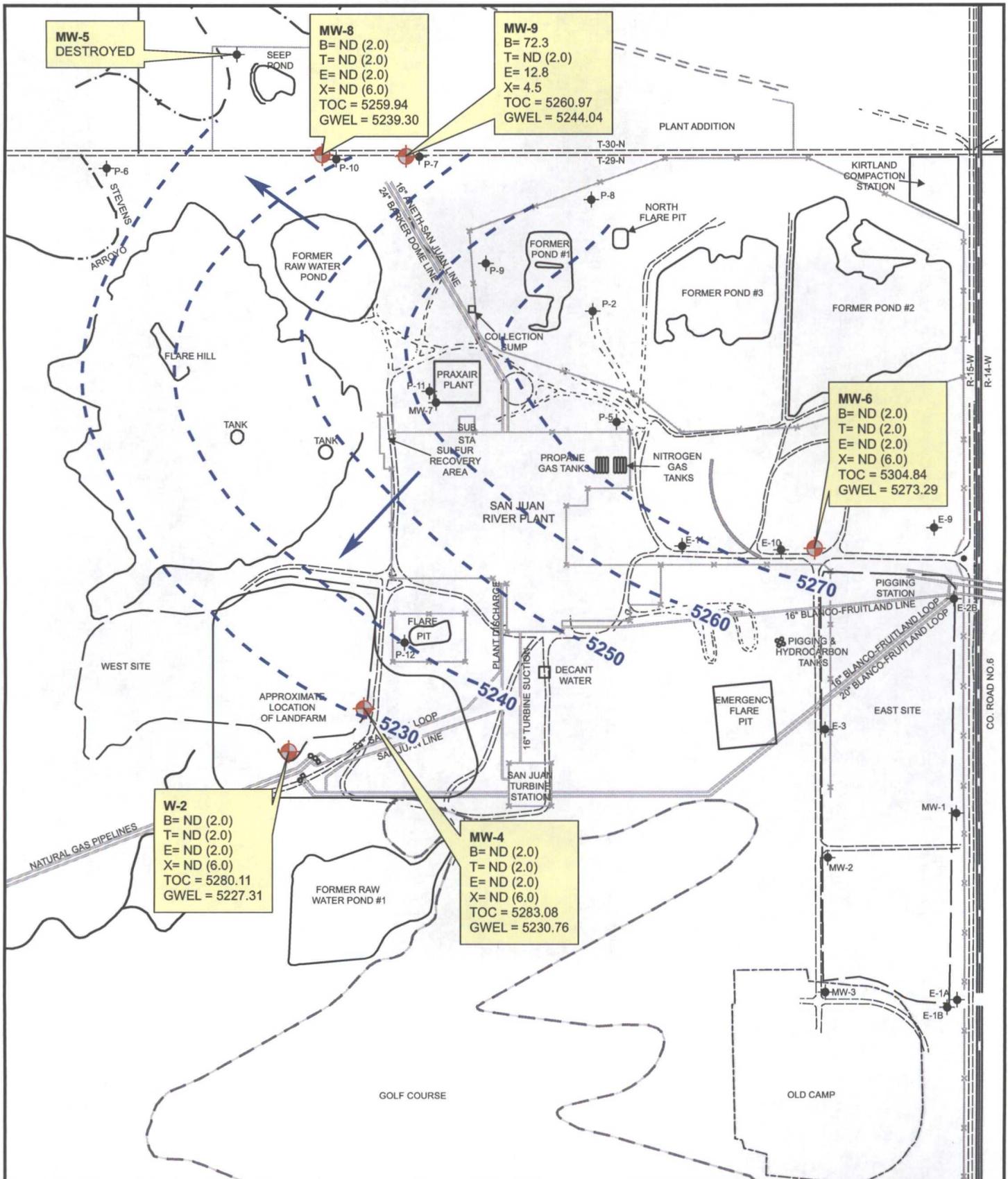
- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)
- J Result Flagged as Estimated



PROJECT: SAN JUAN RIVER PLANT
 TITLE: Groundwater Potentiometric Surface Map and BTEX Concentrations - May 26, 2010

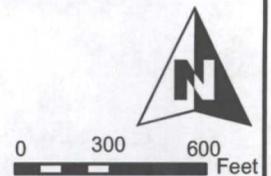
FIGURE:
 4



LEGEND

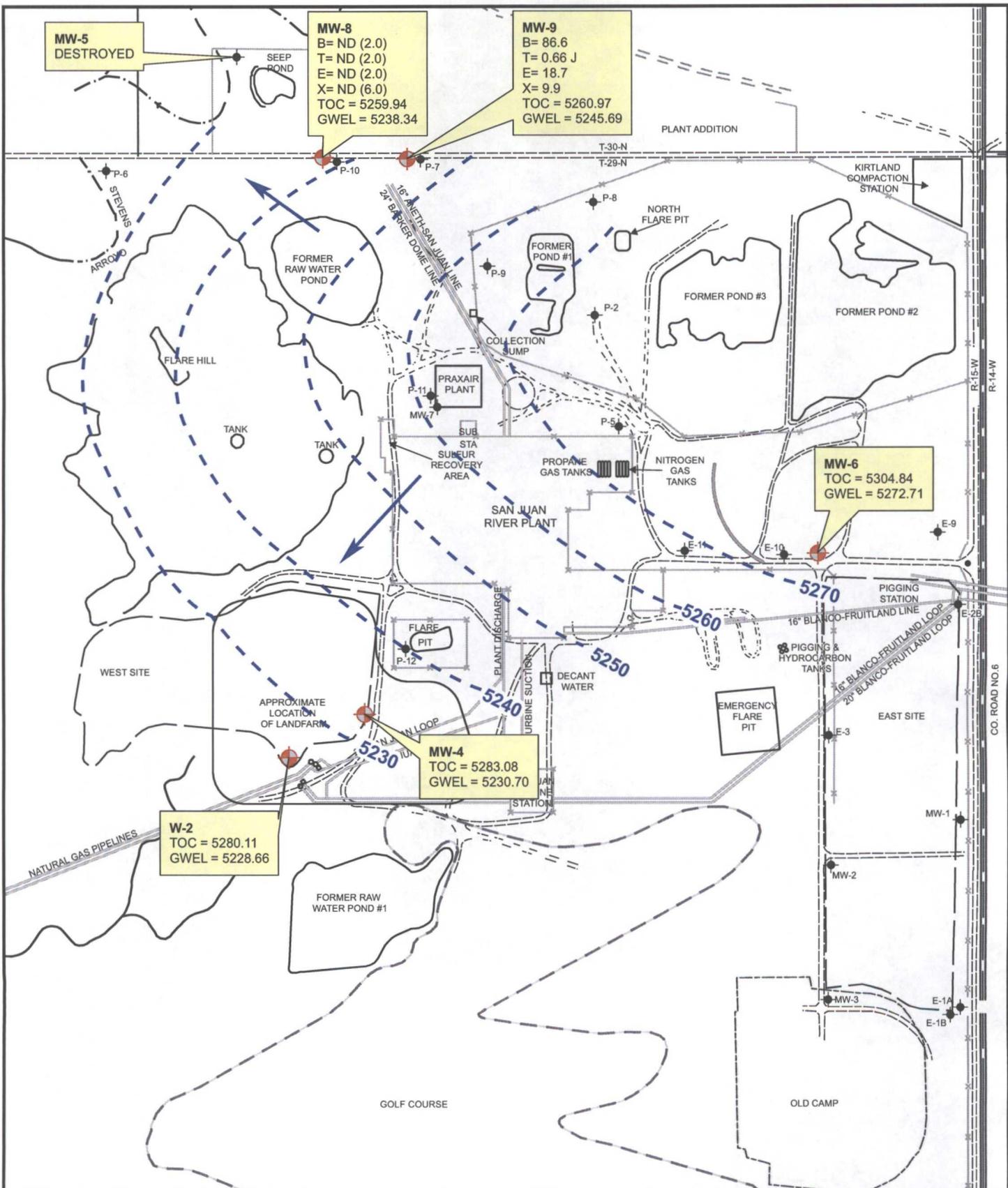
- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)
- J Result Flagged as Estimated



PROJECT: SAN JUAN RIVER PLANT
 TITLE: Groundwater Potentiometric Surface Map and BTEX Concentrations - August 26, 2010

FIGURE: 5



MW-5
DESTROYED

MW-8
B= ND (2.0)
T= ND (2.0)
E= ND (2.0)
X= ND (6.0)
TOC = 5259.94
GWEL = 5238.34

MW-9
B= 86.6
T= 0.66 J
E= 18.7
X= 9.9
TOC = 5260.97
GWEL = 5245.69

MW-6
TOC = 5304.84
GWEL = 5272.71

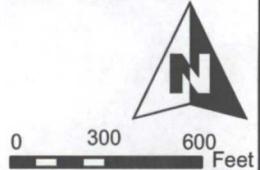
MW-4
TOC = 5283.08
GWEL = 5230.70

W-2
TOC = 5280.11
GWEL = 5228.66

LEGEND

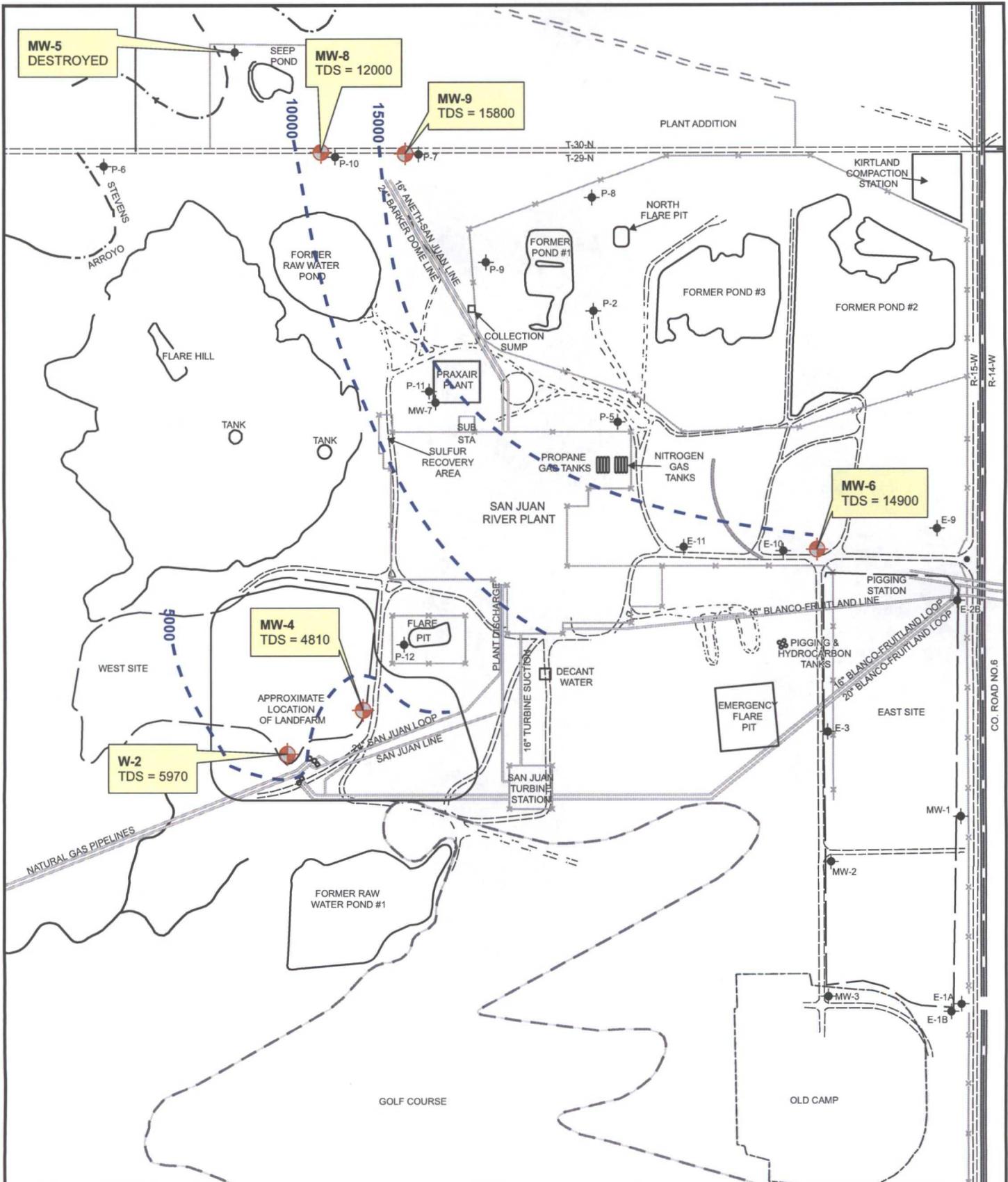
- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)
- J Result Flagged as Estimated



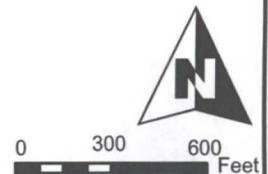
PROJECT: SAN JUAN RIVER PLANT
 TITLE: Groundwater Potentiometric Surface Map and BTEX Concentrations - November 9, 2010

FIGURE: 6



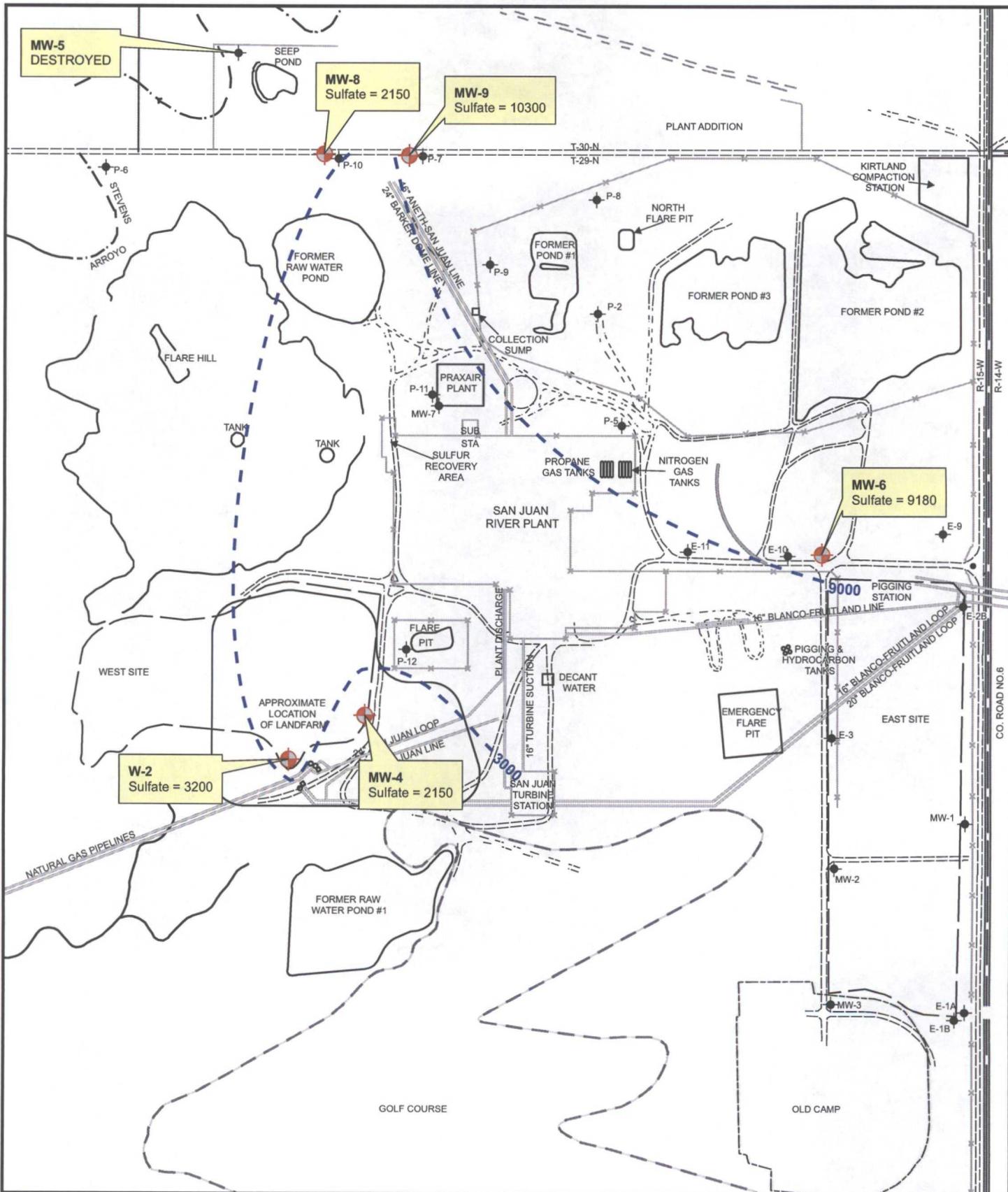
LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- TDS Total Dissolved Solids Concentration in ppm
- 1275— Total Dissolved Solids Isoconcentrations (Inferred Where Dashed)



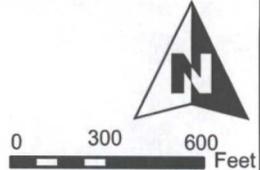
PROJECT: SAN JUAN RIVER PLANT
 TITLE: TDS Isoconcentration Map - August 26, 2010

FIGURE:
 7



LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Sulfate Sulfate Concentration in ppm
- 1275— Sulfate Isoconcentrations (Inferred Where Dashed)



