3R-087

Monitor Report

DATE:
August, 2009

QUARTERLY GROUNDWATER MONITORING REPORT SECOND QUARTER 2009

CONOCOPHILLIPS COMPANY FEDERAL #15 FARMINGTON, NEW MEXICO

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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. 114-690110.100

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Site History 1
2.0 METHODOLOGY AND RESULTS 2
2.1 Groundwater Monitoring Methodology 2
2.2 Groundwater Sampling Analytical Results 2
3.0 CONCLUSIONS 3

FIGURES

1. Site Location Map
2. Site Layout Map
3. Groundwater Elevation Contour Map – June 2009

TABLES

1. Site History Timeline
2. Groundwater Elevation Summary (January 2005 – June 2009)
3. Groundwater Laboratory Analytical Results Summary (January 2005 – June 2009)

APPENDICES

Appendix A. Groundwater Sampling Field Forms
Appendix B. Laboratory Analytical Report

QUARTERLY GROUNDWATER MONITORING REPORT CONOCOPHILLIPS FEDERAL #15 FARMINGTON, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring completed by Tetra Tech, Inc. (Tetra Tech) on June 16, 2009, at the ConocoPhillips Federal #15 site in Farmington, New Mexico (Site). This event represents the fifth consecutive quarter of groundwater monitoring at the Site, and represents the fourth consecutive quarter of groundwater monitoring with laboratory results below New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards (GWQS) contained in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Quarterly monitoring was initiated in March 2008, following a more variable monitoring frequency in place since 2005.

The Site is located between Washington Avenue and English Road on the north side of Gila Street; New Mexico 516 (Main Street) is located approximately 0.5 miles to the west. The Site consists of a gas production well and associated equipment and installations. The location and general features of the Site are shown on **Figures 1** and **2**, respectively.

1.1 Site History

The history of the Site is outlined on **Table 1** and discussed in more detail in the following paragraphs.

On October 23, 2004, a release was discovered at the Site. It was estimated that up to 15 barrels of condensate were unaccounted for. Approximately 1,500 cubic yards of affected soil were excavated and replaced with clean fill during the week of October 25, 2004.

Following soil remediation activities, four, 2-inch polyvinyl chloride (PVC) groundwater monitor wells (MW-1 through MW-4) were installed on November 16 and November 17, 2004 by Biosphere Environmental Sciences and Technologies, LLC to depths of approximately 20 feet below ground surface (bgs). An additional, downgradient monitor well (MW-5) was installed to a depth of approximately 17.5 feet bgs on the property south of the Site on October 19, 2005 by Spectrum Drilling under the supervision of Tetra Tech.

Monitor wells MW-1 through MW-4 were initially sampled on January 18, 2005 and again on October 18 and 19, 2005. Monitor well MW-5 was initially sampled on October 19, 2005.

Beginning in July 2005, Tetra Tech conducted quarterly groundwater removal events at monitor well MW-2 using a vacuum truck. A total of 4,343 gallons were pumped from this well between July 2005 and January 2008, at which time pumping activities were discontinued. The pumped water was disposed of in

the on-site waste water tank (**Figure 2**). Each quarterly groundwater removal event is listed on **Table 1.**

Tetra Tech conducted annual groundwater sampling of monitor wells MW-1 through MW-5 in November of 2006 and 2007. The details of each sampling event are summarized in the 2006 and 2007 Annual Groundwater Monitoring and Site Activities Reports, dated January 2, 2007 and January 30, 2008, respectively.

The 2008 quarterly groundwater monitoring events were conducted in March, July, and October of 2008 and in January 2009. The sampling event conducted on March 30, 2009 is the first quarter of sampling for 2009. Second quarter 2009 sampling was conducted on June 16, 2009 and also marks the fourth consecutive quarterly groundwater monitoring event at the Site in which groundwater quality results for benzene, toluene, ethylbenzene and total xylenes (BTEX) were all below GWQS.

2.0 METHODOLOGY AND RESULTS

The following subsections describe the groundwater monitoring methodology and sampling analytical results.

2.1 Groundwater Monitoring Methodology

Groundwater Elevation Measurements

On June 16, 2009, groundwater elevation measurements were recorded in monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5. **Table 2** presents the monitor well specifications and groundwater level data. A groundwater elevation contour map is presented on **Figure 3,** which illustrates that groundwater at the Site flows to the south, southwest at an approximate gradient of 0.02 feet/feet (ft/ft) toward the Animas River, located approximately 3,200 feet south of the Site.

Groundwater sampling

Groundwater quality samples were collected from monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5 during the June 16, 2009 groundwater sampling event. Approximately 5 gallons of water, or three well volumes, were purged from each monitor well before sampling was performed. A 1.5-inch poly-vinyl disposable bailer was used in each well to purge and collect groundwater samples. The purged water was disposed of in the on-site waste water tank (**Figure 2**). The samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Southern Petroleum Laboratory located in Houston, Texas. The samples were analyzed for presence of BTEX by Environmental Protection Agency (EPA) Method 8260B.

2.2 Groundwater Sampling Analytical Results

The June 2009 analysis of the collected groundwater samples indicates that all analyzed constituents are present in concentrations either below GWQS or were not detected above their respective laboratory reporting limits. Groundwater samples collected from MW-1, MW-3, MW-4 and MW-5 did not reveal

BTEX in concentrations above the laboratory reporting limit of 5 micrograms per liter (ug/l). Total xylenes were the only constituents detected in MW-2 at a concentration of 5.1 ug/L, well below the GWQS for total xylenes of 620 ug/L. Historical laboratory analytical data, including the June 2009 data, are summarized on **Table 3**. The field groundwater sampling forms are presented in **Appendix A** and the laboratory analytical report is presented in **Appendix B**. A generalized geologic cross section of the Site was included in the January 2009 (fourth quarter 2008) report.

3.0 CONCLUSIONS

Tetra Tech conducted quarterly pumping events in monitor well MW-2 from July 2005 to January of 2008. The concentrations of BTEX measured in this well have decreased steadily from January 2005 to June 2009 and are summarized below.

