

3R - 084

**MONITORING
REPORT**

04/10/2008



TETRA TECH, INC.

RECEIVED

2008 APR 11 PM 1 57

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

April 10, 2008

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

**RE: (1) ConocoPhillips Nell Hall #1 2007 Semi-Annual Report
Flora Vista, New Mexico
(2) ConocoPhillips Shephard & Kelsey #1 2007 Quarterly Report
Bloomfield, New Mexico
(3) ConocoPhillips Federal #15 2007 Annual Report
Farmington, New Mexico
(4) ConocoPhillips B Com #1E 2007 Annual Report
Farmington, New Mexico**

Dear Mr. von Gonten:

Enclosed please find a copy of the above-referenced documents as compiled by Tetra Tech, Inc., formerly Maxim Technologies, for these Farmington area sites.

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

Sincerely,

A handwritten signature in cursive script that reads "Kelly E. Blanchard".

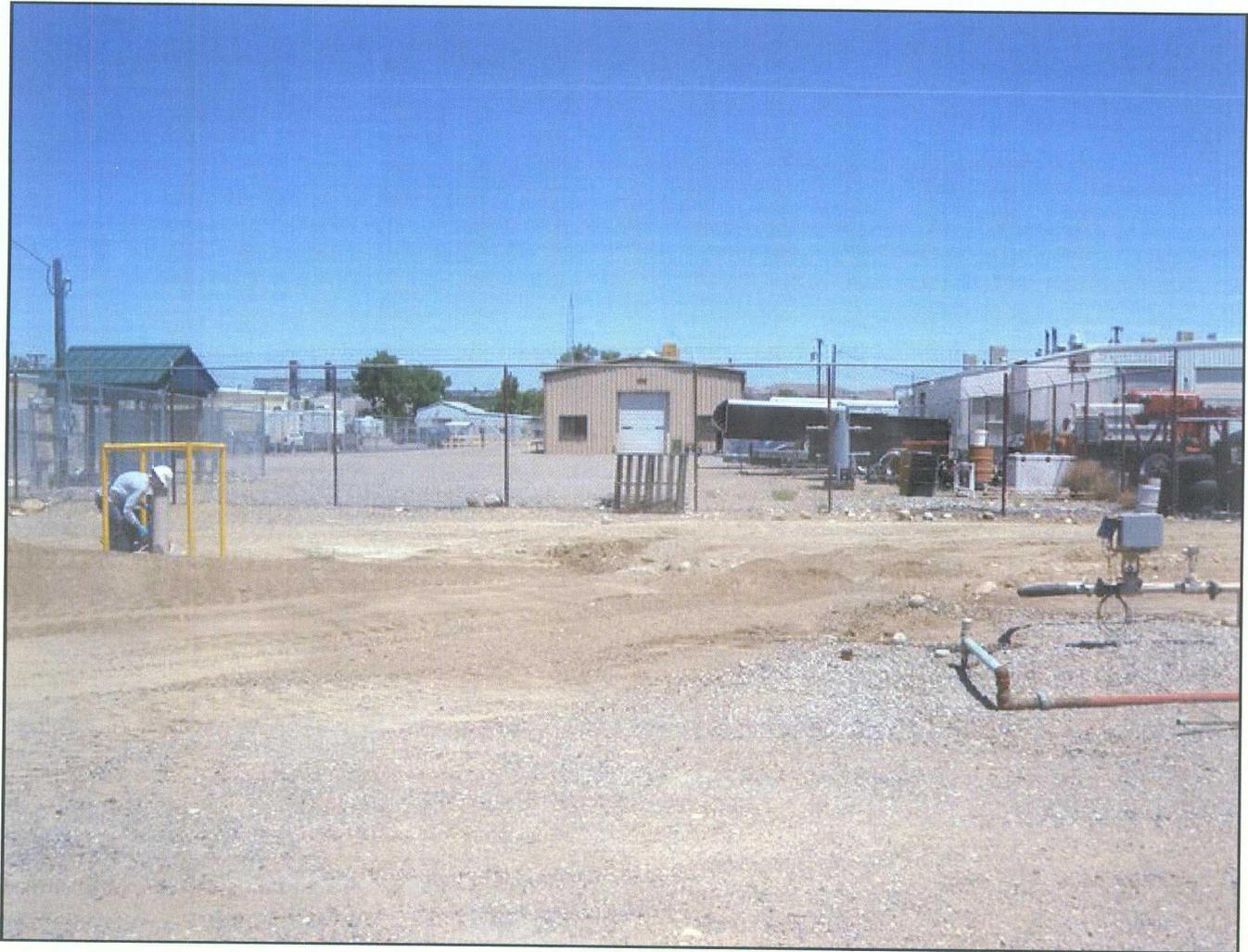
Kelly E. Blanchard
Project Manager/Geologist

Enclosures (4)

3R084

**2007 ANNUAL MONITORING REPORT
FORMER CONOCOPHILLIPS
B COM #I E
FARMINGTON, NM
OCD # 3R0084**

RECEIVED
2008 APR 11 PM 1




ConocoPhillips



TETRA TECH, INC.