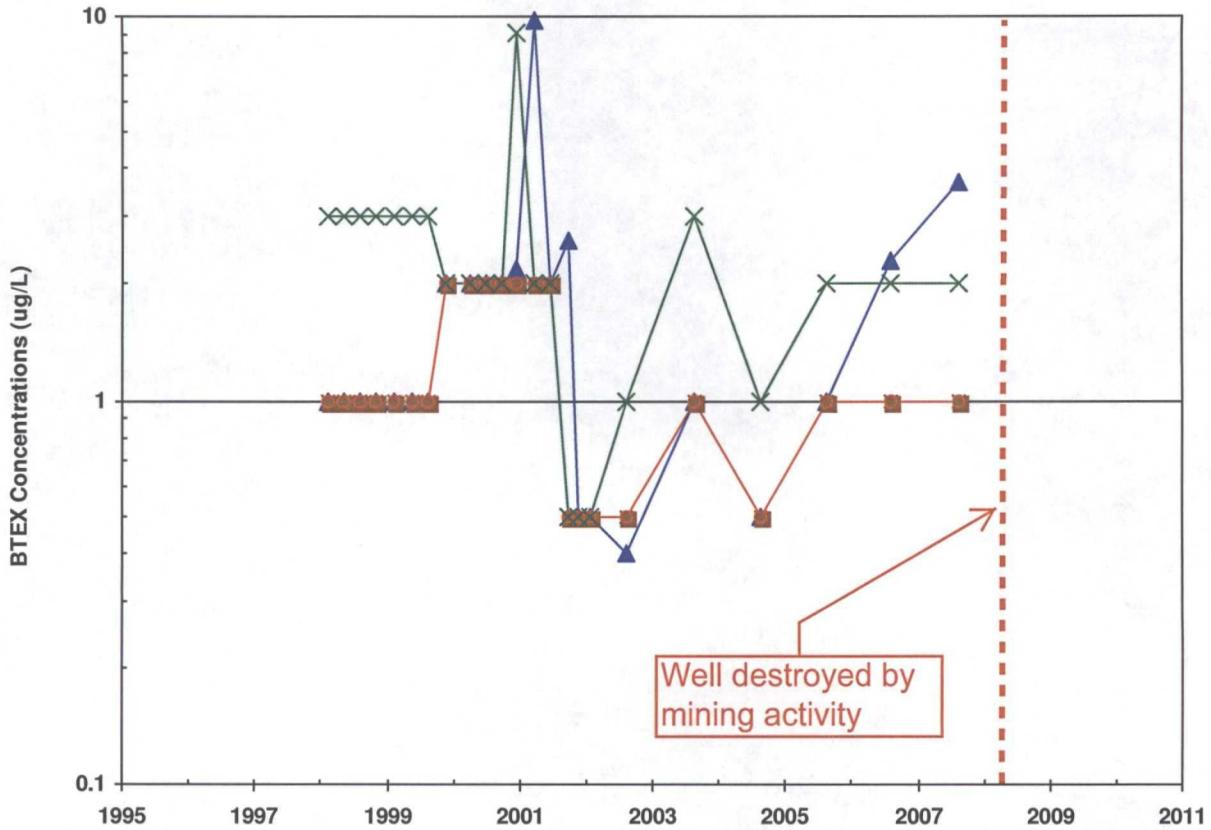
MWH



PROJECT: SAN JUAN RIVER PLANT
 TITLE: Sulfate Isoconcentration Map - August 26, 2010

FIGURE:
8

FIGURE 9
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
EL PASO CORPORATION - SAN JUAN RIVER PLANT (METER #SJRJ)
MW05



▲ Benzene NM Std.: (10 ug/L)	■ Toluene (750 ug/L)	○ Ethylbenzene (750 ug/L)	× Total Xylenes (620 ug/L)
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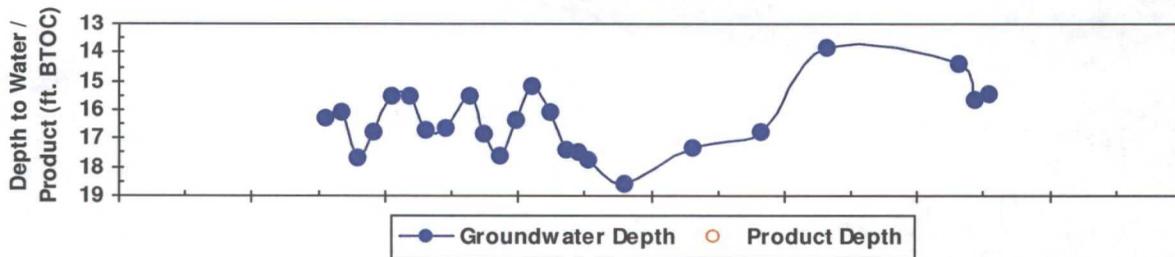
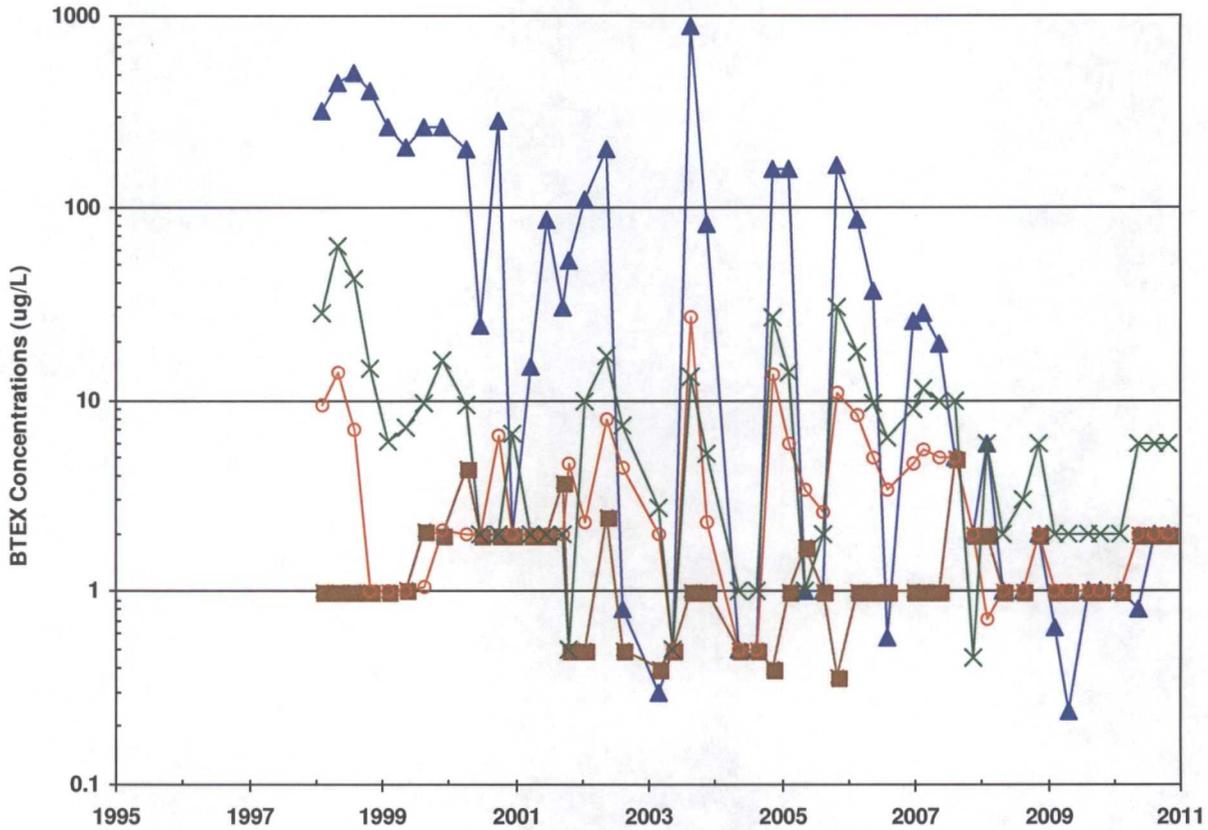
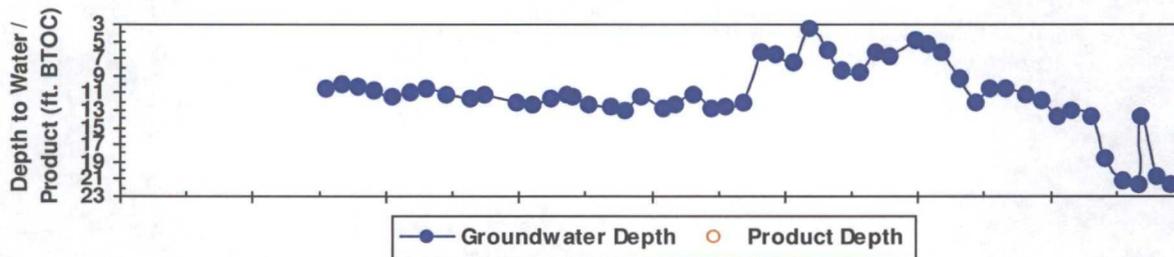


FIGURE 10
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
EL PASO CORPORATION - SAN JUAN RIVER PLANT (METER #SJRJ)
MW08

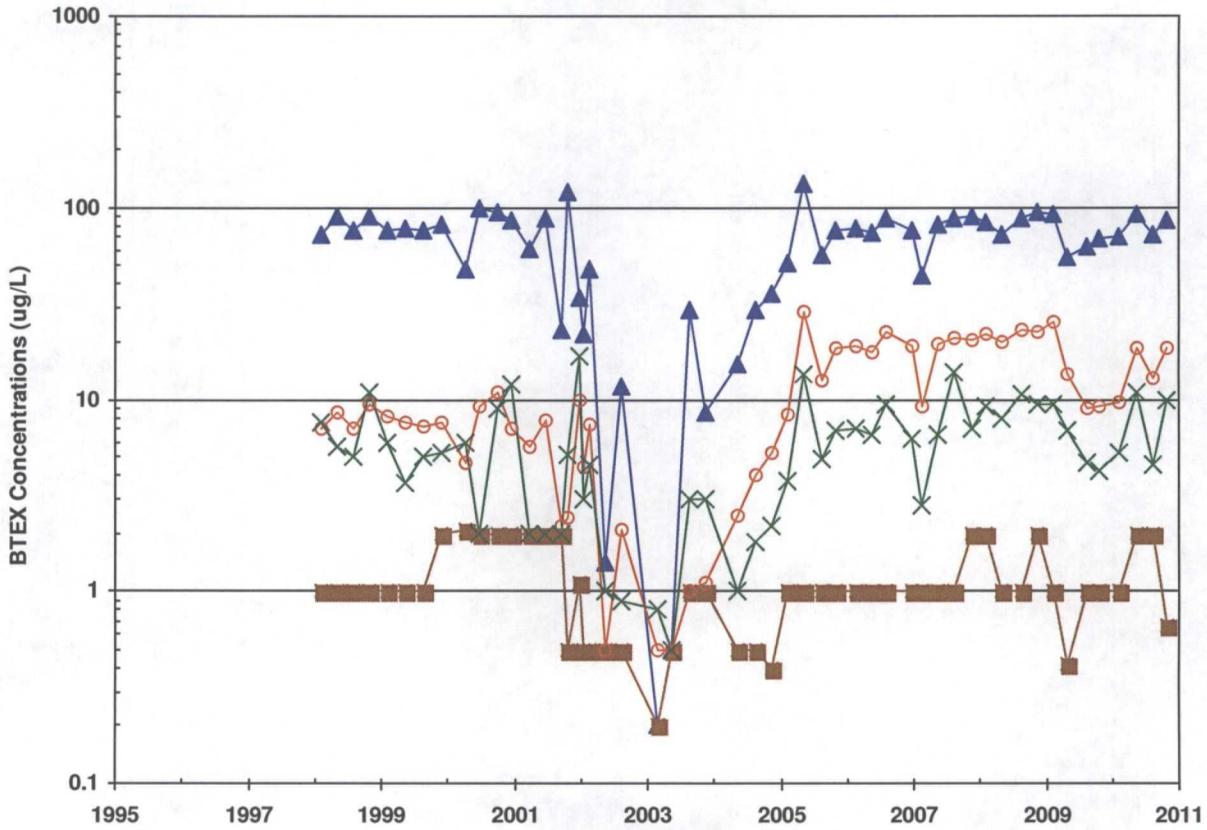


▲ Benzene NM Std.: (10 ug/L)	■ Toluene (750 ug/L)	○ Ethylbenzene (750 ug/L)	× Total Xylenes (620 ug/L)
---------------------------------	-------------------------	------------------------------	-------------------------------

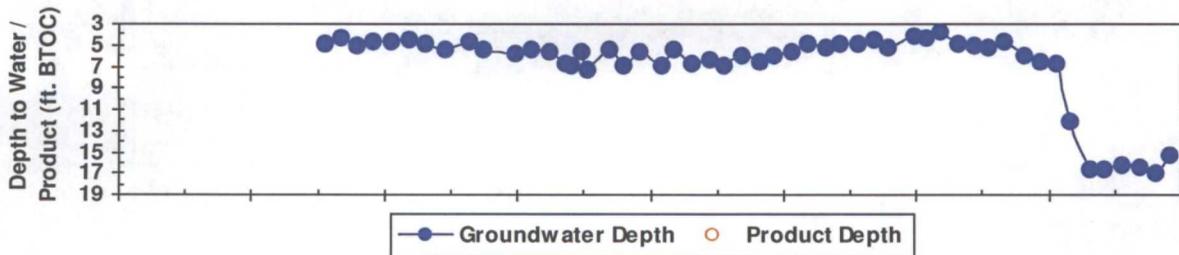


● Groundwater Depth	○ Product Depth
---------------------	-----------------

FIGURE 11
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
EL PASO CORPORATION - SAN JUAN RIVER PLANT (METER #SJRP)
MW09



Benzene	Toluene	Ethylbenzene	Total Xylenes
NM Std.: (10 ug/L)	(750 ug/L)	(750 ug/L)	(620 ug/L)



Groundwater Depth	Product Depth
-------------------	---------------

TABLE 1

SUMMARY OF 2010 GROUNDWATER ANALYTICAL DATA
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

Parameter	NMWQCC Standard	W-2	MW-4	MW-6	MW-8	MW-8	MW-8	MW-8	MW-8	MW-9	MW-9	MW-9	MW-9
		8/26/2010	8/26/2010	8/26/2010	2/18/2010	5/26/2010	8/26/2010	11/9/2010	2/18/2010	5/26/2010	8/26/2010	11/9/2010	11/9/2010
Volatiles Organics (µg/L)													
Benzene	10	<2.0	<2.0	<2.0	<1.0	0.831	<2.0	<2.0	70.7	91.8	72.3	86.6	
Ethylbenzene	750	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	9.7	18.8	12.8	18.7		
Toluene	750	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<1.0	<2.0	<2.0	0.661		
m,p-Xylene	NE	<4.0	<4.0	<4.0	<1.0	<4.0	<4.0	4.9	10.9	4.5	9.9		
o-Xylene	NE	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0		
Total Xylenes	620	<6.0	<6.0	<6.0	<2.0	<6.0	<6.0	5.2	10.9	4.5J	9.9		
Metals (µg/L)													
Aluminum	5,000	5,180	3,310	19,200	--	--	5,210	--	--	--	11,100	--	
Arsenic	100	<5.0	17.5	<5.0	--	--	30	--	--	--	<5.0	--	
Barium	1,000	<200	<200	<200	--	--	<200	--	--	--	<200	--	
Cadmium	10	<4.0	<4.0	11.4	--	--	<4.0	--	--	--	6.1	--	
Calcium	NE	319,000	228,000	331,000	--	--	36,200	--	--	--	300,000	--	
Chromium	50	<10	<10	<10	--	--	18	--	--	--	<10	--	
Cobalt	50	<5.0	57.6	199	--	--	<5.0	--	--	--	235	--	
Copper	1,000	<25	58.9	42	--	--	<25	--	--	--	33.5	--	
Iron	1,000	4,300	9,930	4,600	--	--	3,830	--	--	--	7,400	--	
Lead	50	5.1	19.5	15.1	--	--	8.7	--	--	--	14	--	
Magnesium	NE	103,000	100,000	326,000	--	--	1,010,000	--	--	--	244,000	--	
Manganese	200	87.1	5,970	7,200	--	--	367	--	--	--	7,900	--	
Mercury	2	<0.20	0.68	<0.20	--	--	<0.20	--	--	--	<0.20	--	
Molybdenum	1,000	<10	<10	<10	--	--	33.3	--	--	--	<10	--	
Nickel	200	<40	203	305	--	--	<200	--	--	--	391	--	
Potassium	NE	5,290	7,860	27,600	--	--	226,000	--	--	--	19,100	--	
Selenium	50	111	7.6	335	--	--	7.5	--	--	--	9.7	--	
Silver	50	<10	<10	<10	--	--	<10	--	--	--	<10	--	
Sodium	NE	1,160,000	1,050,000	3,620,000	--	--	2,800,000	--	--	--	4,080,000	--	
Zinc	10,000	34.4	28.7	692	--	--	<100	--	--	--	608	--	
Inorganics (mg/L)													
Alkalinity	NE	198	856	<5.0	--	--	9,250	--	--	--	34	--	
Chloride	250	290	345	1,180	--	--	<1.0	--	--	--	580	--	
Nitrate+Nitrite	10	19.5	0.54	57	--	--	3	--	--	--	<0.10	--	
Sulfate	600	3,200	2,150	9,180	--	--	2,150	--	--	--	10,300	--	
TDS	1,000	5,970	4,810	14,900	--	--	12,000	--	--	--	15,800	--	

