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QUARTERLY GWMR

JUNE 2011

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MARCH 2011 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS COMPANY

FLORA VISTA NO. 1
NATURAL GAS PRODUCTION SITE
FLORA VISTA, SAN JUAN COUNTY, NEW MEXICO

OCD # 3R173

API No. 30-045-20073

Prepared for:

ConocoPhillips

Risk Management and Remediation
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Tetra Tech Project No. 114-690130

June 2011

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

MARCH 2011 GROUNDWATER MONITORING REPORT FLORA VISTA NO. 1 GAS PRODUCTION SITE FLORA VISTA, SAN JUAN COUNTY, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of the quarterly groundwater monitoring event conducted by Tetra Tech, Inc. (Tetra Tech) on March 17, 2011 at the Flora Vista No. 1 natural gas production well site (Site), operated by Burlington Resources Oil & Gas Company LP (Burlington), a wholly-owned subsidiary of ConocoPhillips Company (**Figure 1**). The Site is located on private property in Unit Letter F, Section 22, Township 30N, Range 12W, of San Juan County, New Mexico. The Site consists of a gas production well and associated equipment and installations. A detailed Site layout map is provided as **Figure 2**.

1.1 Site Background

A previous operator removed an earthen dehydrator pit from service in March 1994. A large volume of hydrocarbon-impacted soil was subsequently excavated in April 1994 and again in November 1995. A pit closure report was submitted to NMOCD in August 1996, by El Paso Field Services. NMOCD issued a letter to El Paso Field Services on January 24, 1997 approving pit closure and remediation.

Burlington encountered hydrocarbon-impacted soil at the during a production facility resetting activity in early 2003. Burlington subsequently directed the excavation of approximately 9,443 cubic yards of soil in an attempt to remove all of the hydrocarbon-impacted soil. Groundwater was observed in the bottom of the excavation at approximately 25 feet below the ground surface. Field screening was conducted during excavation to determine extent of impacted soil. To enhance the remediation of the remaining amounts of residual hydrocarbon contamination in the excavated area, approximately 80 barrels (bbls) of a potassium permanganate oxidizer solution was sprayed on the soil.

In September 2003, Envirotech installed a groundwater monitoring well (MW-1) slightly down-gradient from the center of the excavation (**Figure 2**). Subsequent monitoring during September 2003 included analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as total petroleum hydrocarbons (TPH). Groundwater analyses indicated the presence of benzene and total xylenes above regulatory standards. Monitor Wells MW-2, MW-3, and MW-4 were installed at the site in August 2008 in response to an April 2008 request from the New Mexico Oil Conservation Division (NMOCD) for site characterization and enhanced laboratory analyses. A

generalized geologic cross section was prepared using boring logs from the August 2008 monitoring well installation and is presented as **Figure 3**. The Flora Vista No. 1 site history is summarized in **Table 1**.

2.0 METHODOLOGY AND RESULTS

2.1 Groundwater Sampling Methodology

Groundwater Elevation Measurements

On March 17, 2011, groundwater elevation measurements were collected from Monitor Wells MW-1, MW-3, and MW-4 using a dual interface probe. A measureable thickness of light non-aqueous phase liquid (LNAPL) was recorded in MW-4 at a thickness of 0.3 inches. The presence of a measurable thickness of LNAPL was not present in any other site monitoring wells. At the time of the Site visit, the owner of the property was storing a large amount of fill dirt over MW-2. Tetra Tech did not collect a groundwater elevation measurement or groundwater sample from Monitor Well MW-2 due to the presence of the fill dirt. Groundwater elevations are detailed in **Table 2**. During the March 2011 groundwater sampling event, groundwater elevations recorded in Monitor Wells MW-1, MW-3 and MW-4 were at their lowest elevations since monitoring began at the Site. A groundwater elevation contour map is presented as **Figure 4.** Based on March 2011 monitoring event data, groundwater flow is to the southwest and is consistent with historical records at this site.

Groundwater sampling

Approximately three well volumes were purged from Monitor Wells MW-1, MW-3, and MW-4 with a dedicated polyethylene 1.5-inch disposable bailer; or were bailed dry and allowed sufficient time to re-charge prior to sampling. It can also be noted that the three well volumes of water removed from MW-4 was sufficient at reducing the 0.3 inch measureable thickness of LNAPL to an slight sheen prior to collecting a groundwater sample from the monitor well. Purge water and LNAPL generated during purging of Site monitor wells was placed in the onsite produced water tank (**Figure 2**). Collected groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Southern Petroleum Laboratories in Houston, Texas. The samples were analyzed for the presence of BTEX by Environmental Protection Agency (EPA) Method 8260B, dissolved iron and manganese by EPA Method 6010B, and sulfate by EPA method 300.0. The samples collected for analysis of dissolved metals were placed in unpreserved containers supplied by the laboratory. These samples were both filtered and preserved by laboratory personnel prior to analysis. Tetra Tech groundwater sampling field forms are included as **Appendix A**.

2.2 Groundwater Sampling Analytical Results

Groundwater samples collected from Monitor Well MW-3 did not exceed laboratory detection limits for any of the constituents sampled. Groundwater collected from Monitor Wells MW-1 and MW-4 exceeded the New Mexico Water Quality Control Commission (NMWQCC) standards for the following constituents:

- **Benzene** – The NMWQCC standard for benzene is 10 micrograms per liter (µg/L). The concentration of benzene found in the groundwater sample collected from MW-1 was 1,700 µg/L. The groundwater sample collected from MW-4, the down-gradient well, contained a concentration of benzene at 17 µg/L.
- **Xylenes** – The NMWQCC standard for total xylenes is 620 µg/L. The concentration of xylenes found in the groundwater sample collected from MW-1 was 4,309.2 µg/L.
- **Dissolved Iron** – The NMWQCC standard for dissolved iron is 1 milligram per liter (mg/L). The concentration of dissolved iron found in the groundwater sample collected from MW-1 was 1.11 mg/L.
- **Dissolved Manganese** – The NMWQCC standard for dissolved manganese is 0.2 mg/L. The concentration of dissolved manganese found in the groundwater sample collected from MW-1 was 1.07 mg/L. The groundwater sample collected from MW-4 contained a concentration of 4.46 mg/L.

A summary of the historical groundwater laboratory analytical results is presented as **Table 3**. The March 2011 laboratory analytical report is included as **Appendix B**.

3.0 CONCLUSIONS

Groundwater samples collected from MW-1 and MW-4 have consistently exceeded NMWQCC groundwater quality standards for benzene, dissolved iron and dissolved manganese constituents from October 2008 through March 2011. Groundwater samples from MW-1 have also historically exceeded NMWQCC groundwater quality standards for xylenes. BTEX constituent concentrations exhibit a decreasing trend over time in MW-1 and MW-4. Based on the historical groundwater quality data, groundwater samples collected from MW-2 and MW-3 have never exceeded NMWQCC groundwater quality standards for BTEX constituents.

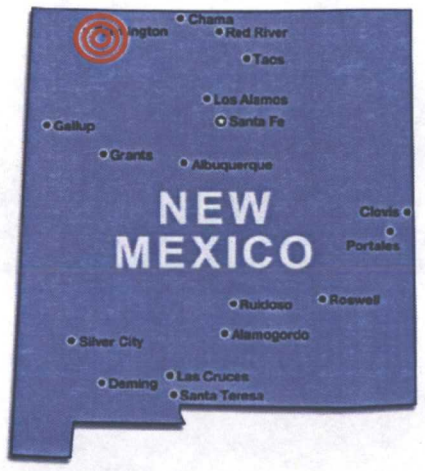
Tetra Tech recommends the continuation of quarterly sampling of MW-1, MW-2, MW-3, and MW-4 in order to monitor ongoing natural attenuation at the site. Since sulfate has never been detected in Site monitor wells above the NMWQCC standard, Tetra Tech recommends discontinuing sampling for this constituent during quarterly monitoring. The next sampling event will take place in June 2011. Tetra Tech will collect samples for BTEX, dissolved iron, and dissolved manganese. 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
Flora Vista No. 1
Flora Vista, NM



Approximate ConocoPhillips
Flora Vista No. 1 Site location

Latitude = 36°47'54.37" N
Longitude = 108°05'17.60" W

Feet

0 60 120

N

TETRA TECH, INC.