January 2008

**2007 ANNUAL GROUNDWATER MONITORING
REPORT**

**FORMER CONOCOPHILLIPS
B COM #1E
FARMINGTON, NEW MEXICO
OCD # 3R0084**

Prepared for:



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. 86900042.100

January 23, 2008

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2007 ANNUAL GROUNDWATER MONITORING REPORT FORMER CONOCOPHILLIPS B COM #1E, FARMINGTON, NEW MEXICO

1.0 INTRODUCTION

This report presents the results of groundwater monitoring completed on November 7, 2007, at the Former ConocoPhillips B Com #1E Site in Farmington, New Mexico, by Tetra Tech, Inc. (Tetra Tech).

The site is located on the southeast side of Farmington, New Mexico near the corner of Murray Road and Carlton Road. The site consists of a gas production well and associated equipment and installations. The location and general features of the B Com #1E site are shown on Figures 1 and 2, respectively.

During March 1997 a site assessment was conducted by On Site Technologies (On Site). Four test pits were advanced and soil samples were collected. Total petroleum hydrocarbon (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) impacts were confirmed north of the production storage tank and west of the separator/dehydrator pit. The impacts were described by On Site as limited to former unlined pit areas, traveling straight down with little lateral migration, due to the porous and permeable subsurface soils. The soils were noncohesive consisting of well rounded gravel and cobbles with sand. The gravel and cobbles were screened out and placed back into the pits with fertilizer to enhance bioremediation.

Six monitoring wells (MW-1 through MW-6) were subsequently installed at the site. Light non-aqueous phase liquid (LNAPL) was discovered in MW-1 and recovery began. During May 2004, Souder Miller and Associates (Souder Miller) placed active and passive skimmers in MW-1 to determine the best method of recovery. The passive skimmer collected a small amount of free product. The active skimmer did not collect any free product. At that time Souder Miller determined that an active skimmer was not a viable method of free product recovery in MW-1. Souder Miller proposed passive skimming or periodic hand bailing as a viable recovery method. The plan for future work at the site includes annual monitoring of MW-1 and MW-6 for BTEX and biodegradation parameters. When MW-1 reaches compliance, quarterly monitoring of MW-1 will commence and all wells will be monitored in the final quarter to verify site closure requirements have been met.

On February 20, 2007, May 15, 2007, August 21, 2007, and November 7, 2007 Tetra Tech was onsite to supervise the pumping of MW-1 using a vacuum truck. Approximately 220, 364, 684, and 651 gallons of fluid were removed from MW-1, respectively, and disposed of in a ConocoPhillips waste water tank located at the Federal Com #15 site in Farmington, New Mexico.

On November 7, 2007, Tetra Tech personnel were onsite to conduct a groundwater sampling event and supervise the pumping of MW-1 using a vacuum truck. Groundwater elevation measurements were collected from MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. Groundwater samples from MW-1 and MW-6 were collected and shipped to Lancaster Laboratories in Lancaster, Pennsylvania to be analyzed for the presence of BTEX, sulfate, nitrate, phosphate, and ferrous iron.

2.0 METHODOLOGY AND RESULTS

The following describes the groundwater monitoring methodology, analytical, and pumping results:

2.1 Groundwater Monitoring Methodology

On November 7, 2007 groundwater elevation measurements were recorded in monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. Table 1 presents the well specifications, groundwater levels, and the top of casing survey results used to calculate the groundwater elevations at the site. A groundwater elevation contour map is presented as Figure 3.

Approximately 3 gallons of water, approximately three well volumes, were purged from MW-6 with a 1.5-inch dedicated, clear, poly-vinyl, disposable bailer. MW-1 was pumped with a vacuum truck for approximately 3 hours before being sampled. The purged water collected was placed in a 55-gallon steel drum onsite for later disposal at a ConocoPhillips approved facility. Groundwater samples were collected using 1.5-inch dedicated, clear, poly-vinyl, disposable bailers. The groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain of custody documentation to Lancaster Laboratories located in Lancaster, Pennsylvania. The samples were analyzed for the presence of BTEX by Environmental Protection Agency (EPA) Method 8260B, sulfate by EPA Method 300.0, nitrate by EPA Method 353.2, phosphate by EPA Method 365.1, and ferrous iron by Standard Method (SM) 18, 3500-Fe B Modified.