NE = Not established
Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

TABLE 2

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW04	9/25/2001	<2.0	8.2	4.3	17	NA	NA
MW04	8/15/2002	0.8	0.5	1.1	0.9	52.93	5230.15
MW04	8/26/2003	<1	<1	<1	<3	53.53	5229.55
MW04	8/27/2004	<1.0	<1.0	<1.0	<3.0	54.44	5228.64
MW04	8/24/2005	<1.0	<1.0	<1.0	<2.0	55.29	5227.79
MW04	8/10/2006	<1.0	<1.0	<1.0	<2.0	55.57	5227.51
MW04	8/23/2007	0.37J	<1.0	<1.0	<2.0	51.87	5231.21
MW04	8/27/2008	<1.0	<1.0	<1.0	<3.0	52.24	5230.84
MW04	8/28/2009	<1.0	<1.0	<1.0	<2.0	58.70	5224.38
MW04	8/26/2010	<2.0	<2.0	<2.0	<6.0	52.32	5230.76
MW05	2/10/1998	<1.0	<1.0	<1.0	<3.0	16.29	5241.15
MW05	5/12/1998	<1.0	<1.0	<1.0	<3.0	16.09	5241.35
MW05	8/7/1998	<1.0	<1.0	<1.0	<3.0	17.69	5239.75
MW05	11/4/1998	<1	<1	<1	<3	16.76	5240.68
MW05	2/10/1999	<1	<1	<1	<3	15.51	5241.93
MW05	5/17/1999	<1	<1	<1	<3	15.49	5241.95
MW05	8/18/1999	<1	<1	<1	<3	16.67	5240.77
MW05	11/30/1999	<2.0	<2.0	<2.0	<2.0	16.60	5240.84
MW05	4/10/2000	<2.0	<2.0	<2.0	<2.0	15.52	5241.92
MW05	6/29/2000	<2.0	<2.0	<2.0	<2.0	16.83	5240.61
MW05	9/29/2000	<2.0	<2.0	<2.0	<2.0	17.58	5239.86
MW05	12/21/2000	2.2	<2	<2	9.1	16.38	5241.06
MW05	3/27/2001	9.8	<2	<2	<2	15.13	5242.31
MW05	6/27/2001	<2.0	<2.0	<2.0	<2.0	16.04	5241.40
MW05	9/25/2001	2.6	<0.5	<0.5	<0.5	17.39	5240.05
MW05	11/29/2001	<0.5	<0.5	<0.5	<0.5	17.45	5239.99
MW05	1/25/2002	<0.5	<0.5	<0.5	<0.5	17.73	5239.71
MW05	8/15/2002	0.4	<0.5	<0.5	1.0	18.61	5238.83
MW05	8/26/2003	<1	<1	<1	<3	17.33	5240.11
MW05	8/27/2004	<1.0	<1.0	<1.0	<3.0	16.80	5240.64
MW05	8/24/2005	<1.0	<1.0	<1.0	<2.0	13.83	5243.61
MW05	8/10/2006	2.3	<1.0	<1.0	<2.0	NA	NA
MW05	8/23/2007	3.7	<1.0	<1.0	<2.0	14.42	5243.02
MW06	9/25/2001	2.1	5.3	<2.0	<2.0	NA	NA

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW06	8/15/2002	0.3	<0.5	<0.5	0.9	31.50	5273.34
MW06	8/26/2003	<1	<1	<1	<3	31.76	5273.08
MW06	8/27/2004	<1.0	<1.0	<1.0	<3.0	31.85	5272.99
MW06	8/24/2005	<1.0	<1.0	<1.0	<2.0	29.93	5274.91
MW06	8/10/2006	<1.0	<1.0	<1.0	<2.0	30.37	5274.47
MW06	8/23/2007	<1.0	<1.0	<1.0	<2.0	30.70	5274.14
MW06	8/27/2008	<1.0	<1.0	<1.0	<3.0	31.27	5273.57
MW06	8/28/2009	<1.0	<1.0	<1.0	<2.0	31.44	5273.40
MW06	8/26/2010	<2.0	<2.0	<2.0	<6.0	31.55	5273.29
MW07	9/25/2001	<2.0	<2.0	<2.0	<2.0	NA	NA
MW07	8/15/2002	0.4	0.4	0.9	1.0	27.07	5266.06
MW07	8/26/2003	<1	<1	<1	<3	27.00	5266.13
MW07	8/27/2004	<1.0	<1.0	<1.0	<3.0	23.55	5269.58
MW07	8/24/2005	<1.0	<1.0	<1.0	<2.0	19.48	5273.65
MW07	8/10/2006	<1.0	<1.0	<1.0	<2.0	20.33	5272.80
MW08	2/10/1998	316	<1.0	9.4	28.4	10.39	5249.55
MW08	5/12/1998	449	<1.0	13.9	62.9	10.02	5249.92
MW08	8/7/1998	509	<1.0	7.05	42.9	10.13	5249.81
MW08	11/4/1998	408	<1	<1	14.5	10.75	5249.19
MW08	2/10/1999	261	<1	<1	6.1	11.31	5248.63
MW08	5/17/1999	205	1.02	<1	7.25	10.93	5249.01
MW08	8/18/1999	265	2.09	1.06	9.60	10.44	5249.50
MW08	11/30/1999	260.0	<2	2.1	16	11.10	5248.84
MW08	4/10/2000	200	4.4	<2	9.5	11.70	5248.24
MW08	6/29/2000	24.0	<2.0	<2.0	<2.0	11.16	5248.78
MW08	9/29/2000	284	<2.0	6.6	<2.0	NA	NA
MW08	12/21/2000	<2.0	<2	<2.0	6.7	11.96	5247.98
MW08	3/27/2001	15.0	<2	<2	<2	12.32	5247.62
MW08	6/27/2001	85.0	<2.0	<2.0	<2.0	11.49	5248.45
MW08	9/25/2001	30	3.7	<2	<2	11.06	5248.88
MW08	10/29/2001	53	<0.5	4.7	<0.5	11.31	5248.63
MW08	1/25/2002	110	<0.5	2.3	9.8	12.35	5247.59
MW08	5/23/2002	200	<2.5	7.9	17	12.60	5247.34
MW08	8/15/2002	0.8	<0.5	4.4	7.3	12.90	5247.04

TABLE 2

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW08	3/6/2003	0.3	0.4	2.0	2.7	12.79	5247.15
MW08	5/15/2003	<1.0	<1.0	<1.0	<3.0	12.25	5247.69
MW08	8/26/2003	891	<1	26.6	13.1	11.16	5248.78
MW08	11/25/2003	81.9	<1	2.3	5.2	12.79	5247.15
MW08	5/18/2004	<1.0	<1.0	<1.0	<3.0	12.02	5247.92
MW08	8/27/2004	<1.0	<1.0	<1.0	<3.0	6.26	5253.68
MW08	11/17/2004	157	<1.0	13.6	27.0	6.46	5253.48
MW08	2/17/2005	159	<1.0	5.9	13.8	7.43	5252.51
MW08	5/19/2005	<1.0	1.7	3.4	1.0J	3.56	5256.38
MW08	8/24/2005	<1.0	<1.0	2.6	<2.0	6.02	5253.92
MW08	11/9/2005	164	0.36J	11.0	30.0	8.38	5251.56
MW08	2/20/2006	85.2	<1.0	8.3	17.6	8.55	5251.39
MW08	5/24/2006	36.3	<1.0	5.0	9.7	6.31	5253.63
MW08	8/10/2006	0.57J	<1.0	3.4	6.4	6.80	5253.14
MW08	12/27/2006	25.6	<1.0	4.6	9.0	4.94	5255.00
MW08	2/27/2007	28.1	<1.0	5.5	11.4	5.40	5254.54
MW08	5/25/2007	19.6	<1.0	5.0	9.8	6.28	5253.66
MW08	8/23/2007	<5.0	<5.0	<5.0	<10	9.25	5250.69
MW08	11/28/2007	<2.0	<2.0	<2.0	0.45J	12.16	5247.78
MW08	2/13/2008	6.0	<2.0	0.71J	<6.0	10.41	5249.53
MW08	5/8/2008	<1.0	<1.0	<1.0	<2.0	10.40	5249.54
MW08	8/27/2008	<1.0	<1.0	<1.0	<3.0	11.15	5248.79
MW08	11/18/2008	<2	<2	<2	<6	11.90	5248.04
MW08	2/18/2009	0.65J	<1.0	<1.0	<2.0	13.60	5246.34
MW08	5/5/2009	0.24J	<1.0	<1.0	<2.0	13.07	5246.87
MW08	8/28/2009	<1.0	<1.0	<1.0	<2.0	13.75	5246.19
MW08	11/4/2009	<1.0	<1.0	<1.0	<2.0	18.58	5241.36
MW08	2/18/2010	<1.0	<1.0	<1.0	<2.0	21.19	5238.75
MW08	5/26/2010	0.81J	<2.0	<2.0	<6.0	13.72	5246.22
MW08	8/26/2010	<2.0	<2.0	<2.0	<6.0	20.64	5239.30
MW08	11/9/2010	<2.0	<2.0	<2.0	<6.0	21.60	5238.34
MW09	2/10/1998	73.1	<1.0	7.1	7.5	4.90	5256.07
MW09	5/12/1998	89.5	<1.0	8.51	5.61	4.22	5256.75
MW09	8/7/1998	77.0	<1.0	7.08	5.0	5.12	5255.85

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW09	11/4/1998	89.8	<1	9.42	10.9	4.60	5256.37
MW09	2/10/1999	77.0	<1	8.1	6	4.67	5256.30
MW09	5/17/1999	78.3	<1	7.54	3.63	4.48	5256.49
MW09	8/18/1999	76.4	<1	7.21	4.97	4.85	5256.12
MW09	11/30/1999	82.0	<2	7.5	5.3	5.38	5255.59
MW09	4/10/2000	48.0	2.1	4.7	5.9	4.74	5256.23
MW09	6/29/2000	100.0	<2	9.2	<2	5.47	5255.50
MW09	9/29/2000	95	<2.0	11	9.0	NA	NA
MW09	12/21/2000	86.0	<2	7.1	12	5.82	5255.15
MW09	3/27/2001	61.0	<2	5.7	<2	5.34	5255.63
MW09	6/27/2001	87.0	<2	7.7	<2	5.68	5255.29
MW09	9/25/2001	23	2.0	2.2	<2.0	6.77	5254.20
MW09	10/29/2001	120	<0.5	2.4	5.1	6.91	5254.06
MW09	12/26/2001	34	1.1	9.9	17	5.68	5255.29
MW09	1/25/2002	22	<0.5	4.4	3.0	7.27	5253.70
MW09	2/21/2002	48	<0.5	7.4	4.5	NA	NA
MW09	5/23/2002	1.4	<0.5	<0.5	<1.0	5.45	5255.52
MW09	8/15/2002	11.7	<0.5	2.1	0.9	6.93	5254.05
MW09	3/6/2003	0.2	0.2	<1.0	0.8	6.82	5254.15
MW09	5/15/2003	<1.0	<1.0	<1.0	<3.0	5.45	5255.52
MW09	8/26/2003	29.3	<1	<1	<3	6.69	5254.28
MW09	11/25/2003	8.6	<1	1.1	<3	6.42	5254.55
MW09	5/18/2004	15.2	<1.0	2.5	<3.0	5.97	5255.00
MW09	8/27/2004	29.5	<1.0	4.0	1.8	6.49	5254.48
MW09	11/17/2004	35.9	<1.0	5.2	2.2	6.02	5254.95
MW09	2/17/2005	51.7	<1.0	8.3	3.7	5.69	5255.28
MW09	5/19/2005	133	<1.0	28.9	13.5	4.78	5256.19
MW09	8/24/2005	56.5	<1.0	12.6	4.9	5.19	5255.78
MW09	11/9/2005	76.0	<1.0	18.8	6.9	4.93	5256.04
MW09	2/20/2006	77.9	<1.0	19.1	7.1	4.83	5256.14
MW09	5/24/2006	73.4	<1.0	17.7	6.6	4.47	5256.50
MW09	8/10/2006	88.7	<1.0	22.5	9.3	5.19	5255.78
MW09	12/27/2006	76.9	<1.0	19.0	6.3	4.13	5256.84
MW09	2/27/2007	44.8	<1.0	9.2	2.8	4.24	5256.73

TABLE 2

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW09	5/25/2007	82.0	<1.0	19.6	6.5	3.81	5257.16
MW09	8/23/2007	88.1	<1.0	21.2	13.8	4.85	5256.12
MW09	11/28/2007	90.9	<2.0	20.4	7.0	5.13	5255.84
MW09	2/13/2008	84.4	<2.0	22.1	9.2	5.28	5255.69
MW09	5/8/2008	71.8	<1.0	20.2	8.0	4.71	5256.26
MW09	8/27/2008	87.9	<1.0	23.4	10.7	6.06	5254.91
MW09	11/18/2008	95.3	<2	22.8	9.5	6.53	5254.44
MW09	2/18/2009	91.3	<1.0	25.7	9.5	6.69	5254.28
MW09	5/5/2009	55.4	0.42J	13.7	6.8	12.18	5248.79
MW09	8/28/2009	63.1	<1.0	9.0	4.6	16.54	5244.43
MW09	11/4/2009	69.4	<1.0	9.2	4.2	16.63	5244.34
MW09	2/18/2010	70.7	<1.0	9.7	5.2	16.18	5244.79
MW09	5/26/2010	91.8	<2.0	18.8	10.9	16.36	5244.61
MW09	8/26/2010	72.3	<2.0	12.8	4.5J	16.93	5244.04
MW09	11/9/2010	86.6	0.66J	18.7	9.9	15.28	5245.69
W02	9/25/2001	<2.0	<2.0	<2.0	<2.0	NA	NA
W02	8/15/2002	1.4	0.4	0.8	1.0	57.55	5222.56
W02	8/26/2003	<1	<1	<1	<3	57.53	5222.58
W02	8/27/2004	<1.0	<1.0	<1.0	<3.0	57.76	5222.35
W02	8/24/2005	<1.0	<1.0	<1.0	<2.0	58.50	5221.61
W02	8/10/2006	<1.0	<1.0	<1.0	<2.0	58.72	5221.39
W02	8/23/2007	<1.0	<1.0	<1.0	<2.0	52.73	5227.38
W02	8/27/2008	<1.0	<1.0	<1.0	<3.0	55.53	5224.58
W02	8/28/2009	<1.0	<1.0	<1.0	<2.0	55.24	5224.87
W02	8/26/2010	<2.0	<2.0	<2.0	<6.0	52.80	5227.31

Notes:

Results shown in bold typeface exceed their respective New Mexico Water Quality Control Commission standards.

"J" = result is qualified as estimated. See laboratory report and/or supplemental data validation report for further detail.

"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit).

Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.

TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER
METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

Page 3 of 8

Parameter	NMWQCC Standard	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5
		6/29/2000	9/29/2000	12/21/2000	3/27/2001	6/27/2001	9/25/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004	8/24/2005	8/10/2006		
Metals (µg/L)															
Aluminum	5,000	--	--	--	--	458,000	2,700	--	12,500	--	1,190	3,340			
Arsenic	100	--	--	--	--	ND	10.6	--	8.9	5	<5.0	<5.0			
Barium	1,000	--	--	--	--	160	17.5	--	200	200	<200	<200			
Cadmium	10	--	--	--	--	ND	0.46	--	4	4	<4.0	4			
Calcium	NE	--	--	--	--	400,000	361,000	--	348,000	--	418,000	338,000			
Chromium	50	--	--	--	--	22	5	--	10	10	<10	<10			
Cobalt	50	--	--	--	--	35	12.7	--	50	50	<50	50.5			
Copper	1,000	--	--	--	--	59	14	--	50.2	--	<25	<25			
Iron	1,000	380	240	590	3,300	63,000	3,380	--	11,800	--	3,180	1,990			
Lead	50	--	--	--	--	150	4.8	--	6.1	3	13.4	9.6			
Magnesium	NE	--	--	--	--	220,000	168,000	--	200,000	--	245,000	203,000			
Manganese	200	3,300	1,800	26	4,200	3,900	3,260	--	5,870	--	8,650	7,640			
Mercury	2	--	--	--	--	--	0.0777	--	0.2	0.2	<0.20	<0.20			
Molybdenum	1,000	--	--	--	--	ND	5	--	10	--	<10	<10			
Nickel	200	--	--	--	--	59	49.3	--	75.5	--	153	180			
Potassium	NE	--	--	--	--	24,000	30,900	--	32,000	--	42,800	44,400			
Selenium	50	--	--	--	--	ND	3.2	--	5	7.5	7.3	<5.0			
Silver	50	--	--	--	--	ND	2.6	--	10	10	<10	<10			
Sodium	NE	--	--	--	--	6,300,000	5,980,000	--	4,390,000	--	6,050,000	4,640,000			
Zinc	10,000	--	--	--	--	190	49	--	109	--	168	259			
Inorganics (mg/L)															
Alkalinity	NE	--	--	--	--	340	--	--	459	358	393	125	109		
Chloride	250	--	--	--	--	380	290	331	488	773	1,150	1,140			
Nitrate+Nitrite	10	10	2	1	5	--	--	--	20	20	0.2	0.1			
Sulfate	600	16,000	16,000	14,000	18,000	14,000	--	14,400	14,200	14,500	11,700	10,500			
TDS	1,000	--	--	--	19,500	20,300	--	20,300	19,900	21,400	21,700	11,700			

NE = Not established

Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

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Parameter	NMWQCC Standard	MW-5	MW-6											
		8/23/2007	9/25/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004	8/24/2005	8/10/2006	8/23/2007	8/27/2008	8/28/2009	8/26/2010	
Metals (µg/L)														
Aluminum	5,000	16,900	22,000	13,600	--	24,500	--	14,500	6,450	12,600	--	--	16,800	19,200
Arsenic	100	<5.0	ND	7.8	--	5	5	<5.0	<5.0	<5.0	--	--	<5.0	<5.0
Barium	1,000	<200	15	13.9	--	200	200	<200	<200	<200	--	--	<200	<200
Cadmium	10	4.8	12	10.9	--	13.3	10.2	11.4	6.8	8.1	--	--	9.5	11.4
Calcium	NE	342,000	400,000	388,000	--	343,000	--	447,000	389,000	325,000	--	--	359,000	331,000
Chromium	50	<10	ND	30.3	--	10	10	<10	<10	<10	--	--	<10	<10
Cobalt	50	63.7	260	202	--	236	--	219	123	161	--	--	176	199
Copper	1,000	30	46	43.4	--	80.7	--	37.8	<25	38.7	--	--	38.3	42
Iron	1,000	12,100	2,900	986	--	5,510	--	427	296	3,780	--	--	3,440	4,600
Lead	50	20.5	250	5	--	3.9	3	10.3	7.6	11	--	--	4.4	15.1
Magnesium	NE	232,000	420,000	316,000	--	360,000	--	376,000	273,000	356,000	--	--	315,000	326,000
Manganese	200	8,040	9,600	6,550	--	8,630	--	8,250	4,820	5,880	--	--	6,830	7,200
Mercury	2	<0.20	--	0.095	--	0.2	0.2	<0.20	<0.20	<0.20	--	--	<0.20	<0.20
Molybdenum	1,000	<10	ND	5	--	10	--	<10	<10	<10	--	--	<10	<10
Nickel	200	183	320	272	--	310	--	275	155	187	--	--	228	305
Potassium	NE	46,400	22,000	29,100	--	29,400	--	37,600	34,200	39,400	--	--	34,800	27,600
Selenium	50	<5.0	300	304	--	247	331	618	995	893	--	--	381	335
Silver	50	<10	ND	4	--	10	10	<10	<10	<10	--	--	<10	<10
Sodium	NE	4,410,000	4,000,000	4,080,000	--	3,830,000	--	4,370,000	3,400,000	3,370,000	--	--	3,470,000	3,620,000
Zinc	10,000	304	790	612	--	729	--	764	527	594	--	--	592	692
Inorganics (mg/L)														
Alkalinity	NE	35	--	--	145	12	11	25	54	30	17	6	6	<5.0
Chloride	250	1,730	1,300	1,040	1,040	1,410	1,340	1,150	1,320	1,830	1,150	1,290	1,290	1,180
Nitrate+Nitrite	10	2.6	ND	--	--	70.3	88.3	176	314	258	140	97.8	97.8	57
Sulfate	600	11,400	10,000	8,300	8,300	10,300	9,320	8,490	8,400	8,930	3,780	4,140	4,140	9,180
TDS	1,000	18,600	16,500	14,900	14,900	17,100	16,600	17,700	11,600	15,500	16,300	16,000	16,000	14,900