- MW-2 benzene concentrations have decreased from 1,200 ug/L to less than the laboratory reporting limit of 5 ug/L.
- MW-2 toluene concentrations decreased from 3,300 ug/L (above the GWQS of 750 ug/L) to less than the laboratory reporting limit of 5 ug/L.
- MW-2 ethylbenzene concentrations decreased from 380 ug/L (below the GWQS of 750 ug/L) to less than the laboratory reporting limit of 5 ug/L.
- MW-2 total xylenes concentrations decreased from 3,500 ug/L (above the GWQS of 620 ug/L) to 5.1 ug/L.

The decrease in BTEX concentrations indicates that the pumping events were effective. Tetra Tech has discontinued the pumping of monitor well MW-2 and will continue monitoring all wells quarterly in order to move toward closure of the Site.

Benzene in MW-3 has decreased from 190 µg/L in January 2005 to less than the laboratory reporting limit of 5 µg/L in June 2009, while benzene in MW-4 has decreased from 36 µg/L in November 2007 to less than the laboratory reporting limit of 5 µg/L in June 2009. Additionally, chlorides have never been detected above GWQS in any Site monitor well. Therefore, analysis of this constituent has been discontinued as of the January 2009 sampling event.

All Site monitor wells have been below NMWQCC GWQS for BTEX constituents for 4 consecutive quarters as of the June 2009 sampling event.

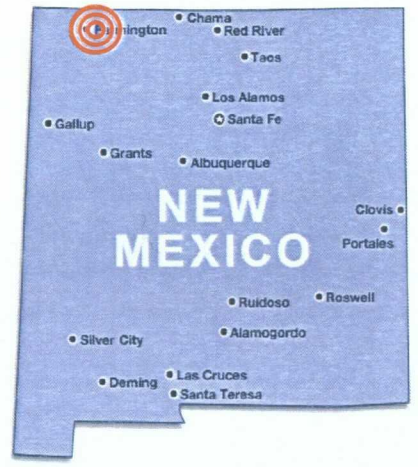
If you have any questions regarding the content of this report, please contact Kelly Blanchard at (505) 237-8440 or at kelly.blanchard@tetratech.com.

FIGURES

1. Site Location Map
2. Site Layout Map
3. Groundwater Elevation Contour Map

FIGURE 1.

Site Location Map
ConocoPhillips Company
Federal #15
Farmington, NM



Approximate ConocoPhillips Federal #15 Site location

Latitude = 36.759339 deg N
Longitude = -108.149891 deg W

N

TETRA TECH, INC.