2.2 Groundwater Sampling Analytical Results

During the November 2007 sampling event the samples collected from monitor well MW-6 were below laboratory detection limits for BTEX. The samples collected from monitor well MW-1 contained concentrations of benzene and xylenes below the New Mexico Water Quality Control Commission (NMWQCC) standards. The sulfate results for MW-1 and MW-6 were below the NMWQCC standards. Ferrous iron was above the NMWQCC standard in MW-1 and MW-6. The NMWQCC has not established a standard for phosphate in groundwater. Table 2 presents the laboratory analytical results. The laboratory analytical reports are included as Appendix B.

2.3 Groundwater Pumping

On February 20, 2007, May 15, 2007, August 21, 2007, and November 7, 2007, Tetra Tech was onsite to supervise the pumping of MW-1 with a vacuum truck. Riley Industrial Services operated the vacuum truck during these events. Riley Industrial Services is located in Farmington, New Mexico. During each event the vacuum truck was equipped with a 4-inch flex hose that was hooked to the top of the well.

During the February event approximately 220 gallons of fluid were recovered. During the May event, approximately 364 gallons of fluid were recovered. During the August event, approximately 684 of fluid

were recovered. During the November event approximately 651 gallons of fluid were recovered. All fluid was disposed of in a ConocoPhillips waste water tank.

3.0 CONCLUSIONS

Historically, monitoring well MW-6, located downgradient of MW-1, has not contained BTEX concentrations higher than the NMWQCC standards. Monitoring well MW-1 BTEX results have decreased significantly since December 1998, and with only an LNAPL sheen that is sometimes detectable. During the pumping events, the absorbent sock in MW-1 will be monitored and changed if necessary. Tetra Tech proposes conducting groundwater pumping events at MW-1 for two additional quarters, during March and June 2008. Groundwater sampling will be conducted in June 2008. If BTEX levels remain below NMWQCC standards, Tetra Tech will begin quarterly sampling for site closure. Subsequent groundwater sampling events will take place in September and December 2008. Reports will follow within 90 days of receiving analytical data from the laboratory. If this is not OCD's understanding of the plan for future work, please contact Kelly Blanchard at Tetra Tech within 30 business days at 505-237-8440 or kelly.blanchard@tetratech.com.