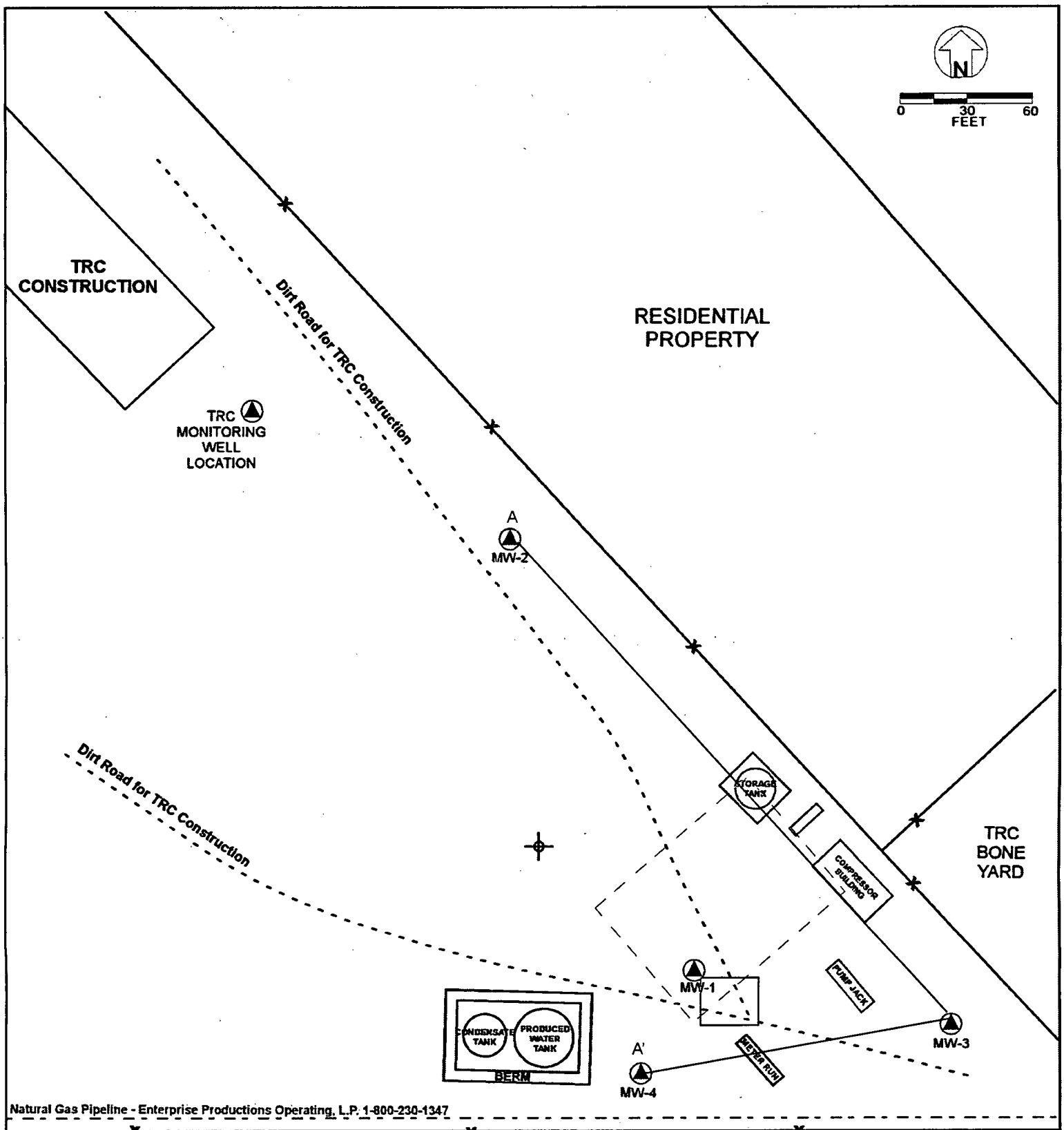


FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS
FLORA VISTA No. 1
Unit F, Sec 22, Twp 30N, Rng 12W
San Juan County, New Mexico

LEGEND

- FLORA VISTA NO.1 WELLHEAD
- MONITORING WELL
- MERRION OIL & GAS 2 OSBORN EQUIPMENT
- APPROXIMATE 2003 EXCAVATION LOCATION
- Approximate Location of Former Dehydrator Pit

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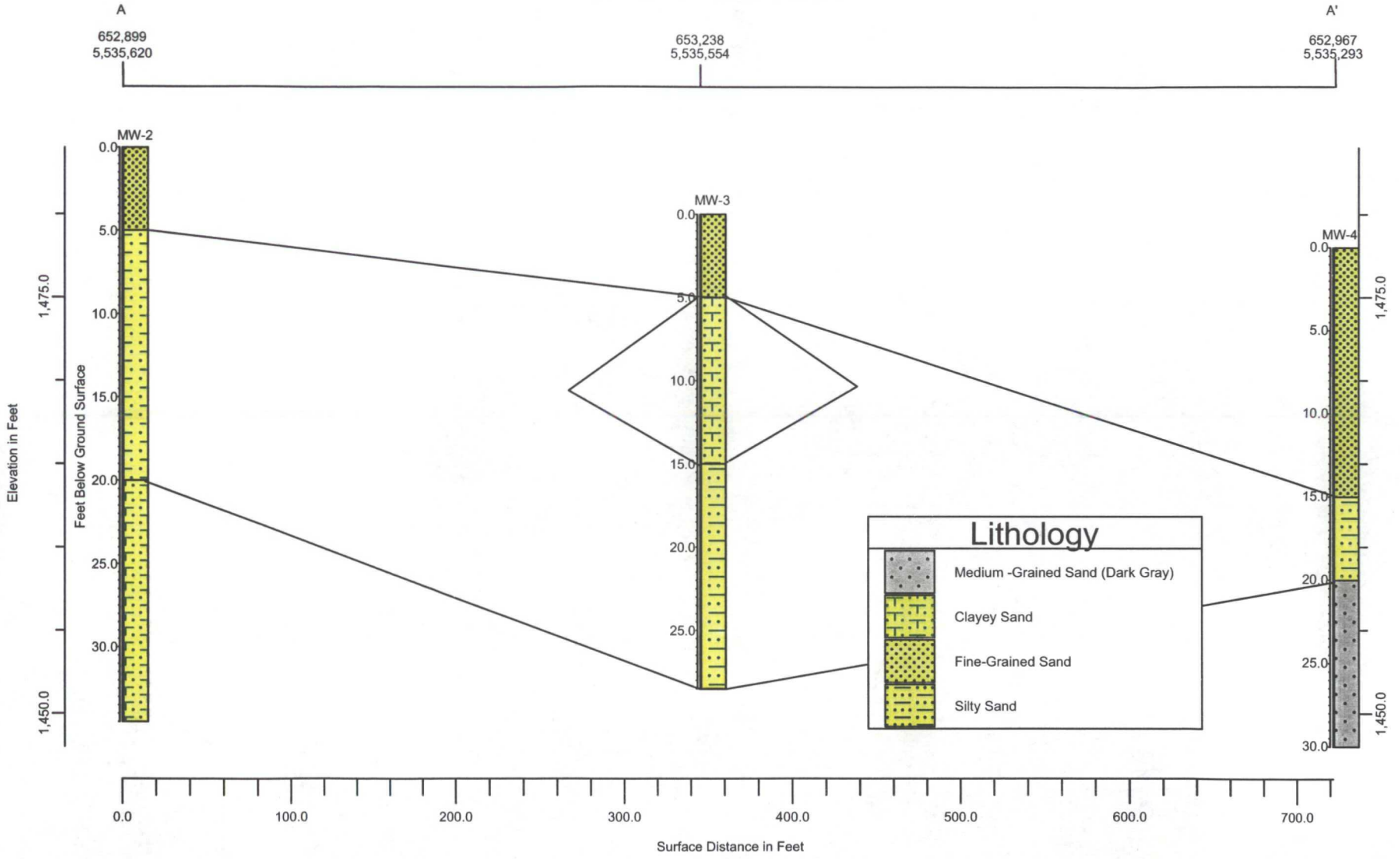
Figure 3.