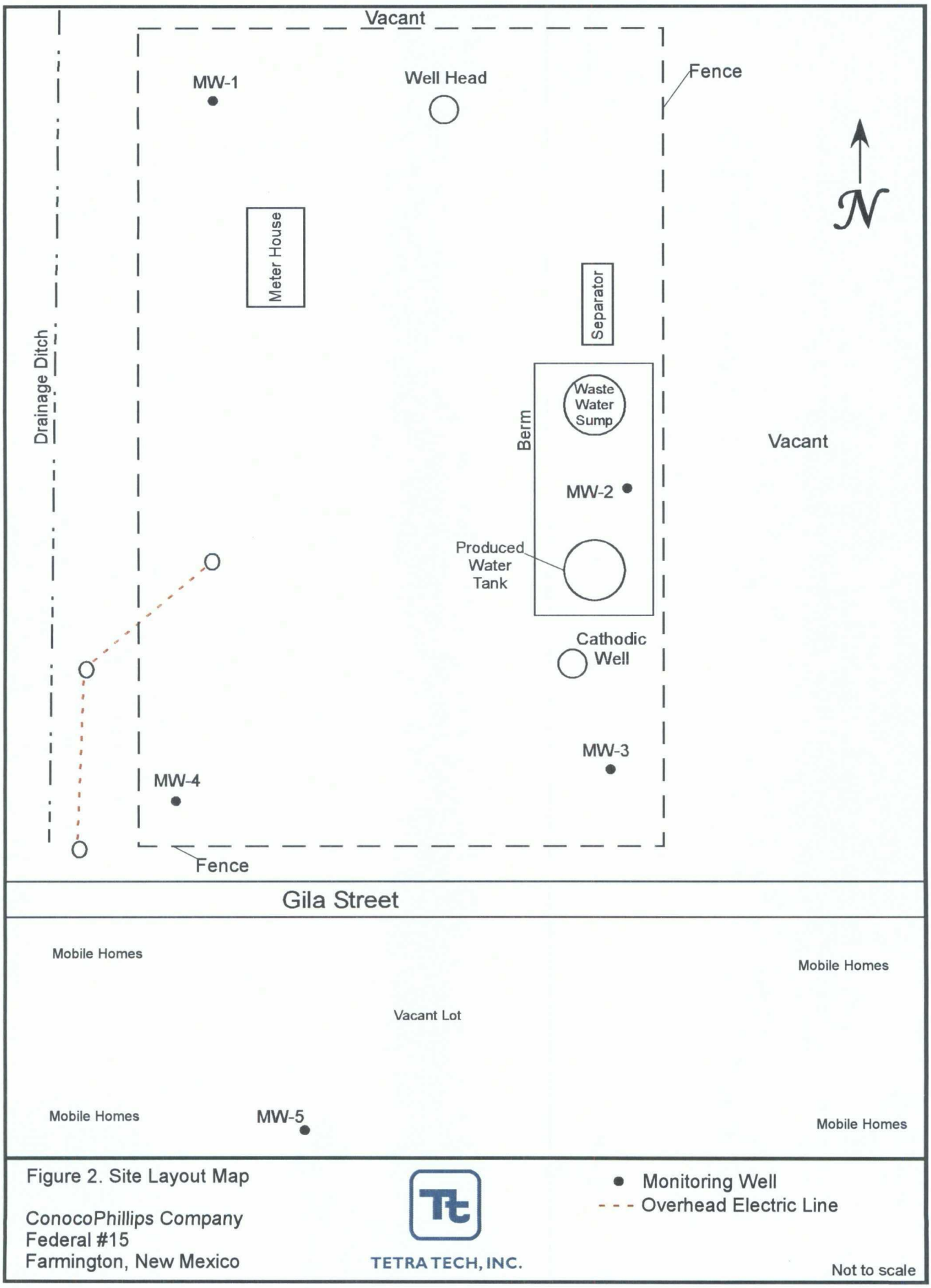


Figure 2. Site Layout Map

ConocoPhillips Company
Federal #15
Farmington, New Mexico

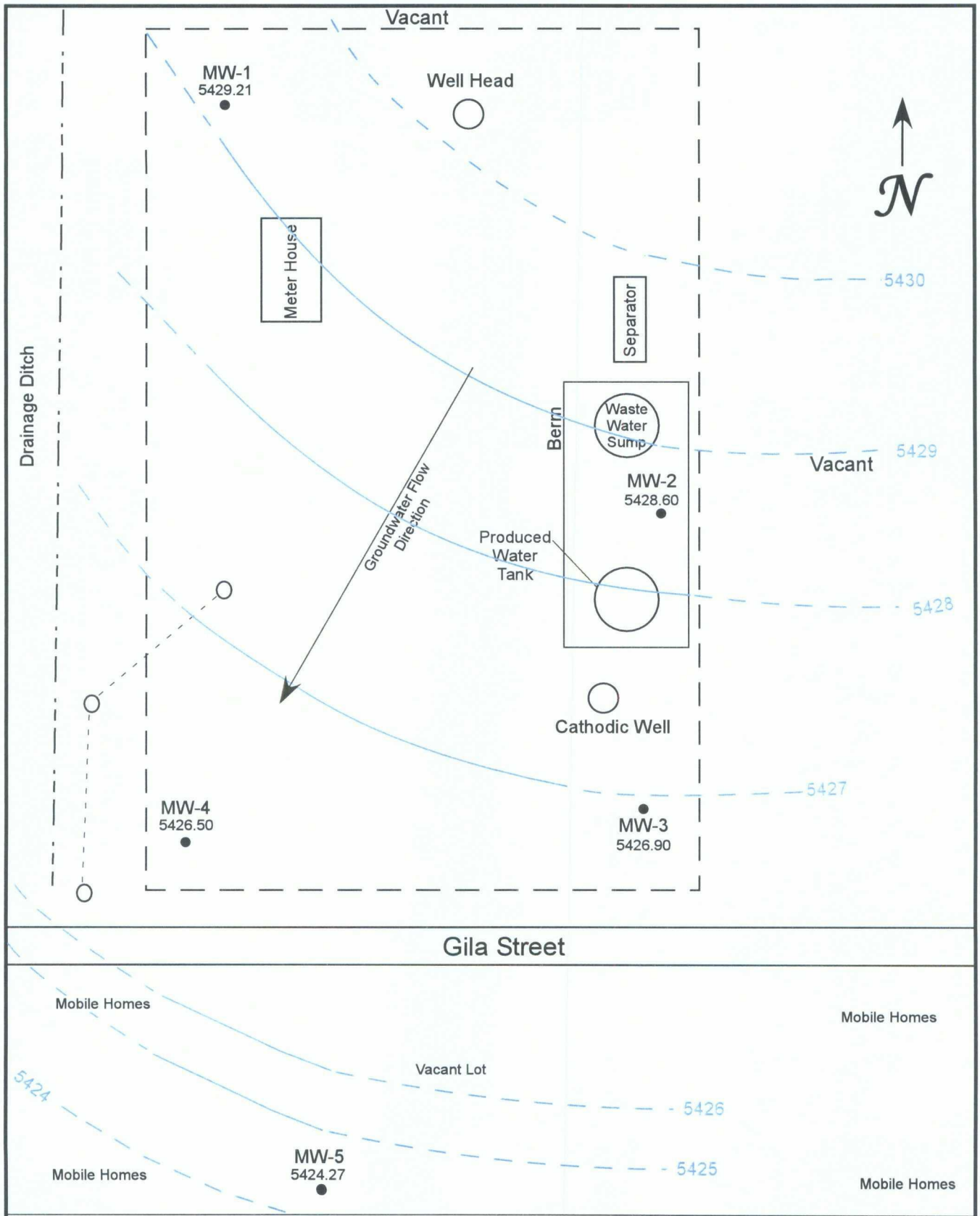


Figure 3. Groundwater Elevation Contour Map - June 2009
ConocoPhillips Company
Federal #15
Farmington, New Mexico

TETRA TECH, INC.

- Monitoring Well
- Overhead Electric Line
- Groundwater contour line
- Inferred groundwater contour line

