3R - 430

AGWMR

04 / 19 / 2013

2012 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS WILMUTH No. 1
SAN JUAN COUNTY, NEW MEXICO
API# 30-045-10370
NMOCD# 3R-430

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1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring events conducted during 2012 by Conestoga-Rovers & Associates, Inc. (CRA) at the ConocoPhillips Company (ConocoPhillips) Wilmuth No. 1 remediation site located north of Aztec, New Mexico (Site). The Site is located on private land leased to ConocoPhillips and is situated in Section 26, Township 31N, Range 11W, of San Juan County, New Mexico (**Figure 1**). 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), took over 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. Burlington excavated a total of 85 cubic yards of impacted soil and disposed of it at JFJ landfarm, located in Aztec, NM.

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 monitor wells were subsequently installed under the supervision of Tetra Tech in April, 2010. A generalized geologic cross section was produced using boring logs from monitor well installation at the Site. The cross section 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, NM. The most recent sampling event took place on December 12, 2012. The December 2012 sampling event marks the 12th consecutive round of quarterly sampling at the Site. A historical timeline is presented in **Table 1**.

2.0 MONITORING SUMMARY, SAMPLING METHODOLOGY, AND ANALYTICAL RESULTS

2.1 MONITORING SUMMARY

Groundwater quality monitoring events were conducted on March 7, June 6, September 19, and December 12, 2012 at the Wilmuth No. 1 site. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3, and MW-4, depth to groundwater in each well was determined using an oil/water interface probe. Groundwater elevation data are summarized in **Table 2**. The casings for Site monitor wells were surveyed on April 8, 2010 using an arbitrary reference-elevation of 100 feet. The data obtained from the Site survey and groundwater elevations collected during the 2012 sampling events were used to create groundwater potentiometric surface maps for the Site (**Figures 4, 5, 6** and **7,** respectively). Using these data, it was determined that the groundwater flow direction at the Site is to the southwest.

2.2 GROUNDWATER SAMPLING METHODOLOGY

During the 2012 quarterly groundwater monitoring events, Site monitor wells were purged of at least 3 casing volumes of groundwater using 1.5-inch diameter, polyethylene, dedicated bailers. While bailing each well, groundwater parameter data, including temperature, pH, conductivity, and oxidation-reduction potential (ORP) were collected using a YSI 556 multi-parameter sonde and results were recorded on CRA Well Sampling Field Information Forms (**Appendix A**). 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, KS for analysis.

Samples were analyzed for total dissolved solids (TDS) by SM 2540C and dissolved manganese by EPA Method 6010. This list of constituents was determined based on the analytical results from the groundwater baseline and initial Site groundwater quality concerns. Analytical results for all groundwater monitoring events at the Site are summarized in **Table 3** and discussed in more detail in the following section.

2.3 GROUNDWATER ANALYTICAL RESULTS

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Groundwater quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedances of NMWQCC groundwater quality standards in Site monitor wells are discussed below. Results are summarized in **Table 3**.

March 2012

- **Dissolved Manganese**
    - The groundwater quality standard for dissolved manganese is 0.2 milligrams per liter (mg/L). Groundwater collected from all Site monitor wells was found to be above the standard for dissolved manganese during March 2012. Dissolved manganese concentrations were 0.955 mg/L, 1.62 mg/L, 1.69 mg/L, and 1.70 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

June 2012

- **Dissolved Manganese**
    - Groundwater collected from all Site monitor wells was found to be above the standard for dissolved manganese during June 2012. Dissolved manganese concentrations were 0.886 mg/L, 1.26 mg/L, 1.74 mg/L, and 1.46 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

September 2012

- **Dissolved Manganese**
    - Groundwater collected from all Site monitor wells was found to be above the standard for dissolved manganese during September 2012. Dissolved manganese concentrations were 0.915 mg/L, 1.39 mg/L, 1.60 mg/L, and 1.90 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

December 2012

- **Dissolved Manganese**
    - Groundwater collected from all Site monitor wells was found to be above the standard for dissolved manganese during December 2012. Dissolved manganese concentrations were 0.979 mg/L, 1.11 mg/L, 1.57 mg/L, and 1.42 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