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TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER
METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

Page 5 of 8

Parameter	NMWQCC Standard	MW-7	MW-7	MW-7	MW-8	MW-8	MW-8	MW-8	MW-8							
		9/25/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004	8/24/2005	8/10/2006	11/30/1999	4/10/2000	6/29/2000	9/29/2000	12/21/2000			
Metals (µg/L)																
Aluminum	5,000	14,000	3,210				35,600				600	801				
Arsenic	100	ND	7.2	14.4	8.9						<5.0	<5.0				
Barium	1,000	85	44.1	302	265						<200	<200				
Cadmium	10	ND	1.3	4	4						<4.0	<4.0				
Calcium	NE	450,000	416,000				397,000				462,000	421,000				
Chromium	50	ND	8.1	21.3	18.7						<10	<10				
Cobalt	50	29	11.6	50							<50	<50				
Copper	1,000	39	23.7	92.1							25.6	<25				
Iron	1,000	14,000	4,240	32,700							226	295	160	1,800	320	320
Lead	50	150	5	16.8	15.5						9	8.9				
Magnesium	NE	230,000	173,000	229,000							238,000	231,000				
Manganese	200	8,900	4,570	4,850							5,340	4,580	4,300	2,400	3,600	1,600
Mercury	2		0.092	0.2	0.2						<0.20	<0.20				
Molybdenum	1,000	ND	2.1	10							<10	<10				
Nickel	200	43	26.7	48.3							<40	<40				
Potassium	NE	15,000	26,800	25,100							27,700	31,000				
Selenium	50	ND	11.4	14.1	9.8						18.1	47.7				
Silver	50	ND	3.4	10	10						<10	<10				
Sodium	NE	4,800,000	4,810,000	4,490,000							5,540,000	4,970,000				
Zinc	10,000	140	68	199							79.1	88.9				
Inorganics (mg/L)																
Alkalinity	NE			900	995	1040					925	1140				
Chloride	250	460		367	369	694					307	344				
Nitrate+Nitrite	10	ND			20	24					22	33	10	5	5	2
Sulfate	600	11,000		11,000	11,900	10,800					11,000	14,200	5,200	5,000	7,500	8,500
TDS	1,000	16,500		17,500	17,600	16,000					19,900	16,500				

NE = Not established

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TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

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Parameter	NMWQCC Standard	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
		3/27/2001	6/27/2001	9/25/2001	10/29/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004	8/24/2005	8/10/2006	8/23/2007	8/27/2008
Metals (µg/L)													
Aluminum	5,000			240		508		1,620		634	219	1,300	3,260
Arsenic	100		ND	ND		23.8		8	20.7	6.2	7.4	<5.0	5.5
Barium	1,000		19	19		29		200	200	<200	<200	<200	<200
Cadmium	10		ND	ND		2		4	4	<4.0	<4.0	<4.0	<4.0
Calcium	NE		370,000	310,000		67,200		354,000		155,000	91,600	69,500	101,000
Chromium	50		ND	ND		1080		10	10	<10	<10	<10	<10
Cobalt	50		ND	ND		7		50		<50	<50	<50	<50
Copper	1,000		ND	ND		14		41.4		<25	<25	<25	<25
Iron	1,000	1,100	1,100	870		6,890		2,390		831	<100	855	1,970
Lead	50		250	250		5		3	7.4	6.9	5.1	4.8	4.3
Magnesium	NE		370,000	280,000		465,000		370,000		274,000	216,000	288,000	264,000
Manganese	200	1,000	2,900	7,500		162		1,460		1,230	1,040	590	557
Mercury	2					0.07		0.2		<0.20	<0.20	<0.20	<0.20
Molybdenum	1,000		ND	ND		56.8		10		29.3	16	16.5	<10
Nickel	200		ND	ND		251		40		<40	<40	<40	<40
Potassium	NE		20,000	36,000		62,900		45,400		75,600	73,000	87,400	89,000
Selenium	50		ND	ND		2.2		5	6.2	<5.0	<5.0	<5.0	<5.0
Silver	50		ND	ND		10		10	10	<10	<10	<10	<10
Sodium	NE		6,200,000	4,500,000		4,720,000		4,390,000		2,610,000	2,210,000	2,220,000	2,790,000
Zinc	10,000		ND	ND		14.5		74.8		42.1	52.6	132	20.7
Inorganics (mg/L)													
Alkalinity	NE		4200	24			4420	5030	4920	1880	2150	2580	3380
Chloride	250		440	610	780		318	726	806	261	147	165	4
Nitrate+Nitrite	10	5	10	ND	0.2			20	20	0.7	0.7	0.6	0.36
Sulfate	600	6,300	6,200	9,600	10		5,450	8,260	7,760	4,920	4,160	3,980	3,590
TDS	1,000		13,800	18,000	17,000		13,200	17,900	17,000	11,000	7,820	8,200	9,420

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TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

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Parameter	NMWQCC Standard	MW-8 8/28/2009	MW-8 8/26/2010	MW-9 11/30/1999	MW-9 4/10/2000	MW-9 6/29/2000	MW-9 9/29/2000	MW-9 12/21/2000	MW-9 3/27/2001	MW-9 6/27/2001	MW-9 9/25/2001	MW-9 10/29/2001
Metals (µg/L)												
Aluminum	5,000	5,340	5,210	--	--	--	--	--	--	--	7,000	--
Arsenic	100	12.2	30	--	--	--	--	--	--	--	ND	--
Barium	1,000	<200	<200	--	--	--	--	--	--	--	8.8	--
Cadmium	10	<4.0	<4.0	--	--	--	--	--	--	--	ND	--
Calcium	NE	34,300	36,200	--	--	--	--	--	--	--	340,000	310,000
Chromium	50	13	18	--	--	--	--	--	--	--	ND	--
Cobalt	50	<50	<50	--	--	--	--	--	--	--	180	--
Copper	1,000	<25	<25	--	--	--	--	--	--	--	31	--
Iron	1,000	3,070	3,830	2,200	2,700	850	1,200	1,400	1,400	3,700	3,300	130
Lead	50	3.9	8.7	--	--	--	--	--	--	--	200	--
Magnesium	NE	373,000	1,010,000	--	--	--	--	--	--	--	310,000	270,000
Manganese	200	869	367	8,800	9,200	8,500	8,400	110	9,000	9,300	8,300	540
Mercury	2	--	<0.20	--	--	--	--	--	--	--	--	--
Molybdenum	1,000	32.1	33.3	--	--	--	--	--	--	--	ND	--
Nickel	200	<40	<200	--	--	--	--	--	--	--	300	--
Potassium	NE	85,600	226,000	--	--	--	--	--	--	--	12,000	43,000
Selenium	50	<5.0	7.5	--	--	--	--	--	--	--	ND	--
Silver	50	<10	<10	--	--	--	--	--	--	--	ND	--
Sodium	NE	2,850,000	2,800,000	--	--	--	--	--	--	--	3,900,000	4,800,000
Zinc	10,000	23.4	<100	--	--	--	--	--	--	--	530	--
Inorganics (mg/L)												
Alkalinity	NE	3860	9250	--	--	--	--	--	--	ND	--	4000
Chloride	250	<1.0	<1.0	--	--	--	--	--	--	770	2,200	530
Nitrate+Nitrite	10	1.2	3	10	5	5	2	1	5	10	ND	0.23
Sulfate	600	4,050	2,150	14,000	12,000	11,000	11,000	3,800	11,000	13,000	12,000	2,200
TDS	1,000	10,700	12,000	--	--	--	--	--	--	16,600	17,000	16,000

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TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

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Parameter	NMTWQCC Standard	MW-9	MW-9										
		8/15/2002	8/21/2009	8/26/2003	8/27/2004	8/24/2005	8/10/2006	8/23/2007	8/27/2008	8/28/2009	8/26/2010	11/9/2010	
Metals (µg/L)													
Aluminum	5,000	8,900	--	43,900	--	13,600	9,770	16,300	14,500	14,700	11,100	--	--
Arsenic	100	8.8	6.1	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	1,000	11.9	200	200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Cadmium	10	8.4	9.4	8.1	8.9	8.2	8.2	<4.0	8.5	6.3	6.1	--	--
Calcium	NE	358,000	319,000	319,000	355,000	346,000	346,000	108,000	361,000	314,000	300,000	--	--
Chromium	50	7.8	16.9	10.4	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt	50	183	200	--	212	193	205	197	228	235	--	--	--
Copper	1,000	51.2	162	--	59	45.8	121	62.9	43	33.5	--	--	--
Iron	1,000	849	29,000	--	4,390	1,480	6,330	3,660	8,930	7,400	--	--	--
Lead	50	5	13.5	7	11.1	8.7	8.4	5.1	6.5	14	--	--	--
Magnesium	NE	258,000	270,000	--	282,000	244,000	289,000	276,000	245,000	244,000	--	--	--
Manganese	200	6,470	7,330	--	7,870	7,360	6,420	7,770	8,300	7,900	--	--	--
Mercury	2	0.13	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Molybdenum	1,000	5	10	--	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nickel	200	295	335	307	335	307	318	316	336	391	--	--	--
Potassium	NE	25,600	23,000	--	25,900	23,800	23,700	28,000	24,600	19,100	--	--	--
Selenium	50	6.7	5	6.5	6.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver	50	2.9	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sodium	NE	4,490,000	3,980,000	--	4,650,000	3,720,000	3,590,000	3,760,000	3,930,000	4,080,000	--	--	--
Zinc	10,000	14.5	597	--	693	624	732	650	604	608	--	--	--
Inorganics (mg/L)													
Alkalinity	NE	<4	13	24.5	19	22	25	18	30	34	--	--	--
Chloride	250	673	752	969	782	674	775	606	1,440	580	--	--	--
Nitrate+Nitrite	10	--	20	20	<0.050	<0.050	0.4	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sulfate	600	11,600	11,800	12,000	10,200	10,700	10,900	4,630	4,030	10,300	--	--	--
TDS	1,000	17,200	16,800	17,400	18,400	17,000	16,500	16,200	17,700	15,800	--	--	--

NE = Not established
Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3

Durango, Colorado 81301

T 970-385-1096

F 970.385.1873

Site Visit Memo

To: Jed Smith

From: Ashley Ager

CC: File

Date: February 11, 2010

Re: San Juan River Plant

14:01: arrived at San Juan River Plant to pull ORC sock from MW-8. Slightly black in color, hard.



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-9
 Client: MWH Date: 2/18/2010 Time: 15:07
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 16.18 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 25.12 ft Product Thickness: _____ ft
 Water Column Height: 8.94 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
8.94 x .65	5.81 x 3		17.43 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
15:10	4.30	9.61	58.5				1.25	yellow tint
	4.28	10.06	58.5				2.5	yellow tint
	4.23	10.35	58.3				4	yellow tint
	4.40	10.55	58.6				5	yellow tint
15:20	4.70	10.18	58.6				6.9	yellow tint, bailed dry
Final:								
15:32	4.72	10.00	58.60				7	yellow tint, bailed dry

COMMENTS: Well bailed dry during sampling.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-9 Sample Time: 15:25

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 02182010TB02 Duplicate Sample: _____



WATER LEVEL DATA

Project Name: San Juan Basin Groundwater
Project Manager: Ashley Ager
Client: MWH
Site Name: San Juan River Plant

Date: 2/18/2010

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	1:57 PM	-	52.46	-	-	
MW-6		-	31.09	-	-	
MW-8		-	21.19	-	-	
MW-9		-	16.18	-	-	
W-2		-	56.1	-	-	

Comments

Re-installed ORC socks in MW-8

large poly pipe is blocking truck access to MW-9 - can this be removed?

Signature: Ashley L. Ager

Date: 2/19/2010



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-8
 Client: MWH Date: 5/26/2010 Time: 9:22
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 13.72 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 22.2 ft Product Thickness: _____ ft
 Water Column Height: 8.48 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
8.48 x .65	5.51 x 3		16.53 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
9:30	6.73	2.96	58.5				1	light gray
	7.28	2.62	57.3				2	brown, silty
	7.29	2.25	57.4				3	brown, silty
	7.33	2.04	57.7				5	brown, silty
	7.45	4.52	58.5				10	bailing down
Final:								
9:52	7.59	3.99	58.50				10.6	brown, silty, bailed dry

COMMENTS: Well bailed dry during sampling. Sample is unpreserved due to reaction of HCl preservative with groundwater.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-8 Sample Time: 9:45

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 05262010TB01 Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-9
 Client: MWH Date: 5/26/2010 Time: 8:31
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 16.36 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 22.1 ft Product Thickness: _____ ft
 Water Column Height: 5.74 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
5.74 x .65	3.73 x 3		11.19 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
8:43	4.24	8.90	56.3				1.25	yellow tint
	4.41	8.90	56.3				2.5	yellow tint
	4.58	8.96	56.7				3.75	yellow tint
	4.71	9.19	56.8				5	yellow tint
Final:								
9:01	5.15	8:32	57:20				7.5	yellow tint, bailed dry

COMMENTS: Well bailed dry during sampling.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-9 Sample Time: 8:58

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 05262010TB01 Duplicate Sample: _____



WATER LEVEL DATA

Project Name: San Juan Basin Groundwater
Project Manager: Ashley Ager
Client: MWH
Site Name: San Juan River Plant

Date: 5/26/2010

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	8:23 AM	-	52.95	-	-	
MW-6		-	21.5	-	-	
MW-8		-	13.72	-	-	
MW-9		-	16.36	-	-	
W-2		-	54.65	-	-	

Comments

Re-installed ORC socks in MW-8

large poly pipe is blocking truck access to MW-9 - can this be removed?

Signature: Ashley L. Ager

Date: 5/31/2010



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: August 19, 2010
Re: San Juan River Plant

13:24 arrived at San Juan River Plant to pull ORC sock from MW-8. Slightly black in color, hard.

Unable to measure DO (meter is out on another project). Will measure before sampling.



COMPLIANCE / ENGINEERING / REMEDIATION





WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-4
 Client: MWH Date: 8/26/2010 Time: 14:25
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 52.32 ft Depth to Product: _____ ft
 Well Diameter: 2" Total Depth: 56.91 ft Product Thickness: _____ ft
 Water Column Height: 4.59 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
4.59 x .16	0.73 x 3		2.2 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
14:32	6.48	3.17	65.3				0.25	yellow tint
	6.55	3.25	64.2				0.5	dark gray, silty
	6.53	3.21	66.9				0.75	dark gray, silty
	6.63	3.19	65.7				0.9	bailing down, gray, black ppt
Final:								
14:48	6.65	65.10	3.10				1.2	dark gray, dry, black ppt

COMMENTS: Well bailed dry while purging.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-4 Sample Time: 14:44

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 08262010TB01 Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-6
 Client: MWH Date: 8/26/2010 Time: 10:50
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 31.55 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 42.13 ft Product Thickness: _____ ft
 Water Column Height: 10.58 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
10.58 x .65	6.88 x 3		20.6 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
11:07	6.55	8.31	64.2				1	light gray
	6.40	8.39	63.0				2	light gray
	5.97	8.48	63.1				3	light gray
	5.01	8.70	62.8				5	yellow tint
	4.56	8.92	63.0				10	yellow tint
	4.29	8.97	63.7				15	bailing down, yellow tint
	4.30	8.94	63.7				19	bailing down, yellow tint
	4.31	8.92	63.7				20	bailing down, yellow tint
Final:								
11:42	4.36	8.80	63.50				21	bailing down, yellow tint

COMMENTS:

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-6 Sample Time: 11:46

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 08262010TB01 Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-9
 Client: MWH Date: 8/26/2010 Time: 12:56
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 16.93 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 22.1 ft Product Thickness: _____ ft
 Water Column Height: 5.17 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
5.17 x 0.65	3.36 x 3		10.08 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
13:10	3.76	9.01	61.0				1.25	yellow tint
	3.74	8.99	60.8				2.5	yellow tint
	3.76	9.19	59.6				3.75	yellow tint
	3.77	9.04	60.6				5	yellow tint
Final:								
13:28	3.75	9.15	60.20				8.25	bailed dry, yellow tint

COMMENTS: well bailed dry while purging.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-9 Sample Time: 13:26

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 08262010TB01 Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: W-2
 Client: MWH Date: 8/26/2010 Time: 13:44
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 52.8 ft Depth to Product: _____ ft
 Well Diameter: 2" Total Depth: 64.42 ft Product Thickness: _____ ft
 Water Column Height: 11.62 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
11.62 x .16	1.85 x 3		5.57 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
13:51	6.93	3.59	65.5				0.25	clear
	6.96	3.58	65.8				0.5	clear
	6.70	3.46	64.9				0.75	clear
	7.00	3.57	64.0				1	clear
Final:								
14:15	7.04	3.56	64.00				1.75	bailed dry, tan, silty

COMMENTS: Well bailed dry while purging.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: W-2 Sample Time: 14:12

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 08262010TB01 Duplicate Sample: _____



WATER LEVEL DATA

Project Name: San Juan Basin Groundwater
Project Manager: Ashley Ager
Client: MWH
Site Name: San Juan River Plant

Date:

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed
MW-4	10:50 AM	-	52.32	-	-
MW-6		-	31.55	-	-
MW-8		-	20.64	-	-
MW-9		-	16.93	-	-
W-2		-	52.8	-	-

Comments

Re-installed ORC socks in MW-8
large poly pipe is blocking truck access to MW-9 - can this be removed?