Not to scale

TABLES

1. Site History Timeline

2. Groundwater Elevation Summary (January 2005 – June 2009)

3. Laboratory Analytical Data Summary (January 2005 – June 2009)

Table 1. Site History Timeline - ConocoPhillips Federal #15

Date/Time Period	Event/Action	Description
October 23, 2004	Release Discovered	Estimated that 15 barrels of condensate was released to the subsurface soil and groundwater
October 25-29, 2004	Soil Excavation	Approximately 1500 cubic yards of affected soil excavated and replaced with clean fill
November 16-17, 2004	Monitor Well Installation	Monitor wells MW-1, MW-2, MW-3, and MW-4 installed to depths of approximately 20 ft BGS
January 18, 2005	Monitor Well Sampling	Initial sampling of monitor wells MW-1, MW-2, MW-3, and MW-4
July 7, 2005	Groundwater Removal from Monitor Well MW-2	First removal of groundwater - 145 gallons removed
October 18-19, 2005	Monitor Well Sampling	Second sampling of monitor wells MW-1, MW-2, MW-3, and MW-4
October 19, 2005	Monitor Well Installation	Monitor well MW-5 installed to a depth of 17.5 ft BGS
October 19, 2005	Groundwater Removal from Monitor Well MW-2	558 gallons removed
October 20, 2005	Monitor Well Sampling	Initial sampling of monitor well MW-5
February 16, 2006	Groundwater Removal from Monitor Well MW-2	236 gallons removed
May 15, 2006		296 gallons removed
August 2, 2006		380 gallons removed
November 14, 2006		440 gallons removed
November 14-15, 2006	Monitor Well Sampling	Third sampling of monitor wells MW-1, MW-2, MW-3, and MW-4; second sampling of monitor well MW-5
February 20, 2007	Groundwater Removal from Monitor Well MW-2	346 gallons removed
May 15, 2007		474 gallons removed
August 21, 2007		528 gallons removed
November 7, 2007		575 gallons removed
November 7, 2007	Monitor Well Sampling	Fourth sampling of monitor wells MW-1, MW-2, MW-3, and MW-4; third sampling of monitor well MW-5
January 16, 2008	Groundwater Removal from Monitor Well MW-2	365 gallons removed
March 18, 2008	Groundwater Removal from Monitor Well MW-2	278 gallons removed
March 18, 2008	Groundwater Removal from Monitor Well MW-4	288 gallons removed
March 18, 2008	Monitor Well Sampling	Initiation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5
July 21, 2008	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5
October 21, 2008	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5. **First quarter of compliance** with all COCs bellow NMWQCC standards.
January 22, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5. **Second quarter of compliance** with all COCs bellow NMWQCC standards.
March 30, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5. **Third quarter of compliance** with all COCs bellow NMWQCC standards.
June 16, 2009	Monitor Well Sampling	Continuation of quarterly sampling for monitor wells MW-1, MW-2, MW-3, MW-4, and MW-5. **Fourth quarter of compliance** with all COCs bellow NMWQCC standards.

Table 2. Groundwater Elevation Summary (January 2005 - March 2009) - ConocoPhillips Federal #15

Well ID	Date Installed	Total Depth (ft bgs)	Screen Interval (ft)	Date Measured	Groundwater Level (ft TOC)	Elevation (ft msl) (TOC)	Groundwater Elevation (ft msl)
MW-1	11/17/2004	20	5 - 20	1/18/2005	8.92	5437.99	5429.07
				7/7/2005	9.33		5428.66
				10/19/2005	8.03		5429.96
				2/16/2006	8.84		5429.15
				5/15/2006	8.96		5429.03
				8/2/2006	8.35		5429.64
				11/14/2006	8.10		5429.89
				2/20/2007	8.76		5429.23
				5/15/2007	9.67[1]		5428.32
				8/21/2007	NM		NM
				11/7/2007	AM		AM
				1/16/2008	7.10		5430.89
				3/18/2008	7.61		5430.38
				7/21/2008	4.82		5433.17
				10/21/2008	4.72		5433.27
				1/22/2009	7.12		5430.87
				3/30/2009	7.98		5430.01
				6/16/2009	8.78		5429.21
MW-2	11/17/2004	20	5 - 20	1/18/2005	9.49	5437.33	5427.84
				7/7/2005	9.55		5427.78
				10/19/2005	8.66		5428.67
				2/16/2006	9.01		5428.32
				5/15/2006	9.00		5428.33
				8/2/2006	8.52		5428.81
				11/14/2006	8.28		5429.05
				2/20/2007	8.87		5428.46
				5/15/2007	8.59		5428.74
				8/21/2007	6.67		5430.66
				11/7/2007	AM		AM
				1/16/2008	7.41		5429.92
				3/18/2008	8.00		5429.33
				7/21/2008	4.63		5432.70
				10/21/2008	4.37		5432.96
				1/22/2009	7.39		5429.94
				3/30/2009	8.23		5429.10
				6/16/2009	8.73		5428.60
MW-3	11/22/2004	20	5 - 20	1/18/2005	8.54	5435.13	5426.59
				7/7/2005	8.51		5426.62
				10/19/2005	7.75		5427.38
				2/16/2006	NM		NM
				5/15/2006	8.42		5426.71
				8/2/2006	7.99		5427.14
				11/14/2006	7.72		5427.41
				2/20/2007	8.23		5426.90
				5/15/2007	7.90		5427.23
				8/21/2007	NM		NM
				11/7/2007	AM		AM
				1/16/2008	7.20		5427.93
				3/18/2008	7.73		5427.40
				7/21/2008	5.00		5430.13
				10/21/2008	4.12		5431.01
				1/22/2009	7.17		5427.96
				3/30/2009	7.91		5427.22
				6/16/2009	8.23		5426.90

Table 2. Groundwater Elevation Summary (January 2005 - March 2009) - ConocoPhillips Federal #15

Well ID	Date Installed	Total Depth (ft bgs)	Screen Interval (ft)	Date Measured	Groundwater Level (ft TOC)	Elevation (ft msl) (TOC)	Groundwater Elevation (ft msl)
MW-4	11/22/2004	20	5 - 20	1/18/2005	8.65	5434.68	5426.03
				7/7/2005	8.50		5426.18
				10/19/2005	7.72		5426.96
				2/16/2006	8.35		5426.33
				5/15/2006	8.40		5426.28
				8/2/2006	7.96		5426.72
				11/14/2006	7.74		5426.94
				2/20/2007	8.18		5426.50
				5/15/2007	7.91		5426.77
				8/21/2007	NM		NM
				11/7/2007	AM		AM
				1/16/2008	7.37		5427.31
				3/18/2008	7.73		5426.95
				7/21/2008	5.90		5428.78
				10/21/2008	5.53		5429.15
				1/22/2009	7.36		5427.32
				3/30/2009	7.88		5426.80
				6/16/2009	8.18		5426.50
MW-5	10/19/2005	17.5	3.5-17.5	10/20/2005	9.11	5434.16	5425.05
				2/16/2006	10.62		5423.54
				5/15/2006	10.47		5423.69
				8/2/2006	9.42		5424.74
				11/14/2006	9.05		5425.11
				2/20/2007	9.84		5424.32
				5/15/2007	8.93		5425.23
				8/21/2007	NM		NM
				11/7/2007	AM		AM
				1/16/2008	NM		NM
				3/18/2008	10.21		5423.95
				7/21/2008	7.55		5426.61
				10/21/2008	6.18		5427.98
				1/22/2009	9.20		5424.96
				3/30/2009	10.30		5423.86
				6/16/2009	9.89		5424.27