Flora Vista No. 1 - Cross-Section A-A'



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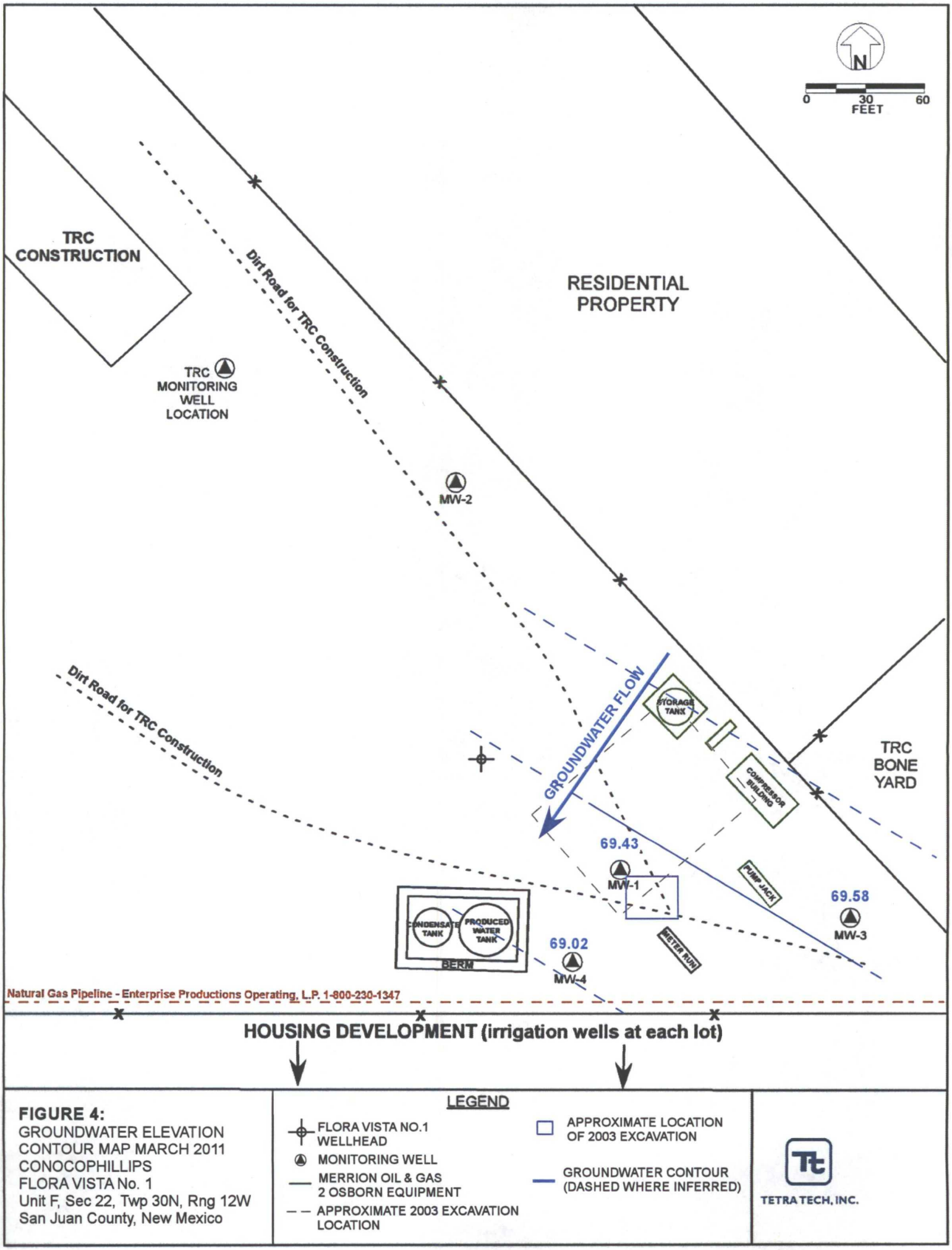

FIGURE 4:
GROUNDWATER ELEVATION CONTOUR MAP MARCH 2011
CONOCOPHILLIPS
FLORA VISTA No. 1
Unit F, Sec 22, Twp 30N, Rng 12W
San Juan County, New Mexico

LEGEND

- FLORA VISTA NO.1 WELLHEAD
- MONITORING WELL
- MERRION OIL & GAS 2 OSBORN EQUIPMENT
- APPROXIMATE 2003 EXCAVATION LOCATION
- APPROXIMATE LOCATION OF 2003 EXCAVATION
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

TETRA TECH, INC.

