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ConocoPhillips

Mr. Jim Griswold
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

January 30, 2017

Re: NMOCD Case No. 3R- 430, 2016 Annual Groundwater Assessment and Monitoring Report

Dear Mr. Griswold:

Enclosed is the 2016 Annual Groundwater Monitoring Report for the Wilmuth No. 1 site. This report, prepared by GHD Services, Inc., contains the results of groundwater monitoring activities in 2016.

Please let me know if you have any questions.

Sincerely,

Joseph B. Crouch

J. Brady Crouch

Enc

2016 Annual Groundwater Monitoring Report

ConocoPhillips Wilmuth No. 1
San Juan County, New Mexico
API# 30-045-10370
NMOCD# 3R-430

ConocoPhillips Company

GHD | 6121 Indian School Rd NE Suite 200 Albuquerque New Mexico 87110 USA

074937| 8MN00| Report No 7 | December 21, 2016

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Appendix A Groundwater Laboratory Analytical Reports

1. Introduction

This report presents the results of annual groundwater monitoring conducted during 2016 by GHD Services, Inc. (GHD) at the ConocoPhillips Company (ConocoPhillips) Wilmuth No. 1 remediation site (hereafter referred to as the "Site"). The Site is located north of Aztec, New Mexico on private land leased to ConocoPhillips and is situated in Section 26, Township 31N, Range 11W, of San Juan County, New Mexico. Geographical coordinates for the Site are 36.864823° North and 107.964516° West. A Site vicinity map and Site plan are included as Figures 1 and 2, respectively.

1.1 Background

The Wilmuth No. 1 natural gas well was spudded in 1958 by El Paso Natural Gas Company. Meridian Oil, Inc., a subsidiary of Burlington Resources, Inc. (Burlington), assumed operation of the well on November 1, 1986. ConocoPhillips acquired Burlington on March 31, 2006.

A release of approximately 22 barrels (bbls) of produced water occurred within the bermed area surrounding the produced water tank on May 17, 2001. Twenty bbls were later recovered. A release of condensate occurred on December 17, 2002 from a corrosion hole in the condensate tank. ConocoPhillips excavated a total of 85 cubic yards of impacted soil that was disposed of JFJ landfarm in Aztec, New Mexico.

ConocoPhillips personnel notified the New Mexico Oil Conservation Division (NMOCD) in December 2009 of groundwater seeping into two separate areas that were undergoing excavation to remove stained soil discovered during line tie in procedures. Four groundwater monitoring wells were subsequently installed under the supervision of Tetra Tech in April 2010. A generalized geologic cross section was produced using boring logs from monitoring well installations at the Site and is presented as Figure 3. Tetra Tech began quarterly sampling immediately following development of the wells by collecting a baseline round of groundwater samples on April 8, 2010.

On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, New Mexico. CRA merged with GHD June 1, 2015.

The Site natural gas well was plugged and abandoned in March 2014. Associated equipment, including the separator, produced water and condensate tanks, and pump jack, were also removed. A metering station does remain at the Site.

The most recent sampling event took place on September 13, 2016. A historical timeline is presented in Table 1.

2. Monitoring Summary, Sampling Methodology, and analytical Results

2.1 Monitoring Summary

Groundwater elevation measurements were obtained for monitoring wells MW-1, MW-2, MW-3, and MW-4 using an oil/water interface probe on September 13th, 2016. Groundwater elevations are detailed in Table 2. A groundwater potentiometric surface map based on the September 2016 data is presented as Figure 4. The groundwater flow direction derived for the Site is to the southwest and is consistent with historical data.

2.2 Groundwater Sampling Methodology

During the 2016 annual groundwater monitoring event, Site monitoring wells were purged of at least three casing volumes of groundwater using 1.5 inch diameter, polyethylene, dedicated bailers. While bailing each well, groundwater parameter data, including temperature, pH, conductivity, dissolved oxygen, and oxidation reduction potential were collected using a YSI 556 multi parameter Sonde. Field parameters are summarized on Table 3.

Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Pace Analytical Services, Inc. of Lenexa, Kansas for analysis. Samples were analyzed for total dissolved solids (TDS) by SM 2540C and dissolved manganese by EPA Method 6010.

2.3 Groundwater Analytical Results

The New Mexico Water Quality Control Commission (NMWQCC) regulates groundwater quality in New Mexico Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC).

The NMWQCC groundwater quality standards for dissolved manganese and TDS are 0.2 mg/L and 1,000 mg/L, respectively.

Groundwater laboratory results from the 2016 sampling event are discussed below:

September 2016

- Dissolved Manganese The concentrations of dissolved manganese in groundwater samples collected from MW 1, MW 2, MW 3, and MW 4 were 1.11 mg/L, 1.74 mg/L, 1.86 mg/L, and 2.01 mg/L, respectively.
- TDS – The concentration of TDS in the groundwater sample collected from all wells were below the NMWQCC standard.

Laboratory analytical results are summarized in Table 4. The corresponding laboratory analytical reports, including quality control summaries, are included in Appendix A.