Signature: Ashley L. Ager

Date: 8/31/2010



WATER LEVEL DATA

8/26/2010

Comments
sample BTEX



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: November 3, 2010
Re: San Juan River Plant

15:52: pull seven (7) ORC socks from MW-8.

DO = 12.89 mg/L
T = 59.9 degrees F



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-9
 Client: MWH Date: 11/9/2010 Time: 15:02
 Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 15.28 ft Depth to Product: _____ ft
 Well Diameter: 4" Total Depth: 22.2 ft Product Thickness: _____ ft
 Water Column Height: 6.92 ft

Sampling Method: Submersible Pump Centrifugal Pump Peristaltic Pump Other _____
 Bottom Valve Bailer Double Check Valve Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal Stabilization of Indicator Parameters Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
6.92 x .65	4.49 x 3		13.49 gal

Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
15:05	4.43	8.86	59.9				1.25	yellow tint
	4.35	8.09	59.5				2.5	yellow tint
	4.35	8.76	59.2				3.75	yellow tint
	4.35	8.86	58.8				5	yellow tint, bailing down
Final:								
15:25	4.90	9.30	57.70				8.4	yellow tint, bailed dry

COMMENTS: Well bailed dry during sampling.

Instrumentation: pH Meter DO Monitor Conductivity Meter Temperature Meter Other _____

Water Disposal: Rio Vista

Sample ID: MW-9 Sample Time: 15:20

Analysis Requested: BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Metals
 Other _____

Trip Blank: 11092010TB01 Duplicate Sample: _____



WATER LEVEL DATA

Project Name: San Juan Basin Groundwater
Project Manager: Ashley Ager
Client: MWH
Site Name: San Juan River Plant

Date: 11/9/2010

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	2:50 PM	-	52.38	-	-	
MW-6		-	32.13	-	-	
MW-8		-	21.6	-	-	Static. Sample BTEX, Replace ORC socks
MW-9		-	15.28	-	-	Sample BTEX
W-2		-	51.45	-	-	

Comments

Re-installed ORC socks in MW-8

large poly pipe is blocking truck access to MW-9 - can this be removed?

Signature: Ashley L. Ager

Date: 11/12/2010



02/22/10

Technical Report for

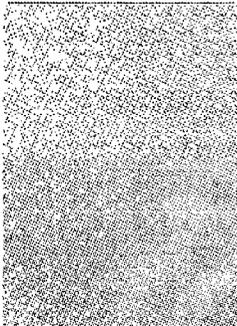
Montgomery Watson

San Juan Basin River Plant Sites Project (SJRP) Project

WO 94292

Accutest Job Number: T47887

Sampling Date: 02/18/10



Report to:

MWH Americas
1801 California St. Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 16



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

**Paul Canevaro
Laboratory Director**

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

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Sample Summary

Montgomery Watson

Job No: T47887

San Juan Basin River Plant Sites Project (SJRP) Project
Project No: WO 94292

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T47887-1	02/18/10	07:00 TU	02/19/10	AQ	Trip Blank Water	180210 TB02
T47887-2	02/18/10	14:47 TU	02/19/10	AQ	Ground Water	SJRP MW-8
T47887-3	02/18/10	15:25 TU	02/19/10	AQ	Ground Water	SJRP MW-9



2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson

Job No T47887

Site: San Juan Basin River Plant Sites Project (SJRP) Project

Report Date 2/22/2010 3:45:49 PM

2 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 02/18/2010 and were received at Accutest on 02/19/2010 properly preserved, at 0.8 Deg. C and intact. These Samples received an Accutest job number of T47887. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ	Batch ID: GKK1653
------------------	--------------------------

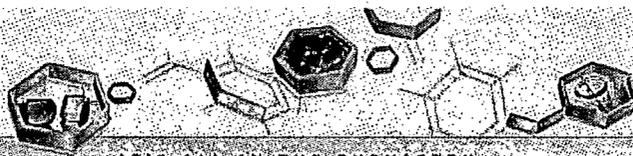
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T47887-2MS, T47887-2MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for o-Xylene are outside control limits. Probable cause due to matrix interference.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used



Gulf Coast

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Section 3

IT'S ALL IN THE CHEMISTRY



Sample Results

Report of Analysis



5 of 16

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T47887

Report of Analysis

3.1

Client Sample ID:	180210 TB02	Date Sampled:	02/18/10
Lab Sample ID:	T47887-1	Date Received:	02/19/10
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	San Juan Basin River Plant Sites Project (SJR) Project		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK034706.D	1	02/20/10	FI	n/a	n/a	GKK1653
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		58-125%
98-08-8	aaa-Trifluorotoluene	114%		73-139%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.2


Client Sample ID: SJRP MW-8 Lab Sample ID: T47887-2 Matrix: AQ - Ground Water Method: SW846 8021B Project: San Juan Basin River Plant Sites Project (SJRP) Project	Date Sampled: 02/18/10 Date Received: 02/19/10 Percent Solids: n/a
--	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK034709.D	1	02/20/10	FI	n/a	n/a	GKK1653
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		58-125%
98-08-8	aaa-Trifluorotoluene	111%		73-139%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SJRP MW-9	Date Sampled:	02/18/10
Lab Sample ID:	T47887-3	Date Received:	02/19/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	San Juan Basin River Plant Sites Project (SJRP) Project		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK034716.D	1	02/20/10	FI	n/a	n/a	GKK1653
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

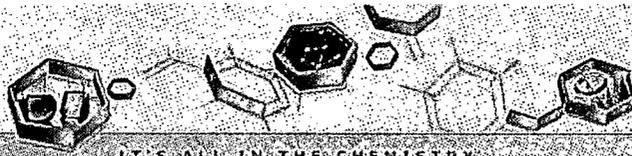
Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	70.7	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	9.7	1.0	0.25	ug/l	
1330-20-7	Xylenes (total)	5.2	2.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	4.9	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	96%		58-125%
98-08-8	aaa-Trifluorotoluene	118%		73-139%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



IT'S ALL IN THE CHEMISTRY

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T47887 Client: MWH Date/Time Received: 2/19/10 9:15

of Coolers Received: 1 Thermometer #: IRI Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 0.8 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: 8109 8619 5207

- COOLER INFORMATION**
- Custody seal missing or not intact
 - Temperature criteria not met
 - Wet ice received in cooler

- CHAIN OF CUSTODY**
- Chain of Custody not received
 - Sample D/T unclear or missing
 - Analyses unclear or missing
 - COC not properly executed

- SAMPLE INFORMATION**
- Sample containers received broken
 - VOC vials have headspace
 - Sample labels missing or illegible
 - ID on COC does not match label(s)
 - D/T on COC does not match label(s)
 - Sample/Bottles rcvd but no analysis on COC
 - Sample listed on COC, but not received
 - Bottles missing for requested analysis
 - Insufficient volume for analysis
 - Sample received improperly preserved

- TRIP BLANK INFORMATION**
- Trip Blank on COC but not received
 - Trip Blank received but not on COC
 - Trip Blank not intact
 - Received Water Trip Blank
 - Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies: _____

TECHNICIAN SIGNATURE/DATE: T. Clark 2/19/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 2-19-10

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

inwalker\forms\samplemanagement

4.1
4

SAMPLE RECEIPT LOG

JOB #: T47887 DATE/TIME RECEIVED: 2-19-10 9:15AM
 CLIENT: MWH INITIALS: SA

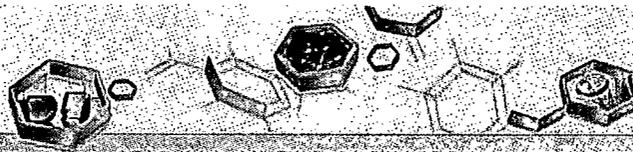
COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	Trip Blank	2-3-10	GW	40ml	1-2	VR2F	1 2 3 4 5 6 7 8	<2 >12
↓	2	SJRP MW-8	2-18-10 14:47	GW	40ml	1-3	VR2F	1 2 3 4 5 6 7 8	<2 >12
↓	3	SJRP MW-9	2-18-10 15:25	GW	40ml	1-3	VR2F	1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

SA 2-19-10

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer
 Rev 8/13/01 ewp



4.1 4



GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T47887
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJR) Project

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1653-MB	KK034704.D 1		02/20/10	FI	n/a	n/a	GKK1653

The QC reported here applies to the following samples:

Method: SW846 8021B

T47887-1, T47887-2, T47887-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	95% 58-125%
98-08-8	aaa-Trifluorotoluene	115% 73-139%

5.1.1
5

Blank Spike Summary

Job Number: T47887
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJRP) Project

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1653-BS	KK034701.D1		02/20/10	FI	n/a	n/a	GKK1653

The QC reported here applies to the following samples:

Method: SW846 8021B

T47887-1, T47887-2, T47887-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.1	101	86-121
100-41-4	Ethylbenzene	20	19.8	99	81-116
108-88-3	Toluene	20	20.0	100	87-117
1330-20-7	Xylenes (total)	60	59.0	98	85-115
95-47-6	o-Xylene	20	19.7	99	87-116
	m,p-Xylene	40	39.2	98	84-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	98%	58-125%
98-08-8	aaa-Trifluorotoluene	115%	73-139%

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T47887
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJR) Project

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T47887-2MS	KK034711.D 1		02/20/10	FI	n/a	n/a	GKK1653
T47887-2MSD	KK034712.D 1		02/20/10	FI	n/a	n/a	GKK1653
T47887-2	KK034709.D 1		02/20/10	FI	n/a	n/a	GKK1653

The QC reported here applies to the following samples:

Method: SW846 8021B

T47887-1, T47887-2, T47887-3

CAS No.	Compound	T47887-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	23.7	119	23.3	117	2	86-121/19
100-41-4	Ethylbenzene	ND	20	21.9	110	21.5	108	2	81-116/14
108-88-3	Toluene	ND	20	23.2	116	22.8	114	2	87-117/16
1330-20-7	Xylenes (total)	ND	60	68.4	114	67.3	112	2	85-115/12
95-47-6	o-Xylene	ND	20	23.3	117*	23.0	115	1	87-116/16
	m,p-Xylene	ND	40	45.1	113	44.3	111	2	84-116/13

CAS No.	Surrogate Recoveries	MS	MSD	T47887-2	Limits
460-00-4	4-Bromofluorobenzene	96%	96%	94%	58-125%
98-08-8	aaa-Trifluorotoluene	112%	111%	111%	73-139%

5.3.1

5



06/08/10

Technical Report for

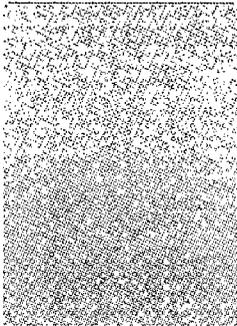
Montgomery Watson

San Juan Basin River Plant Sites Project (SJRP)

WO94292

Accutest Job Number: T53401

Sampling Date: 05/26/10



Report to:

MWH Americas
1801 California St. Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 16



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul R Canevaro

**Paul Canevaro
Laboratory Director**

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

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Sample Summary

Montgomery Watson

Job No: T53401

San Juan Basin River Plant Sites Project (SJRP)
Project No: WO94292

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
T53401-1	05/26/10	08:58 TU	05/27/10	AQ Ground Water	SJRP-MW-9
T53401-2	05/26/10	09:45 TU	05/27/10	AQ Ground Water	SJRP-MW-8
T53401-3	05/26/10	07:00 TU	05/27/10	AQ Trip Blank Water	260510-TB03



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson

Job No T53401

Site: San Juan Basin River Plant Sites Project (SJRP)

Report Date 6/7/2010 6:56:28 PM

2 Sample(s), 1 Trip Blank(s), were collected on 05/26/2010 and were received at Accutest on 05/27/2010 properly preserved, at 3 Deg. C and intact. These Samples received an Accutest job number of T53401. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: VF3871
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T53401-2MS, T53401-2MSD were used as the QC samples indicated.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used



IT'S ALL IN THE CHEMISTRY



Sample Results

Report of Analysis

Report of Analysis

3.1


Client Sample ID:	SJRP MW-9	Date Sampled:	05/26/10
Lab Sample ID:	T53401-1	Date Received:	05/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F026174.D	1	05/29/10	JL	n/a	n/a	VF3871
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	91.8	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	18.8	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	10.9	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	10.9	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	114%		87-119%
460-00-4	4-Bromofluorobenzene	106%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: SJRP MW-8	Date Sampled: 05/26/10
Lab Sample ID: T53401-2	Date Received: 05/27/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F026175.D	1	05/29/10	JL	n/a	n/a	VF3871
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.81	2.0	0.50	ug/l	J
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	113%		87-119%
460-00-4	4-Bromofluorobenzene	106%		80-133%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

3.3
65

Client Sample ID: 260510 TB03	Date Sampled: 05/26/10
Lab Sample ID: T53401-3	Date Received: 05/27/10
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F026173.D	1	05/29/10	JL	n/a	n/a	VF3871
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

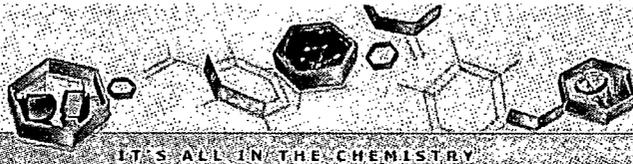
Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	0.56	2.0	0.43	ug/l	J
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		79-122%
17060-07-0	1,2-Dichloroethane-D4	103%		75-121%
2037-26-5	Toluene-D8	117%		87-119%
460-00-4	4-Bromofluorobenzene	107%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T53401 Client: MWH Date/Time Received: 5/27/10 0930

of Coolers Received: 1 Thermometer #: 110 Temperature Adjustment Factor: -0.5°C

Cooler Temps: #1: 3.0°C #2: #3: #4: #5: #6: #7: #8:

Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers:

- COOLER INFORMATION
Custody seal missing or not intact
Temperature criteria not met
Wet ice received in cooler

- SAMPLE INFORMATION
Sample containers received broken
VOC vials have headspace
Sample labels missing or illegible
ID on COC does not match label(s)
D/T on COC does not match label(s)
Sample/Bottles rcvd but no analysis on COC
Sample listed on COC, but not received
Bottles missing for requested analysis
Insufficient volume for analysis
Sample received improperly preserved

- TRIP BLANK INFORMATION
Trip Blank on COC but not received
Trip Blank received but not on COC
Trip Blank not intact
Received Water Trip Blank
Received Soil TB

- CHAIN OF CUSTODY
Chain of Custody not received
Sample D/T unclear or missing
Analyses unclear or missing
COC not properly executed

Number of Encores?
Number of 5035 kits?
Number of lab-filtered metals?

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: [Signature] 5/27/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: [Signature]

CORRECTIVE ACTIONS

Client Representative Notified: [Signature] Date: 5/28/10

By Accutest Representative: [Signature] Via: Phone Email

Client Instructions: Permission given to analyze samples by method 8260.



GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T53401
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF3871-MB	F026171.D	1	05/29/10	JL	n/a	n/a	VF3871

The QC reported here applies to the following samples:

Method: SW846 8260B

T53401-1, T53401-2, T53401-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	112% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	116% 87-119%
460-00-4	4-Bromofluorobenzene	107% 80-133%

5.1.1
5

Blank Spike Summary

Job Number: T53401
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF3871-BS	F026169.D	1	05/29/10	JL	n/a	n/a	VF3871

The QC reported here applies to the following samples:

Method: SW846 8260B

T53401-1, T53401-2, T53401-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	27.4	110	76-118
100-41-4	Ethylbenzene	25	25.4	102	75-112
108-88-3	Toluene	25	25.7	103	77-114
1330-20-7	Xylene (total)	75	74.5	99	75-111
	m,p-Xylene	50	49.8	100	75-112
95-47-6	o-Xylene	25	24.7	99	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	109%	79-122%
17060-07-0	1,2-Dichloroethane-D4	99%	75-121%
2037-26-5	Toluene-D8	114%	87-119%
460-00-4	4-Bromofluorobenzene	102%	80-133%

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T53401
 Account: MWHCODE Montgomery Watson
 Project: San Juan Basin River Plant Sites Project (SJR)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T53401-2MS	F026178.D	1	05/29/10	JL	n/a	n/a	VF3871
T53401-2MSD	F026179.D	1	05/29/10	JL	n/a	n/a	VF3871
T53401-2	F026175.D	1	05/29/10	JL	n/a	n/a	VF3871

The QC reported here applies to the following samples:

Method: SW846 8260B

T53401-1, T53401-2, T53401-3

CAS No.	Compound	T53401-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.81	J	25	28.3	110	28.2	0	76-118/16
100-41-4	Ethylbenzene	ND		25	22.4	90	22.2	1	75-112/12
108-88-3	Toluene	ND		25	24.4	98	24.3	0	77-114/12
1330-20-7	Xylene (total)	ND		75	72.6	97	71.3	2	75-111/12
	m,p-Xylene	ND		50	47.9	96	47.1	2	75-112/12
95-47-6	o-Xylene	ND		25	24.6	98	24.2	2	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T53401-2	Limits
1868-53-7	Dibromofluoromethane	107%	107%	111%	79-122%
17060-07-0	1,2-Dichloroethane-D4	104%	103%	106%	75-121%
2037-26-5	Toluene-D8	107%	108%	113%	87-119%
460-00-4	4-Bromofluorobenzene	101%	99%	106%	80-133%

5.3.1
5



09/13/10

Technical Report for

EL PASO CORPORATION

MWHCODE: San Juan Basin River Plant Sites Project (SJRP)

Accutest Job Number: T58820

Sampling Date: 08/26/10

Report to:

MWH
1801 California Street Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 48



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul Canevaro
Laboratory Director

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.