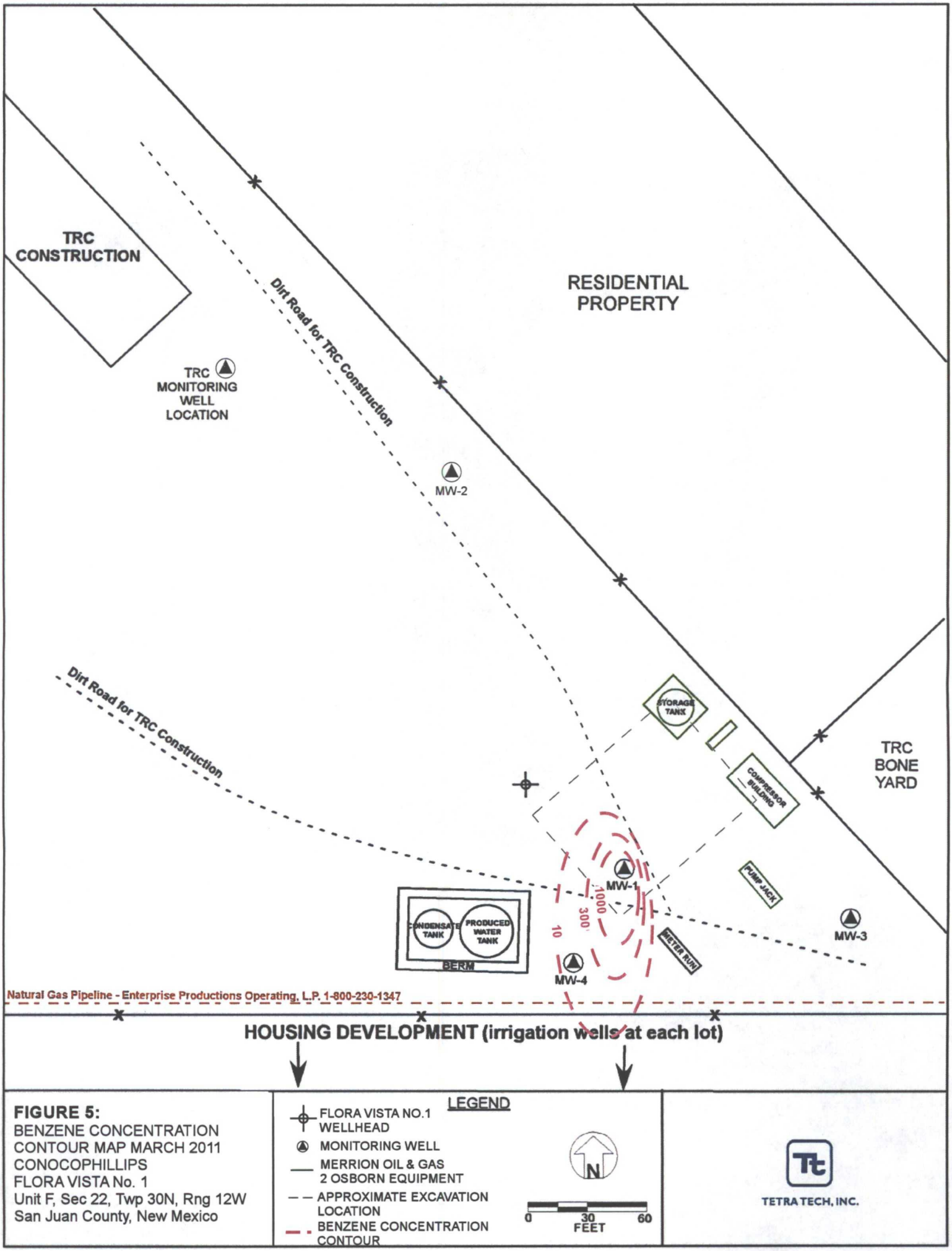

FIGURE 5:
BENZENE CONCENTRATION CONTOUR MAP MARCH 2011
CONOCOPHILLIPS
FLORA VISTA No. 1
Unit F, Sec 22, Twp 30N, Rng 12W
San Juan County, New Mexico

LEGEND

- FLORA VISTA NO.1 WELLHEAD
- MONITORING WELL
- MERRION OIL & GAS 2 OSBORN EQUIPMENT
- APPROXIMATE EXCAVATION LOCATION
- BENZENE CONCENTRATION CONTOUR

N

0 30 60
FEET

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TABLES

Table 1. Site History Timeline - ConocoPhillips Flora Vista No. 1

Date/Time Period	Event/Action	Description/Comments
November 28, 1995	Pit Closure Activities	Philip Environmental excavated and removed approximatley 850 cubic yards of soil from the area where the Flora Vista No. 1 dehydrator pit was located. Excavation activities were stopped in the north and west directions due to the positions of the compressor and meter run equipment.
July and August 1996	Submital of Pit Closure	El Paso Field Services submits Pit Closure Reports to the New Mexico Oil Conservation Division outlining the excavation and clsoure of the dehydrator pit at the site.
January 24, 1997	Pit Closure Approval	El Paso Field Sservices receives approval of pit closure from the New Mexico Oil Conservation Division.
June and July 2003	Initial Site Assessment	Historical petroleum contaminated soil discovered during a production facility resetting activity. Environmental investigation began with the excavation of approximately 4,986 cubic yards of impacted soil and 4,446 cubic yards of clean soil. Groundwater was encountered at approximately 25 feet below the ground surface. The impacted soil was taken to a commercial landfill facility located on Crouch Mesa in Farmington, New Mexico. Approximately 80 bbls of potassium permanganate was sprayed on the soils to breakdown any minor amounts of residual petroleum contaminants. The excavation area was backfilled with clean soil.
September 2, 2003	Groundwater Monitoring Well Installation	One ground water Monitoring Well, MW-1, was installed slightly down-gradient from the center of the soil excavation by Envirotech. Total depth of well is 26 feet.
September of 2003 through December 13, 2006	Quarterly Groundwater Monitoring	Quarterly groundwater monitoring of MW-1 for analysis of BTEX constituents. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 31, 2006	Site Transfer	ConocoPhillips Company completes acquisition of Burlington Resources.
March 2007 through January 2008	Consultant Change and Groundwater Monitoring	After the acquisition of Burlington Resources by ConocoPhillips, consulting responsibilities were transferred from Lode Star LLC of Farmington New Mexico to Tetra Tech of Albuquerque. Tetra Tech began sampling the Flora Vista site quarterly in March of 2007. Four consecutive quarters of goundwater sampling were conducted at the Flora Vista site. Groundwater was sampled from MW-1 and was analyzed for BTEX constituents during all sampling events. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 28, 2008	Reporting	Annual report for 2007 is submitted to the Oil Conservation Division of NM Energy, Minerals, and Resources Department (OCD).
April 1, 2008	Additional Monitoring Requested by OCD	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.
July 23, 2008	Groundwater Monitoring	Groundwater monitoring of MW-1. One sample and a duplicate were collected. Benzene and Xylenes are above NMWQCC standards.
August 12 and 13, 2008	Groundwater Monitoring Well Installation and Groundwater Monitoring	Three additional groundwater Monitoring Wells, MW-2, MW-3 and MW-4 were installed by WDC and overseen by Tetra Tech. MW-2 was installed upgradient of MW-1. Both MW-3 and MW-4 were installed downgradient of MW-1. Soil samples were collected from just above the groundwater interface for each boring location and sent to Southern Petroleum Laboratory for a baseline soil analysis. All wells were developed by purging approximately 80 gallons of fluid using a surge block and hand bailer/purge pump.
October 21, 2008	Groundwater Monitoring	Third quarter 2008 groundwater monitoring was completed and was the first quarter of sampling to include all four monitoring wells on site. A baseline suite was completed including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. There were 3 constituents that returned results above NMWQCC limits, Benzene (MW-1 and MW-4), Total Xylenes (MW-1), and Sulfate (MW-1).
January 28, 2009	Groundwater Monitoring	Tetra Tech conducted fourth quarter 2008 groundwater monitoring at the site for BTEX constituents in all four monitoring wells. Benzene (MW-1 and MW-4), Ethylbenzene (MW-1) and Xylenes (MW-1) were above NMWQCC standards.
March 1, 2009	Initiate Annual Sampling	The Flora Vista No. 1 site is put on an annual monitoring schedule. The next sampling event is scheduled for September 2009.
September 30, 2009	Groundwater Monitoring	Tetra Tech conducted 2009 annual groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.

Table 1. Site History Timeline - ConocoPhillips Flora Vista No. 1

Date/Time Period	Event/Action	Description/Comments
December 16, 2009	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a private domestic irrigation well located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
May 14, 2010	Initiate Quarterly Sampling	The Flora Vista No. 1 site is put on a semi-annual monitoring schedule. Private domestic irrigation well sampling is also to be included in semi-annual sampling events.
June 10, 2010	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a second private down-gradient domestic irrigation well to be sampled for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
June 10 and 11, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.
September 27, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.
December 14, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.
March 17, 2011	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron, dissolved manganese, and sulfate. Groundwater collected from MW-1 exceeded the NMWQCC standards for benzene, xylenes, dissolved iron and dissolved manganese. Groundwater collected from MW-4 exceeded the NMWQCC standards from benzene and dissolved manganese. Tetra Tech also collected a groundwater sample from a private domestic irrigation well located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.

