3R - 427

SEP 2010 QUARTERLY GWMR

02/23/2011

3R 427

6121 Indian School Rd. NE Suite 200
Albuquerque, NM 87110
(505) 237-8440

TETRA TECH, INC.

February 23, 2011

Mr. Glenn von Gonten
State of New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RE: ConocoPhillips El Paso No. 1A September 2010 Quarterly Groundwater Monitoring Report
Blanco, New Mexico

Dear Mr. von Gonten:

Enclosed please find a copy of the above-referenced document as compiled by Tetra Tech, Inc., formerly Maxim Technologies, for this Blanco area site.

Please do not hesitate to contact me at (505) 237-8440 if you have any questions or require additional information.

Sincerely,

Kelly E. Blanchard

Kelly E. Blanchard
Project Manager/Geologist

Enclosures (1)

Cc: Brandon Powell, NMOCD
Terry Lauck, ConocoPhillips (electronic)

SEPTEMBER 2010 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS COMPANY

EL PASO NO.1A
NATURAL GAS PRODUCTION SITE
SAN JUAN COUNTY, NEW MEXICO

API # 30-045-22778

Prepared for:

ConocoPhillips

420 South Keeler Avenue
Bartlesville, OK 74004

Prepared by:

TETRA TECH, INC.

6121 Indian School Rd. NE Suite 200
Albuquerque, NM 87110
Tetra Tech Project No. 96900122.100

February 2011

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QUARTERLY GROUNDWATER MONITORING REPORT CONOCOPHILLIPS COMPANY EL PASO NO.1A SAN JUAN COUNTY, NEW MEXICO

1.0 INTRODUCTION

This report details the results of quarterly groundwater monitoring completed by Tetra Tech, Inc. (Tetra Tech) on September 23, 2010 at the ConocoPhillips Company El Paso No. 1A site in San Juan County, New Mexico (Site). This sampling event represents the eighth quarter of groundwater monitoring conducted by Tetra Tech at the Site, seven of which include all four Site monitor wells.

The Site is located on BLM land east of Blanco, NM near the intersection of New Mexico Highway 64 and County Road 4450 in Section 20, Township 29 North, Range 9 West. The Site consists of the El Paso No. 1S and El Paso No. 1A natural gas production wellheads and includes all associated equipment and installations. A site location map is included as **Figure 1**, a site detail map is included as **Figure 2**, and a generalized geologic cross section is included as **Figure 3**.

1.1 Site History

The history of the Site is outlined in **Table 1**.

2.0 METHODOLOGY AND RESULTS

2.1 Groundwater Monitoring Methodology

Groundwater Elevation Measurements

On September 23, 2010 groundwater elevation measurements were recorded in Monitor Wells MW-1, MW-2, MW-3, and MW-4 using a dual interface probe. Groundwater elevations are detailed in **Table 2.** A groundwater elevation contour map is presented as **Figure 4.** Based on September 2010 monitoring event data, groundwater flow is southwest and consistent with historic records at this site. The San Juan River is approximately 1 mile from the site and flows west.

Groundwater sampling

Each monitor well was sampled after three well casing volumes had been purged; or until measured groundwater parameters including temperature, pH, conductivity, total dissolved solids (TDS), oxidation-reduction potential (ORP), and dissolved oxygen (DO) had stabilized. Parameters were collected using a YSI 556 multi-parameter sonde and were recorded on Tetra Tech Groundwater Sampling Field Forms (**Appendix A**).

Purged groundwater was disposed of in the Site produced water tank (**Figure 2**). A dedicated 1.5-inch polyethylene bailer was used to purge and collect groundwater samples. The samples were then placed in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Southern Petroleum Laboratory (SPL) located in Houston, Texas. The samples were analyzed for presence of volatile organic compounds (VOC) including benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260B, ion chromatography by EPA Method

E300.0, total dissolved solids (TDS) by EPA Method 2540C, and dissolved metals for manganese by EPA Method 6010B.

2.3 Groundwater Sampling Analytical Results

Groundwater collected from Site monitoring wells during the September 2010 monitoring event was below the New Mexico Water Quality Control Commission (NMWQCC) standards for BTEX. Exceedances of NMWQCC standards were detected for the following constituents:

- **Fluoride**

  The NMWQCC groundwater quality standard for fluoride is 1.6 milligrams per liter (mg/L). Groundwater collected from MW-1 was contained a fluoride concentration of 2.46mg/L; groundwater collected from MW-2 contained a fluoride concentration of 2.09 mg/L; groundwater collected from MW-3 contained a fluoride concentration of 2.52 mg/L; while groundwater collected from MW-4 contained a fluoride concentration of 1.8 mg/L.

- **Sulfate**

  The NMWQCC groundwater quality standard for sulfate is 600 mg/L. Groundwater collected from Monitor Well MW-1 contained sulfate at 7,080 mg/L; groundwater collected from MW-2 contained sulfate at 12,400 mg/L; groundwater collected from MW-3 contained sulfate at 4,490 mg/L; and groundwater collected from MW-4 contained sulfate at 6,200 mg/L. The highest concentration of sulfate was found in groundwater collected from MW-2, the up-gradient monitoring well.

- **Manganese**

  The NMWQCC groundwater quality standard for dissolved manganese is 0.2 mg/L. Groundwater collected from Monitor Well MW-1 contained dissolved manganese at 1.8 mg/L, groundwater collected from MW-2 contained dissolved manganese at 1.74 mg/L, and groundwater collected from MW-3 contained dissolved manganese at 0.385 mg/L. Groundwater collected from MW-4 was found to contain dissolved manganese below the NMWQCC standard.

- **Total Dissolved Solids**

  The NMWQCC groundwater quality standard for total dissolved solids (TDS) is 1,000 mg/L. Groundwater collected from Monitor Well MW-1 contained TDS at 10,400 mg/L; groundwater collected from MW-2 contained a concentration of 19,500 mg/L; groundwater collected from MW-3 contained a concentration of 12,600 mg/L; and groundwater collected from MW-4 contained a concentration of 8,600 mg/L. The highest concentration of TDS was found in groundwater collected from MW-2, the up-gradient monitoring well.

Groundwater laboratory analytical results are summarized in **Table 3**. A NMWQCC standard exceedances map is presented as **Figure 5**. The laboratory analytical report for the September 2010 groundwater sampling event is included as **Appendix B**.

3.0 CONCLUSIONS

To date, groundwater samples collected from Site monitor wells have never exceeded NMWQCC groundwater quality standards for BTEX. Furthermore, BTEX concentrations have consistently been

below the minimum laboratory detection limits in Monitor Wells MW-1, MW-2 and MW-4 since monitoring began. Monitoring Wells MW-1, MW-2, MW-3, and MW-4 were found to have concentrations exceeding the NMWQCC standard for fluoride, sulfate and total dissolved solids. Monitoring Wells MW-1, MW-2, and MW-3 were also found to exceed the NMWQCC standard for dissolved manganese.

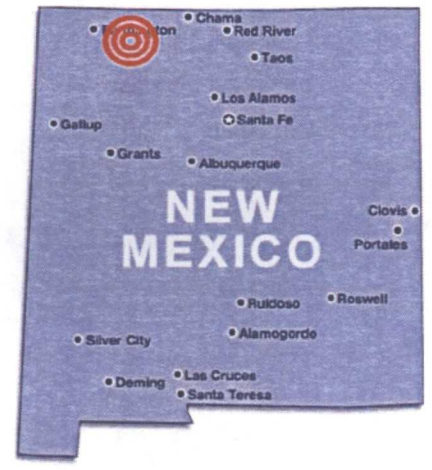
Since BTEX is below standards in all 4 monitoring wells, but other constituents of concern are above NMWQCC standard. Tetra Tech recommends the continuation of quarterly groundwater monitoring until fluoride, sulfate, dissolved manganese, and dissolved iron concentrations are also below NMWQCC standards, appear stable or reach regional background levels. Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

FIGURES

ConocoPhillips High Resolution Aerial Imagery 2008

FIGURE 1.