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Sample Summary

EL PASO CORPORATION

Job No: T58820

MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T58820-1	08/26/10	07:00 TU	08/27/10	AQ	Trip Blank Water	260810TB01
T58820-2	08/26/10	11:46 TU	08/27/10	AQ	Ground Water	SJRP:MW-6
T58820-3	08/26/10	12:38 TU	08/27/10	AQ	Ground Water	SJRP:MW-8
T58820-4	08/26/10	13:26 TU	08/27/10	AQ	Ground Water	SJRP:MW-9
T58820-5	08/26/10	14:12 TU	08/27/10	AQ	Ground Water	SJRP:W-2
T58820-6	08/26/10	14:44 TU	08/27/10	AQ	Ground Water	SJRP:MW-4



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EL PASO CORPORATION

Job No T58820

Site: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Report Date 9/13/2010 9:37:22 AM

5 Sample(s), 1 Trip Blank(s) were collected on 08/26/2010 and were received at Accutest on 08/27/2010 properly preserved, at 3.2 Deg. C and intact. These Samples received an Accutest job number of T58820. A listing of the Laboratory Sample ID; Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: VC519
------------------	------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58696-IMS, T58696-IMSD were used as the QC samples indicated.

Matrix AQ	Batch ID: VE95
------------------	-----------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58851-4MS, T58851-4MSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix AQ	Batch ID: MP12721
------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58905-1DUP, T58905-IMS, T58905-IMSD, T58905-ISDL, T58905-IDUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Arsenic, Cadmium, Chromium are outside control limits for sample MP12721-D1. RPD acceptable due to low duplicate and sample concentrations.
- RPD(s) for Serial Dilution for Aluminum, Arsenic, Cadmium, Chromium, Copper, Lead, Selenium, are outside control limits for sample MP12721-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP12721-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- T58820-3 for Nickel: Elevated reporting limit due to matrix interference.

Metals By Method SW846 7470A

Matrix AQ	Batch ID: MP12702
------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58851-4DUP, T58851-4MS, T58851-4MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 353.2

Matrix AQ	Batch ID: GP10069
------------------	--------------------------

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T59183-1BDUP, T59183-1BMS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

Wet Chemistry By Method SM 2320B

Matrix AQ	Batch ID: GN25050
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58820-2DUP, T58820-2MS were used as the QC samples for Alkalinity, Total as CaCO3.

Wet Chemistry By Method SM 2540C

Matrix AQ	Batch ID: GN25092
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58929-5DUP were used as the QC samples for Solids, Total Dissolved.
- RPD(s) for Duplicate for Solids, Total Dissolved are outside control limits for sample GN25092-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SM 4500 CL C

Matrix AQ	Batch ID: GP10079
------------------	--------------------------

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58820-3DUP, T58820-3MS were used as the QC samples for Chloride.

Wet Chemistry By Method SM 4500 SO4

Matrix AQ	Batch ID: GP10032
------------------	--------------------------

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T58600-1DUP, T58600-1MS were used as the QC samples for Sulfate.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used



IT'S ALL IN THE CHEMISTRY



Sample Results

Report of Analysis

Report of Analysis

3.1


Client Sample ID: 260810TB01	Date Sampled: 08/26/10
Lab Sample ID: T58820-1	Date Received: 08/27/10
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0001523.D	1	08/30/10	MH	n/a	n/a	VE95
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		79-122%
17060-07-0	1,2-Dichloroethane-D4	85%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	105%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.2

Client Sample ID: SJRP MW-6 Lab Sample ID: T58820-2 Matrix: AQ - Ground Water Method: SW846 8260B Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	Date Sampled: 08/26/10 Date Received: 08/27/10 Percent Solids: n/a
--	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0001527.D	1	08/30/10	MH	n/a	n/a	VE95
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		79-122%
17060-07-0	1,2-Dichloroethane-D4	85%		75-121%
2037-26-5	Toluene-D8	98%		87-119%
460-00-4	4-Bromofluorobenzene	106%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

32
35

Client Sample ID:	SJRP MW-6	Date Sampled:	08/26/10
Lab Sample ID:	T58820-2	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	19200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Arsenic	<5.0	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Barium	<200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cadmium	11.4	4.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Calcium	331000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Chromium	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cobalt	199	50	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Copper	42.0	25	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Iron	4600	100	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Lead	15.1	3.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Magnesium	326000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Manganese	7200	15	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Mercury	<0.20	0.20	ug/l	1	08/30/10	08/30/10 CN	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Nickel	305	40	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Potassium	27600	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Selenium	335	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Silver	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Sodium	3620000	50000	ug/l	10	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Zinc	692	20	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA5062
- (2) Instrument QC Batch: MA5074
- (3) Instrument QC Batch: MA5078
- (4) Prep QC Batch: MP12702
- (5) Prep QC Batch: MP12721

RL = Reporting Limit

Report of Analysis

3.2

Client Sample ID: SJRP MW-6	Date Sampled: 08/26/10
Lab Sample ID: T58820-2	Date Received: 08/27/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJR)	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	<5.0	5.0	mg/l	1	08/31/10 15:00	LA	SM 2320B
Chloride	1180	50	mg/l	50	09/10/10 11:00	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	57.0	2.0	mg/l	20	09/07/10 17:04	CV	EPA 353.2
Solids, Total Dissolved	14900	100	mg/l	1	08/31/10	BG	SM 2540C
Sulfate	9180	200	mg/l	20	09/03/10 08:15	SS	SM 4500 SO4

RL = Reporting Limit

Report of Analysis



Client Sample ID:	SJRP MW-8	Date Sampled:	08/26/10
Lab Sample ID:	T58820-3	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0001528.D	1	08/30/10	MH	n/a	n/a	VE95
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		79-122%
17060-07-0	1,2-Dichloroethane-D4	86%		75-121%
2037-26-5	Toluene-D8	98%		87-119%
460-00-4	4-Bromofluorobenzene	107%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.3



Client Sample ID:	SJRP MW-8	Date Sampled:	08/26/10
Lab Sample ID:	T58820-3	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5210	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Arsenic	30.0	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Barium	<200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cadmium	<4.0	4.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Calcium	36200	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Chromium	18.0	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cobalt	<50	50	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Copper	<25	25	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Iron	3830	100	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Lead	8.7	3.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Magnesium	1010000	25000	ug/l	5	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Manganese	367	15	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Mercury	<0.20	0.20	ug/l	1	08/30/10	08/30/10 CN	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	33.3	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Nickel ^a	<200	200	ug/l	5	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Potassium	226000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Selenium	7.5	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Silver	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Sodium	2800000	50000	ug/l	10	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Zinc ^a	<100	100	ug/l	5	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA5062
- (2) Instrument QC Batch: MA5074
- (3) Instrument QC Batch: MA5078
- (4) Prep QC Batch: MP12702
- (5) Prep QC Batch: MP12721

(a) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

33
3

Client Sample ID:	SJRP MW-8	Date Sampled:	08/26/10
Lab Sample ID:	T58820-3	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	9250	5.0	mg/l	1	08/31/10 15:00	LA	SM 2320B
Chloride	<1.0	1.0	mg/l	1	09/10/10 11:00	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	3.0	0.10	mg/l	1	09/07/10 15:40	CV	EPA 353.2
Solids, Total Dissolved	12000	67	mg/l	1	08/31/10	BG	SM 2540C
Sulfate	2150	40	mg/l	4	09/03/10 08:15	SS	SM 4500 SO4

RL = Reporting Limit

Report of Analysis

3.4

Client Sample ID: SJRP MW-9 Lab Sample ID: T58820-4 Matrix: AQ - Ground Water Method: SW846 8260B Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	Date Sampled: 08/26/10 Date Received: 08/27/10 Percent Solids: n/a
--	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0001529.D	1	08/30/10	MH	n/a	n/a	VE95
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	72.3	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	12.8	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	4.5	6.0	1.7	ug/l	J
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	4.5	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%		79-122%
17060-07-0	1,2-Dichloroethane-D4	85%		75-121%
2037-26-5	Toluene-D8	96%		87-119%
460-00-4	4-Bromofluorobenzene	106%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.4


Client Sample ID: SJRP MW-9	Date Sampled: 08/26/10
Lab Sample ID: T58820-4	Date Received: 08/27/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	11100	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Arsenic	<5.0	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Barium	<200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cadmium	6.1	4.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Calcium	300000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Chromium	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cobalt	235	50	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Copper	33.5	25	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Iron	7400	100	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Lead	14.0	3.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Magnesium	244000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Manganese	7900	15	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Mercury	<0.20	0.20	ug/l	1	08/30/10	08/30/10 CN	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Nickel	391	40	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Potassium	19100	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Selenium	9.7	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Silver	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Sodium	4080000	50000	ug/l	10	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Zinc	608	20	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA5062
- (2) Instrument QC Batch: MA5074
- (3) Instrument QC Batch: MA5078
- (4) Prep QC Batch: MP12702
- (5) Prep QC Batch: MP12721

RL = Reporting Limit

Report of Analysis

3.4



Client Sample ID:	SJRP MW-9	Date Sampled:	08/26/10
Lab Sample ID:	T58820-4	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	34.0	5.0	mg/l	1	08/31/10 15:00	LA	SM 2320B
Chloride	580	20	mg/l	20	09/10/10 11:00	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/07/10 15:45	CV	EPA 353.2
Solids, Total Dissolved	15800	91	mg/l	1	08/31/10	BG	SM 2540C
Sulfate	10300	200	mg/l	20	09/03/10 08:15	SS	SM 4500 SO4

RL = Reporting Limit

Report of Analysis

3.5


Client Sample ID: SJRP W-2	Date Sampled: 08/26/10
Lab Sample ID: T58820-5	Date Received: 08/27/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0011731.D	1	09/01/10	AK	n/a	n/a	VC519
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		79-122%
17060-07-0	1,2-Dichloroethane-D4	88%		75-121%
2037-26-5	Toluene-D8	95%		87-119%
460-00-4	4-Bromofluorobenzene	93%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.5



Client Sample ID:	SJRP W-2	Date Sampled:	08/26/10
Lab Sample ID:	T58820-5	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	5180	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Arsenic	< 5.0	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Barium	< 200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cadmium	< 4.0	4.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Calcium	319000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Copper	< 25	25	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Iron	4300	100	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Lead	5.1	3.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Magnesium	103000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Manganese	87.1	15	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	08/30/10	08/30/10 CN	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	< 10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Nickel	< 40	40	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Potassium	5290	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Selenium	1.11	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Sodium	1160000	50000	ug/l	10	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Zinc	34.4	20	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA5062
- (2) Instrument QC Batch: MA5074
- (3) Instrument QC Batch: MA5078
- (4) Prep QC Batch: MP12702
- (5) Prep QC Batch: MP12721

RL = Reporting Limit

Report of Analysis

3.5


Client Sample ID: SJRP W-2	Date Sampled: 08/26/10
Lab Sample ID: T58820-5	Date Received: 08/27/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	198	5.0	mg/l	1	08/31/10 15:00	LA	SM 2320B
Chloride	290	10	mg/l	10	09/10/10 11:00	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	19.5	1.0	mg/l	10	09/07/10 16:47	CV	EPA 353.2
Solids, Total Dissolved	5970	67	mg/l	1	08/31/10	BG	SM 2540C
Sulfate	3200	50	mg/l	5	09/03/10 08:15	SS	SM 4500 SO4

RL = Reporting Limit

Report of Analysis

3.6
3

Client Sample ID: SJRP MW-4 Lab Sample ID: T58820-6 Matrix: AQ - Ground Water Method: SW846 8260B Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	Date Sampled: 08/26/10 Date Received: 08/27/10 Percent Solids: n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0001530.D	1	08/30/10	MH	n/a	n/a	VE95
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		79-122%
17060-07-0	1,2-Dichloroethane-D4	85%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	107%		80-133%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID:	SJRP MW-4	Date Sampled:	08/26/10
Lab Sample ID:	T58820-6	Date Received:	08/27/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	3310	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Arsenic	17.5	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Barium	<200	200	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cadmium	<4.0	4.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Calcium	228000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Chromium	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Cobalt	57.6	50	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Copper	58.9	25	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Iron	9930	100	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Lead	19.5	3.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Magnesium	100000	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Manganese	5970	15	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Mercury	0.68	0.20	ug/l	1	08/30/10	08/30/10 CN	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Nickel	203	40	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Potassium	7860	5000	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Selenium	7.6	5.0	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Silver	<10	10	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵
Sodium	1050000	50000	ug/l	10	09/01/10	09/07/10 TW	SW846 6010B ³	SW846 3010A ⁵
Zinc	28.7	20	ug/l	1	09/01/10	09/03/10 TW	SW846 6010B ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA5062
- (2) Instrument QC Batch: MA5074
- (3) Instrument QC Batch: MA5078
- (4) Prep QC Batch: MP12702
- (5) Prep QC Batch: MP12721

RL = Reporting Limit

Report of Analysis

3.6



Client Sample ID: SJRP MW-4			
Lab Sample ID: T58820-6		Date Sampled: 08/26/10	
Matrix: AQ - Ground Water		Date Received: 08/27/10	
		Percent Solids: n/a	
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJR)			

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	856	5.0	mg/l	1	08/31/10 15:00	LA	SM 2320B
Chloride	345	10	mg/l	10	09/10/10 11:00	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	0.54	0.10	mg/l	1	09/07/10 15:48	CV	EPA 353.2
Solids, Total Dissolved	4810	29	mg/l	1	08/31/10	BG	SM 2540C
Sulfate	2150	40	mg/l	4	09/03/10 08:15	SS	SM 4500 SO4

RL = Reporting Limit



IT'S ALL IN THE CHEMISTRY

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T58820 Client: MWH Date/Time Received: 8/27/10 0930

of Coolers Received: 2 Thermometer #: JR04 Temperature Adjustment Factor: 0.0

Cooler Temperatures (initial/adjusted): #1: 0.9 #2: 3.2 #3: #4: #5:

#6: #7: #8: #9: #10: #11: #12:

Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

COOLER INFORMATION

- Custody seal missing or not intact
- Temperature criteria not met
- Wet ice received in cooler

CHAIN OF CUSTODY

- Chain of Custody not received
- Sample D/T unclear or missing
- Analyses unclear or missing
- COC not properly executed

SAMPLE INFORMATION

- Sample containers received broken
- VOC vials have headspace
- Sample labels missing or illegible
- ID on COC does not match label(s)
- D/T on COC does not match label(s)
- Sample/Bottles rcvd but no analysis on COC
- Sample listed on COC, but not received
- Bottles missing for requested analysis
- Insufficient volume for analysis
- Sample received improperly preserved

TRIP BLANK INFORMATION

- Trip Blank on COC but not received
- Trip Blank received but not on COC
- Trip Blank not intact
- Received Water Trip Blank
- Received Soil TB

Number of Encores?
 Number of 5035 kds?
 Number of lab-filtered metals?

Summary of Discrepancies:

- Trip Blank labeled "Trip Blank" but labeled 26080 TB 21 on COC
- Vials for SJRP MW-8 are not preserved
- Added HNO₃ to SJRP MW-8 500ml bottle, 4ml's. M2010-07-086 - Added HNO₃ to SJRP MW-4 500ml bottle, 5ml's. (Did not bring PH below 2)
- Added amt of H₂SO₄ to SJRP MW-8 to 250ml bottle. PH now below 2. M2010-07-087
- SJRP MW-4 has no date on COC.
- Trip Blank date and time is 8/20/10 1100 on vials but 8/26/10 0700 on COC.

TECHNICIAN SIGNATURE/DATE: [Signature] 8/27/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: [Signature] 8/27/10

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

T58820: Chain of Custody
Page 3 of 4

4.1
4

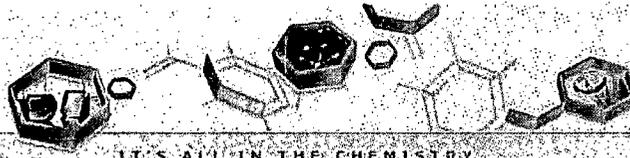
SAMPLE RECEIPT LOG

JOB #: T 58820 DATE/TIME RECEIVED: 8/27/10 0930
 CLIENT: MWH INITIALS: MG

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	Trip Blank	8/26/10 1130	WTS	40ml	1-2	VR	1 2 3 4 5 6 7 8	<2 >12
	2	SJRP MW-6	8/26/10 1146	W	1000ml	1	3-F	1 2 3 4 5 6 7 8	<2 >12
					500ml	2	1-MM	1 2 3 4 5 6 7 8	<2 >12
					250ml	3	3-F	1 2 3 4 5 6 7 8	<2 >12
					40ml	4-6	VR	1 2 3 4 5 6 7 8	<2 >12
	3	SJRP MW-8	8/26/10 1238		1000ml	1	3-F	1 2 3 4 5 6 7 8	<2 >12
					500ml	2	1-MM	1 2 3 4 5 6 7 8	<2 >12
					250ml	3	3-F	1 2 3 4 5 6 7 8	<2 >12
					40ml	4-6	VR	1 2 3 4 5 6 7 8	<2 >12
2	4	SJRP MW-9	8/26/10 1326		1000ml	1	3-F	1 2 3 4 5 6 7 8	<2 >12
					500ml	2	1-MM	1 2 3 4 5 6 7 8	<2 >12
					250ml	3	3-F	1 2 3 4 5 6 7 8	<2 >12
					40ml	4-6	VR	1 2 3 4 5 6 7 8	<2 >12
	5	SJRP W-2	8/26/10 1412		1000ml	1	3-F	1 2 3 4 5 6 7 8	<2 >12
					500ml	2	1-MM	1 2 3 4 5 6 7 8	<2 >12
					250ml	3	3-F	1 2 3 4 5 6 7 8	<2 >12
					40ml	4-6	VR	1 2 3 4 5 6 7 8	<2 >12
	6	SJRP MW-4	8/26/10 1444		1000ml	1	3-F	1 2 3 4 5 6 7 8	<2 >12
					500ml	2	1-MM	1 2 3 4 5 6 7 8	<2 >12
					250ml	3	3-F	1 2 3 4 5 6 7 8	<2 >12
					40ml	4-6	VR	1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other 8-27-10
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer
 Rev 8/13/01 ewp

4.1
4



GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE95-MB	E0001508.D	1	08/30/10	MH	n/a	n/a	VE95

The QC reported here applies to the following samples:

Method: SW846 8260B

T58820-1, T58820-2, T58820-3, T58820-4, T58820-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	90% 79-122%
17060-07-0	1,2-Dichloroethane-D4	85% 75-121%
2037-26-5	Toluene-D8	97% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