Table 2. Monitoring Well Specifications and Groundwater Elevations ConocoPhillips Flora Vista No.1

Well ID	Total Depth (ft bgs)	Surface Elevation, Top of Casing* (ft)	Screen Interval (ft)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Water Level (ft BMP)
MW-1	26.02	94.38	11.02 - 26.02	6/20/2003	standing	94.38
				9/23/2003	17.03	77.35
				12/16/2003	20.11	74.27
				3/16/2004	23.69	70.69
				6/21/2004	19.92	74.46
				9/30/2004	16.82	77.56
				12/13/2004	20.40	73.98
				3/22/2005	24.32	70.06
				6/22/2005	--	--
				10/24/2005	--	--
				12/13/2005	21.24	73.14
				3/22/2006	24.75	69.63
				6/22/2006	20.48	73.9
				10/20/2006	19.13	75.25
				12/13/2006	21.24	73.14
				11/9/2007	19.71	74.67
				1/15/2008	NM	NA
				3/19/2008	24.35	70.03
				7/23/2008	19.89	74.49
				10/21/2008	19.48	74.9
				1/28/2009	23.96	70.42
				9/30/2009	18.16	76.22
				6/10/2010	21.64	72.74
				9/27/2010	19.31	75.07
				12/14/2010	21.41	72.97
				3/17/2011	24.95	69.43
MW-2	31.35	97.1	12.35 - 27.35	10/21/2008	20.71	76.39
				1/28/2009	22.75	74.35
				9/30/2009	18.83	78.27
				6/11/2010	22.09	75.01
				9/27/2010	20.12	76.98
				12/14/2010	NM	NM
				3/17/2011	NM	NM
MW-3	30.87	92.9	11.87 - 26.87	10/21/2008	17.92	74.98
				1/28/2009	21.53	71.37
				9/30/2009	16.43	76.47
				6/10/2010	19.71	73.19
				9/27/2010	17.81	75.09
				12/14/2010	19.61	73.29
				3/17/2011	23.32	69.58
MW-4	30.42	93.6	11.42-26.42	10/21/2008	18.06	75.54
				1/28/2009	24.55	69.05
				9/30/2009	17.89	75.71
				6/10/2010	21.02	72.58
				9/27/2010	18.93	74.67
				12/14/2010	21.04	72.56
				3/17/2011	24.58	69.02

*Casing elevations are based on an arbitrary 100 ft relative surface elevation set at the gas well head

ft = Feet

TOC = Top of casing

NM = Not measured

NA = Not applicable

bgs = below ground surface

BMP = below measuring point

Table 3. Groundwater Analytical Results Summary - ConocoPhillips Flora Vista No. 1

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	Dissolved Manganese (mg/L)
MW-1	6/20/2003	**1700**	300	490	**5090**	NA	NA	NA
	9/23/2003	**7500**	20	660	**9220**	NA	NA	NA
	12/16/2003	**7930**	10	**1180**	**864**	NA	NA	NA
	3/16/2004	**6860**	U	**1160**	**8470**	NA	NA	NA
	6/21/2004	**4140**	U	430	**3120**	NA	NA	NA
	9/30/2004	**9080**	30	**1410**	**9980**	NA	NA	NA
	12/13/2004	**8520**	U	**1340**	**9390**	NA	NA	NA
	3/22/2005	**4550**	U	**850**	**5950**	NA	NA	NA
	6/22/2005	--	21.88	--	--	NA	NA	NA
	10/24/2005	**6390**	U	**1010**	**7416**	NA	NA	NA
	12/13/2005	**6170**	U	**1010**	**7570**	NA	NA	NA
	3/22/2006	**3580**	U	**770**	**5840**	NA	NA	NA
	6/22/2006	**3100**	U	500	**3500**	NA	NA	NA
	10/20/2006	**6600**	10	**1220**	**8910**	NA	NA	NA
	12/13/2006	**4230**	10	**1090**	**8130**	NA	NA	NA
	3/27/2007	**2370**	7	504	**3749**	NA	NA	NA
	6/25/2007	**2870**	140	510	**3890**	NA	NA	NA
	11/9/2007	**5600**	< 0.7	**910**	**6800**	NA	NA	NA
	1/15/2008	**4200**	< 0.7	**890**	**5700**	NA	NA	NA
	3/19/2008	**2700**	< 5.0	590	**4700**	NA	NA	NA
	7/23/2008	**2000**	< 5.0	380	**1400**	NA	NA	NA
	10/21/2008	**4500**	< 5.0	630	**5300**	NA	NA	NA
	1/28/2009	**4000**	< 5.0	**880**	**8700**	NA	NA	NA
	9/30/2009	**4200**	1.6	530	**5100**	11.7	**2.08**	**1.09**
	6/10/2010	**1700**	1.2	330	**990**	27	0.126	**1.28**
	9/27/2010	**3200**	2	530	**4201.6**	1.8	**7.73**	**1.19**
	12/14/2010	**3200**	1.2	620	**5301.6**	1.03	**4.13**	**0.888**
	3/17/2011	**1700**	3.7	480	**4,309.2**	2.27	**1.11**	**1.07**
NMWQCC Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**	**600 (µg/L)**	**1 (µg/L)**	**0.2 (µg/L)**

Explanation

NMWQCC = New Mexico Water Quality Control Commission
µg/L = micrograms per liter (parts per billion)
mg/L = milligrams per liter (parts per million)
<0.5 = Below laboratory detection limit in ug/L
Bold = concentrations that exceed the NMWQCC limits
NA = Not analyzed

Table 3. Groundwater Analytical Results Summary - ConocoPhillips Flora Vista No. 1

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	Dissolved Manganese (mg/L)
MW-2	10/21/2008	< 0.5	< 0.5	< 0.5	< 0.5	115	0.656*	0.248*
	1/28/2009	< 0.5	< 0.5	< 0.5	< 0.5	ND	ND	ND
	9/30/2009	< 0.5	< 0.5	< 0.5	< 0.5	123	0.0223	< 0.00500
	6/11/2010	< 1.0	< 1.0	< 1.0	< 1.0	156	< 0.0200	< 0.00500
	9/27/2010	< 1.0	< 1.0	< 1.0	< 1.0	179	< 0.0200	< 0.00500
	12/14/2010	Not Measured - Well was covered by TRC Construction						
	3/17/2011	Not Measured - Well was covered by TRC Construction						
MW-3	10/21/2008	< 0.5	< 0.5	< 0.5	< 0.5	93	0.739*	0.0867*
	1/28/2009	< 0.5	< 0.5	< 0.5	< 0.5	ND	ND	ND
	9/30/2009	< 0.5	< 0.5	< 0.5	< 0.5	144	0.0543	< 0.00500
	6/10/2010	< 0.5	< 1.0	< 1.0	< 1.0	122	0.0425	< 0.00500
	9/27/2010	< 1.0	< 1.0	< 1.0	< 1.0	170	< 0.0200	< 0.00500
	12/14/2010	< 1.0	< 1.0	< 1.0	< 1.0	142	< 0.0200	< 0.00500
	3/17/2011	< 1.0	< 1.0	< 1.0	< 1.0	119	< 0.0200	< 0.00500
MW-4	10/21/2008	**39**	< 0.5	31	180	90.1	8.4*	4.16*
	1/28/2009	**660**	< 0.5	64	583	ND	ND	ND
	9/30/2009	**340**	< 0.5	54	572	48.9	0.148	**4.48**
	6/10/2010	**140**	< 1.0	27	252	53.3	0.0566	**4.65**
	9/27/2010	**33**	< 1.0	41	274	92.5	**1.22**	**4.34**
	12/14/2010	**130**	< 1.0	93	**899**	67.5	**1.75**	**4.69**
	3/17/2011	**17**	< 1.0	18	196.6	83	0.0852	**4.46**
NMWQCC Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**	**600 (mg/L)**	**1 (mg/L)**	**0.2 (mg/L)**

Explanation

NMWQCC = New Mexico Water Quality Control Commission
µg/L = micrograms per liter (parts per billion)
mg/L = milligrams per liter (parts per million)
<0.5 = Below laboratory detection limit in ug/L
Bold = concentrations that exceed the NMWQCC limits
NA = Not analyzed
* = Results reported for total metals analysis, results can not be compared to NMWQCC Standards for dissolved metals
ND = Not Detected

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Flora Vista No. 1 Page 1 of 4

act No.