Site Location Map
ConocoPhillips
Company
El Paso No. 1A
San Juan County, NM



Directions from HW 64 to ConocoPhillips El Paso No. 1A Site Location

Approximate ConocoPhillips El Paso No. 1A Site location

N

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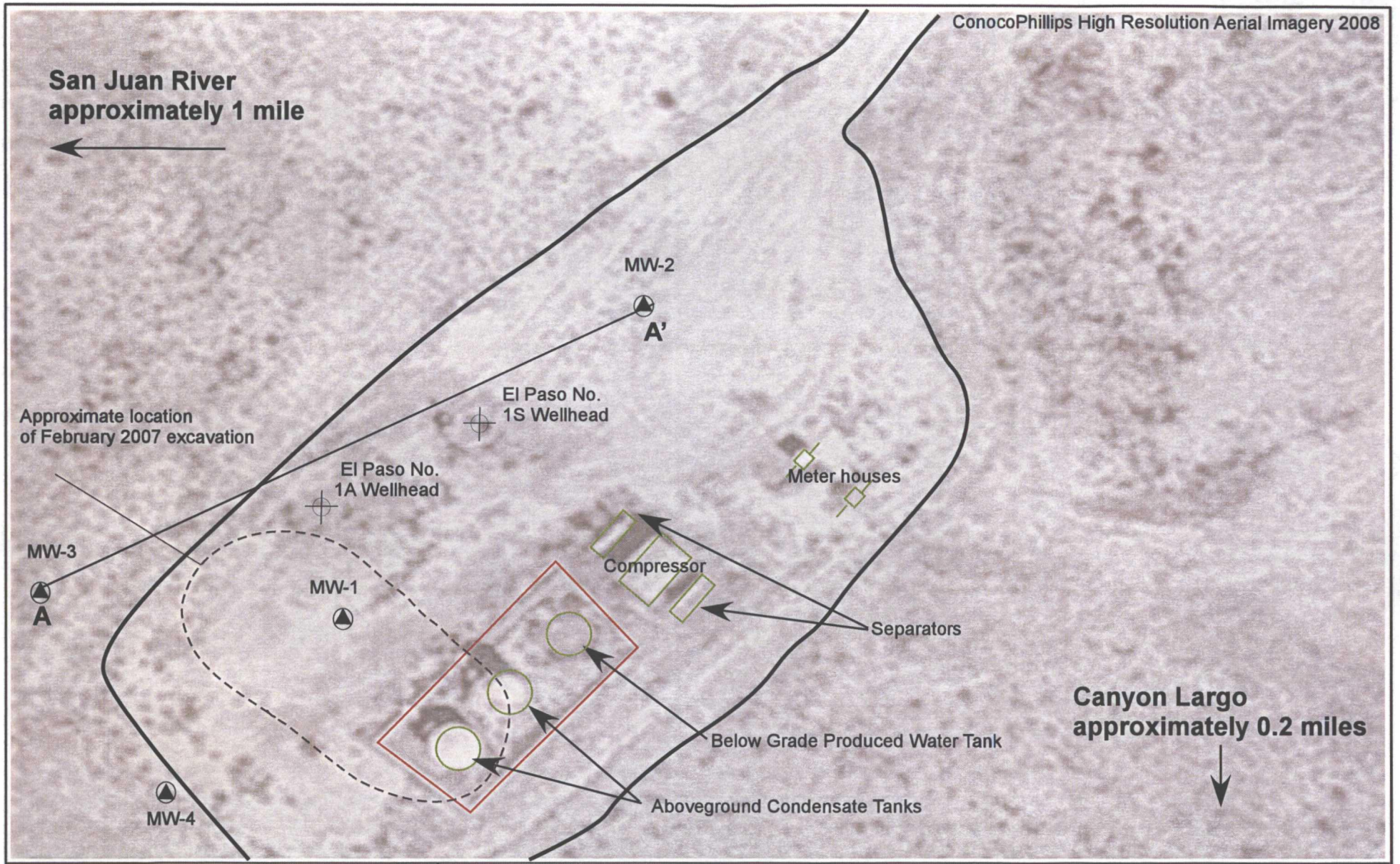


FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS COMPANY
EL PASO NO. 1A
Sec 20, Twp 29N, Rng 09W
San Juan County, New Mexico

LEGEND

- WELLHEAD
- MONITOR WELL
- GENERAL SITE BOUNDARY
- BERM
- EQUIPMENT

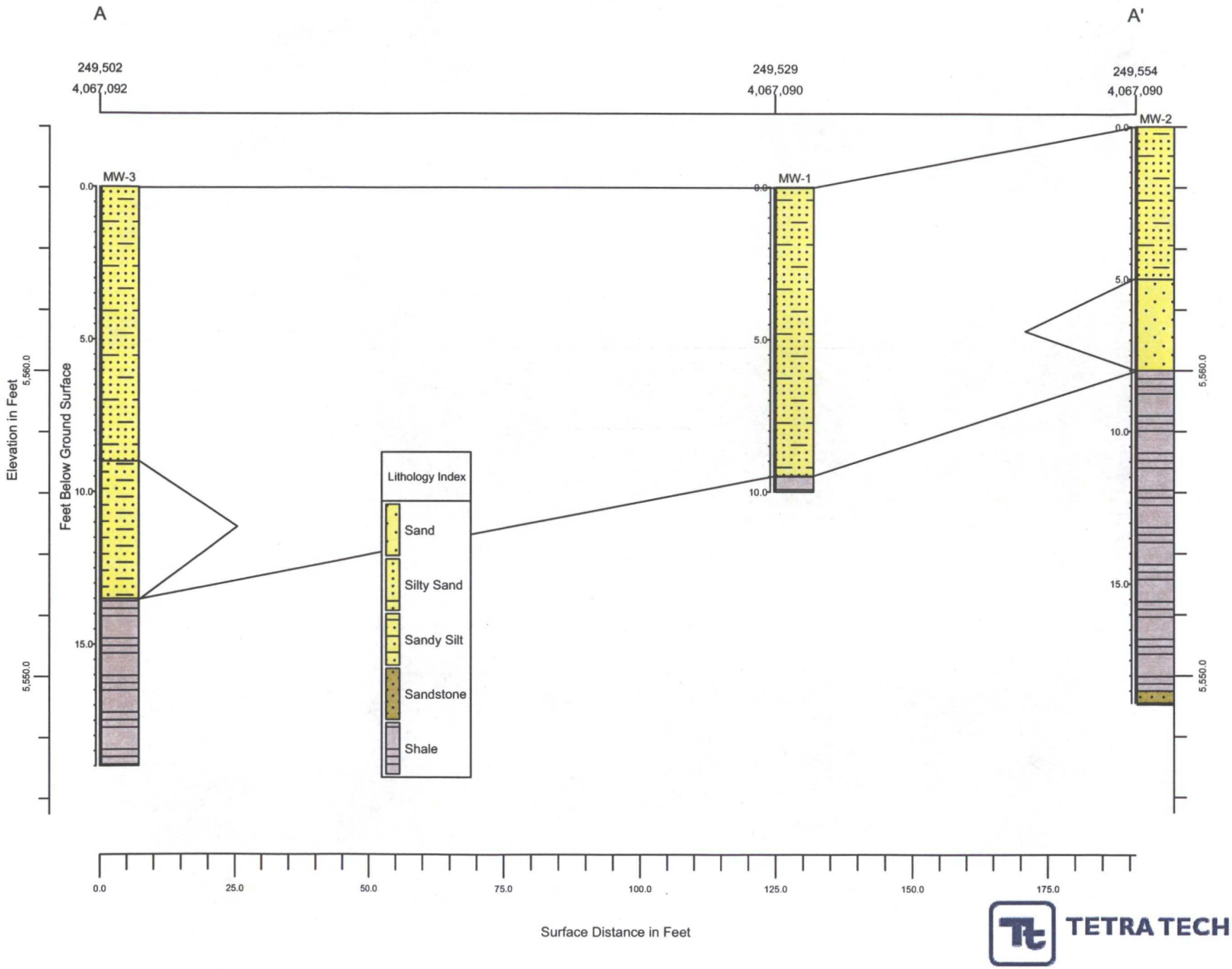
0 20 40
FEET

N

TETRA TECH, INC.