5.1.1
5

Method Blank Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC519-MB	C0011724.D	1	09/01/10	AK	n/a	n/a	VC519

The QC reported here applies to the following samples:

Method: SW846 8260B

T58820-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	88% 79-122%
17060-07-0	1,2-Dichloroethane-D4	86% 75-121%
2037-26-5	Toluene-D8	97% 87-119%
460-00-4	4-Bromofluorobenzene	93% 80-133%

5.1.2
5

Blank Spike Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE95-BS	E0001507.D	1	08/30/10	MH	n/a	n/a	VE95

The QC reported here applies to the following samples:

Method: SW846 8260B

T58820-1, T58820-2, T58820-3, T58820-4, T58820-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.4	102	76-118
100-41-4	Ethylbenzene	25	25.8	103	75-112
108-88-3	Toluene	25	25.8	103	77-114
1330-20-7	Xylene (total)	75	78.8	105	75-111
	m,p-Xylene	50	52.7	105	75-112
95-47-6	o-Xylene	25	26.0	104	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	94%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	75-121%
2037-26-5	Toluene-D8	97%	87-119%
460-00-4	4-Bromofluorobenzene	107%	80-133%

5.2.1
5

Blank Spike Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC519-BS	C0011722.D 1		08/31/10	AK	n/a	n/a	VC519

The QC reported here applies to the following samples:

Method: SW846 8260B

T58820-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	25.2	101	76-118
100-41-4	Ethylbenzene	25	24.2	97	75-112
108-88-3	Toluene	25	24.6	98	77-114
1330-20-7	Xylene (total)	75	70.7	94	75-111
	m,p-Xylene	50	47.7	95	75-112
95-47-6	o-Xylene	25	22.9	92	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	88%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	75-121%
2037-26-5	Toluene-D8	98%	87-119%
460-00-4	4-Bromofluorobenzene	91%	80-133%

5.2.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T58851-4MS	E0001516.D	1	08/30/10	MH	n/a	n/a	VE95
T58851-4MSD	E0001517.D	1	08/30/10	MH	n/a	n/a	VE95
T58851-4	E0001515.D	1	08/30/10	MH	n/a	n/a	VE95

The QC reported here applies to the following samples:

Method: SW846 8260B

T58820-1, T58820-2, T58820-3, T58820-4, T58820-6

CAS No.	Compound	T58851-4 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2.0 U	25	25.8	103	24.5	98	5	76-118/16
100-41-4	Ethylbenzene	2.0 U	25	26.5	106	24.8	99	7	75-112/12
108-88-3	Toluene	0.78 J	25	26.9	104	25.5	99	5	77-114/12
1330-20-7	Xylene (total)	6.0 U	75	79.7	106	74.2	99	7	75-111/12
	m,p-Xylene	4.0 U	50	53.4	107	49.1	98	8	75-112/12
95-47-6	o-Xylene	2.0 U	25	26.3	105	25.1	100	5	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T58851-4	Limits
1868-53-7	Dibromofluoromethane	91%	90%	91%	79-122%
17060-07-0	1,2-Dichloroethane-D4	83%	85%	86%	75-121%
2037-26-5	Toluene-D8	97%	96%	97%	87-119%
460-00-4	4-Bromofluorobenzene	103%	104%	104%	80-133%

5.3.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T58820
 Account: ELPASOX EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T58696-1MS	C0011728.D	1	09/01/10	AK	n/a	n/a	VC519
T58696-1MSD	C0011729.D	1	09/01/10	AK	n/a	n/a	VC519
T58696-1	C0011727.D	1	09/01/10	AK	n/a	n/a	VC519

The QC reported here applies to the following samples:

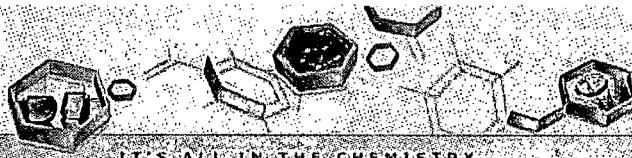
Method: SW846 8260B

T58820-5

CAS No.	Compound	T58696-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2.0 U	25	20.9	84	20.1	80	4	76-118/16
100-41-4	Ethylbenzene	2.0 U	25	20.1	80	19.6	78	3	75-112/12
108-88-3	Toluene	2.0 U	25	20.9	84	19.7	79	6	77-114/12
1330-20-7	Xylene-(total)	6.0 U	75	60.0	80	57.7	77	4	75-111/12
	m,p-Xylene	4.0 U	50	40.4	81	38.4	77	5	75-112/12
95-47-6	o-Xylene	2.0 U	25	19.5	78	19.3	77	1	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T58696-1	Limits
1868-53-7	Dibromofluoromethane	87%	88%	89%	79-122%
17060-07-0	1,2-Dichloroethane-D4	85%	85%	87%	75-121%
2037-26-5	Toluene-D8	97%	100%	97%	87-119%
460-00-4	4-Bromofluorobenzene	94%	93%	92%	80-133%

5.3.2
5



IT'S ALL IN THE CHEMISTRY

Metals Analysis

9

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T58820
Account: ELPASOX - EL PASO CORPORATION
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12702
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 08/30/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.049	.05	-0.0090	<0.20

Associated samples MP12702: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T58820
 Account: ELPASOX - EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12702
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 08/30/10 08/30/10

Metal	T58851-4 Original DUP	RPD	QC Limits	T58851-4 Original MS	Spikelot HGTXAQ40 % Rec	QC Limits
Mercury	0.0	0.0	NC	0-6.6	0.0 3.2 3	106.7 78-118

Associated samples MP12702: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.12
 6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T58820
Account: ELPASOX - EL PASO CORPORATION
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12702
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 08/30/10

Metal	T58851-4 Original MSD	Spikelot HGTXAQ40 % Rec	MSD RPD	QC Limit
Mercury	0.0	3.1	3	103.3

Associated samples MP12702: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.12

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T58820

Account: ELPASOX - EL PASO CORPORATION

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12702

Methods: SW846 7470A

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

08/30/10

Metal	BSP Result	Spikelot HGTXAQ40	% Rec	QC Limits
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Mercury 3.0 3 100% 80-120

Associated samples MP12702: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

6.1.3

6

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T58820
Account: ELPASOX - EL PASO CORPORATION
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJR).

QC Batch ID: MP12721
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/01/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12	12.0	<200
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1	1.2	<5.0
Barium	200	.97	3.4	0.0	<200
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09	0.16	<4.0
Calcium	5000	7.4	25	25.7	<5000
Chromium	10	.23	.27	-0.080	<10
Cobalt	50	.15	.22	-0.18	<50
Copper	25	1.1	5.9	-1.0	<25
Iron	100	1.1	23	6.1	<100
Lead	3.0	1	1.8	-0.17	<3.0
Lithium	300	2	2		
Magnesium	5000	7.7	7.9	-4.8	<5000
Manganese	15	.054	1.9	0.43	<15
Molybdenum	10	.39	.2	0.11	<10
Nickel	40	.69	1.4	0.010	<40
Potassium	5000	39	45	44.9	<5000
Selenium	5.0	1.5	.98	1.6	<5.0
Silver	10	1.2	.24	-0.70	<10
Sodium	5000	9.2	100		
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5	0.68	<20

Associated samples MP12721: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.2.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T58820
 Account: ELPASOX - EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12721
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/01/10 09/01/10

Metal	T58905-1 Original	DUP	RPD	QC Limits	T58905-1 Original MS	Spikelot MPTW4	% Rec	QC Limits	
Aluminum	210	196	6.9	0-20	210	51900	50000	103.4	80-120
Antimony	anr								
Arsenic	4.7	3.8	21.2 (a)	0-20	4.7	428	400	105.8	80-120
Barium	79.9	76.1	4.9	0-20	79.9	516	400	109.0	80-120
Beryllium									
Boron									
Cadmium	0.19	0.14	30.3 (a)	0-20	0.19	416	400	104.0	80-120
Calcium	41100	39000	5.2	0-20	41100	91100	50000	100.0	80-120
Chromium	0.90	0.64	33.8 (a)	0-20	0.90	409	400	102.0	80-120
Cobalt	0.0	0.0	NC	0-20	0.0	386	400	96.5	80-120
Copper	6.9	6.3	9.1	0-20	6.9	409	400	100.5	80-120
Iron	98.6	88.5	10.8	0-20	98.6	50900	50000	101.6	80-120
Lead	2.5	2.3	8.3	0-20	2.5	404	400	100.4	80-120
Lithium									
Magnesium	29400	28000	4.9	0-20	29400	80000	50000	101.2	80-120
Manganese	15.5	13.1	16.8	0-20	15.5	419	400	100.9	80-120
Molybdenum	13.6	13.1	3.7	0-20	13.6	426	400	103.1	80-120
Nickel	6.9	5.9	15.6	0-20	6.9	422	400	103.8	80-120
Potassium	16100	15500	3.8	0-20	16100	69100	50000	106.0	80-120
Selenium	2.7	2.8	3.6	0-20	2.7	419	400	104.1	80-120
Silver	0.0	0.0	NC	0-20	0.0	412	400	103.0	80-120
Sodium	552000	529000	4.3	0-20	552000	599000	50000	94.0	80-120
Strontium									
Thallium									
Tin	anr								
Titanium	anr								
Vanadium	anr								
Zinc	45.4	39.7	13.4	0-20	45.4	467	400	105.4	80-120

Associated samples MP12721: T58820-2, T58820-3, T58820-4, T58820-5; T58820-6

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

6.2.2
 6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T58820
 Account: ELPASOX - EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12721
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/01/10

Metal	T58905-1 Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum	210	50800	50000	101.2	20
Antimony	anr				
Arsenic	4.7	420	400	103.8	20
Barium	79.9	506	400	106.5	20
Beryllium					
Boron					
Cadmium	0.19	409	400	102.2	20
Calcium	41100	88600	50000	95.0	20
Chromium	0.90	402	400	100.3	20
Cobalt	0.0	378	400	94.5	20
Copper	6.9	402	400	98.8	20
Iron	98.6	50100	50000	100.0	20
Lead	2.5	399	400	99.1	20
Lithium					
Magnesium	29400	78000	50000	97.2	20
Manganese	15.5	409	400	98.4	20
Molybdenum	13.6	419	400	101.4	20
Nickel	6.9	415	400	102.0	20
Potassium	16100	67600	50000	103.0	20
Selenium	2.7	409	400	101.6	20
Silver	0.0	405	400	101.3	20
Sodium	552000	575000	50000	46.0 (a)	20
Strontium					
Thallium					
Tin	anr				
Titanium	anr				
Vanadium	anr				
Zinc	45.4	455	400	102.4	20

Associated samples MP12721: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

6.2.2
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T58820
 Account: ELPASOX - EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRJP)

QC Batch ID: MP12721
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/01/10

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum	50900	50000	101.8	80-120
Antimony	anr			
Arsenic	403	400	100.8	80-120
Barium	428	400	107.0	80-120
Beryllium				
Boron				
Cadmium	404	400	101.0	80-120
Calcium	50600	50000	101.2	80-120
Chromium	411	400	102.8	80-120
Cobalt	385	400	96.3	80-120
Copper	397	400	99.3	80-120
Iron	50500	50000	101.0	80-120
Lead	392	400	98.0	80-120
Lithium				
Magnesium	51000	50000	102.0	80-120
Manganese	399	400	99.8	80-120
Molybdenum	408	400	102.0	80-120
Nickel	397	400	99.3	80-120
Potassium	50400	50000	100.8	80-120
Selenium	397	400	99.3	80-120
Silver	393	400	98.3	80-120
Sodium				
Strontium				
Thallium				
Tin	anr			
Titanium	anr			
Vanadium	anr			
Zinc	409	400	102.3	80-120

Associated samples MP12721: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.2.3
 6

SERIAL DILUTION RESULTS SUMMARY

Login Number: T58820
 Account: ELPASOX - EL PASO CORPORATION
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP12721
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/01/10

Metal	T58905-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	210	249	18.7 (a)	0-10
Antimony	anr			
Arsenic	4.72	0.00	100.0 (a)	0-10
Barium	79.9	77.2	3.4	0-10
Beryllium				
Boron				
Cadmium	0.190	0.00	100.0 (a)	0-10
Calcium	41100	40300	1.9	0-10
Chromium	0.900	0.00	100.0 (a)	0-10
Cobalt	0.00	0.00	NC	0-10
Copper	6.93	0.00	100.0 (a)	0-10
Iron	98.6	107	8.1	0-10
Lead	2.49	0.00	100.0 (a)	0-10
Lithium				
Magnesium	29400	29000	1.1	0-10
Manganese	15.5	15.4	0.7	0-10
Molybdenum	13.6	13.1	3.5	0-10
Nickel	6.85	7.34	7.2	0-10
Potassium	16100	15200	5.5	0-10
Selenium	2.66	8.92	235.3 (a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium	552000	581000	5.3	0-10
Strontium				
Thallium				
Tin	anr			
Titanium	anr			
Vanadium	anr			
Zinc	45.4	51.1	12.7 (b)	0-10

Associated samples MP12721: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Results < IDL are shown as zero for calculation purposes

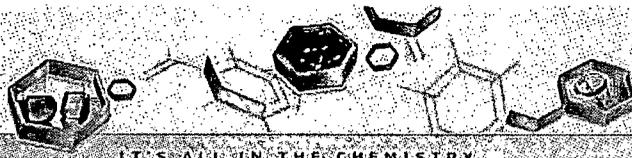
(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

6.2.4
6



General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T58820

Account: ELPASOX - EL PASO CORPORATION

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN25050	5.0	2.0	mg/l	2500	2500	102.0	80-120%
Chloride	GP10079/GN25251	1.0	0.0	mg/l	1000	988	98.8	92-107%
Nitrogen, Nitrate + Nitrite	GP10069/GN25216	0.10	0.0	mg/l	1	0.958	95.8	90-110%
Solids, Total Dissolved	GN25092	10	0.0	mg/l	500	474	94.8	80-120%
Sulfate	GP10032/GN25126	10	0.0	mg/l	100	95.5	95.5	80-120%

Associated Samples:

Batch GN25050: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GN25092: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10032: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10069: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10079: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

(*) Outside of QC limits

7.1
7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T58820
Account: ELPASOX - EL PASO CORPORATION
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN25050	T58820-2	mg/l	3.0	3.0	0.0	0-10%
Chloride	GP10079/GN25251	T58820-3	mg/l	0.50	0.50	0.0	0-5%
Nitrogen, Nitrate + Nitrite	GP10069/GN25216	T59183-1B	mg/l	12.1	12.1	0.0	0-20%
Solids, Total Dissolved	GN25092	T58929-5	mg/l	51.0	47.0	8.2(a)	0-5%
Sulfate	GP10032/GN25126	T58600-1	mg/l	736	730	0.9	0-20%

Associated Samples:

Batch GN25050: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GN25092: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10032: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10069: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10079: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

7.2
7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T58820

Account: ELPASOX - EL PASO CORPORATION

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN25050	T58820-2	mg/l	3.0	25	29.0	92.0	79-122%
Chloride	GP10079/GN25251	T58820-3	mg/l	0.50	10	10.5	100.0	81-119%
Nitrogen, Nitrate + Nitrite	GP10069/GN25216	T59183-1B	mg/l	12.1	10	21.9	98.0	90-110%
Sulfate	GP10032/GN25126	T58600-1	mg/l	736	25	761	98.8	75-125%

Associated Samples:

Batch GN25050: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10032: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10069: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

Batch GP10079: T58820-2, T58820-3, T58820-4, T58820-5, T58820-6

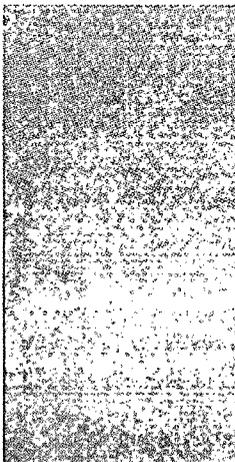
(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

7.3
7



11/23/10



Technical Report for

MWH Americas, Inc.
Juan Basin Pit Groundwater Remediation
WO94293
Accutest Job Number: T63369

Sampling Dates: 11/08/10 - 11/09/10

Report to:

MWH Americas
1801 California St. Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com
ATTN: Jed Smith

Total number of pages in report: 46



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul R Canevaro
Paul Canevaro
Laboratory Director

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-10-3) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

MWH Americas, Inc.

Job No: T63369

Juan Basin Pit Groundwater Remediation
 Project No: WO94293

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T63369-1	11/08/10	07:00 TU	11/10/10	AQ	Trip Blank Water	08112010TB01
T63369-2	11/08/10	10:37 TU	11/10/10	AQ	Ground Water	CANADA MESA MW-1
T63369-3	11/08/10	10:05 TU	11/10/10	AQ	Ground Water	CANADA MESA MW-2
T63369-4	11/08/10	09:24 TU	11/10/10	AQ	Ground Water	CANADA MESA MW-3
T63369-5	11/08/10	11:42 TU	11/10/10	AQ	Ground Water	K31 MW-2
T63369-6	11/08/10	12:15 TU	11/10/10	AQ	Ground Water	K31 MW-4
T63369-7	11/08/10	12:59 TU	11/10/10	AQ	Ground Water	K31 MW-5
T63369-8	11/08/10	12:04 TU	11/10/10	AQ	Ground Water	K31 MW-8
T63369-9	11/09/10	08:48 TU	11/10/10	AQ	Ground Water	SANDOVAL MW-1
T63369-10	11/08/10	14:09 TU	11/10/10	AQ	Ground Water	K-27 MW-1
T63369-11	11/08/10	15:00 TU	11/10/10	AQ	Ground Water	K-27 MW-3
T63369-12	11/08/10	15:37 TU	11/10/10	AQ	Ground Water	K-27 MW-5
T63369-13	11/08/10	16:16 TU	11/10/10	AQ	Ground Water	K-27 MW-2

Sample Summary (continued)

MWH Americas, Inc.