Site Location Flora Vista, NM

Site/Well No. MW-1 Coded/ Replicate No. Dup@1635 Date 3-17-11

Weather Cloudy, warm 65° Time Sampling Began Time Sampling Completed 1630

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface 2' MP Elevation 94.38

Total Sounded Depth of Well Below MP 26.02 Water-Level Elevation 69.43

Held ____ Depth to Water Below MP 24.95 Diameter of Casing 2"

Wet ____ Water Column in Well 1.07 Gallons Pumped/Bailed Prior to Sampling Pumped/Bailed

Gallons per Foot 0.16

Gallons in Well 0.17 x 3 = 0.51 Sampling Pump Intake Setting (feet below land surface) —

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Sulfate	32oz plastic	None
Dissolved mn, fe	16oz plastic	None

Remarks H2O is light gray with sporty sheen & hydrocarbon odor

Sampling Personnel Christine Mathews, Cassie Brown / No Parameters due to low well volume

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 Flora Vista No. 1 Page 2 of 4

Project No.

Site Location Flora Vista, NM

Site/Well No. MW-2 Coded/ Replicate No. Date 3.17.11

Weather cloudy, warm, 65° Time Sampling Began N/A Time Sampling Completed No Sample Collected

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation 97.1

Total Sounded Depth of Well Below MP 31.35 Water-Level Elevation —

Held ____ Depth to Water Below MP Diameter of Casing 2"

Wet ____ Water Column in Well Gallons Pumped/Bailed Prior to Sampling Pumped/Bailed

Gallons per Foot 0.16

Gallons in Well Sampling Pump Intake (feet below land —

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Sulfate	32 oz plastic	None
Dissolved Mn, Fe	16 oz plastic	None

Remarks Well covered by fill material & TRC equipment. Unable to Sample

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

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Flora Vista No. 1 Page 3 of 4

Project No.

Site Location Flora Vista, NM

Site/Well No. MW-3 Coded/ Replicate No. Date 3.17.11

Weather ~~Sun~~ Cloudy warm, 65° Time Sampling Began 1605 Time Sampling Completed 1620

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface

MP Elevation 92.9

Total Sounded Depth of Well Below MP ~~30.87~~ 31.60

Water-Level Elevation 69.68

Held ____ Depth to Water Below MP 23.32

Diameter of Casing 2"

Wet ____ Water Column in Well 7.18

Gallons Pumped/Bailed Prior to Sampling Pumped/Bailed 3.5

Gallons per Foot 0.16

Gallons in Well 1.148 x 3 = 3.44

Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump (Bailer)

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm³)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1612	14.97	7.14	510	0.410	4.14	41.1	138.0	2.5
1614	14.90	7.15	513	0.413	4.12	40.9	136.4	3.0
1615	14.89	7.14	513	0.414	4.06	40.2	135.7	3.5

Sampling Equipment Purge Pump/(Bailer)

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Sulfate	32 oz Plastic	None
Dissolved Mn, Fe	16 oz Plastic	None

Remarks H2O is brown & silty, no odor or sheen observed.

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

TETRA TECH, INC.

WATER SAMPLING FIELD FORM

Project Name Flora Vista No. 1 Page 4 of 4

ject No.

Site Location Flora Vista, NM

Site/Well No. MW-4 Coded/ Replicate No. Date 3-17-11

Weather Cloudy, warm 65° Time Sampling Began 1600 Time Sampling Completed 1615

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface MP Elevation 93.6

Total Sounded Depth of Well Below MP 30.42 Water-Level Elevation 69.02

Held Depth to Water Below MP 24.58 Diameter of Casing 2"

Wet Water Column in Well 5.84 Gallons Pumped/Bailed Prior to Sampling Pumped/Bailed

Gallons per Foot 0.16

Gallons in Well 0.93 x 3 = 2.80 Sampling Pump Intake Setting (feet below land surface)

Purging Equipment Purge pump / Bailer

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature (°C)	pH	Conductivity (µS/cm)	TDS (g/L)	DO (mg/L)	DO %	ORP (mV)	Volume (gal.)

Sampling Equipment Purge Pump/Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 40mL VOA's	HCl
Sulfate	32 oz plastic	None
Dissolved mn, Fe	16 oz plastic	None

Remarks Probe picked up 3" of product in H_2O. H_2O is black with silt and green. hydrocarbon odor

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

LABORATORY ANALYTICAL REPORT

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Conoco Phillips

Certificate of Analysis Number:

11030510

Report To:		Project Name:	COP Flora Vista No. 1
Tetra Tech, Inc.		Site:	Flora Vista, NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.			
Suite 200		PO Number:	4509972379
Albuquerque		State:	New Mexico
NM		State Cert. No.:	
87110-		Date Reported:	3/31/2011
ph (505) 237-8440	fax: (505) 881-3283		

This Report Contains A Total Of 17 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

4/1/2011

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Conoco Phillips

Certificate of Analysis Number:
11030510

Report To:		Project Name:	COP Flora Vista No. 1
Tetra Tech, Inc.		Site:	Flora Vista, NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.			
Suite 200		PO Number:	4509972379
Albuquerque		State:	New Mexico
NM		State Cert. No.:	
87110-		Date Reported:	3/31/2011
ph (505) 237-8440	fax: (505) 881-3283		

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.

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.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

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

4/1/2011

Erica Cardenas
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Conoco Phillips

Certificate of Analysis Number:

11030510

his designee, as verified by the following signature.

4/1/2011

Erica Cardenas
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Conoco Phillips

Certificate of Analysis Number:

11030510

Report To: Tetra Tech, Inc.
Kelly Blanchard
6121 Indian School Road, N.E.
Suite 200
Albuquerque
NM
87110-
ph (505) 237-8440 fax: (505) 881-3283

Fax To:

Project Name: COP Flora Vista No. 1
Site: Flora Vista, NM
Site Address:

PO Number: 4509972379
State: New Mexico
State Cert. No.:
Date Reported: 3/31/2011

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	11030510-01	Water	03/17/2011 16:30	3/22/2011 9:26:00 AM	302870	☐
MW-3	11030510-02	Water	03/17/2011 16:20	3/22/2011 9:26:00 AM	302870	☐
MW-4	11030510-03	Water	03/17/2011 16:15	3/22/2011 9:26:00 AM	302865	☐
MW-4	11030510-03	Water	03/17/2011 16:15	3/22/2011 9:26:00 AM	302870	☐
Duplicate	11030510-04	Water	03/17/2011 16:35	3/22/2011 9:26:00 AM	302865	☐
Trip Blank	11030510-05	Water	03/21/2011 11:00	3/22/2011 9:26:00 AM	302865	☐

Erica Cardenas

4/1/2011

Erica Cardenas
Project Manager

Date

Kesavalu M. Bagawandoss Ph.D., J.D.
Laboratory Director

Ted Yen
Quality Assurance Officer

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-1 **Collected:** 03/17/2011 16:30 **SPL Sample ID:** 11030510-01

Site: Flora Vista, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**	
Sulfate	2.27		0.5	1	03/24/11 10:12	ESK	5752030
METALS BY METHOD 6010B, DISSOLVED				**MCL**	**SW6010B**	**Units: mg/L**	
Iron	1.11		0.02	1	03/29/11 22:53	R_V	5754963
Manganese	1.07		0.005	1	03/29/11 22:53	R_V	5754963

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	03/22/2011 9:45	M_W	1.00

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	1700		50	50	03/24/11 12:25	JC	5751079
Ethylbenzene	480		50	50	03/24/11 12:25	JC	5751079
Toluene	3.7		1	1	03/23/11 18:11	JC	5750237
m,p-Xylene	4300		100	50	03/24/11 12:25	JC	5751079
o-Xylene	9.2		1	1	03/23/11 18:11	JC	5750237
Xylenes,Total	4309.2		50	50	03/24/11 12:25	JC	5751079
Surr: 1,2-Dichloroethane-d4	88.9	%	70-130	50	03/24/11 12:25	JC	5751079
Surr: 1,2-Dichloroethane-d4	91.5	%	70-130	1	03/23/11 18:11	JC	5750237
Surr: 4-Bromofluorobenzene	97.9	%	74-125	50	03/24/11 12:25	JC	5751079
Surr: 4-Bromofluorobenzene	92.3	%	74-125	1	03/23/11 18:11	JC	5750237
Surr: Toluene-d8	96.8	%	82-118	50	03/24/11 12:25	JC	5751079
Surr: Toluene-d8	101	%	82-118	1	03/23/11 18:11	JC	5750237