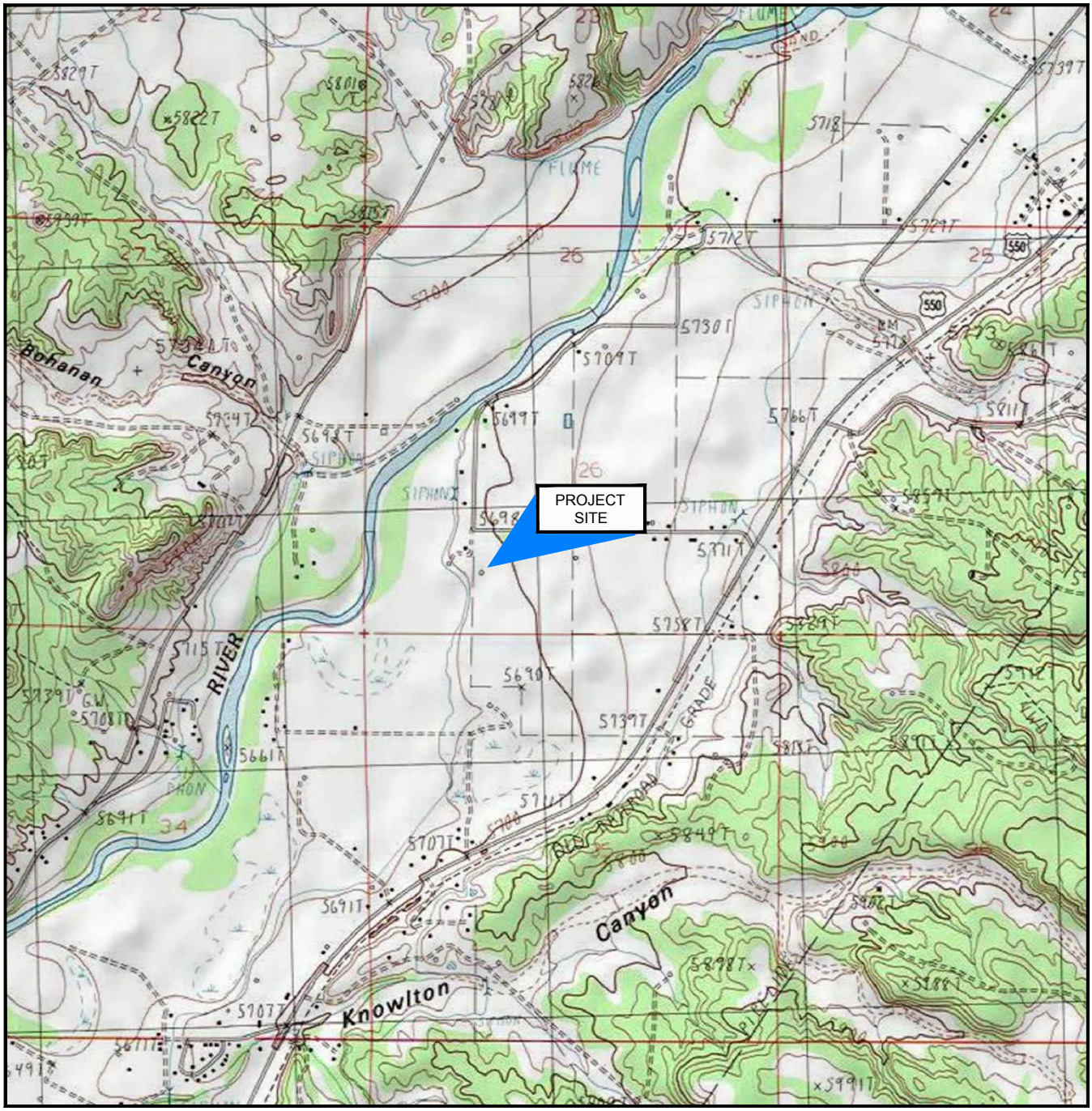
3. Conclusions and Recommendations

Groundwater samples from Site monitoring wells have continually exceeded the NMWQCC groundwater quality standard for dissolved manganese, which has remained stable over time across the Site. Groundwater samples from all Site monitoring wells have intermittently exceeded the standard for TDS.

GHD recommends installation of a temporary, upgradient monitoring well, to be located northeast of the Site in the cultivated field between the Site and the nearby residence. A groundwater sample will be collected from the well and analyzed to help determine if inorganic constituents detected in Site wells are at background concentrations.

It is also recommended that annual sampling of Site monitoring wells continue. The next groundwater monitoring event at the Site is scheduled for September 2017.

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"CEDAR HILL AND AZTEC, NEW MEXICO"

N

0 1000 2000ft

Figure 1

SITE VICINITY MAP
WILMUTH No. 1 NATURAL GAS WELL SITE
SECTION 26, T31N-R11W, SAN JUAN COUNDY, NEW MEXICO
ConocoPhillips Company

GHD

074937-95(006)GN-DL001_TOPO NOV 11/2015

ConocoPhillips high resolution aerial imagery 2008.

Figure 2

SITE PLAN
WILMUTH No. 1 NATURAL GAS WELL SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