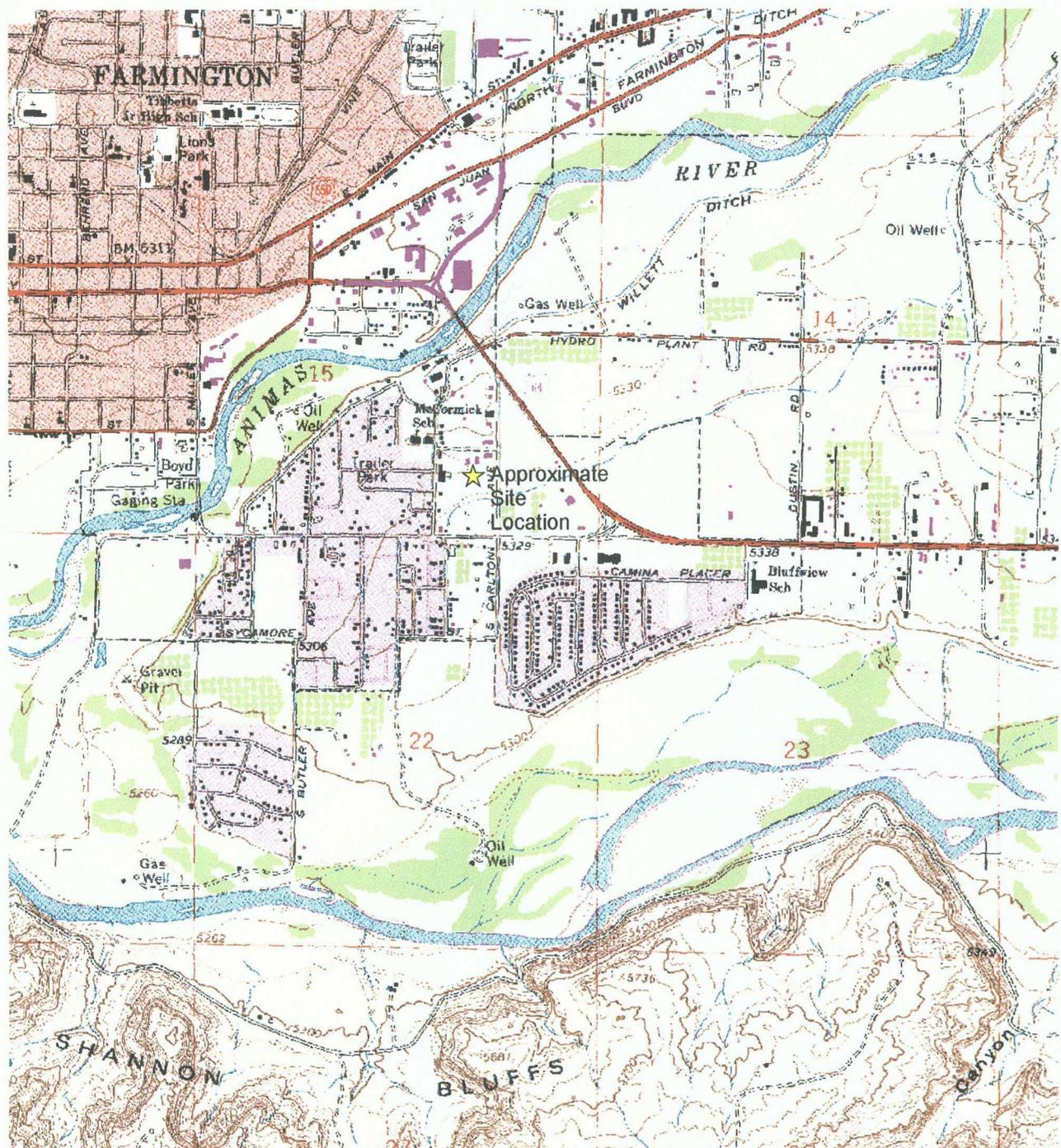


Figure 1. Site Location Map

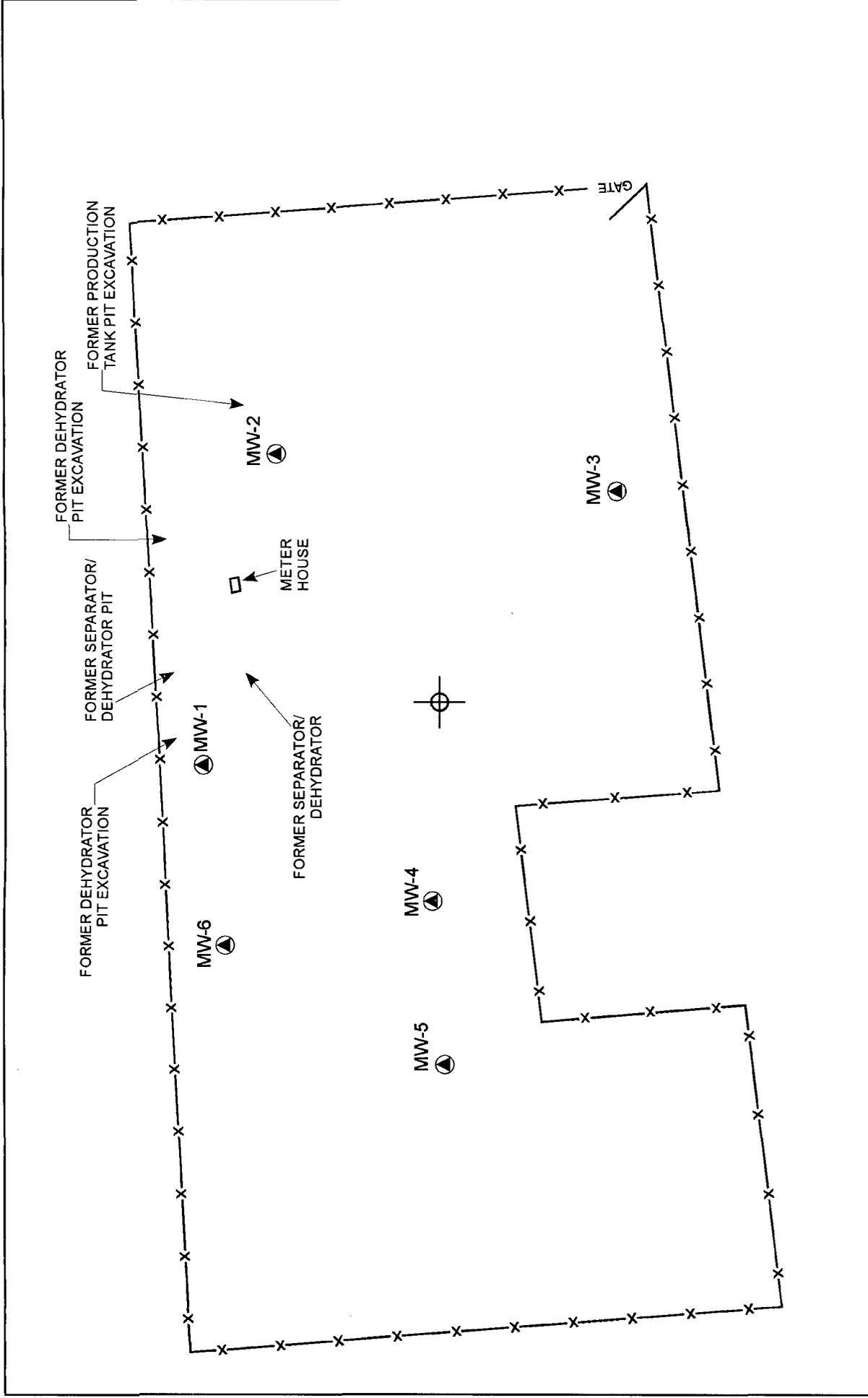
FORMER CONOCOPHILLIPS B COM #1 E

SW 1/4 SE 1/4 SECTION 25 T 29N R 13W
 Farmington South, New Mexico USGS Quadrangle

★ = Approximate Site Location



TETRA TECH, INC.