Figure 3

El Paso No. 1A - Cross-Section A-A'



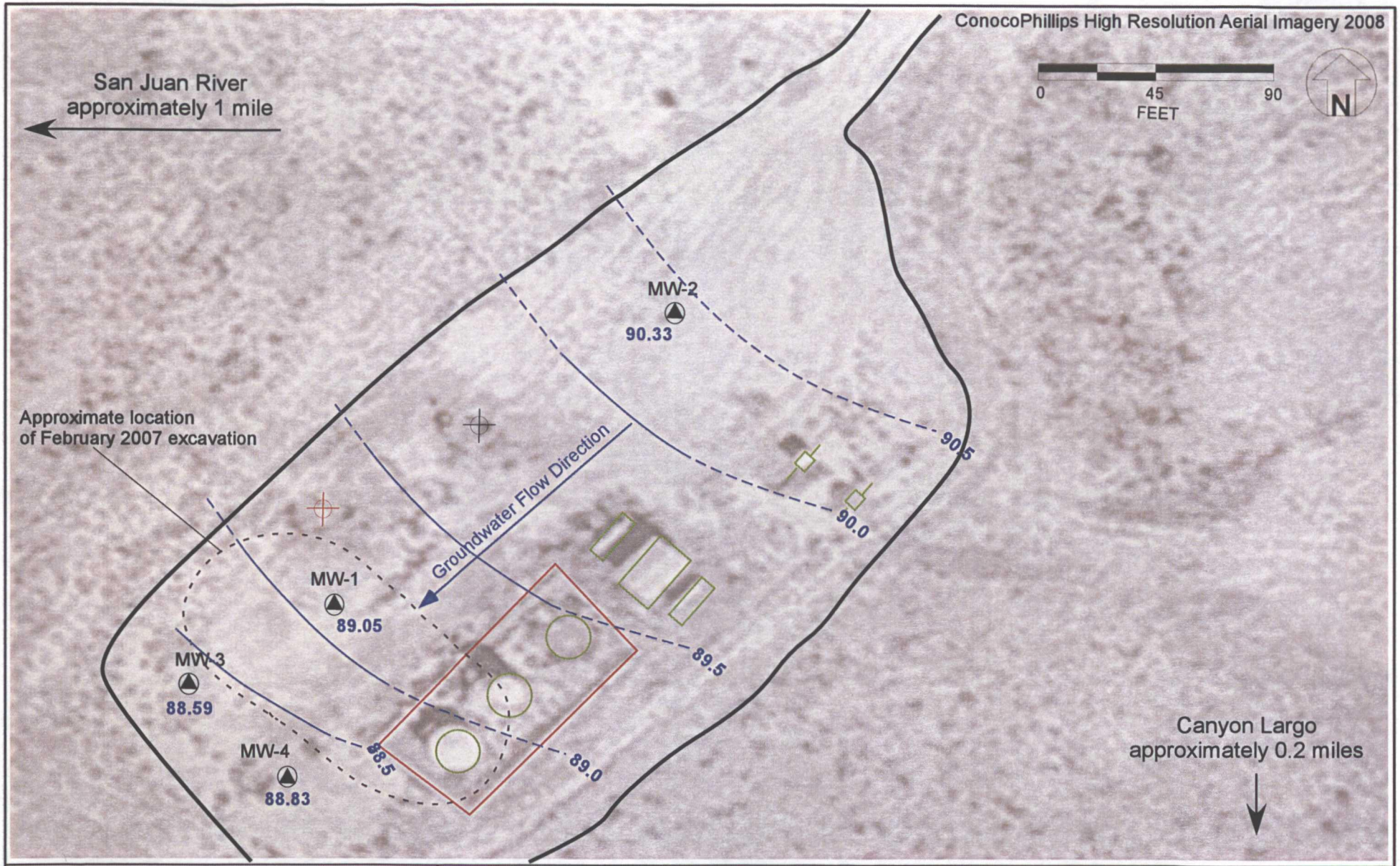


FIGURE 4:
GROUNDWATER ELEVATION MAP
SEPTEMBER 2010
CONOCOPHILLIPS COMPANY
EL PASO NO. 1A
Sec 20, Twp 29N, Rng 09W
San Juan County, New Mexico

LEGEND

- EL PASO 1A WELLHEAD
- EL PASO 1S WELLHEAD
- MONITOR WELL
- BERM
- EQUIPMENT
- GROUNDWATER ELEVATION LINE (FEET)
- GENERAL SITE BOUNDARY

TETRA TECH, INC.

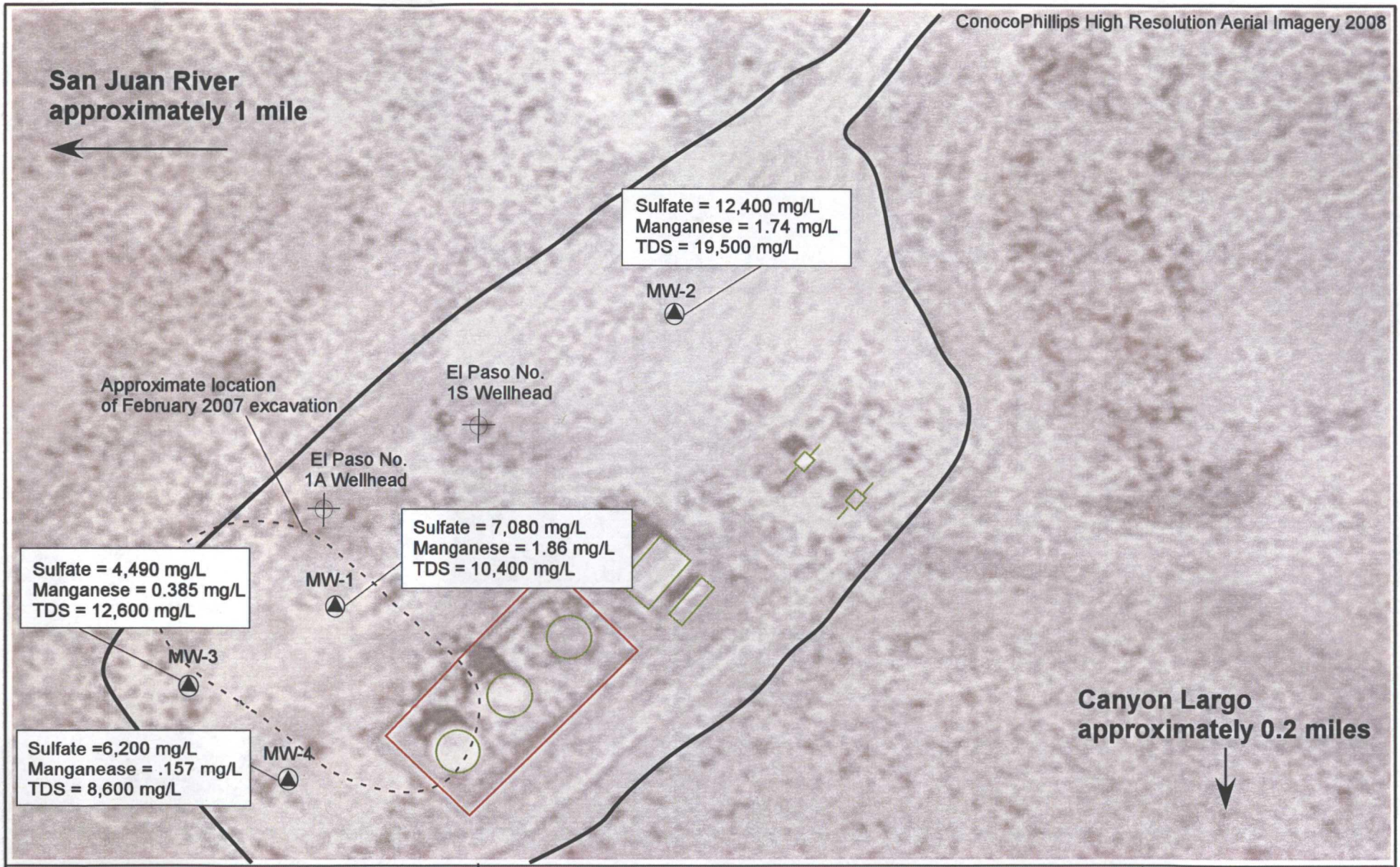


FIGURE 5:
GROUNDWATER QUALITY STANDARD EXCEEDENCES CONCENTRATION MAP
SEPTEMBER 2010
CONOCOPHILLIPS COMPANY
EL PASO NO. 1A
Sec 20, Twp 29N, Rng 09W
San Juan County, New Mexico

LEGEND

- WELLHEAD
- MONITOR WELL
- BERM
- EQUIPMENT
- GENERAL SITE BOUNDARY

N

0 45 90
FEET

TETRA TECH, INC.