GHD

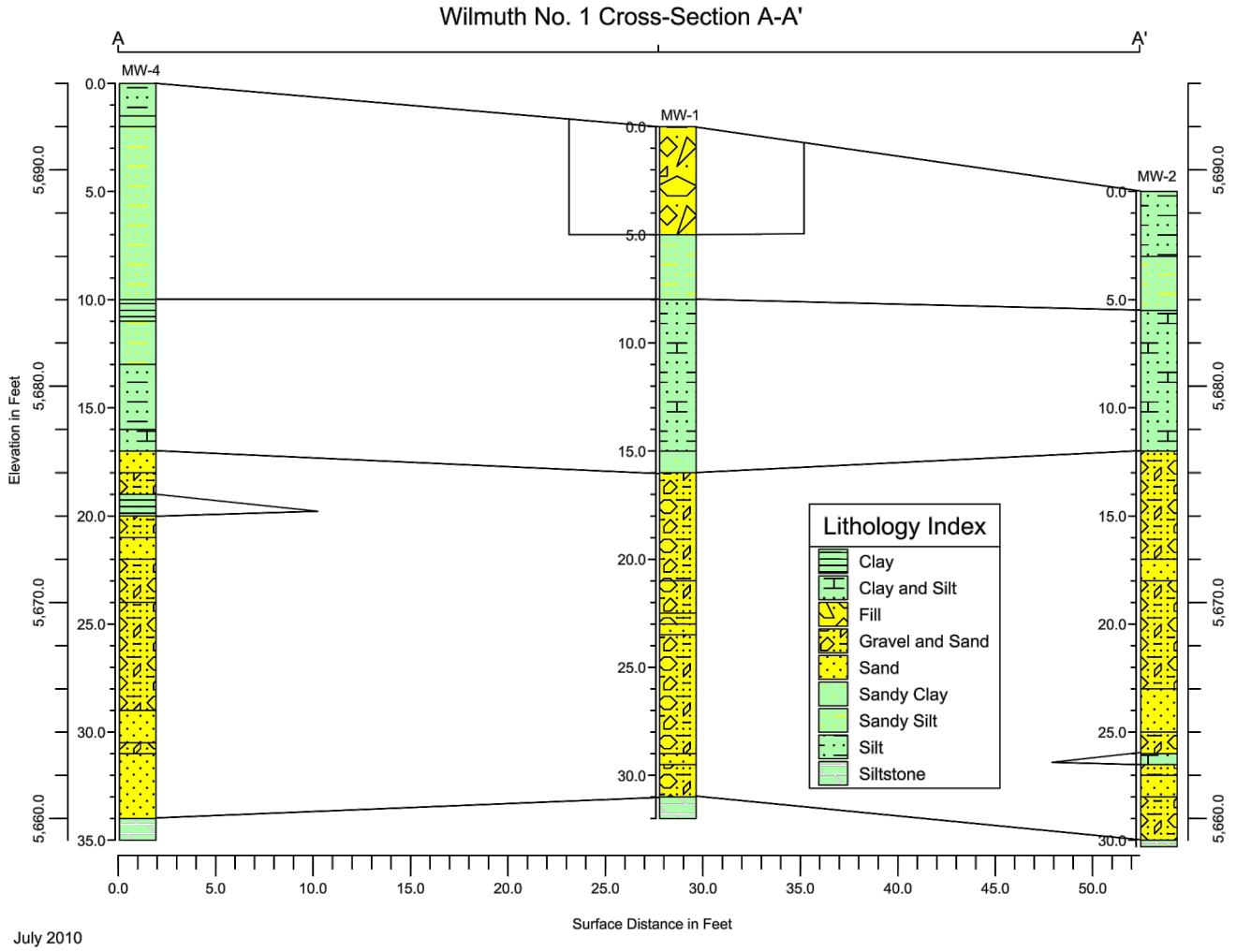


Figure 3

GEOLOGICAL CROSS SECTION
WILMUTH NO. 1 NATURAL GAS WELL SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

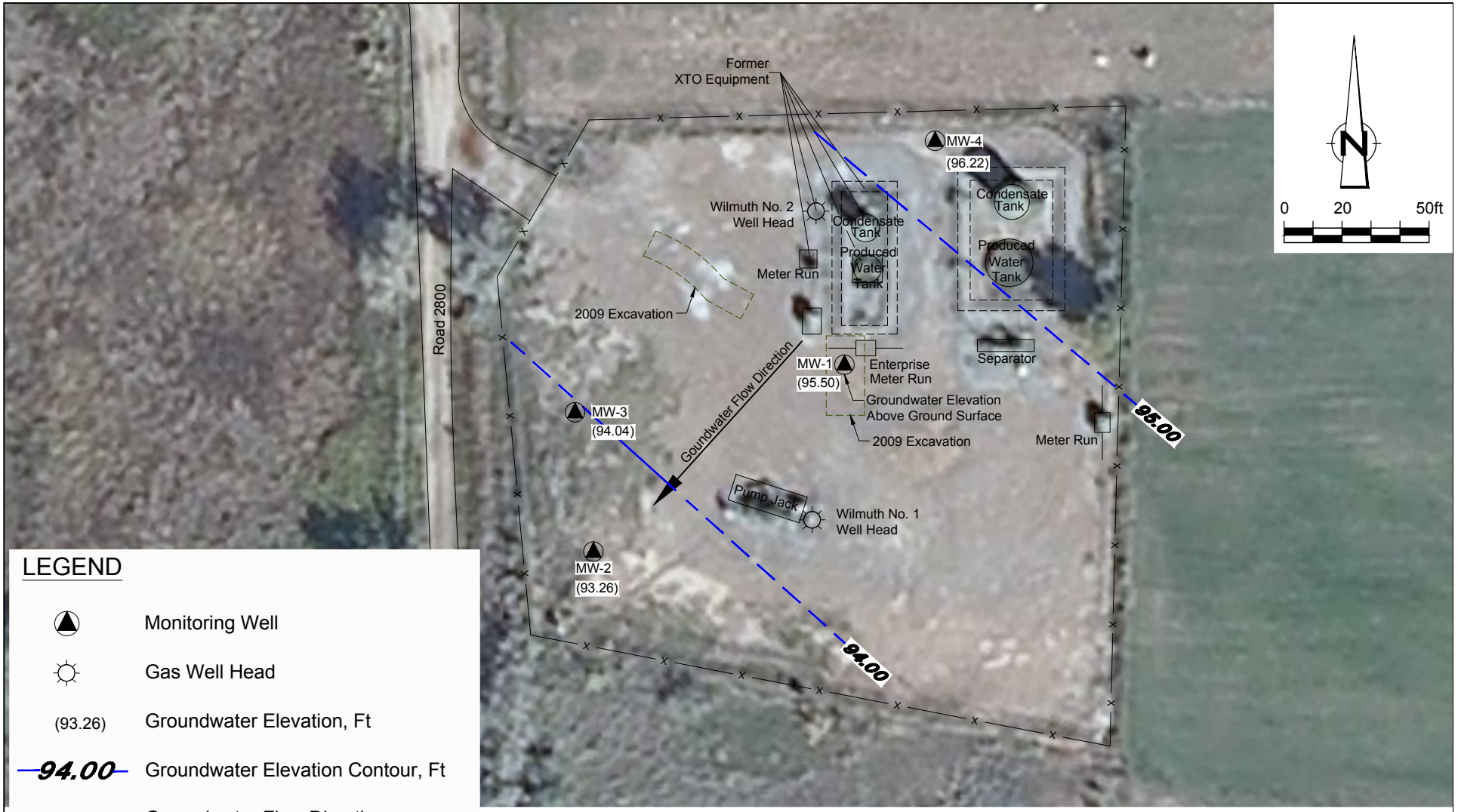


Figure 4

SEPTEMBER 2016 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

GHD

074937-95(007)GN-DL004_GG DEC 22, 2016

Figure 5

SEPTEMBER 2016 GROUNDWATER CONCENTRATION MAP
WILMUTH No. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

GHD

Tables

Table 1

Site History Timeline
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
July 24, 1958 to August 11, 1958	Production Well Completion	Well spudded and completed by El Paso Natural Gas Company.
November 1, 1986	Change of Operator	Operator changed from El Paso Natural Gas Company to Meridian Oil Inc. (a subsidiary of Burlington Resources, Inc.)
May 17, 2001	Release	Due to a broken dump arm, 22 barrels (bbls) of produced water were released within the bermed area around the produced water tank. 20 bbls were reported to be recovered.
December 17, 2002	Release	A corrosion hole in the bottom of a steel pit tank that collected fluids from the separator and condensate tank drain allowed an unknown volume of produced water and condensate to leak onto the ground. All fluids were contained inside the tank berm. Impacted gravel and soils were excavated and disposed of at JFJ Landfarm. Excavation dimensions were approximately 30 feet by 25 feet by 3 feet for a total of 85 cubic yards.
May 21, 2004	Workover Pit Proposal Approved	A lined workover pit was approved by Denny Faust of the NMOCD as detailed in Burlington Resources general pit construction plan dated April 26, 2004 which was also approved by the NMOCD.
March 31, 2006	Change of Operator	ConocoPhillips Company completed acquisition of Burlington Resources.
December 22 and 23, 2009	Potential for Groundwater Impacts Discovered	ConocoPhillips company notified Brandon Powell and Kelly Roberts of the NMOCD about groundwater seeping into two excavated areas on Site where discolored soils had been found during line tie-in procedures. The type, volume, and origin of the initial release was unknown. Groundwater samples were collected from the two areas and analyzed by Envirotech Inc. of Farmington, NM for benzene, toluene, ethylbenzene and total xylenes (BTEX), total petroleum hydrocarbons (TPH) and chloride. Analytical results indicated that BTEX and TPH are below NMWQCC groundwater standards; however, chloride was present at a concentration above the standard of 250 mg/L with a concentration of 2,500 mg/L in the area of the excavation and a concentration of 950 mg/L in an trench associated with line tie-in procedures. Soil samples were collected from the same trench and groundwater samples were collected from where discolored soil was present. The soil was analyzed by Envirotech for BTEX, TPH and Chloride. Analytical results for all soil samples were below NMOCD recommended soil action levels.
January 7, 2010	NMOCD Correspondence	A C-141 Release Notification and Corrective Action form was submitted to the NMOCD by ConocoPhillips.
April 5, 2010 through April 7, 2010	Groundwater Monitoring Well Installation and Baseline Soil Sampling	Tetra Tech supervised the installation of 4 groundwater Monitor Wells; MW-1, MW-2, MW-3 and MW-4, by Enviro-Drill Inc. of Albuquerque, NM. Each well was installed with 25 feet of screen. MW-1, MW-2 and MW-3 were all set at 30 feet below ground surface. MW-4 was set at 35 feet below ground surface. A confining layer of gray siltstone was found at depth in each of the four boring locations. Soil samples were collected from all four soil borings and analyzed for major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. Analytical results for all soil samples were below NMOCD recommended soil action levels.