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-3 **Collected:** 03/17/2011 16:20 **SPL Sample ID:** 11030510-02

Site: Flora Vista, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Sulfate	119		5	10	03/24/11 13:05	ESK	5752031
METALS BY METHOD 6010B, DISSOLVED			**MCL**	**SW6010B**	**Units: mg/L**		
Iron	ND		0.02	1	03/29/11 22:59	R_V	5754964
Manganese	ND		0.005	1	03/29/11 22:59	R_V	5754964

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	03/22/2011 9:45	M_W	1.00

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	03/24/11 11:27	JC	5751077
Ethylbenzene	ND		1	1	03/24/11 11:27	JC	5751077
Toluene	ND		1	1	03/24/11 11:27	JC	5751077
m,p-Xylene	ND		2	1	03/24/11 11:27	JC	5751077
o-Xylene	ND		1	1	03/24/11 11:27	JC	5751077
Xylenes,Total	ND		1	1	03/24/11 11:27	JC	5751077
Surr: 1,2-Dichloroethane-d4	94.9	%	70-130	1	03/24/11 11:27	JC	5751077
Surr: 4-Bromofluorobenzene	93.3	%	74-125	1	03/24/11 11:27	JC	5751077
Surr: Toluene-d8	96.4	%	82-118	1	03/24/11 11:27	JC	5751077

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-4 **Collected:** 03/17/2011 16:15 **SPL Sample ID:** 11030510-03

Site: Flora Vista, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY				**MCL**	**E300.0**	**Units: mg/L**	
Sulfate	83		5	10	03/24/11 13:21	ESK	5752032
METALS BY METHOD 6010B, DISSOLVED				**MCL**	**SW6010B**	**Units: mg/L**	
Iron	0.0852		0.02	1	03/29/11 23:05	R_V	5754965
Manganese	4.46		0.005	1	03/29/11 23:05	R_V	5754965

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	03/22/2011 9:45	M_W	1.00

VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	17		1	1	03/24/11 11:57	JC	5751078
Ethylbenzene	18		1	1	03/24/11 11:57	JC	5751078
Toluene	ND		1	1	03/24/11 11:57	JC	5751078
m,p-Xylene	190		2	1	03/24/11 11:57	JC	5751078
o-Xylene	6.6		1	1	03/24/11 11:57	JC	5751078
Xylenes,Total	196.6		1	1	03/24/11 11:57	JC	5751078
Surr: 1,2-Dichloroethane-d4	93.4		% 70-130	1	03/24/11 11:57	JC	5751078
Surr: 4-Bromofluorobenzene	96.7		% 74-125	1	03/24/11 11:57	JC	5751078
Surr: Toluene-d8	98.4		% 82-118	1	03/24/11 11:57	JC	5751078

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID Duplicate **Collected:** 03/17/2011 16:35 **SPL Sample ID:** 11030510-04

Site: Flora Vista, NM

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
Benzene	1700		50	50	03/24/11 12:54	JC	5751080
Ethylbenzene	470		50	50	03/24/11 12:54	JC	5751080
Toluene	3.6		1	1	03/23/11 19:37	JC	5750238
m,p-Xylene	4000		100	50	03/24/11 12:54	JC	5751080
o-Xylene	8.2		1	1	03/23/11 19:37	JC	5750238
Xylenes,Total	4008.2		50	50	03/24/11 12:54	JC	5751080
Surr: 1,2-Dichloroethane-d4	88.8		% 70-130	50	03/24/11 12:54	JC	5751080
Surr: 1,2-Dichloroethane-d4	87.7		% 70-130	1	03/23/11 19:37	JC	5750238
Surr: 4-Bromofluorobenzene	94.4		% 74-125	50	03/24/11 12:54	JC	5751080
Surr: 4-Bromofluorobenzene	93.4		% 74-125	1	03/23/11 19:37	JC	5750238
Surr: Toluene-d8	96.8		% 82-118	50	03/24/11 12:54	JC	5751080
Surr: Toluene-d8	100		% 82-118	1	03/23/11 19:37	JC	5750238

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID Trip Blank **Collected:** 03/21/2011 11:00 **SPL Sample ID:** 11030510-05

Site: Flora Vista, NM

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
Benzene	ND			1	1	03/24/11 10:59	JC	5751076
Ethylbenzene	ND			1	1	03/24/11 10:59	JC	5751076
Toluene	ND			1	1	03/24/11 10:59	JC	5751076
m,p-Xylene	ND			2	1	03/24/11 10:59	JC	5751076
o-Xylene	ND			1	1	03/24/11 10:59	JC	5751076
Xylenes,Total	ND			1	1	03/24/11 10:59	JC	5751076
Surr: 1,2-Dichloroethane-d4	97.4		%	70-130	1	03/24/11 10:59	JC	5751076
Surr: 4-Bromofluorobenzene	93.6		%	74-125	1	03/24/11 10:59	JC	5751076
Surr: Toluene-d8	92.7		%	82-118	1	03/24/11 10:59	JC	5751076

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Metals by Method 6010B, Dissolved
Method: SW6010B
WorkOrder: 11030510
Lab Batch ID: 105581

Method Blank

RunID: ICP2_110329A-5754942 Units: mg/L
Analysis Date: 03/29/2011 21:46 Analyst: R_V
Preparation Date: 03/22/2011 9:45 Prep By: M_ Method SW3005A

Analyte	Result	Rep Limit
Iron	ND	0.02
Manganese	ND	0.005

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
11030510-01B	MW-1
11030510-02B	MW-3
11030510-03B	MW-4

Laboratory Control Sample (LCS)

RunID: ICP2_110329A-5754944 Units: mg/L
Analysis Date: 03/29/2011 21:52 Analyst: R_V
Preparation Date: 03/22/2011 9:45 Prep By: M_ Method SW3005A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron	1.000	0.9760	97.60	80	120
Manganese	0.1000	0.09890	98.90	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 11030506-02
RunID: ICP2_110329A-5754947 Units: mg/L
Analysis Date: 03/29/2011 22:04 Analyst: R_V
Preparation Date: 03/22/2011 9:45 Prep By: M_ Method SW3005A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron	7.722	1	8.722	N/C	1	8.638	N/C	N/C	20	75	125
Manganese	3.161	0.1	3.278	N/C	0.1	3.302	N/C	N/C	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report 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.

4/1/2011 11:55:04 AM

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 11030510
Lab Batch ID: R317462

Method Blank

RunID: Q_110323B-5750229 Units: ug/L
Analysis Date: 03/23/2011 10:57 Analyst: JC

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
11030510-01A	MW-1
11030510-04A	Duplicate

Analyte	Result	Rep Limit
Toluene	ND	1.0
o-Xylene	ND	1.0
Surr: 1,2-Dichloroethane-d4	94.3	70-130
Surr: 4-Bromofluorobenzene	92.1	74-125
Surr: Toluene-d8	100.5	82-118

Laboratory Control Sample (LCS)

RunID: Q_110323B-5750228 Units: ug/L
Analysis Date: 03/23/2011 10:28 Analyst: JC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Toluene	20.0	23.7	119	74	126
o-Xylene	20.0	22.0	110	74	130
Surr: 1,2-Dichloroethane-d4	50.0	43.9	87.8	70	130
Surr: 4-Bromofluorobenzene	50.0	45.7	91.3	74	125
Surr: Toluene-d8	50.0	50.9	102	82	118

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 11030531-02
RunID: Q_110323B-5750231 Units: ug/L
Analysis Date: 03/23/2011 14:47 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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4/1/2011 11:55:04 AM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 11030510
Lab Batch ID: R317462