TABLES

Table 1. Site History Timeline - ConocoPhillips Company El Paso No. 1A

DATE	ACTIVITY
5-Jan-78	Well spudded by El Paso Natural Gas Co.
1-Nov-86	Meridian Oil, Inc. becomes the operator under El Paso Production Company
31-Dec-00	Operator name change from Burlington Resources Oil and Gas Company to Burlington Resources Oil and Gas Company LP.
31-Mar-06	ConocoPhillips Company completed the aquistion of Burlington Resources.
Feb-07	Hydrocarbon-impacted soils discovered during trench work being conducted for a new flowline. Original source of contamination is unknown.
Feb-07	Contaminated soil excavated from the Site. Soil samples collected and analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) were below NMOCD regulations.
21-Sep-07	Groundwater monitoring well installed to a depth of ten (10) feet below ground surface (bgs) by Envirotech Inc. of Farmington, NM (Envirotech). A soil sample obtained from the well boring was analyzed for benzene, BTEX and total petroleum hydrocarbons (TPH). Results were below NMOCD regulations of 10 parts per million (ppm), 50 ppm, and 100 ppm, respectively.
21-Sep-07	A ground water sample was collected from the temporary monitoring well and analyzed for BTEX; results were below the State of New Mexico drinking water standard for this constituent.
27-Sep-07	Depth to groundwater measured at seven (7) feet bgs.
Sep-07	Envirotech report recommends plugging and abandonment of the temporary ground water monitoring well and a No Further Action determination for the Site (Envirotech, 2007).
Apr-08	Oil Conservation Division of NM Energy, Minerals, and Resources Dept. indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn von Gonten.
25-Oct-08	1st quarter sampling of MW-1 by Tetra Tech.
Jan-09	Attempt to install additional monitoring wells; roads inaccessible by drill rig due to winter weather conditions.
3 and 4-March-09	Monitoring wells MW-2, MW-3, MW-4 installed and developed by WDC overseen by Tetra Tech. Soil samples were collected from MW-3 and MW-2 boring locations.
2-Apr-09	First quarter of sampling to include all 4 monitoring wells. A baseline suite was collected for MW-1, MW-2, MW-3 and MW-4.
18-Jun-09	2nd quarter of groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4.
29-Sep-09	3rd quarter of groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4. Samples collected for dissolved metals exceeding standards that were previously run by the total metals test method; Al, Mn, Fe. Dissolved manganese was found in concentrations above NMWQCC standard.
15-Dec-09	4th quarter groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4. Analytical results for fluoride are inconclusive.
28-Apr-10	5th quarter groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4
8-Jun-10	6th quarter groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4.
23-Sep-10	7th quarter groundwater sampling conducted by Tetra Tech to include wells MW-1, MW-2, MW-3 and MW-4.

Table 2. Groundwater Elevation Data Summary - ConocoPhillips Company El Paso No. 1A

Well ID	Total Depth (ft bgs)	Screen Interval (ft)	*Elevation (ft) (TOC)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Groundwater Elevation
MW-1	13.55	4.75-9.75	99.52	9/21/2007	7.00	92.52
				10/25/2008	10.92	88.60
				1/30/2009	NM	NM
				4/2/2009	10.33	89.19
				6/18/2009	10.65	88.87
				9/29/2009	10.96	88.56
				12/15/2009	10.99	88.53
				4/28/2010	10.53	88.99
				6/8/2010	10.48	89.04
				9/23/2010	10.47	89.05
MW-2	20.75	3-17.9	98.72	4/2/2009	8.49	90.23
				6/18/2009	8.71	90.01
				9/29/2009	8.70	90.02
				12/15/2009	8.75	89.97
				4/28/2010	8.38	90.34
				6/8/2010	8.30	90.42
				9/23/2010	8.39	90.33
MW-3	21.15	3.1-18.1	98.175	4/2/2009	9.71	88.47
				6/18/2009	9.75	88.43
				9/29/2009	10.10	88.08
				12/15/2009	10.07	88.11
				4/28/2010	9.66	88.52
				6/8/2010	9.62	88.56
				9/23/2010	9.59	88.59
MW-4	20.83	2.9-17.9	98.28	4/2/2009	9.74	88.54
				6/18/2009	9.78	88.50
				9/29/2009	10.04	88.24
				12/15/2009	10.06	88.22
				4/28/2010	9.70	88.58
				6/8/2010	9.61	88.67
				9/23/2010	9.45	88.83

ft = Feet

TOC = Top of casing

bgs = below ground surface

* Elevation relative to wellhead, set at an arbitrary elevation of 100 feet above mean sea level

NM = Not Measured

Table 3. Groundwater Laboratory Analytical Results Summary - ConocoPhillips Company El Paso No. 1A

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Aluminum (mg/L)	Iron (mg/L)	Manganese (mg/L)	Total Dissolved Solids (mg/L)
MW-1	9/21/2007	1.4	0.5	<0.2	0.3	NS	NS	NS	NS	NS	NA
	10/25/2008	<0.5	<0.5	<0.5	<0.5	<2	6400	NS	26*	5.49*	NA
	1/30/2009	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)
	4/2/2009	<0.5	<0.5	<0.5	<0.5	1.92	7580	2.21*	29.6*	3.14*	10000
	6/18/2009	<5	<5	<5	<5	2.04	7970	2.1*	7.66*	3.06*	NA
	9/29/2009	<1	<1	<1	<1	1.56	8030	<0.1	0.0237	1.42	10600
	12/15/2009	<1	<1	<1	<1	<50	10100	NA	NA	1.68	10400
	4/28/2010	<1	<1	<1	<1	2.14	8100	NA	NA	2.37	10300
	6/8/2010	<1	<1	<1	<1	< 5.0	6690	NA	NA	2.17	10600
	9/23/2010	<1	<1	<1	<1	2.46	7080	NA	NA	1.8	10400
MW-2	4/2/2009	<0.5	<0.5	<0.5	<0.5	<0.5	15900	0.705*	0.751*	1.16*	22500
	6/18/2009	<5	<5	<5	<5	0.67	17000	1.49*	1.23*	1.92*	NA
	9/29/2009	<1	<1	<1	<1	<0.5	29800	<0.1	<0.02	2.03	31800
	12/15/2009	<1	<1	<1	<1	<100	22100	NA	NA	1.54	25100
	4/28/2010	<1	<1	<1	<1	2.18	8350	NA	NA	0.941	12300
	6/8/2010	<1	<1	<1	<1	< 5.0	12200	NA	NA	1.38	19000
	9/23/2010	<1	<1	<1	<1	2.09	12400	NA	NA	1.74	19500
MW-3	4/2/2009	<0.5	<0.5	52	362	1.68	4090	5.47*	9.31*	0.788*	7530
	6/18/2009	<5	<5	15	87	1.68	5750	3.75*	5.3*	0.454*	NA
	9/29/2009	<1	<1	2.7	20	1.47	6890	0.224	0.14	0.432	8630
	12/15/2009	<1	<1	3	24	<50	7490	NA	NA	0.583	9230
	4/28/2010	2	<1	15	124	1.53	5680	NA	NA	0.519	6610
	6/8/2010	<1	<1	5.4	45.7	< 5.0	4740	NA	NA	0.409	6620
	9/23/2010	<1	<1	1.3	10.5	2.52	4490	NA	NA	0.385	12600
MW-4	4/2/2009	<0.5	<0.5	<0.5	<0.5	2.42	4750	2.1*	2.12*	0.396*	6660
	6/18/2009	<5	<5	<5	<5	2.25	5300	5.52*	6.91*	0.333*	NA
	9/29/2009	<1	<1	<1	<1	2.26	5340	0.943	0.393	0.134	6760
	12/15/2009	<1	<1	<1	<1	<50	5660	NA	NA	0.201	6500
	4/28/2010	<1	<1	<1	<1	2.38	4820	NA	NA	0.198	8320
	6/8/2010	<1	<1	<1	<1	2.78	3910	NA	NA	0.177	3380
	9/23/2010	<1	<1	<1	<1	1.8	6200	NA	NA	0.157	8600
NMWQCC Standards		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	1.6 (mg/L)	600 (mg/L)	5 (mg/L)	1 (mg/L)	0.2 (mg/L)	1000 (mg/L)

Explanation

ND = Not Detected
NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
NA(1) = Not analyzed due to laboratory error
NA = Not Analyzed
<0.7 = Below laboratory detection limit of 0.7 ug/L
Bold = concentrations that exceed the NMWQCC limits
* = Results reported for total metals analysis, results can not be compared to NMWQCC Standards for dissolved metals

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name El Paso 1A — Page 1 of 4

ject No.