Table 1

Site History Timeline
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
April 8, 2010	Baseline Groundwater Sampling	Tetra Tech conducted the initial groundwater sampling from Site Monitor Wells, MW-1, MW-2, MW-3 and MW-4. A baseline suite was completed including major ions, NMWQCC dissolved metals, SVOCs , VOCs including BTEX, diesel range organics, and gasoline range organics. All four Site monitor wells were below NMWQCC standards for BTEX constituents. All four wells were above the standard for dissolved manganese. MW-1, MW-2 and MW-4 were above the standard for total dissolved solids (TDS). MW-1 and MW-4 were also above the standard for sulfate.
June 9, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
September 20, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
December 16, 2010	Quarterly Groundwater Monitoring Event	Forth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
March 16, 2011	Quarterly Groundwater Monitoring Event	Fifth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitor wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitor wells were below NMWQCC standards for chloride, sulfate and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. The sample collected from MW-1 was above the standard for TDS.
June 15, 2011	Transfer of Consulting Responsibilities	Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 22, 2011	Quarterly Groundwater Monitoring Event	Sixth quarterly groundwater sampling was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, chloride, sulfate, and TDS. All four Site monitoring wells were below NMWQCC standards for chloride, sulfate and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese. The sample collected from MW-1 was above the standard for TDS.
October 12, 2011	Quarterly Groundwater Monitoring Event	Seventh quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, and TDS. All four Site monitoring wells were below NMWQCC standards for TDS and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese.

Table 1

Site History Timeline
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
December 14, 2011	Quarterly Groundwater Monitoring Event	Eighth quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for BTEX, dissolved manganese, and TDS. All four Site monitoring wells were below NMWQCC standards for TDS and BTEX constituents. Samples collected from all four Site wells were above the standard for dissolved manganese.
March 7, 2012	Quarterly Groundwater Monitoring Event	Ninth quarterly groundwater sampling event was conducted by CRA. BTEX analysis was discontinued following the December 2011 sampling event. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
June 6, 2012	Quarterly Groundwater Monitoring Event	Tenth quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 19, 2012	Quarterly Groundwater Monitoring Event	11th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 12, 2012	Quarterly Groundwater Monitoring Event	12th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese. TDS below standard for 6th consecutive quarterly event.
March 18, 2013	Quarterly Groundwater Monitoring Event	13th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. MW-1 was above NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
June 14, 2013	Quarterly Groundwater Monitoring Event	14th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 12, 2013	Quarterly Groundwater Monitoring Event	15th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 12, 2013	Quarterly Groundwater Monitoring Event	16th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.

Table 1

Site History Timeline
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Date/Time Period	*Event/Action*	*Description/Comments*
April 3, 2014	Quarterly Groundwater Monitoring Event	17th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for TDS. All four Site monitoring wells were below NMWQCC standards for TDS.
June 19, 2014	Quarterly Groundwater Monitoring Event	18th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 15, 2014	Quarterly Groundwater Monitoring Event	19th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
December 15, 2014	Quarterly Groundwater Monitoring Event	20th quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
March 16, 2015	Quarterly Groundwater Monitoring Event	21st quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. MW-1 exceeded the NMWQCC standard for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
June 15, 2015	Quarterly Groundwater Monitoring Event	22nd quarterly groundwater sampling event was conducted by CRA. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. All four Site monitoring wells were below NMWQCC standards for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
September 14, 2015	Quarterly Groundwater Monitoring Event	23rd quarterly groundwater sampling event was conducted by GHD. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. MW-3 was above the NMWQCC standard for TDS. Samples collected from all four Site wells were above the standard for dissolved manganese.
November 30, 2015	Quarterly Groundwater Monitoring Event	24th quarterly groundwater sampling event was conducted by GHD. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS. Samples collected from all four Site wells were above the NMWQCC standard for dissolved manganese.
September 13, 2016	Annual Groundwater Monitoring Event	GHD conducted annual groundwater sampling event. Samples were collected from all Site monitoring wells and analyzed for dissolved manganese and TDS.

Notes:

NMOCD = New Mexico Oil Conservation Division
NMWQCC = New Mexico Water Quality Control Commission

Table 2

Monitoring Well Specifications and Groundwater Elevations
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	*Total Depth (feet bgs)*	*Top of Casing Elevation**	*Screen Interval (feet bgs)*	*Date Measured*	*Depth to Groundwater (feet below TOC)*	*Relative Water Level**
MW-1	30	95.8	4.5 - 29.5	4/8/2010	5.21	90.59
				6/9/2010	1.94	93.86
				9/20/2010	1.51	94.29
				12/16/2010	3.31	92.49
				3/16/2011	4.98	90.82
				6/22/2011	2.45	93.35
				10/12/2011	0[(1)]	95.80[(1)]
				12/14/2011	2.62	93.18
				3/7/2012	4.36	91.44
				6/6/2012	1.11	94.69
				9/19/2012	0[(1)]	95.80[(1)]
				12/12/2012	2.56	93.24
				3/18/2013	4.52	91.28
				6/14/2013	0.90	94.90
				9/12/2013	0.21	95.59
				12/12/2013	2.70	93.10
				4/3/2014	4.28	91.52
				6/19/2014	0.88	94.92
				9/15/2014	0.40	95.40
				12/15/2014	3.20	92.60
				3/16/2015	5.05	90.75
				6/15/2015	2.22	93.58
				9/14/2015	0.18	95.62
				11/30/2015	3.21	92.59
				9/14/2016	0.30	95.50
MW-2	30	95.8	4.5 - 29.5	4/8/2010	6.48	89.32
				6/9/2010	3.68	92.12
				9/20/2010	3.28	92.52
				12/16/2010	4.83	90.97
				3/16/2011	6.31	89.49
				6/22/2011	4.11	91.69
				10/12/2011	1.88	93.92
				12/14/2011	4.25	91.55
				3/7/2012	5.67	90.13
				6/6/2012	3.05	92.75
				9/19/2012	2.05	93.75
				12/12/2012	4.31	91.49
				3/18/2013	5.96	89.84
				6/14/2013	2.96	92.84
				9/12/2013	2.41	93.39
				12/12/2013	4.43	91.37
				4/3/2014	5.84	89.96
				6/19/2014	2.88	92.92
				9/15/2014	2.50	93.30
				12/15/2014	4.99	90.81
				3/16/2015	6.60	89.20
				6/15/2015	4.13	91.67
				9/14/2015	2.45	93.35
				11/30/2015	5.00	90.80
				9/14/2016	2.54	93.26