The corresponding laboratory analytical reports, including quality control summaries, are included in **Appendix B**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

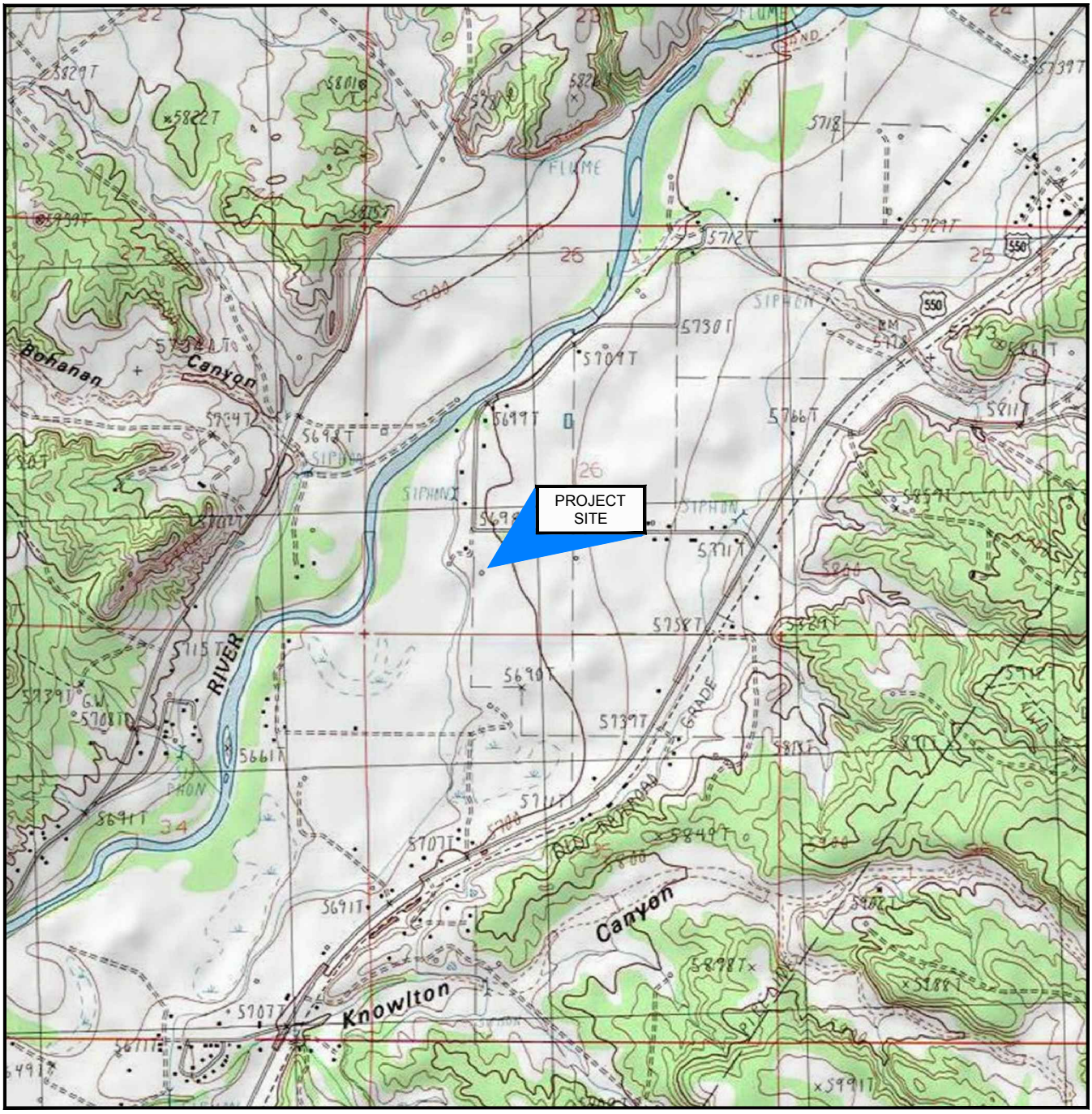
BTEX analysis was discontinued at the Site following the December 14, 2011 groundwater quality monitoring event, which represented the eighth consecutive quarterly sampling event with BTEX constituents below laboratory detection limits.