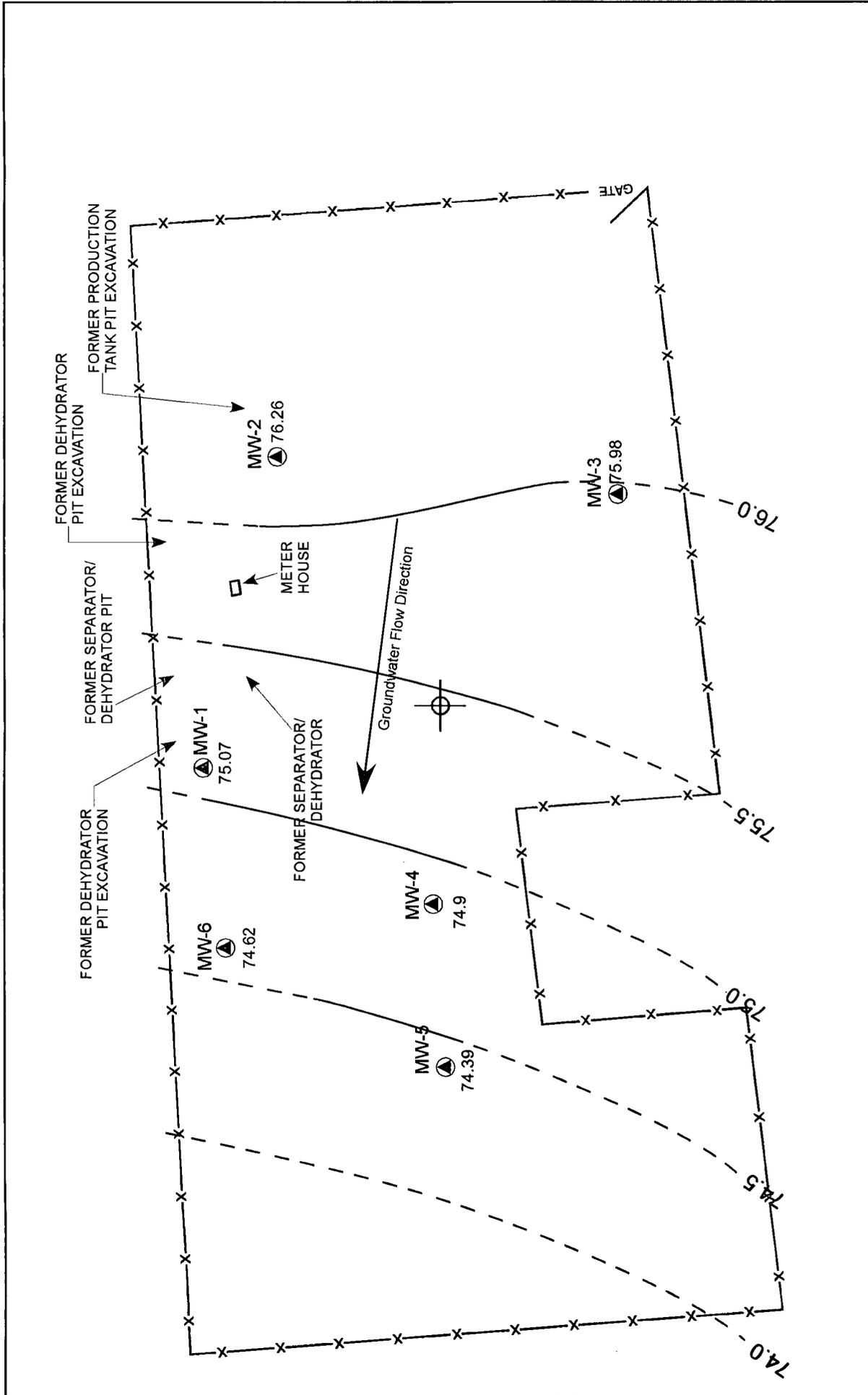
LEGEND

- ⊕ WELLHEAD
- ⊙ MONITORING WELL
- x- FENCE



TETRA TECH, INC.