Table 2

Monitoring Well Specifications and Groundwater Elevations
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	*Total Depth (feet bgs)*	*Top of Casing Elevation**	*Screen Interval (feet bgs)*	*Date Measured*	*Depth to Groundwater (feet below TOC)*	*Relative Water Level**
MW-3	30	96.32	4.5 - 29.5	4/8/2010	6.37	89.95
				6/9/2010	3.39	92.93
				9/20/2010	3.02	93.30
				12/16/2010	4.65	91.67
				3/16/2011	6.20	90.12
				6/22/2011	3.91	92.41
				10/12/2011	1.55	94.77
				12/14/2011	4.04	92.28
				3/7/2012	5.59	90.73
				6/6/2012	2.75	93.57
				9/19/2012	1.71	94.61
				12/12/2012	4.09	92.23
				3/18/2013	5.89	90.43
				6/14/2013	2.72	93.60
				9/12/2013	2.13	94.19
				12/12/2013	4.27	92.05
				4/3/2014	5.73	90.59
				6/19/2014	2.26	94.06
				9/15/2014	2.35	93.97
				12/15/2014	4.88	91.44
				3/16/2015	6.56	89.76
				6/15/2015	3.95	92.37
				9/14/2015	2.21	94.11
				11/30/2015	4.87	91.45
				9/14/2016	2.28	94.04
MW-4	35	98.7	9.5 - 34.5	4/8/2010	9.68(2)	89.02
				6/9/2010	4.41	94.29
				9/20/2010	3.78	94.92
				12/16/2010	5.70	93.00
				3/16/2011	7.44	91.26
				6/22/2011	4.81	93.89
				10/12/2011	2.05	96.65
				12/14/2011	5.01	93.69
				3/7/2012	6.83	91.87
				6/6/2012	3.34	95.36
				9/19/2012	2.11	96.59
				12/12/2012	4.93	93.77
				3/18/2013	6.96	91.74
				6/14/2013	3.10	95.60
				9/12/2013	2.42	96.28
				12/12/2013	5.08	93.62
				4/3/2014	6.59	92.11
				6/19/2014	2.85	95.85
				9/15/2014	2.55	96.15
				12/15/2014	5.60	93.10
				3/16/2015	7.50	91.20
				6/15/2015	4.49	94.21
				9/14/2015	2.39	96.31
				11/30/2015	5.57	93.13
				9/14/2016	2.48	96.22

Notes:
TOC = Top of casing
bgs = Below ground surface
* = Elevation relative to an arbitrary reference elevation of 100 feet
(1) = Water flowing up and out of well casing.
(2) = Anomalous data point

Table 3

Field Parameters Summary
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	3/16/2015	14.10	6.26	1.100	1650	--	224.0	9.50
	6/15/2015	13.23	7.04	0.677	1041	1.97	33.6	10.75
	9/14/2015	16.15	5.45	0.821	1263	2.11	84.6	12.00
	11/30/2015	13.50	7.28	0.887	1365	3.08	109.5	10.50
	9/13/2016	15.92	6.99	0.856	1317	0.95	-263.3	11.50
MW-2	3/16/2015	13.20	6.82	0.800	1310	--	251.0	11.75
	6/15/2015	13.81	6.90	0.693	1068	2.46	24.8	13.00
	9/14/2015	14.94	6.82	0.805	1239	1.95	117.3	13.75
	11/30/2015	12.51	7.15	0.804	1237	1.90	46.5	12.50
	9/13/2016	13.67	7.05	0.807	1242	1.42	-191.3	13.50
MW-3	3/16/2015	13.00	6.96	0.800	1220	--	270.0	12.00
	6/15/2015	13.16	6.05	0.699	1075	1.68	66.4	13.25
	9/14/2015	14.16	6.75	0.802	1234	1.27	96.3	14.00
	11/30/2015	12.50	7.16	0.793	1221	1.94	1.8	12.75
	9/13/2016	13.42	7.17	0.806	1240	0.78	-330.4	13.50
MW-4	3/16/2015	13.30	7.01	0.800	1250	--	274.0	12.00
	6/15/2015	13.55	6.83	0.707	1087	1.14	46.2	13.00
	9/14/2015	14.07	7.07	0.793	1220	1.80	109.0	14.00
	11/30/2015	12.47	7.19	0.790	1215	1.54	-33.0	12.50
	9/13/2016	13.72	7.15	0.808	1242	0.78	-338.4	13.50

Notes:

TDS = total dissolved solids
DO = dissolved oxygen
ORP = oxidation-reduction potential