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

Quarterly analysis will continue for dissolved manganese and TDS for all Site monitor wells until the June 2013 quarterly sampling event. Following this sampling event, TDS analysis will continue to be performed quarterly and dissolved manganese analysis will be performed every two years during September. Once manganese is detected at levels below the standard for all Site monitor wells, quarterly sampling will resume for manganese only. When eight consecutive quarters of data within compliance levels or at background concentrations has been achieved, remediation Site closure will be requested.

The next groundwater monitoring event at the Site is scheduled for March 2013.

FIGURES



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

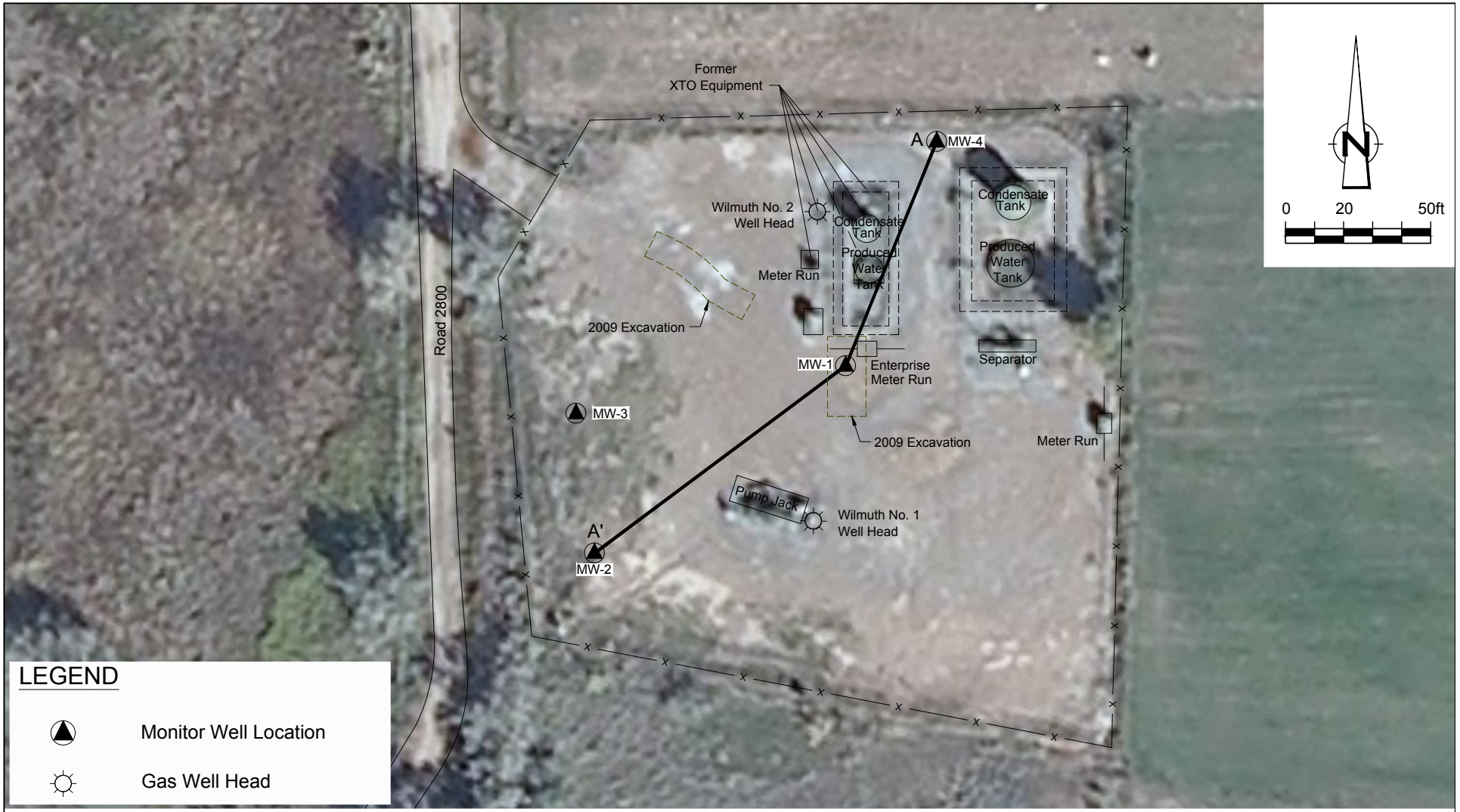
N

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

CRA



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

CRA

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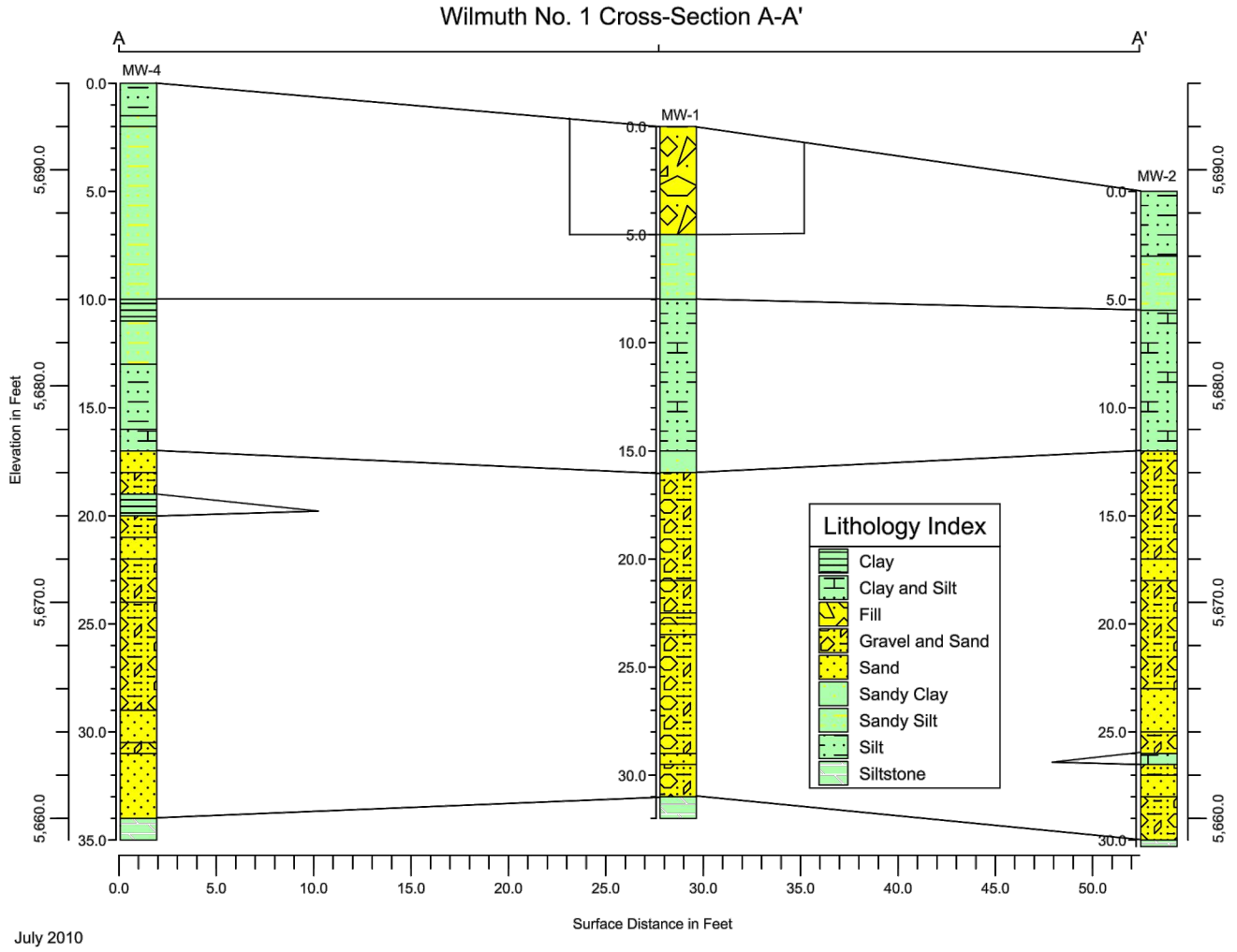