FIGURE 2:
SITE LAYOUT MAP
CONOCOPHILLIPS
B COM #1 E



LEGEND

-  WELLHEAD
-  MONITORING WELL
-  FENCE

FIGURE 3:
GROUNDWATER ELEVATION
CONTOUR MAP (11/7/2007)
CONOCOPHILLIPS
B COM #1 E




 GROUNDWATER ELEVATION
CONTOUR (0.5 FT. INTERVAL)

Table 1. ConocoPhillips B Com #1E Monitoring Well Specifications and Groundwater Elevation Table

Well ID	Total Depth (ft. bgs)	Screen Interval (ft)	*Elevation (ft.) (TOC)	Date Measured	Groundwater Level (ft TOC)	Relative Groundwater Elevation (ft TOC)
MW-1	34.09	19.09 - 34.09	101.37	5/9/2005	28.3	73.07
				10/19/2005	25.12	76.25
				11/14/2006	26.48	74.89
MW-2	33.72	18.72 - 33.72	101.57	11/7/2007	26.3	75.07
				5/9/2005	27.28	74.29
				10/19/2005	24.3	77.27
MW-3	32.44	17.44 - 32.44	102.1	11/14/2006	26.08	75.49
				11/7/2007	25.31	76.26
				5/9/2005	27.81	74.29
MW-4	32.72	17.72 - 32.72	101.4	10/19/2005	25.06	77.04
				11/14/2006	26.75	75.35
				11/7/2007	26.12	75.98
MW-5	34.09	19.09 - 34.09	100.52	5/9/2005	28.73	72.67
				10/19/2005	25.62	75.78
				11/14/2006	27.02	74.38
MW-6	34.02	19.02 - 34.02	102.14	11/7/2007	26.5	74.9
				5/9/2005	28.5	72.02
				10/19/2005	25.3	75.22
MW-6	34.02	19.02 - 34.02	102.14	11/14/2006	27.67	72.85
				11/7/2007	26.13	74.39
				5/9/2005	29.94	72.2
MW-6	34.02	19.02 - 34.02	102.14	10/19/2005	26.7	75.44
				11/14/2006	27.91	74.23
				11/7/2007	27.52	74.62

ft. = Feet
 TOC = Top of casing
 bgs = below ground surface
 * Relative Elevation

Table 2. ConocoPhillips B Com #1E Groundwater Analytical Results Summary

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Phosphate (mg/L)
	2/19/1998	210	34	370	2,044	NS	NS	NS	NS
	6/12/1998	3" free product in bailer - not sampled							
	9/15/1998	free product - not sampled							
MW-1	12/29/1998	350	BDL	420	2,800	NS	NS	NS	NS
	1/22/2004	free product - not sampled							
	5/9/2005	17	<0.7	74	250	<0.40	77.8	14.9	0.42
	10/19/2005	34	<1.0	170	1400	0.15	39.9	15	0.43
	11/14/2006	18	<0.7	190	1600	<0.015	145	8.8	4.4
	11/7/2007	7	<0.7	120	250	<0.015	38.4	6.4	0.57
	9/15/1998	BDL	BDL	BDL	BDL	NS	NS	NS	NS
MW-6	12/29/1998	BDL	BDL	BDL	BDL	NS	NS	NS	NS
	3/3/1999	BDL	BDL	BDL	BDL	NS	NS	NS	NS
	6/15/1999	BDL	BDL	BDL	BDL	NS	NS	NS	NS
	9/15/1999	BDL	0.7	1.1	BDL	NS	NS	NS	NS
	12/14/1999	BDL	1.8	0.7	1.9	NS	NS	NS	NS
	1/22/2004	BDL	BDL	BDL	BDL	NS	NS	NS	NS
	5/9/2005	<0.5	<0.7	<0.8	<0.8	<0.4	97	15.9	7
NMWQCC Standards	10/19/2005	<0.5	<0.7	<0.8	<0.8	5.4	52.6	1.4	1.7
	11/14/2006	<0.5	<0.7	<0.8	1	<0.015	159	5.8	2
	11/7/2007	<0.5	<0.7	<0.8	<0.8	<0.015	112	3	0.99

NMWQCC = New Mexico Water Quality Control Commission

mg/L = milligrams per liter (parts per million)

µg/L = micrograms per liter (parts per billion)

NE=Not Established

NA = Not Analyzed

BDL = Below laboratory detection limits

<0.7 = Below laboratory detection limit of 0.7 ug/L



WATER SAMPLING FIELD FORM

Project Name B Com #1E

Page 2 of 2

Project No. 1158690042

Site Location Farmington, NM

Site/Well No. MW-1

Coded/
Replicate No. Duplicate

Date 11/7/2007

Weather sunny, 70°

Time Sampling
Began 7:30

Time Sampling
Completed 11:45

EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface Approx. 3.5'

MP Elevation 101.37*

Total Sounded Depth of Well Below MP 34.09

Water-Level Elevation 75.07*

Held _____ Depth to Water Below MP 26.3

Diameter of Casing 2"