Explanation

(1) = Water level near bottom of monitor well
AM = Anomolous measurement due to meter malfunction - reading not recorded
bgs = Below ground surface
ft = Feet
msl = Mean sea level
NM = Not measured
TOC = Top of casing

Table 3. Groundwater Laboratory Analytical Results Summary (January 2005 - June2009) - ConocoPhillips Federal #15

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	2-Methylnaphthalene (µg/L)	1-Methylnaphthalene (µg/L)	Naphthalene (µg/L)	Total Naphthalene (µg/L)	Chloride (mg/L)
MW-1	1/18/2005	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	85
	10/18/2005	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	39
	11/15/2006	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	36
	11/7/2007	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	44
	3/18/2008	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	7/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	54
	10/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	57.8
	1/22/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	74.8
	3/30/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	6/16/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
MW-2	1/18/2005	**1200**	**3300**	380	**3500**	72	34	51	**157**	41
	Duplicate	**1300**	**3700**	410	**3800**	NA	NA	NA	NA	NA
	10/19/2005	**1100**	410	160	470	18	11	15	**44**	60
	Duplicate	**1100**	500	150	610	NA	NA	NA	NA	NA
	11/14/2006	**23**	29	6.6	120	<10	<10	<10	<10	50
	Duplicate	**45**	57	12	220	NA	NA	NA	NA	NA
	11/7/2007	4.2	8.8	24	74	<10	<10	<10	<10	35
	Duplicate	3.9	7.9	22	69	NA	NA	NA	NA	NA
	3/18/2008	5	<5.0	<5.0	9	NA	NA	NA	NA	NA
	7/21/2008	<5.0	<5.0	13	27	<5.0	<5.0	<5.0	NA	42.7
	Duplicate	<5.0	<5.0	13	27	NA	NA	NA	NA	NA
	10/21/2008	<5.0	<5.0	<5.0	5	<5.0	<5.0	<5.0	NA	71.3
	Duplicate	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	1/22/2009	<5.0	<5.0	7	17	<5.0	<5.0	<5.0	<5.0	36.1
	Duplicate	<5.0	<5.0	5	12	NA	NA	NA	NA	NA
	3/30/2009	5.7	<5.0	11	22	NA	NA	NA	NA	NA
	6/16/2009	<5.0	<5.0	<5.0	5.1	NA	NA	NA	NA	NA
	Duplicate	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
MW-3	1/18/2005	**190**	<5.0	<5.0	<10	<10	<10	<10	<10	34
	10/19/2005	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	42
	11/14/2006	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	39
	11/7/2007	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	34
	3/18/2008	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	7/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	22
	10/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	20.6
	1/22/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	22
	3/30/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	6/16/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
MW-4	1/18/2005	2.8	<1.0	<1.0	<2.0	<10	<10	<10	<10	37
	10/19/2005	**23**	2.2	<1.0	4.3	<10	<10	<10	<10	51
	11/14/2006	1.1	<1.0	<1.0	<2.0	<10	<10	<10	<10	44
	11/7/2007	**36**	<1.0	22	<2.0	<10	<10	<10	<10	24
	3/18/2008	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	7/21/2008	**35**	<5.0	18	<5.0	<5.0	<5.0	<5.0	NA	22
	10/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	25.1
	1/22/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	42.1
	3/30/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA

Table 3. Groundwater Laboratory Analytical Results Summary (January 2005 - June2009) - ConocoPhillips Federal #15

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	2-Methylnaphthalene (µg/L)	1-Methylnaphthalene (µg/L)	Naphthalene (µg/L)	Total Naphthalene (µg/L)	Chloride (mg/L)
	Duplicate	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	6/16/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
MW-5	**10/20/2005**	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	73
	11/14/2006	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	79
	11/7/2007	<1.0	<1.0	<1.0	<2.0	<10	<10	<10	<10	58
	3/18/2008	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	7/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	27.6
	10/21/2008	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	34.5
	1/22/2009	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	35.8
	3/30/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
	6/16/2009	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA
NMWQCC Groundwater Quality Standards		**10 (µg/L)**	**750 (µg/L)**	**750 (µg/L)**	**620 (µg/L)**	**NE**	**NE**	**NE**	**30 (µg/L)**	**250 mg/L**

Explanation

mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
NE=Not established
NMWQCC = New Mexico Water Quality Control Commission
NA = Not analyzed
<1.0 = Not detected at the reporting limit
Constituents in excess of NMWQCC groundwater quality standards are in **BOLD**

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

WATER SAMPLING FIELD FORM

Project No. Federal #15 _____ of _____

Site Location _____

Site/Well No. MW- 1 Coded/ Replicate No. _____ Date 6/16/09

Weather Overcast, 80° Time Sampling Began 1400 Time Sampling Completed 1420

EVACUATION DATA

Description of Measuring Pt (MP) _____

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 18.3 Water-Level Elevation _____

Held _____ Depth to Water Below MP 8.78 Diameter of Casing (2 inch) / 4 inch

Wet _____ Water Column in Well 9.52 Gallons Pumped/Bailed Prior to Sampling 4.5

Gallons per Foot 0.16

Gallons in Well 1.52 x 3 = 4.56 Sampling Pump Intake (feet below land surface) _____

Purging Equipment _____

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1409	12.44	6.93	2413	1.568	2.41	22.6	85.4	
1414	12.44	6.91	2424	1.575	3.57	33.4	62.9	
1417	12.31	6.91	2421	1.574	4.02	39.8	54.7	

Sampling Equipment Low Flow Pump (Disposable Bailer)

Constituents Sampled	Container Description	Preservative
BTEX	3 VOAs	HCl

Remarks brownish-red, no odor/sheen

Sampling Personnel GD, AM

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

WATER SAMPLING FIELD FORM

Project No. Federal #15 — 1 of 1

Site Location

Site/Well No. MW-2 — Coded/ Replicate No. — Date 6/16/09

Weather Overcast, 80° — Time Sampling Began 1435 — Time Sampling Completed 1450

EVACUATION DATA

duplicate collected @ 1600

Description of Measuring Pt (MP)