Figure 3

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

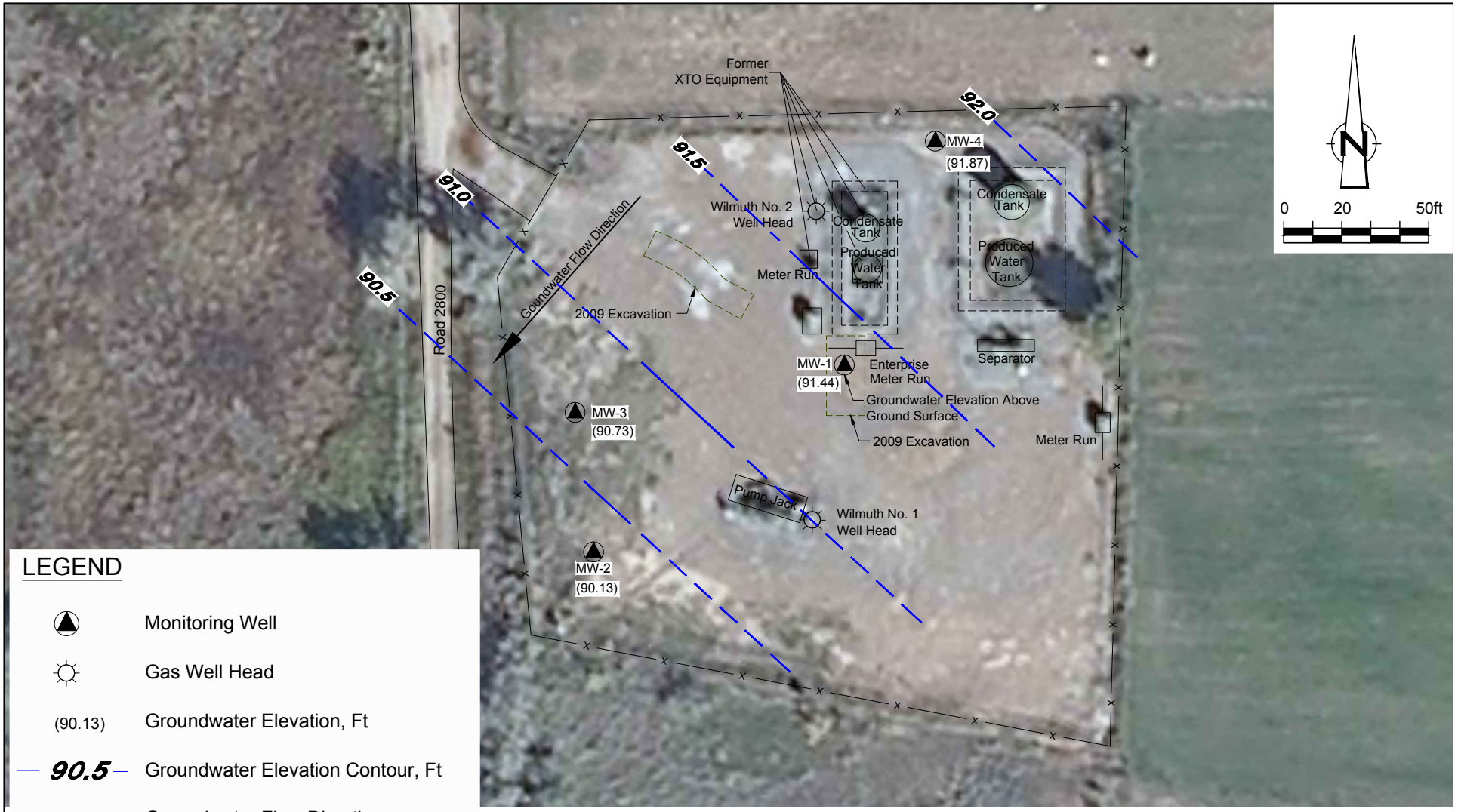

Figure 4

MARCH 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH NO. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