Wet _____ Water Column in Well 7.79

Gallons Pumped/Bailed
Prior to Sampling _____

Gallons per Foot 0.16

Gallons in Well 1.2464

Sampling Pump Intake Setting
(feet below land surface) N/A

Purging Equipment Vacuum truck pumped water for 3.75 hours, used 1.5" polyvinyl disposable bailer to collect sample

SAMPLING DATA/FIELD PARAMETERS

Time	Temperature	pH	Conductivity	TDS in ppm	Other

Sampling Equipment 1.5" Polyvinyl Disposable Bailer

Constituents Sampled	Container Description	Preservative
<u>BTEX, Sulfate, Nitrate, Phosphate,</u>	_____	_____
<u>Ferrous Iron</u>	_____	_____
_____	_____	_____

Remarks product thickness of 0.02 feet on water; * means Relative Elevation; well pumped - parameters not measured

Sampling Personnel Mitch Crooks, 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



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared for:

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1064824. Samples arrived at the laboratory on Friday, November 09, 2007. The PO# for this group is 4509596737 and the release number is LAUCKE.

<u>Client Description</u>	<u>Lancaster Labs Number</u>
MW-6 Grab Water Sample	5208424
MW-1 Grab Water Sample	5208425
Duplicate Grab Water Sample	5208426
Trip Blank Water Sample	5208427

ELECTRONIC Tetra Tech
COPY TO

Attn: Kelly Blanchard



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17606-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancastarlabs.com

Questions? Contact your Client Services Representative
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

A handwritten signature in cursive script that reads "Christine Dulaney".

Christine Dulaney
Senior Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. 5208424 WW Group No. 1064824

MW-6 Grab Water Sample
Site# 6079
Farmington B Com #1E, NM

Collected: 11/07/2007 09:10

Account Number: 11288

Submitted: 11/09/2007 09:10
Reported: 04/03/2008 at 12:21
Discard: 05/04/2008

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

FARM6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	0.050	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	2.0	5.0	mg/l	50
The reporting limit(s) for the analyte(s) above was raised due to matrix interference.							
00224	Chloride	16887-00-6	55.7	4.0	8.0	mg/l	20
00228	Sulfate	14808-79-8	112.	6.0	20.0	mg/l	20
00345	Total Phosphorus as PO4 water	14265-44-2	0.99	0.25	0.31	mg/l	1
08344	Ferrous Iron	n.a.	3.0	0.080	1.0	mg/l	10
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00219	Nitrite Nitrogen	EPA 353.2	1	11/09/2007 10:57	Nicole M Kepley	1
00220	Nitrate Nitrogen	EPA 353.2	1	11/16/2007 18:20	Courtney A Shoff	50
00224	Chloride	EPA 300.0	1	11/19/2007 16:05	Ashley M Heckman	20
00228	Sulfate	EPA 300.0	1	11/19/2007 16:05	Ashley M Heckman	20
00345	Total Phosphorus as PO4 water	EPA 365.1	1	11/15/2007 18:22	Courtney A Shoff	1
08344	Ferrous Iron	SM20 3500-Fe B modified	1	11/10/2007 06:50	Daniel S Smith	10
02300	GC/MS Volatiles	SW-846 8260B	1	11/12/2007 12:44	Matthew F Regan	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/12/2007 12:44	Matthew F Regan	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	11/13/2007 12:10	Nancy J Shoop	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. 5208425 WW Group No. 1064824
**MW-1 Grab Water Sample
Site# 6079
Farmington B Com #1E, NM**

Collected: 11/07/2007 11:45

Account Number: 11288

 Submitted: 11/09/2007 09:10
 Reported: 04/03/2008 at 12:21
 Discard: 05/04/2008

 ConocoPhillips
 PO Box 2200
 Bartlesville OK 74005

FARM1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	0.050	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	2.0	5.0	mg/l	50
The reporting limit(s) for the analyte(s) above was raised due to matrix interference.							
00224	Chloride	16887-00-6	56.4	4.0	8.0	mg/l	20
00228	Sulfate	14808-79-8	38.4	1.5	5.0	mg/l	5
00345	Total Phosphorus as PO4 water	14265-44-2	0.57	0.25	0.31	mg/l	1
08344	Ferrous Iron	n.a.	6.4	0.16	2.0	mg/l	20
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	7.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	120.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	250.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00219	Nitrite Nitrogen	EPA 353.2	1	11/09/2007 10:58	Nicole M Kepley	1
00220	Nitrate Nitrogen	EPA 353.2	1	11/16/2007 18:21	Courtney A Shoff	50
00224	Chloride	EPA 300.0	1	11/19/2007 17:21	Ashley M Heckman	20
00228	Sulfate	EPA 300.0	1	11/16/2007 21:52	Ashley M Heckman	5
00345	Total Phosphorus as PO4 water	EPA 365.1	1	11/15/2007 18:23	Courtney A Shoff	1
08344	Ferrous Iron	SM20 3500-Fe B modified	1	11/10/2007 06:50	Daniel S Smith	20
02300	GC/MS Volatiles	SW-846 8260B	1	11/12/2007 13:08	Matthew F Regan	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/12/2007 13:08	Matthew F Regan	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	11/13/2007 12:10	Nancy J Shoop	1