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 19.13 — Water-Level Elevation

Held — Depth to Water Below MP 8.73 — Diameter of Casing (2 inch / 4 inch)

Wet — Water Column in Well 10.4 — Gallons Pumped/Bailed Prior to Sampling

Gallons per Foot 0.16

Gallons in Well 1.66 x 3 = 4.98 gal/cm3 — Sampling Pump Intake (feet below land surface)

Purging Equipment

SAMPLING DATA/FIELD PARAMETERS °C

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1439	15.37	7.24	2158	1.402	2.79	27.2	-189.5	
1441	14.62	7.23	2030	1.320	2.53	24.2	-184.6	
1444	14.52	7.19	1962	1.276	2.71	26.0	-177.0	

Sampling Equipment — Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
BTEX	40 mL VOAs	HCl

Remarks — Bio odor, black organic matter in water, clear. Sewer smell

Sampling Personnel GD, AM

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

WATER SAMPLING FIELD FORM

Project No. Federal #15 _____ of _____

Site Location _____

Site/Well No. MW-3 Coded/ Replicate No. _____ Date 6/16/09

Weather overcast, 80° Time Sampling Began 1230 Time Sampling Completed 1300

EVACUATION DATA

Description of Measuring Pt (MP) _____

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 9.95 Water-Level Elevation _____

Held _____ Depth to Water Below MP 8.23 Diameter of Casing (2 inch) 4 inch

Wet _____ Water Column in Well 1.72 Gallons Pumped/Bailed Prior to Sampling 1

Gallons per Foot 0.16

Gallons in Well 0.175 x 3 = 0.825 Sampling Pump Intake (feet below land surface) 7

Purging Equipment _____

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1253	16.04	6.85	2331	1.514	2.73	27.7	191.7	
1256	14.43	6.99	2280	1.481	2.70	27.3	183.5	
1259	14.67	6.96	2218	1.441	2.77	26.9	180.7	

Sampling Equipment Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 VOAs	HCl

Remarks water is murky, brown, no odor/sheen

Sampling Personnel Gary Desselle, Ana Moreno

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

WATER SAMPLING FIELD FORM

Project No. Federal #15 _____ of _____

Site Location _____

Site/Well No. MW- 4 Coded/ Replicate No. _____ Date 6/16/09

Weather Overcast, 80° Time Sampling Began 1310 Time Sampling Completed 1330

EVACUATION DATA

Description of Measuring Pt (MP) _____

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 18.50 Water-Level Elevation _____

Held _____ Depth to Water Below MP 8.18 Diameter of Casing (2 inch) 4 inch

Wet _____ Water Column in Well 10.32 Gallons Pumped/Bailed Prior to Sampling 5

Gallons per Foot 0.16

Gallons in Well 1.65 x 3 = 4.95 Sampling Pump Intake (feet below land surface) _____

Purging Equipment _____

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1317	14.85	7.17	1940	1.260	2.73	26.6	149.8	
1320	14.51	7.18	1933	1.256	2.81	27.3	129.7	
1325	14.53	7.18	1930	1.254	2.68	26.0	133.7	

Sampling Equipment Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 VOAs	HCl

Remarks murky / brown

Sampling Personnel Gary Desselle, Ana Moreno

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

WATER SAMPLING FIELD FORM

Project No. Federal #15 ____ of ____

Site Location ____

Site/Well No. MW-5 Coded/ Replicate No. ____ Date 6/16/09

Weather Overcast, 80° Time Sampling Began 1340 Time Sampling Completed 1350

EVACUATION DATA

Description of Measuring Pt (MP) ____

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 17.12 Water-Level Elevation ____

Held ____ Depth to Water Below MP 9.89 Diameter of Casing 2 inch / 4 inch

Wet ____ Water Column in Well 7.23 Gallons Pumped/Bailed Prior to Sampling ____

Gallons per Foot 0.16

Gallons in Well 1.15x3= 3.45 Sampling Pump Intake (feet below land surface) ____

Purging Equipment ____

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS	DO	DO%	ORP	Other
1342	16.19	7.00	2285	1.487	3.13	31.9	145.9	
1347	14.92	6.97	2327	1.513	2.47	24.5	144.3	
1350	14.97	6.95	2332	1.516	2.27	22.6	146.2	
1352	14.98	6.95	2328	1.513	3.00	29.5	146.0	

Sampling Equipment Low Flow Pump / Disposable Bailer

Constituents Sampled	Container Description	Preservative
BTEX	3 VOAs	HCl

Remarks brown, no odor

Sampling Personnel GD, AM

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

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

Conoco Phillips

Certificate of Analysis Number:

09060979

Report To:		Project Name:	COP Federal Com #15
Tetra Tech, Inc.		Site:	Farmington, NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.			
Suite 200		PO Number:	4509596743
Albuquerque		State:	New Mexico
NM		State Cert. No.:	
87110-		Date Reported:	6/30/2009
ph: (505) 237-8440	fax:		

This Report Contains A Total Of 14 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

6/30/2009

Date

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

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

Case Narrative for:

Conoco Phillips

Certificate of Analysis Number:

09060979

Report To:		Project Name:	COP Federal Com #15
Tetra Tech, Inc.		Site:	Farmington, NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.			
Suite 200		PO Number:	4509596743
Albuquerque		State:	New Mexico
NM		State Cert. No.:	
87110-		Date Reported:	6/30/2009
ph: (505) 237-8440	fax:		

I. SAMPLE RECEIPT:

A trip blank was received with the samples but was not listed on the chain of custody. Per your request, SPL, Inc. analyzed the trip blank for Volatile Organics by SW846 Method 8260.

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. CERTIFICATION:

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.