Site Location Blanco, NM

Site/Well No. MW-1 — Coded/ Replicate No. Duplicate @1155 — Date 9/23/10

Weather Sunny, cool — Time Sampling Began 1150 — Time Sampling Completed 1200

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 13.56 — Water-Level Elevation

Hold — Depth to Water Below MP 10.47

Wet — Water Column in Well 3.09 — Diameter of Casing 2" — Gallons Pumped/Bailed Prior to Sampling 1.75

Gallons per Foot 0.16

Gallons in Well .4944 — Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump / Bailer — X3 = 1.483

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1152	20.14	7.90	11.639	7.565	.85	20.5	-133.2	1.25
1153	20.15	7.92	11.618	7.549	1.06	12.2	-141.9	1.5
1154	20.18	7.94	11.582	7.528	.95	10.8	-151.4	1.75

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description		Preservative
BTEX	3 40mL VOA's		HCl
Total Metals Dissolved Mn	plastic	16 oz	none
Flouride, Sulfate, TDS	plastic	32 oz	none

Remarks H2O is dark brownish gray with dark sediment, no odor or sheen observed

Sampling Personnel Christine Matteds & Cassie Brown

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

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WATER SAMPLING FIELD FORM

Project Name El Paso 1A — Page 2 of 4

ject No.

Site Location Blanco, NM

Site/Well No. MW-2 — Coded/ Replicate No. — Date 9/23/10

Weather Sunny, Cool — Time Sampling Began 1100 — Time Sampling Completed 1115

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 20.75 bp — Water-Level Elevation

Held — Depth to Water Below MP ~~12.26~~ 8.39 — Diameter of Casing 2"

Wet — Water Column in Well 12.26 — Gallons Pumped/Bailed Prior to Sampling 6.0

Gallons per Foot 0.16

Gallons in Well 1.96 — Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump/ Bailer — X3 = 5.88

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1109	18.62	8.12	14042	9.13	5.35	57.3	153.7	5.25
1111	18.12	7.81	16422	10.72	2.87	32.1	158.6	5.5
1112	18.18	7.83	15688	10.13	2.35	26.3	151.3	6.0

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
~~Total Metals~~ Dissolved Mn	plastic 16 oz	none
Flouride, Sulfate, TDS	plastic 32 oz	none

Remarks water is mostly clear/light brown; no odor or sheen detected, some black sediment towards end of 3 volume

Sampling Personnel Christine Mathews & Cassie Braun

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name El Paso 1A — Page 3 of 4

ject No.

Site Location Blanco, NM

Site/Well No. MW-3 — Coded/ Replicate No. — Date 9/23/10

Weather Sunny, Cool — Time Sampling Began 1105 — Time Sampling Completed 1130

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 21.00 — Water-Level Elevation

Held — Depth to Water Below MP 9.59 — Diameter of Casing (2) 2"

Wet — Water Column in Well 11.41 — Gallons Pumped/Bailed Prior to Sampling 6.5

Gallons per Foot 0.16

Gallons in Well 1,826 — Sampling Pump Intake Setting (feet below land surface) [redacted]

Purging Equipment Purge pump / Bailer — X3 = 5,477

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1123	19.47	8.37	10536	6.848	1.59	17.7	-219.0	4.5
1125	19.23	8.40	10554	6.861	1.47	16.5	-222.8	5.0
1127	19.34	8.44	10547	6.856	1.94	22.0	-224.4	6.5

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
~~Total Metals~~ Dissolved Mn	plastic 16 oz	none
Flouride, Sulfate, TDS	plastic 32 oz	none

Remarks H2O is dark gray with silt & sediment. Odor is bio/sulfer odor w/ no sheen observed

Sampling Personnel Christine Mathews & Cassie Brown

Well Casing Volumes

Gal./ft.							
	1¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1½" = 0.10	2½" = 0.24	3"½ = 0.50	6" = 1.46

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name El Paso 1A — Page 4 of 4

Project No.

Site Location Blanco, NM

Site/Well No. MW-4 — Coded/ Replicate No. — Date 9/23/10

Weather Sunny, Cool — Time Sampling Began 1110 — Time Sampling Completed 1145

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 20.86 — Water-Level Elevation

Held / Wet — Depth to Water Below MP ~~9.50~~ 9.45 — Diameter of Casing 2"

Water Column in Well 11.36 — Gallons Pumped/Bailed Prior to Sampling 5.5 gallons

Gallons per Foot 0.16

Gallons in Well 1.818 — Sampling Pump Intake Setting (feet below land surface)

Purging Equipment: Purge pump / Bailer — x3 = 5.453

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1130	17.85	8.35	7954	5.169	6.21	61.2	-120.1	5.0
1138	17.45	8.32	7965	5.177	2.61	27.2	-123.8	5.25
1141	17.25	8.28	7947	5.166	1.98	21.1	-131.4	5.5

Sampling Equipment: Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Total Metals Dissolved Mn	plastic 16 oz	none
Flouride, Sulfate, TDS	plastic 32oz	none

Remarks: H2O is brown with silt, slight bio/sulfery odor, no sheen

Sampling Personnel: Christine Mathews & Cassie Brown

Well Casing Volumes

Gal./ft.							
	1 ¼" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1 ½" = 0.10	2 ½" = 0.24	3" ½ = 0.50	6" = 1.46

APPENDIX B

GROUNDWATER LABORATORY ANALYTICAL REPORT

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

Certificate of Analysis

October 14, 2010

Workorder: H10090645

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: COP - El Paso 1A

Project Number: El Paso 1A

Site: El Paso 1A

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

This Report Contains A Total Of 25 Pages

Excluding Any Attachments

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Certificate of Analysis

October 14, 2010

Workorder: H10090645

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6121 Indian School Road NE
Suite 200
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Project: COP - El Paso 1A

Project Number: El Paso 1A

Site: El Paso 1A

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II: ANALYSES AND EXCEPTIONS:

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

There were no exceptions noted.

III. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

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Certificate of Analysis

October 14, 2010

Workorder: H10090645

Kelly Blanchard
Tetra Tech
6121 Indian School Road NE
Suite 200
Albuquerque, NM 87110

Project: COP - El Paso 1A

Project Number: El Paso 1A

Site: El Paso 1A

PO Number: ENFOS

NELAC Cert. No.: T104704205-09-3

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or by his designee, as verified by the following signature.

Erica Cardenas, Senior Project Manager

Enclosures

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

SAMPLE SUMMARY

Workorder: H10090645 : COP - El Paso 1A

Project Number: El Paso 1A

Lab ID	Sample ID	Matrix	COC ID	Date/Time Collected	Date/Time Received
H10090645001	MW-1	Water		9/23/2010 12:00	9/25/2010 08:55
H10090645002	MW-2	Water		9/23/2010 11:15	9/25/2010 08:55
H10090645003	MW-4	Water		9/23/2010 11:45	9/25/2010 08:55
H10090645004	MW-3	Water		9/23/2010 11:30	9/25/2010 08:55
H10090645005	Duplicate	Water		9/23/2010 11:55	9/25/2010 08:55
H10090645006	Trip Blank	Water		9/24/2010 12:30	9/25/2010 08:55

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID: **H10090645001** Date/Time Received: 9/25/2010 08:55 Matrix: Water
Sample ID: **MW-1** Date/Time Collected: 9/23/2010 12:00

VOLATILES

Analysis Desc: SW-846 8260B
SW-846 5030Analytical Batches:
Batch: 2677 SW-846 8260B on 10/01/2010 05:35 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND	/	1.0	0.13	1			2677
Ethylbenzene	ND	/	1.0	0.48	1			2677
Toluene	ND	/	1.0	0.13	1			2677
m,p-Xylene	ND	/	1.0	0.58	1			2677
o-Xylene	ND	/	1.0	0.35	1			2677
Xylenes, Total	ND	/	1.0	0.35	1			2677
4-Bromofluorobenzene (S)	100 %	/	74-125		1			2677
1,2-Dichloroethane-d4 (S)	96.6 %	/	70-130		1			2677
Toluene-d8 (S)	104 %	/	82-118		1			2677

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B
Preparation Batches:
Batch: 2100 SW-846 3010A on 09/27/2010 15:00 by R_V
Analytical Batches:
Batch: 1647 SW-846 6010B on 10/01/2010 14:49 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	1.80		0.00500	0.000300	1		2100	1647

WET CHEMISTRY

Analysis Desc: EPA 300.0
Analytical Batches:
Batch: 1484 EPA 300.0 on 09/28/2010 00:51 by GLN DF = 1000.
Batch: 1493 EPA 300.0 on 10/12/2010 20:02 by GLN DF = 1.