074937-95(003)GN-DL003 APR 4/2013

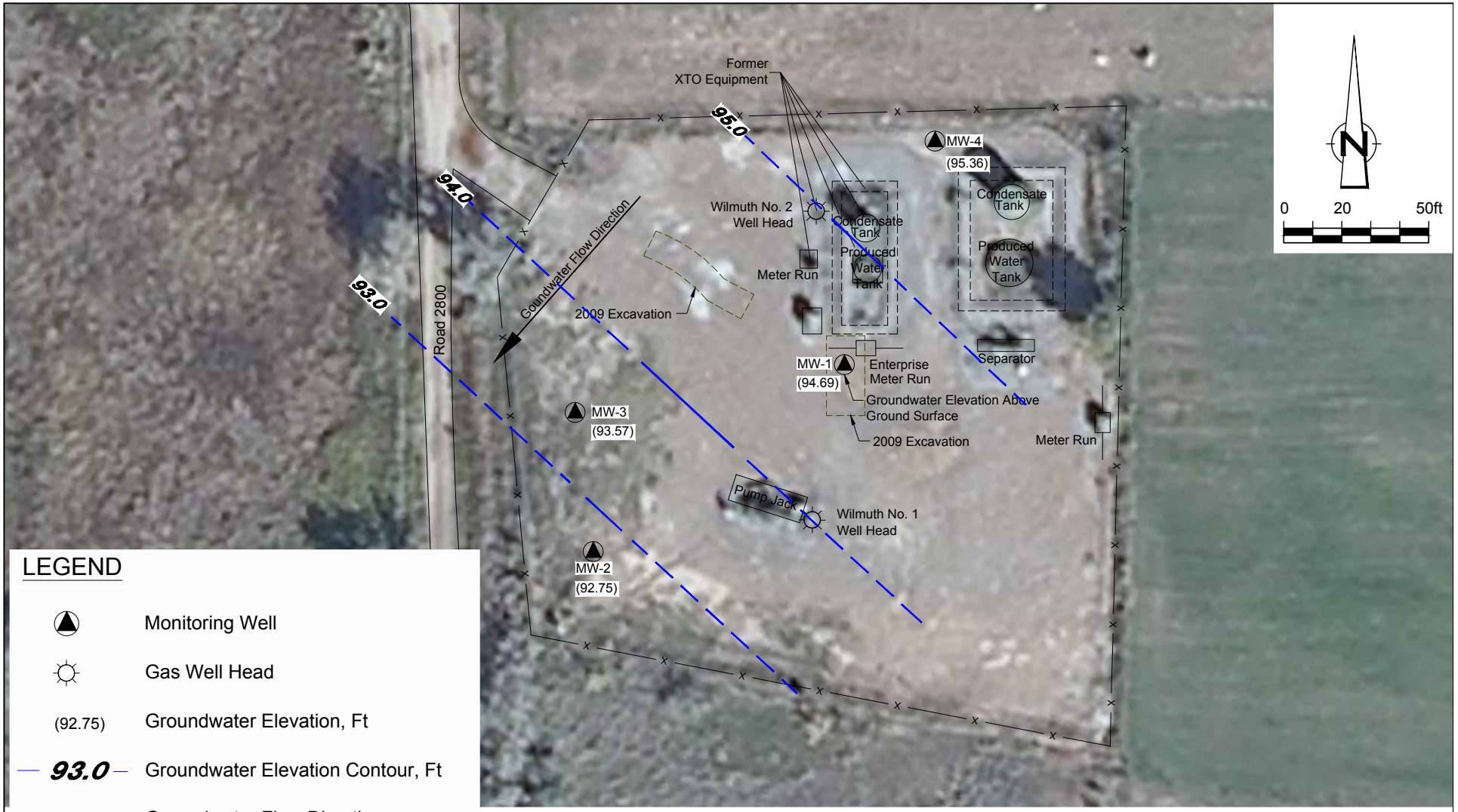

Figure 5

JUNE 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH NO. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