IV. 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.

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

Erica Cardenas
Project Manager

Date

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

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

Conoco Phillips

Certificate of Analysis Number:

09060979

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 Federal Com #15
Site: Farmington, NM
Site Address:

PO Number: 4509596743
State: New Mexico
State Cert. No.:
Date Reported: 6/30/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	09060979-01	Water	6/16/2009 2:20:00 PM	6/18/2009 9:30:00 AM	327800	☐
MW-2	09060979-02	Water	6/16/2009 2:50:00 PM	6/18/2009 9:30:00 AM	327800	☐
MW-3	09060979-03	Water	6/16/2009 1:00:00 PM	6/18/2009 9:30:00 AM	327800	☐
MW-4	09060979-04	Water	6/16/2009 1:30:00 PM	6/18/2009 9:30:00 AM	327800	☐
MW-5	09060979-05	Water	6/16/2009 1:50:00 PM	6/18/2009 9:30:00 AM	327800	☐
DUPLICATE	09060979-06	Water	6/16/2009 4:00:00 PM	6/18/2009 9:30:00 AM	327800	☐
Trip Blank (SPL)	09060979-07	Water	6/16/2009	6/18/2009 9:30:00 AM	327800	☐

Erica Cardenas
Project Manager

6/30/2009
Date

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

Ted Yen
Quality Assurance Officer

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

Client Sample ID: MW-1 **Collected:** 06/16/2009 14:20 **SPL Sample ID:** 09060979-01

Site: Farmington, 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		5		1	06/21/09 6:41	LU_L	5079188
Ethylbenzene	ND		5		1	06/21/09 6:41	LU_L	5079188
Toluene	ND		5		1	06/21/09 6:41	LU_L	5079188
m,p-Xylene	ND		5		1	06/21/09 6:41	LU_L	5079188
o-Xylene	ND		5		1	06/21/09 6:41	LU_L	5079188
Xylenes,Total	ND		5		1	06/21/09 6:41	LU_L	5079188
Surr: 1,2-Dichloroethane-d4	94.0		% 78-116		1	06/21/09 6:41	LU_L	5079188
Surr: 4-Bromofluorobenzene	94.8		% 74-125		1	06/21/09 6:41	LU_L	5079188
Surr: Toluene-d8	92.8		% 82-118		1	06/21/09 6:41	LU_L	5079188

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: MW-2 **Collected:** 06/16/2009 14:50 **SPL Sample ID:** 09060979-02

Site: Farmington, 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		5		1	06/21/09 4:26	LU_L	5079182
Ethylbenzene	ND		5		1	06/21/09 4:26	LU_L	5079182
Toluene	ND		5		1	06/21/09 4:26	LU_L	5079182
m,p-Xylene	5.1		5		1	06/21/09 4:26	LU_L	5079182
o-Xylene	ND		5		1	06/21/09 4:26	LU_L	5079182
Xylenes,Total	5.1		5		1	06/21/09 4:26	LU_L	5079182
Surr: 1,2-Dichloroethane-d4	94.4		%	78-116	1	06/21/09 4:26	LU_L	5079182
Surr: 4-Bromofluorobenzene	99.8		%	74-125	1	06/21/09 4:26	LU_L	5079182
Surr: Toluene-d8	91.9		%	82-118	1	06/21/09 4:26	LU_L	5079182

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: MW-3 **Collected:** 06/16/2009 13:00 **SPL Sample ID:** 09060979-03

Site: Farmington, 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		5		1	06/21/09 7:08	LU_L	5079189
Ethylbenzene	ND		5		1	06/21/09 7:08	LU_L	5079189
Toluene	ND		5		1	06/21/09 7:08	LU_L	5079189
m,p-Xylene	ND		5		1	06/21/09 7:08	LU_L	5079189
o-Xylene	ND		5		1	06/21/09 7:08	LU_L	5079189
Xylenes,Total	ND		5		1	06/21/09 7:08	LU_L	5079189
Surr: 1,2-Dichloroethane-d4	91.5		%	78-116	1	06/21/09 7:08	LU_L	5079189
Surr: 4-Bromofluorobenzene	98.3		%	74-125	1	06/21/09 7:08	LU_L	5079189
Surr: Toluene-d8	90.0		%	82-118	1	06/21/09 7:08	LU_L	5079189

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: MW-4 **Collected:** 06/16/2009 13:30 **SPL Sample ID:** 09060979-04

Site: Farmington, 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		5	1	06/21/09 7:35	LU_L	5079190
Ethylbenzene	ND		5	1	06/21/09 7:35	LU_L	5079190
Toluene	ND		5	1	06/21/09 7:35	LU_L	5079190
m,p-Xylene	ND		5	1	06/21/09 7:35	LU_L	5079190
o-Xylene	ND		5	1	06/21/09 7:35	LU_L	5079190
Xylenes,Total	ND		5	1	06/21/09 7:35	LU_L	5079190
Surr: 1,2-Dichloroethane-d4	95.4		% 78-116	1	06/21/09 7:35	LU_L	5079190
Surr: 4-Bromofluorobenzene	99.2		% 74-125	1	06/21/09 7:35	LU_L	5079190
Surr: Toluene-d8	93.2		% 82-118	1	06/21/09 7:35	LU_L	5079190

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: MW-5 **Collected:** 06/16/2009 13:50 **SPL Sample ID:** 09060979-05

Site: Farmington, 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		5	1	06/21/09 8:02	LU_L	5079191
Ethylbenzene	ND		5	1	06/21/09 8:02	LU_L	5079191
Toluene	ND		5	1	06/21/09 8:02	LU_L	5079191
m,p-Xylene	ND		5	1	06/21/09 8:02	LU_L	5079191
o-Xylene	ND		5	1	06/21/09 8:02	LU_L	5079191
Xylenes,Total	ND		5	1	06/21/09 8:02	LU_L	5079191
Surr: 1,2-Dichloroethane-d4	94.8		% 78-116	1	06/21/09 8:02	LU_L	5079191
Surr: 4-Bromofluorobenzene	100		% 74-125	1	06/21/09 8:02	LU_L	5079191
Surr: Toluene-d8	92.9		% 82-118	1	06/21/09 8:02	LU_L	5079191

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: DUPLICATE **Collected:** 06/16/2009 16:00 **SPL Sample ID:** 09060979-06