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Fluoride	2.46		0.500	0.0430	1			1493
Sulfate	7080		500	43.5	1000			1484

Analysis Desc: SM 2540 C
Analytical Batches:
Batch: 1824 SM 2540 C on 09/26/2010 12:56 by MMAL

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A

Project Number: El Paso 1A

Lab ID: **H10090645001**

Date/Time Received: 9/25/2010 08:55

Matrix: Water

Sample ID: **MW-1**

Date/Time Collected: 9/23/2010 12:00

Parameters	Results	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Residue, Filterable (TDS)	10400		100	39.4	10			1824

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID: **H10090645002** Date/Time Received: 9/25/2010 08:55 Matrix: Water
Sample ID: **MW-2** Date/Time Collected: 9/23/2010 11:15

VOLATILES

Analysis Desc: SW-846 8260B SW-846 5030Analytical Batches:
Batch: 2677 SW-846 8260B on 10/01/2010 06:01 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2677
Ethylbenzene	ND		1.0	0.48	1			2677
Toluene	ND		1.0	0.13	1			2677
m,p-Xylene	ND		1.0	0.58	1			2677
o-Xylene	ND		1.0	0.35	1			2677
Xylenes, Total	ND		1.0	0.35	1			2677
4-Bromofluorobenzene (S)	103 %		74-125		1			2677
1,2-Dichloroethane-d4 (S)	100 %		70-130		1			2677
Toluene-d8 (S)	107 %		82-118		1			2677

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B Preparation Batches:
Batch: 2100 SW-846 3010A on 09/27/2010 15:00 by R_V
Analytical Batches:
Batch: 1647 SW-846 6010B on 10/01/2010 15:13 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	1.74		0.00500	0.000300	1		2100	1647

WET CHEMISTRY

Analysis Desc: EPA 300.0 Analytical Batches:
Batch: 1484 EPA 300.0 on 09/28/2010 01:08 by GLN DF = 1000
Batch: 1493 EPA 300.0 on 10/12/2010 20:19 by GLN DF = 1

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Fluoride	2.09		0.500	0.0430	1			1493
Sulfate	12400		500	43.5	1000			1484

Analysis Desc: SM 2540 C Analytical Batches:
Batch: 1824 SM 2540 C on 09/26/2010 12:56 by MMAL

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A | Project Number: El Paso 1A

Lab ID: **H10090645002** | Date/Time Received: 9/25/2010 08:55 | Matrix: Water

Sample ID: **MW-2** | Date/Time Collected: 9/23/2010 11:15

Parameters	Results	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Residue, Filterable (TDS)	19500		100	39.4	10			1824

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID: **H10090645003** Date/Time Received: 9/25/2010 08:55 Matrix: Water
Sample ID: **MW-4** Date/Time Collected: 9/23/2010 11:45

VOLATILES

Analysis Desc: SW-846 8260B SW-846 5030Analytical Batches:
Batch: 2677 SW-846 8260B on 10/01/2010 06:28 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND	/	1.0	0.13	1			2677
Ethylbenzene	ND	/	1.0	0.48	1			2677
Toluene	ND	/	1.0	0.13	1			2677
m,p-Xylene	ND	/	1.0	0.58	1			2677
o-Xylene	ND	/	1.0	0.35	1			2677
Xylenes, Total	ND	/	1.0	0.35	1			2677
4-Bromofluorobenzene (S)	101 %	/	74-125		1			2677
1,2-Dichloroethane-d4 (S)	96.7 %	/	70-130		1			2677
Toluene-d8 (S)	104 %	/	82-118		1			2677

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B Preparation Batches:
Batch: 2100 SW-846 3010A on 09/27/2010 15:00 by R_V
Analytical Batches:
Batch: 1647 SW-846 6010B on 10/01/2010 15:19 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	0.157		0.00500	0.000300	1		2100	1647

WET CHEMISTRY

Analysis Desc: EPA 300.0 Analytical Batches:
Batch: 1484 EPA 300.0 on 09/28/2010 01:25 by GLN DF = 1000
Batch: 1493 EPA 300.0 on 10/12/2010 20:36 by GLN DF = 1

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Fluoride	1.80		0.500	0.0430	1			1493
Sulfate	6200		500	43.5	1000			1484

Analysis Desc: SM 2540 C Analytical Batches:
Batch: 1824 SM 2540 C on 09/26/2010 12:56 by MMAL

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A

Project Number: El Paso 1A

Lab ID: **H10090645003**
Sample ID: **MW-4**

Date/Time Received: 9/25/2010 08:55
Date/Time Collected: 9/23/2010 11:45

Matrix: Water

Parameters	Results	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Residue, Filterable (TDS)	8600		100	39.4	10			1824

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID: **H10090645004** Date/Time Received: 9/25/2010 08:55 Matrix: Water
Sample ID: **MW-3** Date/Time Collected: 9/23/2010 11:30

VOLATILES

Analysis Desc: SW-846 8260B SW-846 5030Analytical Batches:
Batch: 2677 SW-846 8260B on 10/01/2010 07:21 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2677
Ethylbenzene	1.3	J	1.0	0.48	1			2677
Toluene	ND		1.0	0.13	1			2677
m,p-Xylene	9.2	J	1.0	0.58	1			2677
o-Xylene	1.3	J	1.0	0.35	1			2677
Xylenes, Total	10.5	J	1.0	0.35	1			2677
4-Bromofluorobenzene (S)	104 %		74-125		1			2677
1,2-Dichloroethane-d4 (S)	96.8 %		70-130		1			2677
Toluene-d8 (S)	104 %		82-118		1			2677

ICP DISSOLVED METALS

Analysis Desc: SW-846 6010B Preparation Batches:
Batch: 2100 SW-846 3010A on 09/27/2010 15:00 by R_V
Analytical Batches:
Batch: 1647 SW-846 6010B on 10/01/2010 15:26 by EBG

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Manganese	0.385		0.00500	0.000300	1		2100	1647

WET CHEMISTRY

Analysis Desc: EPA 300.0 Analytical Batches:
Batch: 1484 EPA 300.0 on 09/28/2010 01:42 by GLN DF = 1000
Batch: 1493 EPA 300.0 on 10/12/2010 20:53 by GLN DF = 1

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Fluoride	2.52		0.500	0.0430	1			1493
Sulfate	4490		500	43.5	1000			1484

Analysis Desc: SM 2540 C Analytical Batches:
Batch: 1824 SM 2540 C on 09/26/2010 12:56 by MMAL

Parameters	Results mg/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID: **H10090645004** Date/Time Received: 9/25/2010 08:55 Matrix: Water

Sample ID: **MW-3** Date/Time Collected: 9/23/2010 11:30

Parameters	Results	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Residue, Filterable (TDS)	12600		100	39.4	10			1824

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A

Project Number: El Paso 1A

Lab ID: **H10090645005**

Date/Time Received: 9/25/2010 08:55

Matrix: Water

Sample ID: **Duplicate**

Date/Time Collected: 9/23/2010 11:55

VOLATILES

Analysis Desc: SW-846 8260B

SW-846 5030Analytical Batches:

Batch: 2677 SW-846 8260B on 10/01/2010 06:54 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2677
Ethylbenzene	ND		1.0	0.48	1			2677
Toluene	ND		1.0	0.13	1			2677
m,p-Xylene	ND		1.0	0.58	1			2677
o-Xylene	ND		1.0	0.35	1			2677
Xylenes, Total	ND		1.0	0.35	1			2677
4-Bromofluorobenzene (S)	101 %		74-125		1			2677
1,2-Dichloroethane-d4 (S)	94.7 %		70-130		1			2677
Toluene-d8 (S)	106 %		82-118		1			2677

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ANALYTICAL RESULTS

Workorder: H10090645 : COP - El Paso 1A | Project Number: El Paso 1A

Lab ID: **H10090645006** | Date/Time Received: 9/25/2010 08:55 | Matrix: Water

Sample ID: **Trip Blank** | Date/Time Collected: 9/24/2010 12:30

VOLATILES

Analysis Desc: SW-846 8260B | SW-846 5030Analytical Batches:

Batch: 2677 SW-846 8260B on 10/01/2010 05:08 by LKL

Parameters	Results ug/l	Qual	Report Limit	MDL	DF	RegLmt	Batch Information Prep	Analysis
Benzene	ND		1.0	0.13	1			2677
Ethylbenzene	ND		1.0	0.48	1			2677
Toluene	ND		1.0	0.13	1			2677
m,p-Xylene	ND		1.0	0.58	1			2677
o-Xylene	ND		1.0	0.35	1			2677
Xylenes, Total	ND		1.0	0.35	1			2677
4-Bromofluorobenzene (S)	101 %		74-125		1			2677
1,2-Dichloroethane-d4 (S)	91.7 %		70-130		1			2677
Toluene-d8 (S)	105 %		82-118		1			2677

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QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A — Project Number: El Paso 1A

QC Batch: MSV/2676 — Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030 — Preparation: 09/30/2010 00:00 by LKL

Associated Lab Samples: H10090645001, H10090645002, H10090645003, H10090645004, H10090645005, H10090645006, H10090646001, H10090646002, H10090646003, H10090646004, H10090646005

METHOD BLANK: 73258

Analysis Date/Time Analyst: 10/01/2010 04:16 LKL

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Benzene	ug/l	ND		1.0
Ethylbenzene	ug/l	ND		1.0
Toluene	ug/l	ND		1.0
m,p-Xylene	ug/l	ND		1.0
o-Xylene	ug/l	ND		1.0
Xylenes, Total	ug/l	ND		1.0
4-Bromofluorobenzene (S)	%	103		74-125
1,2-Dichloroethane-d4 (S)	%	93.2		70-130
Toluene-d8 (S)	%	104		82-118

LABORATORY CONTROL SAMPLE: 73259

Analysis Date/Time Analyst: 10/01/2010 03:48 LKL

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Benzene	ug/l	20	20.8	104	74-123
Ethylbenzene	ug/l	20	20.4	102	72-127
Toluene	ug/l	20	19.8	99.0	74-126
m,p-Xylene	ug/l	40	41.2	103	71-129
o-Xylene	ug/l	20	20.1	100	74-130
Xylenes, Total	ug/l	60	61.24	102	71-130
4-Bromofluorobenzene (S)	%			109	74-125
1,2-Dichloroethane-d4 (S)	%			94.4	70-130
Toluene-d8 (S)	%			104	82-118

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 73260 73261 Original: H10090646004

MS Analysis Date/Time Analyst: 10/01/2010 10:02 LKL

MSD Analysis Date/Time Analyst: 10/01/2010 10:29 LKL

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	ug/l	ND	20	22.0	22.3	110	111	70-124	1.1	20
Ethylbenzene	ug/l	ND	20	20.2	20.6	101	103	35-175	2.1	20
Toluene	ug/l	ND	20	20.2	20.8	101	104	70-131	2.9	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A — Project Number: El Paso 1A

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 73260 73261 Original: H10090646004

MS Analysis Date/Time Analyst: 10/01/2010 10:02 LKL

MSD Analysis Date/Time Analyst: 10/01/2010 10:29 LKL

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
m,p-Xylene	ug/l	ND	40	40.2	40.3	100	101	35-175	0.3	20
o-Xylene	ug/l	ND	20	20.1	20.5	101	103	35-175	1.8	20
Xylenes, Total	ug/l	ND	60	60.31	60.82	101	101	35-175	0.8	20
4-Bromofluorobenzene (S)	%	106				108	106	74-125		
1,2-Dichloroethane-d4 (S)	%	93.9				90.2	89.0	70-130		
Toluene-d8 (S)	%	104				103	102	82-118		

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A — Project Number: El Paso 1A

QC Batch: DIGM/2100 — Analysis Method: SW-846 6010B

QC Batch Method: SW-846 3010A — Preparation: 09/27/2010 15:00 by R_V

Associated Lab Samples: H10090638001, H10090638002, H10090644001, H10090644002, H10090644003, H10090644004, H10090645001, H10090645002, H10090645003, H10090645004, H10090646001, H10090646002, H10090646003

METHOD BLANK: 71885

Analysis Date/Time Analyst: 10/01/2010 13:12 EBG

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Manganese	mg/l	ND		0.00500

LABORATORY CONTROL SAMPLE: 71886

Analysis Date/Time Analyst: 10/01/2010 13:18 EBG

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Manganese	mg/l	0.10	0.1014	101	80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 71883 71884 Original: H10090644004

MS Analysis Date/Time Analyst: 10/01/2010 13:30 EBG

MSD Analysis Date/Time Analyst: 10/01/2010 13:36 EBG

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Manganese	mg/l	9.73	0.10	9.713	9.957	NC	NC	75-125	NC	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A — Project Number: El Paso 1A

QC Batch: IC/1484 — Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: H10090644001, H10090644002, H10090644003, H10090644004, H10090645001, H10090645002, H10090645003, H10090645004, H10090646001, H10090646002, H10090646003

METHOD BLANK: 74573

Analysis Date/Time Analyst: 09/27/2010 13:58 GLN

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Sulfate	mg/l	ND		0.500

LABORATORY CONTROL SAMPLE & LCSD: 74574 74575

LCS Analysis Date/Time Analyst: 09/27/2010 14:15 GLN

LCSD Analysis Date/Time 09/28/2010 10:46 GLN

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD
Sulfate	mg/l	10	9.776	9.766	97.8	97.7	85-115	0.1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 74576 74577 Original: H10090644004

MS Analysis Date/Time Analyst: 09/27/2010 21:55 GLN

MSD Analysis Date/Time Analyst: 09/27/2010 22:12 GLN

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Sulfate	mg/l	3750	10000	14040	14010	103	103	80-120	0.2	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

QC Batch: IC/1493 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: H10090645001 H10090645002 H10090645003 H10090645004

METHOD BLANK: 75635

Analysis Date/Time Analyst: 10/12/2010 17:29 GLN

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Sulfate	mg/l	ND		0.500
Fluoride	mg/l	ND		0.500

LABORATORY CONTROL SAMPLE: 75636

Analysis Date/Time Analyst: 10/12/2010 17:46 GLN

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits
Sulfate	mg/l	10	10.72	107	85-115
Fluoride	mg/l	10	10.63	106	85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 75637 75638 Original: H10100239001

MS Analysis Date/Time Analyst: 10/12/2010 18:54 GLN

MSD Analysis Date/Time Analyst: 10/12/2010 19:11 GLN

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Fluoride	mg/l	0.89	10	12.16	12.18	113	113	80-120	0.2	20

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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QUALITY CONTROL DATA

Workorder: H10090645 : COP - El Paso 1A — Project Number: El Paso 1A

QC Batch: WETS/1824 — Analysis Method: SM 2540 C

QC Batch Method: SM 2540 C

Associated Lab Samples: H10090645001 H10090645002 H10090645003 H10090645004 H10090646001 H10090646002 H10090646003

METHOD BLANK: 72011

Analysis Date/Time Analyst: 09/26/2010 12:56 MMAL

Parameter	Units	Blank Result	Qualifiers	Reporting Limit
Residue, Filterable (TDS)	mg/l	ND		10.0

LABORATORY CONTROL SAMPLE & LCSD: 72012 72013

LCS Analysis Date/Time Analyst: 09/26/2010 12:56 MMAL

LCSD Analysis Date/Time 09/26/2010 12:56 MMAL

Parameter	Units	Spike Conc	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD
Residue, Filterable (TDS)	mg/l	200	201.0	200.0	100	100	95-107	0.5	10

SAMPLE DUPLICATE: 71746 — Original: H10090645001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	DF
WET CHEMISTRY						10
Residue, Filterable (TDS)	mg/l	10400	10500	0.9	10	10

QC results presented in the QC Control Data have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules. Also, MS/MSD % recoveries are calculated by the SPL LIMS using any detected value greater than the MDL.