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 11030531-02
RunID: Q_110323B-5750231 Units: ug/L
Analysis Date: 03/23/2011 14:47 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Toluene	ND	20	21.9	109	20	21.9	109	0.0732	24	80	117
o-Xylene	ND	20	21.9	110	20	20.7	104	5.46	20	84	114
Surr: 1,2-Dichloroethane-d4	ND	50	46.5	93.1	50	45.6	91.2	2.07	30	70	130
Surr: 4-Bromofluorobenzene	ND	50	46.5	93.0	50	46.1	92.2	0.874	30	74	125
Surr: Toluene-d8	ND	50	47.7	95.4	50	47.4	94.8	0.591	30	82	118

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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4/1/2011 11:55:04 AM

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Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 11030510
Lab Batch ID: R317516

Method Blank

RunID: Q_110324A-5751074 Units: ug/L
Analysis Date: 03/24/2011 10:01 Analyst: JC

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	92.2	70-130
Surr: 4-Bromofluorobenzene	94.5	74-125
Surr: Toluene-d8	98.0	82-118

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
11030510-01A	MW-1
11030510-02A	MW-3
11030510-03A	MW-4
11030510-04A	Duplicate
11030510-05A	Trip Blank

Laboratory Control Sample (LCS)

RunID: Q_110324A-5751073 Units: ug/L
Analysis Date: 03/24/2011 9:32 Analyst: JC

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	20.7	103	74	123
Ethylbenzene	20.0	20.9	105	72	127
Toluene	20.0	21.6	108	74	126
m,p-Xylene	40.0	43.1	108	71	129
o-Xylene	20.0	21.3	106	74	130
Xylenes,Total	60.0	64.4	107	71	130
Surr: 1,2-Dichloroethane-d4	50.0	45.5	90.9	70	130
Surr: 4-Bromofluorobenzene	50.0	48.1	96.2	74	125
Surr: Toluene-d8	50.0	47.9	95.7	82	118

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
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Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 11030510
Lab Batch ID: R317516

Sample Spiked: 11030582-02
RunID: Q_110324A-5751082 Units: ug/L
Analysis Date: 03/24/2011 14:50 Analyst: JC

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	21.7	108	20	21.6	108	0.268	22	70	124
Ethylbenzene	ND	20	21.8	109	20	21.7	109	0.395	20	76	122
Toluene	ND	20	22.5	112	20	22.2	111	1.18	24	80	117
m,p-Xylene	ND	40	44.2	110	40	42.7	107	3.40	20	69	127
o-Xylene	ND	20	21.6	108	20	21.6	108	0.157	20	84	114
Xylenes,Total	ND	60	65.8	110	60	64.3	107	2.33	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	47.9	95.8	50	47.2	94.3	1.61	30	70	130
Surr: 4-Bromofluorobenzene	ND	50	46.1	92.2	50	48.2	96.3	4.37	30	74	125
Surr: Toluene-d8	ND	50	47.7	95.5	50	48.1	96.2	0.793	30	82	118

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Conoco Phillips

COP Flora Vista No. 1

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 11030510
Lab Batch ID: R317593

Method Blank

RunID: IC1_110324A-5752026 Units: mg/L
Analysis Date: 03/24/2011 9:08 Analyst: ESK

Analyte	Result	Rep Limit
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
11030510-01C	MW-1
11030510-02C	MW-3
11030510-03C	MW-4

Laboratory Control Sample (LCS)

RunID: IC1_110324A-5752027 Units: mg/L
Analysis Date: 03/24/2011 9:24 Analyst: ESK

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	10.03	100.3	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 11030510-03
RunID: IC1_110324A-5752033 Units: mg/L
Analysis Date: 03/24/2011 13:38 Analyst: ESK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	82.98	50	140.2	114.4	50	140.5	115.0	0.2231	15	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Sample Receipt Checklist

And

Chain of Custody

ACCUTEST LABORATORIES

SPL ENVIRONMENTAL
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	11030510	Received By:	T_B
Date and Time Received:	3/22/2011 9:26:00 AM	Carrier name:	Fedex-Standard Overnight
Temperature:	2.0/2.0°C	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present ☐
2.	Custody seals intact on shippping container/cooler?	Yes	☑	No	☐	Not Present ☐
3.	Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present ☑
4.	Chain of custody present?	Yes	☑	No	☐	
5.	Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
6.	Chain of custody agrees with sample labels?	Yes	☑	No	☐	
7.	Samples in proper container/bottle?	Yes	☑	No	☐	
8.	Sample containers intact?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test?	Yes	☑	No	☐	
10.	All samples received within holding time?	Yes	☑	No	☐	
11.	Container/Temp Blank temperature in compliance?	Yes	☑	No	☐	
12.	Water - VOA vials have zero headspace?	Yes	☑	No	☐	VOA Vials Not Present ☐
13.	Water - Preservation checked upon receipt (except VOA*)?	Yes	☐	No	☐	Not Applicable ☑

*VOA Preservation Checked After Sample Analysis

SPL Representative: | Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No.: 1103051O

302870

page 1 of 2

Client Name: Tetra Tech
Address: 6121 Indian School Rd #200
City: Albuquerque State: NM Zip: 87110
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: kelly.blanchard@tetratech
Project Name/No.: Flora Vista No.1
Site Name:
Site Location: San Juan County NM Flora Vista, NM
Invoice To: Conoco Phillips Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=enore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: BTEX	Dissolved Fe, Mn	Sulfate
MW-1	3.17.11	1630		X	W	V	40	1	3	X		
MW-1	3.17.11	1630		X	W	P	16	Ø	1		X	
MW-1	3.17.11	1630		X	W	P	1	Ø	1			X
~~MW-2~~	~~3.17.11~~ CM											
~~MW-2~~	~~3.17.11~~ CM											
~~MW-2~~	~~3.17.11~~ CM											
MW-3	3.17.11	1620		X	W	V	40	1	3	X		
MW-3	3.17.11	1620		X	W	P	16	Ø	1		X	
MW-3	3.17.11	1620		X	W	P	1	Ø	1			X
MW-4	3.17.11	1615		X	W	V	40	1	3	X		

RUSH

Client/Consultant Remarks: Please filter metals before analysis

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp:

Requested TAT
☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☒ Standard
☐ 3 Business Days
☐ Other
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify): NMWQCC Standards

PM review (initial):

	date	time		
1. Relinquished by Sampler:	3.21.11	1130	2. Received by:	
3. Relinquished by:	date	time	4. Received by:	
5. Relinquished by:	date 3/22/11	time 9:26	6. Received by Laboratory:	

☒ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No.: 302865

1103010

page 2 of 2

Client Name: Tetra Tech
Address: 6121 Indian School Rd #200
City: Albuquerque State: NM Zip: 87110
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: kelly.blanchard@tetratech.com
Project Name/No.: Flora Vista No. 1
Site Name:
Site Location: San Juan County, Flora Vista, NM
Invoice To: ConocoPhillips Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil/solid O=oil A=air SL=sludge E=entire X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other Ø=None)	Number of Containers	Requested Analysis: BTEX	Dissolved Fe, Mn	Sulfate
MW-4	3.17.11	1615		X	W	P	16	Ø	1		X	
MW-4	3.17.11	1615		X	W	P	1	Ø	1			X
Duplicate	3.17.11	1635		X	W	V	40	1	3	X		
Trip Blank	3.21.11	1100			W	V	40	1	2	X		

Client/Consultant Remarks: Please filter metals before analysis

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp:

Requested TAT

- ☐ 1 Business Day
- ☐ 2 Business Days
- ☐ 3 Business Days
- ☐ Contract
- ☒ Standard
- ☐ Other _____

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☒

Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify): NMWQCC Standards

PM review (initial):

	date	time	
1. Relinquished by Sampler:	3.21.11	1130	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date 3/22/11	time 9:20	6. Received by Laboratory:

☒ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777