Site: Farmington, 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		5	1	06/21/09 6:14	LU_L	5079186
Ethylbenzene	ND		5	1	06/21/09 6:14	LU_L	5079186
Toluene	ND		5	1	06/21/09 6:14	LU_L	5079186
m,p-Xylene	ND		5	1	06/21/09 6:14	LU_L	5079186
o-Xylene	ND		5	1	06/21/09 6:14	LU_L	5079186
Xylenes,Total	ND		5	1	06/21/09 6:14	LU_L	5079186
Surr: 1,2-Dichloroethane-d4	95.1		% 78-116	1	06/21/09 6:14	LU_L	5079186
Surr: 4-Bromofluorobenzene	98.1		% 74-125	1	06/21/09 6:14	LU_L	5079186
Surr: Toluene-d8	94.3		% 82-118	1	06/21/09 6:14	LU_L	5079186

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Client Sample ID: Trip Blank (SPL) **Collected:** 06/16/2009 0:00 **SPL Sample ID:** 09060979-07

Site: Farmington, 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		5	1	06/21/09 5:48	LU_L	5089044
Ethylbenzene	ND		5	1	06/21/09 5:48	LU_L	5089044
Toluene	ND		5	1	06/21/09 5:48	LU_L	5089044
m,p-Xylene	ND		5	1	06/21/09 5:48	LU_L	5089044
o-Xylene	ND		5	1	06/21/09 5:48	LU_L	5089044
Xylenes,Total	ND		5	1	06/21/09 5:48	LU_L	5089044
Surr: 1,2-Dichloroethane-d4	94.4		% 78-116	1	06/21/09 5:48	LU_L	5089044
Surr: 4-Bromofluorobenzene	99.7		% 74-125	1	06/21/09 5:48	LU_L	5089044
Surr: Toluene-d8	92.3		% 82-118	1	06/21/09 5:48	LU_L	5089044

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - 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

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

Quality Control Report

Conoco Phillips

COP Federal Com #15

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 09060979
Lab Batch ID: R276174

Method Blank

RunID: K_090620E-5079181 Units: ug/L
Analysis Date: 06/21/2009 3:59 Analyst: LU_L

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	91.9	78-116
Surr: 4-Bromofluorobenzene	100.0	74-125
Surr: Toluene-d8	92.7	82-118

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09060979-01A	MW-1
09060979-02A	MW-2
09060979-03A	MW-3
09060979-04A	MW-4
09060979-05A	MW-5
09060979-06A	DUPLICATE
09060979-07A	Trip Blank (SPL)

Laboratory Control Sample (LCS)

RunID: K_090620E-5079180 Units: ug/L
Analysis Date: 06/21/2009 3:32 Analyst: LU_L

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	20.6	103	74	123
Ethylbenzene	20.0	20.0	100	72	127
Toluene	20.0	18.5	92.3	74	126
m,p-Xylene	40.0	41.4	104	71	129
o-Xylene	20.0	21.4	107	74	130
Xylenes,Total	60.0	62.8	105	71	130
Surr: 1,2-Dichloroethane-d4	50.0	49.3	98.7	78	116
Surr: 4-Bromofluorobenzene	50.0	50.9	102	74	125
Surr: Toluene-d8	50.0	46.4	92.9	82	118

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

Sample Spiked: 09060979-02
RunID: K_090620E-5079183 Units: ug/L
Analysis Date: 06/21/2009 4:53 Analyst: LU_L

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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.

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

Quality Control Report

Conoco Phillips

COP Federal Com #15

Analysis: Volatile Organics by Method 8260B **WorkOrder:** 09060979
Method: SW8260B **Lab Batch ID:** R276174

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	23.3	104	20	24.0	107	2.74	22	70	124
Ethylbenzene	ND	20	21.5	98.4	20	22.4	103	4.22	20	76	122
Toluene	ND	20	17.6	87.8	20	18.3	91.5	4.13	24	80	117
m,p-Xylene	5.06	40	44.5	98.5	40	46.2	103	3.88	20	69	127
o-Xylene	ND	20	20.6	103	20	21.3	106	3.37	20	84	114
Xylenes,Total	5.06	60	65.1	100	60	67.5	104	3.72	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	46.7	93.3	50	49.7	99.3	6.22	30	78	116
Surr: 4-Bromofluorobenzene	ND	50	50.2	100	50	51.6	103	2.76	30	74	125
Surr: Toluene-d8	ND	50	45.3	90.5	50	46.7	93.3	3.05	30	82	118

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
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
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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.

Sample Receipt Checklist

And

Chain of Custody

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

Sample Receipt Checklist

Workorder:	**09060979**	Received By:	**T_B**
Date and Time Received:	**6/18/2009 9:30:00 AM**	Carrier name:	**Fedex-Standard Overnight**
Temperature:	**0.5°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?** 1. Trip blank received not listed on chain.	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: Cardenas, Erica
Contact Date & Time: 6/25/2009
Client Name Contacted: Kelly Blanchard

Non Conformance Issues: 1. Logged on hold pending client contact.

Client Instructions: Per client - run BTEX on TB.

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 327800
0906097 9
page _____ of _____

Client Name: Tetra Tech
Address: 6121 Indian School Rd. NE Suite 200
City Albuquerque State NM Zip 87110
Phone/Fax: 505-237-8440
Client Contact: Kelly Blanchard Email: Kelly.blanchard@tetratech.com
Project Name/No.:
Site Name: Federal #15
Site Location: Farmington, NM
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore 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
MW-1	6/16/09	1420		X	W	V	40	1	3	X
MW-2	6/16/09	1450		X	W	V	40	1	3	X
MW-3	6/16/09	1300		X	W	V	40	1	3	X
MW-4	6/16/09	1330		X	W	V	40	1	3	X
MW-5	6/16/09	1350		X	W	V	40	1	3	X
Duplicate	6/16/09	1600		X	W	V	40	1	3	X

Client/Consultant Remarks:

Laboratory remarks:

Intact? Y N
Ice? Y N
Temp: 5.5°C

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):

PM review (initial):

	date	time	
1. Relinquished by Sampler:	6/17/09	1630	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	6/18/09	9:30	6. Received by Laboratory: Jamesha Brown

☐ 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