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Legend

(S) - Indicates analyte is a surrogate

Qualifier	Qualifier Description
*	Recovery/RPD value outside QC limits
+	DCS Concentration
B	Analyte detected in the Method Blank
C	MTBE results were not confirmed by GCMS
D	Recovery out of range due to dilution
E	Results exceed calibration range
H	Exceeds holding time
I	Estimated value, between MDL and PQL (Florida)
J	Estimated value
JN	The analysis indicates the presence of an analyte
MI	Matrix Interference
N	Recovery outside of control limits
NC	Not Calculable (Sample Duplicate)
NC	Not Calculated - Sample concentration > 4 times the spike
ND	Not Detected at reporting Limits
P	Pesticide dual column results, greater then 25%
Q	Received past holding time
TNTC	Too numerous to count
U	Not Detected at reporting Limits

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: H10090645 : COP - El Paso 1A Project Number: El Paso 1A

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
H10090645001	**MW-1**	SM 2540 C	WETS/1824		
H10090645002	**MW-2**	SM 2540 C	WETS/1824		
H10090645003	**MW-4**	SM 2540 C	WETS/1824		
H10090645004	**MW-3**	SM 2540 C	WETS/1824		
H10090645001	**MW-1**	SW-846 3010A	DIGM/2100	SW-846 6010B	ICP/1647
H10090645002	**MW-2**	SW-846 3010A	DIGM/2100	SW-846 6010B	ICP/1647
H10090645003	**MW-4**	SW-846 3010A	DIGM/2100	SW-846 6010B	ICP/1647
H10090645004	**MW-3**	SW-846 3010A	DIGM/2100	SW-846 6010B	ICP/1647
H10090645001	**MW-1**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645002	**MW-2**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645003	**MW-4**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645004	**MW-3**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645005	**Duplicate**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645006	**Trip Blank**	SW-846 5030	MSV/2676	SW-846 8260B	MSV/2677
H10090645001	**MW-1**	EPA 300.0	IC/1484		
H10090645002	**MW-2**	EPA 300.0	IC/1484		
H10090645003	**MW-4**	EPA 300.0	IC/1484		
H10090645004	**MW-3**	EPA 300.0	IC/1484		
H10090645001	**MW-1**	EPA 300.0	IC/1493		
H10090645002	**MW-2**	EPA 300.0	IC/1493		
H10090645003	**MW-4**	EPA 300.0	IC/1493		
H10090645004	**MW-3**	EPA 300.0	IC/1493		

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Sample Receipt Checklist

WorkOrder:	H10090645	Received By	LOG
Date and Time	09/25/2010 08:55	Carrier Name:	FEDEXP
Temperature:	2.0°C	Chilled By:	Water Ice

1.	Shipping container/cooler in good condition?	YES
2.	Custody seals intact on shipping container/cooler?	YES
3.	Custody seals intact on sample bottles?	Not Present
4.	Chain of custody present?	YES
5.	Chain of custody signed when relinquished and received?	YES
6.	Chain of custody agrees with sample labels?	YES
7.	Samples in proper container/bottle?	YES
8.	Samples containers intact?	YES
9.	Sufficient sample volume for indicated test?	YES
10.	All samples received within holding time?	YES
11.	Container/Temp Blank temperature in compliance?	YES
12.	Water - VOA vials have zero headspace?	YES
13.	Water - Preservation checked upon receipt(except VOA*)?	Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative: Contact Date & Time:

Client Name Contacted:

Client Instructions:

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Fax: (713) 660-8975

page 1 of 2

Analysis Request and Chain of Custody Record

H10090645

8880 Interchange Drive, Houston, TX 77054

Company Name: Tetra Tech / Conoco Phillips
Contact: Kelly Blanchard
Address: 6121 Indian School Rd. NE, Ste. 200
Phone/Fax: (505) 237-8440 / (505) 237-8656
Email Address: kelly.blanchard@tetratech.com
Invoice To:
Purchase Order No:
Project Name/No.: El Paso 1A
Site Address:
Sampled By: Christine Mathews

Sampling Event Description: Quarterly [X]; Semi-Annual [ ]; WC-Waste Char. [ ]; Other (describe below) [ ]

QA/QC Level: TRRP [ ]; Level III [ ]; STD [X]; Other [ ]

SAMPLE ID	DATE	TIME	Water	Soil	Sludge	Other	Number Containers	Container Type	Preservative	BTEX - 8260	Dissolved Manganese	SO4, Fl, TDS			
MW-1	9.23.10	1200	X				3	VOA	HCL	X					
MW-1	9.23.10	1200	X				1	16oz P	Ø		X				
MW-1	9.23.10	1200	X				1	32oz P	Ø			X			
MW-2	9.23.10	1115	X				3	VOA	HCL	X					
MW-2	9.23.10	1115	X				1	16oz P	Ø		X				
MW-2	9.23.10	1115	X				1	32oz P	Ø			X			
MW-4 ~~MW-3~~	9.23.10	1145	X				3	VOA	HCL	X					
MW-4 ~~MW-3~~	9.23.10	1145	X				1	16oz P	Ø		X				
MW-4 ~~MW-3~~	9.23.10	1145	X				1	32oz P	Ø			X	/		
MW-3 ~~MW-4~~	9.23.10	1130	X				3	VOA	HCL	X					

SHORT HOLDS

TAT: Standard [ ]; Rush [ ]; 5 Day [X]; [ ]; [ ]; [ ]

Special Detection Limits (Specify): Please filter & preserve metals. Fluoride detection limit is (0.16)

Special Reporting Requirements (Specify):

Consultant Remarks:

Laboratory Remarks:

PM review:

Relinquished by Sampler	Date	Time	Received by
[signature]	9/24/10	1300	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by SPL:
	9/25/10	8:55	Amanda Nickman

SPL Inc.
8880 Interchange Drive
Houston, TX 77054
Phone: (713) 660-0901
Fax: (713) 660-8975

Analysis Request and Chain of Custody Record

8880 Interchange Drive, Houston, TX 77054

SPL Workorder No: H10090645

Company Name: Tetra Tech / Conoco Phillips	Sampling Event Description:
Contact: Kelly Blanchard	Quarterly: X
Address: 6121 Indian School Rd. NE, Ste. 200	Semi-Annual:
Phone/Fax: (505) 237-8440 / (505) 237-8656	WC-Waste Char.:
E-mail Address: kelly.blanchard@tetratech.com	Other (describe below):
Invoice To:	
Purchase Order No:	
Project Name/No.: El Paso 1A	QA/QC Level
Site Address:	TRRP: Level 3:
Sampled By: Christine Matteus	STD: X Other:

SAMPLE ID	DATE	TIME	Water	Soil	Sludge	Other	Number Containers	Container Type	Preservative	BTEX - 8260	Dissolved Manganese	SO4,Fl,TDS
~~MW-3 MW-4~~	9.23.10	1130	X				1	160z P	HNO3		X	
MW-3 ~~MW-4~~	9.23.10	1130	X				1	32oz P	HNO3			X
Duplicate	9.23.10	1155	X				3	VOA	HCl	X		
Trip Blank	9.23.10	1230					2	VOA	HCl	X		

TAT: 24hr ☐ 2nd ☐ Rush ☐ 5 day ☒ Normal ☐

Special Detection Limit (Specify): Please filter & preserve metals, Fluoride detection limit needs to be (0.16)

Special Reporting Requirements (Specify):

Consultant Remarks:

Laboratory Remarks:

P.M. review:

	Date	Time	
Relinquished by: Christine Matteus			Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 9/25/10	Time 8:55	Received by: SPL, Inc. Amanda Mckenzie

Report ID: H10090645_6089
Printed: 10/14/2010 14:55