Table 4

Groundwater Laboratory Analytical Results Summary
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Manganese (dissolved) (mg/L)	Total dissolved solids (TDS) (mg/L)
	NMWQCC Groundwater Quality Standards			**0.01**	**0.75**	**0.75**	**0.62**	**250**	**600**	**0.2**	**1000**
MW-1	MW-1	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	143	**879**	**3.03**	**1780**
	MW-1 Duplicate	4/8/2010	(Duplicate)	< 0.001	0.0011	< 0.001	0.001	--	--	--	--
	MW-1	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	26.9	375	**1.08**	**1190**
	MW-1 Duplicate	6/9/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	30.0	425	**0.933**	**1020**
	MW-1 Duplicate	9/20/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	381	**0.896**	**1010**
	MW-1 Duplicate	12/16/2010	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	MW-1	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	26.0	499	**2.36**	**1200**
	MW-1 Duplicate	3/16/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	--	--
	GW-74937-062211-PG-04	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	21.6	585	**2.32**	**1100**
	GW-74937-062211-PG-05	6/22/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--
	GW-074937-101211-CM-009	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.04**	939
	GW-074937-101211-CM-010	10/12/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--
	GW-074937-121411-CB-MW-1	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**0.972**	913
	GW-074937-121411-CB-DUP	12/14/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**--**	--
	GW-074937-3712-CB-MW-1	3/7/2012	(orig)	--	--	--	--	--	--	**0.955**	980
	GW-074937-060612-CB-MW-1	6/6/2012	(orig)	--	--	--	--	--	--	**0.886**	851
	GW-074937-091912-JP-MW-1	9/19/2012	(orig)	--	--	--	--	--	--	**0.915**	853
	GW-074937-091912-JP-DUP	9/19/2012	(Duplicate)	--	--	--	--	--	--	**0.939**	--
	GW-074937-121212-CM-MW-1	12/12/2012	(orig)	--	--	--	--	--	--	**0.979**	927
	GW-074937-031813-CM-MW-1	3/18/2013	(orig)	--	--	--	--	--	--	**1.120**	**1070**
	074937-061413-JK-MW1	6/14/2013	(orig)	--	--	--	--	--	--	**0.930**	831
	GW-074937-091213-CM-MW-1	9/12/2013	(orig)	--	--	--	--	--	--	**0.921**	942
	GW-074937-091213-CM-DUP	9/12/2013	(Duplicate)	--	--	--	--	--	--	**--**	870
	GW-074937-121213-CM-MW-1	12/12/2013	(orig)	--	--	--	--	--	--	**1.10**	930
	GW-074937-040314-CM-MW-1	4/3/2014	(orig)	--	--	--	--	--	--	--	979
	GW-074937-040314-CK-MW-1	6/19/2014	(orig)	--	--	--	--	--	--	**0.96**	885
	GW-074937-091514-CB-MW-1	9/15/2014	(orig)	--	--	--	--	--	--	**1.04**	952
	GW-074937-121514-CM-MW-1	12/15/2014	(orig)	--	--	--	--	--	--	**1.03**	817
	GW-074937-031615-CM-MW-1	3/16/2015	(orig)	--	--	--	--	--	--	**1.39**	**1060**
	GW-074937-061515-CB-MW-1	6/15/2015	(orig)	--	--	--	--	--	--	**1.01**	772
	GW-074937-061515-CB-DUP	6/15/2015	(Duplicate)	--	--	--	--	--	--	**1.03**	--
	GW-074937-091415-CK-MW-1	9/14/2015	(orig)	--	--	--	--	--	--	**1.04**	903
	GW-074937-091415-CK-DUP	9/14/2015	(Duplicate)	--	--	--	--	--	--	**1.03**	851
	GW-074937-113015-CB-MW-1	11/30/2015	(orig)	--	--	--	--	--	--	**1.18**	900
	GW-074937-091316-CM-MW-1	9/13/2016	(orig)							**1.11**	906

Table 4

Groundwater Laboratory Analytical Results Summary
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Manganese (dissolved) (mg/L)	Total dissolved solids (TDS) (mg/L)
MW-2	MW-2	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	27.7	533	**2.48**	**1120**
	MW-2	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	19.8	337	**1.66**	**1070**
	MW-2	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.4	304	**0.822**	**1130**
	MW-2	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	281	**1.37**	**1410**
	MW-2	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.1	280	**1.57**	858
	GW-74937-062211-PG-02	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	18.5	324	**1.51**	718
	GW-074937-101211-CM-007	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.49**	743
	GW-074937-121411-CB-MW-2	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.47**	812
	GW-074937-3712-CB-MW-2	3/7/2012	(orig)	--	--	--	--	--	--	**1.62**	857
	GW-074937-060612-CB-MW-2	6/6/2012	(orig)	--	--	--	--	--	--	**1.26**	688
	GW-074937-091912-JP-MW-2	9/19/2012	(orig)	--	--	--	--	--	--	**1.39**	736
	GW-074937-121212-CM-MW-2	12/12/2012	(orig)	--	--	--	--	--	--	**1.11**	709
	GW-074937-031813-CM-MW-2	3/18/2013	(orig)	--	--	--	--	--	--	**1.56**	804
	074937-061413-JK-MW2	6/14/2013	(orig)	--	--	--	--	--	--	**1.38**	699
	GW-074937-091213-CM-MW-2	9/12/2013	(orig)	--	--	--	--	--	--	**1.450**	760
	GW-074937-121213-CM-MW-2	12/12/2013	(orig)	--	--	--	--	--	--	**1.30**	747
	GW-074937-040314-CM-MW-2	4/3/2014	(orig)	--	--	--	--	--	--	--	819
	GW-074937-061914-CK-MW-2	6/19/2014	(orig)	--	--	--	--	--	--	**1.3**	825
	GW-074937-091514-CB-MW-2	9/15/2014	(orig)	--	--	--	--	--	--	**1.53**	817
	GW-074937-121514-CM-MW-2	12/15/2014	(orig)	--	--	--	--	--	--	**1.31**	778
	GW-074937-031615-CM-MW-2	3/16/2015	(orig)	--	--	--	--	--	--	**1.69**	856
	GW-074937-031615-CM-DUP	3/16/2015	(Duplicate)	--	--	--	--	--	--	**1.71**	831
	GW-074937-061515-CB-MW-2	6/15/2015	(orig)	--	--	--	--	--	--	**1.88**	793
	GW-074937-091415-CK-MW-2	9/14/2015	(orig)	--	--	--	--	--	--	**1.85**	876
	GW-074937-113015-CB-MW-2	11/30/2015	(orig)	--	--	--	--	--	--	**1.68**	796
	GW-074937-091316-CM-MW-2	9/13/2016	(orig)							**1.74**	857