Job No: T63369

Juan Basin Pit Groundwater Remediation
Project No: WO94293

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T63369-14	11/09/10	10:35 TU	11/10/10	AQ	Ground Water	FOGELSON MW-3
T63369-15	11/09/10	11:18 TU	11/10/10	AQ	Ground Water	FOGELSON MW-2
T63369-16	11/09/10	11:53 TU	11/10/10	AQ	Ground Water	FOGELSON MW-1
T63369-17	11/09/10	15:55 TU	11/10/10	AQ	Ground Water	SJRP MW-8
T63369-18	11/09/10	15:20 TU	11/10/10	AQ	Ground Water	SJRP MW-9
T63369-19	11/09/10	13:00 TU	11/10/10	AQ	Ground Water	GCU 142E MW-1
T63369-20	11/09/10	13:23 TU	11/10/10	AQ	Ground Water	GCU 142E MW-2
T63369-21	11/09/10	13:57 TU	11/10/10	AQ	Ground Water	GCU 142E TMW-1



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: MWH Americas, Inc.

Job No T63369

Site: Juan Basin Pit Groundwater Remediation

Report Date 11/22/2010 4:02:48 PM

20 Samples, 1 Trip Blanks were collected on between 11/08/2010 and 11/09/2010 and were received at Accutest on 11/10/2010 properly preserved, at 3.7 Deg. C and intact. These Samples received an Accutest job number of T63369. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: VF4065
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T63550-1MS, T63550-1MSD were used as the QC samples indicated.
- T63369-5: Sample was not preserved to a pH < 2
- T63369-13: Sample was not preserved to a pH < 2

Matrix AQ	Batch ID: VF4067
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T63734-6MS, T63734-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- T63369-17: Sample was not preserved to a pH < 2

Matrix AQ	Batch ID: VF4070
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T63734-9MS, T63734-9MSD were used as the QC samples indicated.
- T63369-5: Sample was not preserved to a pH < 2

Matrix AQ	Batch ID: VF4071
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T63820-4MS, T63820-4MSD were used as the QC samples indicated.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used



Sample Results

Report of Analysis

Report of Analysis

3.17
3

Client Sample ID: SJRP MW-8	Date Sampled: 11/09/10
Lab Sample ID: T63369-17	Date Received: 11/10/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Juan Basin Pit Groundwater Remediation	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	F030328.D	1	11/17/10	AK	n/a	n/a	VF4067
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		79-122%
17060-07-0	1,2-Dichloroethane-D4	91%		75-121%
2037-26-5	Toluene-D8	92%		87-119%
460-00-4	4-Bromofluorobenzene	90%		80-133%

(a) Sample was not preserved to a pH < 2

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.18



Client Sample ID: SJRP MW-9	Date Sampled: 11/09/10
Lab Sample ID: T63369-18	Date Received: 11/10/10
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Juan Basin Pit Groundwater Remediation	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F030329.D	1	11/17/10	AK	n/a	n/a	VF4067
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	86.6	2.0	0.50	ug/l	
108-88-3	Toluene	0.66	2.0	0.43	ug/l	J
100-41-4	Ethylbenzene	18.7	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	9.9	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	9.9	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		79-122%
17060-07-0	1,2-Dichloroethane-D4	96%		75-121%
2037-26-5	Toluene-D8	100%		87-119%
460-00-4	4-Bromofluorobenzene	93%		80-133%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

FED-EX Tracking # 87735 6194 9969	Batch Order Control #
Accutest Quote #	Accutest Job # T63369

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes					
Company Name MWH		Project Name / No. EJB Pit OW Rem 2009-2040 TU		Requested Analyses		Matrix Codes DW - Drinking Water GW - Ground Water WW - Wastewater SO - Soil SL - Sludge OI - Oil LIQ - Liquid SOL - Other Solid					
Project Contact Jed Smith jed.smith@mwhglobal.com		Bill to El Paso Corp Invoice Attn. Norma Ramos									
Address 1801 California Street, Suite 2900		Address 1001 Louisiana Street, Rm S1904B									
City Denver	State CO	City Hou	State TX								
Zip 80202	Zip 77002										
Phone No. 303-291-2276	Fax No.	Phone No.	Fax No.								
Samplers Name		Client Purchase Order # San Juan River Plant Project									
Accutest Sample #		Collection						Number of preserved bottles		LAB USE ONLY	
Field ID / Point of Collection		Date	Time					Matrix	# of bottles		
17	SJRP MW-8	11/09/10	1555					GW	3		
18	SJRP MW-9	11/09/10	1520	GW	3						

Turnaround Time (Business days)	Approved By/ Date:	Data Deliverable Information	Comments / Remarks
<input checked="" type="checkbox"/> 10 Day STANDARD <input type="checkbox"/> 7 Day <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other	_____	<input type="checkbox"/> Commercial "A" <input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Data Package Commercial "A" = Results Only Commercial "B" = Results & Standard QC	<input type="checkbox"/> TRRP-13 <input type="checkbox"/> EDD Format <input type="checkbox"/> Other If samples are received unpreserved, please notify MWH regarding holding time!!

Real time analytical data available via LabLink

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by: [Signature]	Date Time: 1655	Received By:	Date Time: 11/9/10	Relinquished By:	Date Time: 11/9/10	Received By:	Date Time: 11/9/10
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	Date Time:
Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	Preserved where applicable	On Ice	Cooler Temp. 3.7°C

T63369: Chain of Custody
Page 3 of 5

SAMPLE INSPECTION FORM

Accutest Job Number: T63369 Client: MWH Date/Time Received: 11/10/10 9:10

of Coolers Received: 1 Thermometer #: 110 Temperature Adjustment Factor: 0.5°C

Cooler Temperatures (initial/adjusted): #1: 4.2/3.7°C #2: _____ #3: _____ #4: _____ #5: _____

#6: _____ #7: _____ #8: _____ #9: _____ #10: _____ #11: _____ #12: _____

Method of Delivery: FEDEX UPS Accutest Courter Greyhound Delivery Other

- COOLER INFORMATION**
- Custody seal missing or not intact
 - Temperature criteria not met
 - Wet ice received in cooler

- CHAIN OF CUSTODY**
- Chain of Custody not received
 - Sample D/T unclear or missing
 - Analyses unclear or missing
 - COC not properly executed

- SAMPLE INFORMATION**
- Sample containers received broken
 - VOC vials have headspace
 - Sample labels missing or illegible
 - ID on COC does not match label(s)
 - D/T on COC does not match label(s)
 - Sample/Bottles rcvd but no analysis on COC
 - Sample listed on COC, but not received
 - Bottles missing for requested analysis
 - Insufficient volume for analysis
 - Sample received improperly preserved

- TRIP BLANK INFORMATION**
- Trip Blank on COC but not received
 - Trip Blank received but not on COC
 - Trip Blank not intact
 - Received Water Trip Blank
 - Received Soil TB

Number of Encores? _____
 Number of 5035 kits? _____
 Number of lab-filtered metals? _____

Summary of Discrepancies: Received extra samples. GCU 1429 mwl, mw2, mw1
Added to end of job

TECHNICIAN SIGNATURE/DATE: [Signature] 11-10-10

INFORMATION AND SAMPLE LABELING VERIFIED BY: _____

CORRECTIVE ACTIONS

Client Representative Notified: Ted Smith Date: 11-15-10
 By Accutest Representative: George Gen Via: Phone Email
 Client Instructions: Analyze samples not on the COC.

\\nwalker\form\samplemanagement SM023 Revised 5/11/10

4.1
4

SAMPLE RECEIPT LOG

JOB #: T63369 DATE/TIME RECEIVED: 11-10-10 910
 CLIENT: MWH INITIALS: EC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
	1	Top Blank	11-9-10	W	4am	1-3	VK	1 2 3 4 5 6 7 8	<2 >12
	2	Canada Mesa MW-1	11-8-10 1037					1 2 3 4 5 6 7 8	<2 >12
	3	↓ MW-2	1205					1 2 3 4 5 6 7 8	<2 >12
	4	↓ MW-3	924					1 2 3 4 5 6 7 8	<2 >12
	5	K-31 MW-2	1142					1 2 3 4 5 6 7 8	<2 >12
	6	↓ MW-4	1115					1 2 3 4 5 6 7 8	<2 >12
	7	↓ MW-5	1254					1 2 3 4 5 6 7 8	<2 >12
	8	↓ MW-8	1201					1 2 3 4 5 6 7 8	<2 >12
	9	Sandora 1 MW-1	11-9-10 843					1 2 3 4 5 6 7 8	<2 >12
	10	K-27 MW-1	11-8-10 1409					1 2 3 4 5 6 7 8	<2 >12
	11	↓ MW-3	1500					1 2 3 4 5 6 7 8	<2 >12
	12	↓ MW-5	1537					1 2 3 4 5 6 7 8	<2 >12
	13	↓ MW-2	1616					1 2 3 4 5 6 7 8	<2 >12
	14	Fogelson MW-3	11-9-10 1035					1 2 3 4 5 6 7 8	<2 >12
	15	↓ MW-2	1118					1 2 3 4 5 6 7 8	<2 >12
	16	↓ MW-1	1155					1 2 3 4 5 6 7 8	<2 >12
	17	SSRP MW-8	1555					1 2 3 4 5 6 7 8	<2 >12
	18	" MW-9	1520					1 2 3 4 5 6 7 8	<2 >12
	19	GCU 1422 MW-1	1300					1 2 3 4 5 6 7 8	<2 >12
	20	↓ MW-2	1323					1 2 3 4 5 6 7 8	<2 >12
	21	↓ MW-3	1357					1 2 3 4 5 6 7 8	<2 >12
			EC 11-10-10					1 2 3 4 5 6 7 8	<2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

T63369: Chain of Custody
Page 5 of 5



GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4065-MB	F030265.D	1	11/16/10	AK	n/a	n/a	VF4065

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-1, T63369-2, T63369-3, T63369-4, T63369-5, T63369-6, T63369-7, T63369-8, T63369-9, T63369-10, T63369-11, T63369-12, T63369-13

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	89% 79-122%
17060-07-0	1,2-Dichloroethane-D4	91% 75-121%
2037-26-5	Toluene-D8	92% 87-119%
460-00-4	4-Bromofluorobenzene	85% 80-133%

5.1.1

5

Method Blank Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4067-MB	F030311.D	1	11/17/10	AK	n/a	n/a	VF4067

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-15, T63369-16, T63369-17, T63369-18, T63369-19

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	92% 79-122%
17060-07-0	1,2-Dichloroethane-D4	92% 75-121%
2037-26-5	Toluene-D8	95% 87-119%
460-00-4	4-Bromofluorobenzene	91% 80-133%

5.1.2
5

Method Blank Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4070-MB	F030361.D	1	11/18/10	AK	n/a	n/a	VF4070

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-5, T63369-14, T63369-20, T63369-21

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	92% 79-122%
17060-07-0	1,2-Dichloroethane-D4	86% 75-121%
2037-26-5	Toluene-D8	101% 87-119%
460-00-4	4-Bromofluorobenzene	96% 80-133%

5.1.3

5

Method Blank Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4071-MB	F030386.D	1	11/19/10	AK	n/a	n/a	VF4071

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-21

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	91% 79-122%
17060-07-0	1,2-Dichloroethane-D4	88% 75-121%
2037-26-5	Toluene-D8	103% 87-119%
460-00-4	4-Bromofluorobenzene	95% 80-133%

5.1.4
5

Blank Spike Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4065-BS	F030263.D	1	11/16/10	AK	n/a	n/a	VF4065

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-1, T63369-2, T63369-3, T63369-4, T63369-5, T63369-6, T63369-7, T63369-8, T63369-9, T63369-10, T63369-11, T63369-12, T63369-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	25.0	100	75-112
108-88-3	Toluene	25	24.7	99	77-114
1330-20-7	Xylene (total)	75	74.4	99	75-111
	m,p-Xylene	50	49.5	99	75-112
95-47-6	o-Xylene	25	24.9	100	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	90%	79-122%
17060-07-0	1,2-Dichloroethane-D4	87%	75-121%
2037-26-5	Toluene-D8	90%	87-119%
460-00-4	4-Bromofluorobenzene	85%	80-133%

5.2.1

5

Blank Spike Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4067-BS	F030309.D	1	11/17/10	AK	n/a	n/a	VF4067

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-15, T63369-16, T63369-17, T63369-18, T63369-19

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.8	99	76-118
100-41-4	Ethylbenzene	25	25.3	101	75-112
108-88-3	Toluene	25	25.3	101	77-114
1330-20-7	Xylene (total)	75	75.4	101	75-111
	m,p-Xylene	50	50.5	101	75-112
95-47-6	o-Xylene	25	25.0	100	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	93%	75-121%
2037-26-5	Toluene-D8	101%	87-119%
460-00-4	4-Bromofluorobenzene	93%	80-133%

5.2.2
5

Blank Spike Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4070-BS	F030358.D	1	11/18/10	AK	n/a	n/a	VF4070

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-5, T63369-14, T63369-20, T63369-21

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.4	102	75-112
108-88-3	Toluene	25	25.4	102	77-114
1330-20-7	Xylene (total)	75	76.1	101	75-111
	m,p-Xylene	50	50.7	101	75-112
95-47-6	o-Xylene	25	25.5	102	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	91%	79-122%
17060-07-0	1,2-Dichloroethane-D4	83%	75-121%
2037-26-5	Toluene-D8	101%	87-119%
460-00-4	4-Bromofluorobenzene	94%	80-133%

5.2.3

5

Blank Spike Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4071-BS	F030384.D	1	11/19/10	AK	n/a	n/a	VF4071

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-21

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	20.7	83	76-118
108-88-3	Toluene	25	21.9	88	77-114

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	90%	79-122%
17060-07-0	1,2-Dichloroethane-D4	84%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	94%	80-133%

5.2.4
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T63550-1MS	F030268.D	2	11/16/10	AK	n/a	n/a	VF4065
T63550-1MSD	F030269.D	2	11/16/10	AK	n/a	n/a	VF4065
T63550-1	F030267.D	2	11/16/10	AK	n/a	n/a	VF4065

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-1, T63369-2, T63369-3, T63369-4, T63369-5, T63369-6, T63369-7, T63369-8, T63369-9, T63369-10, T63369-11, T63369-12, T63369-13

CAS No.	Compound	T63550-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.0 U	50	48.9	98	49.5	99	1	76-118/16
100-41-4	Ethylbenzene	4.0 U	50	50.3	101	50.4	101	0	75-112/12
108-88-3	Toluene	4.0 U	50	50.0	100	49.9	100	0	77-114/12
1330-20-7	Xylene (total)	12 U	150	153	102	151	101	1	75-111/12
	m,p-Xylene	8.0 U	100	102	102	101	101	1	75-112/12
95-47-6	o-Xylene	4.0 U	50	51.0	102	50.0	100	2	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T63550-1	Limits
1868-53-7	Dibromofluoromethane	98%	97%	100%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	95%	100%	75-121%
2037-26-5	Toluene-D8	100%	101%	102%	87-119%
460-00-4	4-Bromofluorobenzene	93%	91%	93%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T63734-6MS	F030313.D	1	11/17/10	AK	n/a	n/a	VF4067
T63734-6MSD	F030314.D	1	11/17/10	AK	n/a	n/a	VF4067
T63734-6	F030312.D	1	11/17/10	AK	n/a	n/a	VF4067

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-15, T63369-16, T63369-17, T63369-18, T63369-19

CAS No.	Compound	T63734-6 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	58.6	25	81.6	92	81.8	93	0	76-118/12
100-41-4	Ethylbenzene	8.5	25	33.3	99	33.2	99	0	75-112/12
108-88-3	Toluene	4.1	25	29.7	102	29.6	102	0	77-114/12
1330-20-7	Xylene (total)	11.7	75	86.0	99	86.3	99	0	75-111/12
	m,p-Xylene	10.1	50	59.3	98	59.8	99	1	75-112/12
95-47-6	o-Xylene	1.7	J 25	26.6	100	26.5	99	0	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T63734-6	Limits
1868-53-7	Dibromofluoromethane	92%	92%	95%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	85%	96%	75-121%
2037-26-5	Toluene-D8	99%	100%	99%	87-119%
460-00-4	4-Bromofluorobenzene	93%	93%	92%	80-133%

5.3.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T63734-9MS	F030364.D	20	11/18/10	AK	n/a	n/a	VF4070
T63734-9MSD	F030365.D	20	11/18/10	AK	n/a	n/a	VF4070
T63734-9	F030363.D	20	11/18/10	AK	n/a	n/a	VF4070

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-5, T63369-14, T63369-20, T63369-21

CAS No.	Compound	T63734-9 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2560	500	3000	88	2920	72 ^a	3	76-118/16
100-41-4	Ethylbenzene	399	500	898	100	863	93	4	75-112/12
108-88-3	Toluene	731	500	1260	106	1210	96	4	77-114/12
1330-20-7	Xylene (total)	826	1500	2290	98	2220	93	3	75-111/12
	m,p-Xylene	668	1000	1650	98	1580	91	4	75-112/12
95-47-6	o-Xylene	158	500	641	97	632	95	1	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T63734-9	Limits
1868-53-7	Dibromofluoromethane	91%	90%	93%	79-122%
17060-07-0	1,2-Dichloroethane-D4	82%	81%	89%	75-121%
2037-26-5	Toluene-D8	102%	99%	99%	87-119%
460-00-4	4-Bromofluorobenzene	95%	94%	94%	80-133%

(a) Outside control limits due to high level in sample relative to spike amount.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63369
 Account: MWHCODE MWH Americas, Inc.
 Project: Juan Basin Pit Groundwater Remediation

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T63820-4MS	F030388.D	10	11/19/10	AK	n/a	n/a	VF4071
T63820-4MSD	F030389.D	10	11/19/10	AK	n/a	n/a	VF4071
T63820-4	F030387.D	10	11/19/10	AK	n/a	n/a	VF4071

The QC reported here applies to the following samples:

Method: SW846 8260B

T63369-21

CAS No.	Compound	T63820-4 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	226	250	449	89	427	80	5	76-118/16
108-88-3	Toluene	6.9	250	256	100	244	95	5	77-114/12

CAS No.	Surrogate Recoveries	MS	MSD	T63820-4	Limits
1868-53-7	Dibromofluoromethane	91%	87%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	80%	89%	75-121%
2037-26-5	Toluene-D8	102%	100%	103%	87-119%
460-00-4	4-Bromofluorobenzene	95%	93%	95%	80-133%

5.3.4

5