*-=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. 5208426 WW Group No. 1064824

Duplicate Grab Water Sample
Site# 6079
Farmington B Com #1E, NM

Collected: 11/07/2007 12:00

Account Number: 11288

Submitted: 11/09/2007 09:10
Reported: 04/03/2008 at 12:22
Discard: 05/04/2008

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

FARFD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	7.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	120.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	250.	0.8	5.	ug/l	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	GC/MS Volatiles	SW-846 8260B	1	11/12/2007 13:32	Matthew F Regan	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/12/2007 13:32	Matthew F Regan	1

*=This limit was used in the evaluation of the final result



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. 5208427 WW Group No. 1064824

Trip Blank Water Sample
Site# 6079
Farmington B Com #1E, NM

Collected: 11/07/2007 12:10

Account Number: 11288

Submitted: 11/09/2007 09:10
Reported: 04/03/2008 at 12:22
Discard: 05/04/2008

ConocoPhillips
PO Box 2200
Bartlesville OK 74005

FARTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
02300	GC/MS Volatiles						
05401	Benzene	71-43-2	N.D.	0.5	5.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	5.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	5.	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

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CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	GC/MS Volatiles	SW-846 8260B	1	11/12/2007 12:21	Matthew F Regan	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/12/2007 12:21	Matthew F Regan	1

*This limit was used in the evaluation of the final result

Quality Control Summary

 Client Name: ConocoPhillips
 Reported: 04/03/08 at 12:22 PM

Group Number: 1064824

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 07313105101A Nitrite Nitrogen	N.D.	0.015	0.050	mg/l	97		90-110		
Batch number: 07314834401A Ferrous Iron	N.D.	0.0080	0.10	mg/l	99		95-105		
Batch number: 07317110101A Total Phosphorus as PO4 water	N.D.	0.25	0.31	mg/l	104		90-110		
Batch number: 07320106101B Nitrate Nitrogen	N.D.	0.040	0.10	mg/l	103		90-110		
Batch number: 07320196101A Chloride	N.D.	0.20	0.40	mg/l	98		90-110		
Sulfate	N.D.	0.30	1.0	mg/l	96		89-110		
Batch number: T073161AA Benzene	N.D.	0.5	5.	ug/l	105		78-119		
Toluene	N.D.	0.7	5.	ug/l	98		85-115		
Ethylbenzene	N.D.	0.8	5.	ug/l	87		82-119		
Xylene (Total)	N.D.	0.8	5.	ug/l	90		83-113		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>BKG MAX</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 07313105101A Nitrite Nitrogen	110		90-110		1.9	2.1	11	20
Batch number: 07314834401A Ferrous Iron	100	97	86-110	2	4	6.4	6.2	2 (1)
Batch number: 07317110101A Total Phosphorus as PO4 water	139*		90-110		4.0	4.6	13*	3
Batch number: 07320106101B Nitrate Nitrogen	90		90-110		2.2	2.0	11* (1)	2
Batch number: 07320196101A Chloride	97		90-110		55.7	53.8	3	3
Sulfate	94		90-110		112.	110.	2	3

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

 Client Name: ConocoPhillips
 Reported: 04/03/08 at 12:22 PM

Group Number: 1064824

Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: T073161AA	Sample number(s): 5208424-5208427 UNSPK: P208166								
Benzene	116	111	83-128	4	30				
Toluene	108	107	83-127	1	30				
Ethylbenzene	97	95	82-129	1	30				
Xylene (Total)	98	97	82-130	1	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: GC/MS Volatiles
 Batch number: T073161AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5208424	108	97	95	105
5208425	107	95	99	107
5208426	105	97	98	111
5208427	105	95	97	105
Blank	107	97	94	103
LCS	103	100	100	108
MS	104	99	99	107
MSD	102	100	103	110
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers	Inorganic Qualifiers
A TIC is a possible aldol-condensation product	B Value is <CRDL, but ≥IDL
B Analyte was also detected in the blank	E Estimated due to interference
C Pesticide result confirmed by GC/MS	M Duplicate injection precision not met
D Compound quantitated on a diluted sample	N Spike amount not within control limits
E Concentration exceeds the calibration range of the instrument	S Method of standard additions (MSA) used for calculation
J Estimated value	U Compound was not detected
N Presumptive evidence of a compound (TICs only)	W Post digestion spike out of control limits
P Concentration difference between primary and confirmation columns >25%	* Duplicate analysis not within control limits
U Compound was not detected	+ Correlation coefficient for MSA <0.995
X,Y,Z Defined in case narrative	

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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