Table 4

Groundwater Laboratory Analytical Results Summary
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Manganese (dissolved) (mg/L)	Total dissolved solids (TDS) (mg/L)
MW-3	MW-3	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	19.2	259	**1.38**	930
	MW-3	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	18.5	241	**1.43**	769
	MW-3	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.3	271	**0.736**	830
	MW-3	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	265	**1.33**	**1200**
	MW-3	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	18.1	263	**1.57**	896
	GW-74937-062211-PG-01	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	19.2	324	**1.71**	726
	GW-074937-101211-CM-008	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.67**	716
	GW-074937-121411-CB-MW-3	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.56**	713
	GW-074937-3712-CB-MW-3	3/7/2012	(orig)	--	--	--	--	--	--	**1.69**	739
	GW-074937-060612-CB-MW-3	6/6/2012	(orig)	--	--	--	--	--	--	**1.74**	709
	GW-074937-091912-JP-MW-3	9/19/2012	(orig)	--	--	--	--	--	--	**1.60**	723
	GW-074937-121212-CM-MW-3	12/12/2012	(orig)	--	--	--	--	--	--	**1.57**	709
	GW-074937-121212-CM-DUP	12/12/2012	(Duplicate)	--	--	--	--	--	--	**--**	717
	GW-074937-031813-CM-MW-3	3/18/2013	(orig)	--	--	--	--	--	--	**1.58**	770
	GW-074937-031813-CM-DUP	3/18/2013	(Duplicate)	--	--	--	--	--	--	--	766
	074937-061413-JK-MW3	6/14/2013	(orig)	--	--	--	--	--	--	**1.64**	711
	GW-074937-091213-CM-MW-3	9/12/2013	(orig)	--	--	--	--	--	--	**1.650**	764
	GW-074937-121213-CM-MW-3	12/12/2013	(orig)	--	--	--	--	--	--	**1.50**	756
	GW-074937-040314-CM-MW-3	4/3/2014	(orig)	--	--	--	--	--	--	--	764
	GW-074937-040314-CM-DUP	4/3/2014	(Duplicate)	--	--	--	--	--	--	--	783
	GW-074937-061914-CK-MW-3	6/19/2014	(orig)	--	--	--	--	--	--	**1.5**	820
	GW-074937-091514-CB-MW-3	9/15/2014	(orig)	--	--	--	--	--	--	**1.79**	795
	GW-074937-121514-CM-MW-3	12/15/2014	(orig)	--	--	--	--	--	--	**1.82**	782
	GW-074937-121514-CM-DUP	12/15/2014	(Duplicate)	--	--	--	--	--	--	--	786
	GW-074937-031615-CM-MW-3	3/16/2015	(orig)	--	--	--	--	--	--	**1.83**	808
	GW-074937-061515-CB-MW-3	6/15/2015	(orig)	--	--	--	--	--	--	**1.90**	777
	GW-074937-091415-CK-MW-3	9/14/2015	(orig)	--	--	--	--	--	--	**1.98**	**1170**
	GW-074937-113015-CB-MW-3	11/30/2015	(orig)	--	--	--	--	--	--	**1.91**	793
	GW-074937-091316-CM-MW-3	9/13/2016	(orig)							**1.86**	847

Table 4

Groundwater Laboratory Analytical Results Summary
ConocoPhillips Company
Wilmuth No. 1
San Juan County, New Mexico

Well ID	*Sample ID*	*Date*	*Sample Type*	*Benzene (mg/L)*	*Toluene (mg/L)*	*Ethylbenzene (mg/L)*	*Xylenes (total) (mg/L)*	*Chloride (mg/L)*	*Sulfate (mg/L)*	*Manganese (dissolved) (mg/L)*	*Total dissolved solids (TDS) (mg/L)*
MW-4	MW-4	4/8/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	40	**918**	**3.94**	**1900**
	MW-4	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	29.6	542	**3.44**	**1380**
	MW-4	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	22.4	445	**2.59**	**1160**
	MW-4	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	464	**2.85**	**1350**
	MW-4	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	20.6	385	**2.18**	970
	GW-74937-062211-PG-03	6/22/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	22.1	408	**2.31**	814
	GW-074937-101211-CM-006	10/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**2.13**	779
	GW-074937-121411-CB-MW-4	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.94**	776
	GW-074937-3712-CB-MW-4	3/7/2012	(orig)	--	--	--	--	--	--	**1.70**	772
	GW-074937-060612-CB-MW-4	6/6/2012	(orig)	--	--	--	--	--	--	**1.46**	662
	GW-074937-091912-JP-MW-4	9/19/2012	(orig)	--	--	--	--	--	--	**1.90**	771
	GW-074937-121212-CM-MW-4	12/12/2012	(orig)	--	--	--	--	--	--	**1.42**	731
	GW-074937-031813-CM-MW-4	3/18/2013	(orig)	--	--	--	--	--	--	**1.54**	766
	074937-061413-JK-MW4	6/14/2013	(orig)	--	--	--	--	--	--	**1.74**	676
	GW-074937-091213-CM-MW-4	9/12/2013	(orig)	--	--	--	--	--	--	**1.810**	822
	GW-074937-121213-CM-MW-4	12/12/2013	(orig)	--	--	--	--	--	--	**1.20**	776
	GW-074937-121213-CM-DUP	12/12/2013	(Duplicate)	--	--	--	--	--	--	**1.20**	795
	GW-074937-040314-CM-MW-4	4/3/2014	(orig)	--	--	--	--	--	--	--	788
	GW-074937-061914-CK-MW-4	6/19/2014	(orig)	--	--	--	--	--	--	**1.6**	805
	GW-074937-091514-CB-MW-4	9/15/2014	(orig)	--	--	--	--	--	--	**1.82**	813
	GW-074937-121514-CM-MW-4	12/15/2014	(orig)	--	--	--	--	--	--	**1.82**	783
	GW-074937-031615-CM-MW-4	3/16/2015	(orig)	--	--	--	--	--	--	**1.70**	811
	GW-074937-061515-CB-MW-4	6/15/2015	(orig)	--	--	--	--	--	--	**2.16**	800
	GW-074937-091415-CK-MW-4	9/14/2015	(orig)	--	--	--	--	--	--	**2.03**	839
	GW-074937-113015-CB-MW-4	11/30/2015	(orig)	--	--	--	--	--	--	**1.91**	809
	GW-074937-113015-CB-DUP	11/30/2015	(Duplicate)	--	--	--	--	--	--	**1.82**	--
	GW-074937-091316-CM-MW-4	9/13/2016	(orig)							**2.01**	865
	GW-074937-091316-CM-MW-DUP	9/13/2016	(Duplicate)							**1.75**	

Notes:

MW = monitoring well
NMWQCC = New Mexico Water Quality Control Commission
Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
mg/L = milligrams per liter (parts per million)
< 1.0 = Below laboratory detection limit of 1.0 mg/L
-- = not analyzed

Appendices

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

September 23, 2016

Christine Mathews
GHD Services, Inc.
6212 Indian School Rd. NE St2
Albuquerque, NM 87110

RE: Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, GHD Services, Inc,
Jeffrey Walker, GHD Services, Inc

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60227653001	**GW-074937-091316-CM-MW-1**	Water	09/13/16 09:30	09/14/16 08:56
60227653002	**GW-074937-091316-CM-MW-2**	Water	09/13/16 09:20	09/14/16 08:56
60227653003	**GW-074937-091316-CM-MW-3**	Water	09/13/16 09:45	09/14/16 08:56
60227653004	**GW-074937-091316-CM-MW-4**	Water	09/13/16 09:55	09/14/16 08:56
60227653005	**GW-074937-091316-CM-DUP**	Water	09/13/16 00:00	09/14/16 08:56

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60227653001	**GW-074937-091316-CM-MW-1**	EPA 6010	TDS	1
		SM 2540C	JMC1	1
60227653002	**GW-074937-091316-CM-MW-2**	EPA 6010	TDS	1
		SM 2540C	JMC1	1
60227653003	**GW-074937-091316-CM-MW-3**	EPA 6010	TDS	1
		SM 2540C	JMC1	1
60227653004	**GW-074937-091316-CM-MW-4**	EPA 6010	TDS	1
		SM 2540C	JMC1	1
60227653005	**GW-074937-091316-CM-DUP**	EPA 6010	TDS	1

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PROJECT NARRATIVE

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: GHD Services_COP NM
Date: September 23, 2016

General Information:
5 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: GHD Services_COP NM
Date: September 23, 2016

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Sample: GW-074937-091316-CM-MW-1 **Lab ID: 60227653001** Collected: 09/13/16 09:30 Received: 09/14/16 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1110**	ug/L	5.0	1	09/21/16 15:55	09/22/16 12:34	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**906**	mg/L	5.0	1		09/20/16 16:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Sample: GW-074937-091316-CM-MW-2 **Lab ID: 60227653002** Collected: 09/13/16 09:20 Received: 09/14/16 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1740**	ug/L	5.0	1	09/21/16 15:55	09/22/16 12:37	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**857**	mg/L	5.0	1		09/20/16 16:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Sample: GW-074937-091316-CM-MW-3 **Lab ID: 60227653003** Collected: 09/13/16 09:45 Received: 09/14/16 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1860**	ug/L	5.0	1	09/21/16 15:55	09/22/16 12:43	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**847**	mg/L	5.0	1		09/20/16 16:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Sample: GW-074937-091316-CM-MW-4 **Lab ID: 60227653004** Collected: 09/13/16 09:55 Received: 09/14/16 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**2010**	ug/L	5.0	1	09/21/16 15:55	09/22/16 12:45	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**865**	mg/L	5.0	1		09/20/16 16:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Sample: GW-074937-091316-CM-DUP **Lab ID: 60227653005** Collected: 09/13/16 00:00 Received: 09/14/16 08:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1750**	ug/L	5.0	1	09/21/16 15:55	09/22/16 12:48	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

QC Batch: 447446 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60227653001, 60227653002, 60227653003, 60227653004, 60227653005

METHOD BLANK: 1830368 Matrix: Water
Associated Lab Samples: 60227653001, 60227653002, 60227653003, 60227653004, 60227653005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	09/22/16 15:26	

LABORATORY CONTROL SAMPLE: 1830369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	996	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1830370 1830371

Parameter	Units	60227652001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Manganese, Dissolved	ug/L	925	1000	1000	1880	1890	96	96	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

QC Batch: 447228 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60227653001, 60227653002, 60227653003, 60227653004

METHOD BLANK: 1829317 Matrix: Water
Associated Lab Samples: 60227653001, 60227653002, 60227653003, 60227653004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/20/16 16:10	

LABORATORY CONTROL SAMPLE: 1829318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 1829319

Parameter	Units	60227588001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	264	252	5	10	

SAMPLE DUPLICATE: 1829320

Parameter	Units	60227653002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	857	840	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074937 Wilmuth No1 COP
Pace Project No.: 60227653

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60227653001	**GW-074937-091316-CM-MW-1**	EPA 3010	447446	EPA 6010	447531
60227653002	**GW-074937-091316-CM-MW-2**	EPA 3010	447446	EPA 6010	447531
60227653003	**GW-074937-091316-CM-MW-3**	EPA 3010	447446	EPA 6010	447531
60227653004	**GW-074937-091316-CM-MW-4**	EPA 3010	447446	EPA 6010	447531
60227653005	**GW-074937-091316-CM-DUP**	EPA 3010	447446	EPA 6010	447531
60227653001	**GW-074937-091316-CM-MW-1**	SM 2540C	447228		
60227653002	**GW-074937-091316-CM-MW-2**	SM 2540C	447228		
60227653003	**GW-074937-091316-CM-MW-3**	SM 2540C	447228		
60227653004	**GW-074937-091316-CM-MW-4**	SM 2540C	447228		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60227653

60227653

Client Name: GHD-COP-NM

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7044 6052 7960 Pace Shipping Label Used? Yes ☑ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: (CF +1.1 T-266) / (CF -0.1 T-239) **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.0 **Corr. Factor** CF +1.1 CF -0.1 **Corrected** 2.1

Date and initials of person examining contents: JR 9/14/16 1545

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☑Yes ☐No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: water	☐Yes ☐No ☑N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: alice Date: 09/15/16

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: 1445	Start:
End: 1450	End:
Temp:	Temp:

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services_COP NM	Report To:	Christine Mathews	Attention:	
Address:	6212 Indian School Rd, NE St2	Copy To:	Jeff Walker , Angela Bown	Company Name:	
Albuquerque, NM 87110				Address:	
Email:	christine.mathews@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	505-884-0672 Fax:	Project Name:	074937 Wilmuth No1 COP	Pace Project Manager:	alice.spiller@pacelabs.com
Requested Due Date:		Project #:		Pace Profile #:	8644, 21

Regulatory Agency
State / Location
NM

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Dissolved Mn-field filtered	Total Dissolved Solids	Residual Chlorine (Y/N)	60022 7653
1	GW-074937-09136-CM-MW-1	WT	G			9/13/16	0930		2	1		1							X	X		001
2	GW-074937-09136-CM-MW-2	WT	G			9/13/16	0920		2	1		1							X	X		002
3	GW-074937-09136-CM-MW-3	WT	G			9/13/16	0945		2	1		1							X	X		003
4	GW-074937-09136-CM-MW-4	WT	G			9/13/16	0955		2	1		1							X	X		004
5	GW-074937-09136-CM-DUP	WT	G			9/13/16	—		1			1								X		005
6																						
7																						
8																						
9																						
10																						
11																						
12																						

1 (BP3N) 1 (BP3F) 1.3

1 (BP3F) 1.3

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Christine Mathews/GHD	9/13/16	1430		9/14/16	

SAMPLE CONDITIONS			
3.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE		
PRINT Name of SAMPLER:	Christine Mathews	
SIGNATURE of SAMPLER:		DATE Signed: 9/13/16

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Appendix A
2016 Annual Groundwater Laboratory Analytical Report