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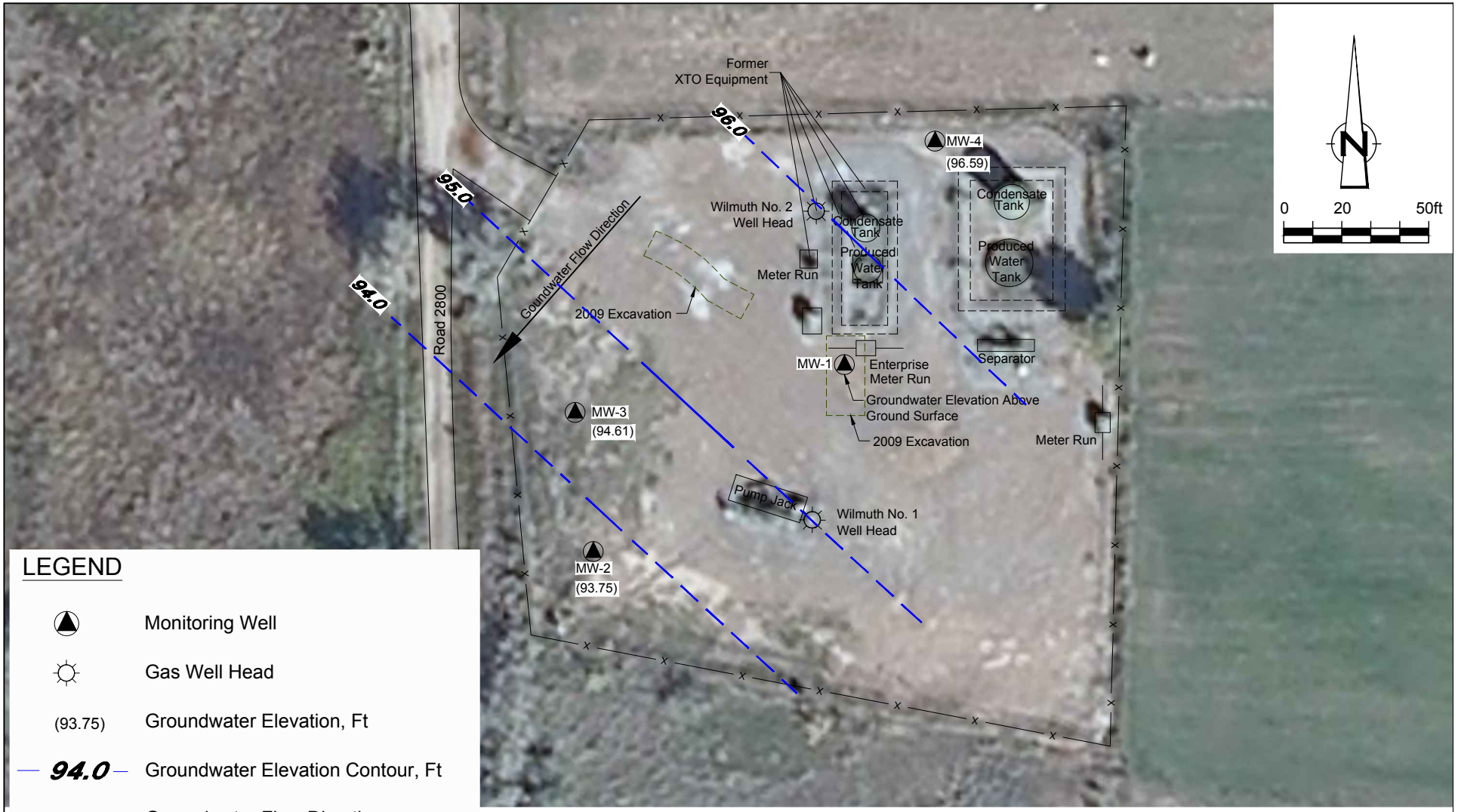

Figure 6

SEPTEMBER 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH NO. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

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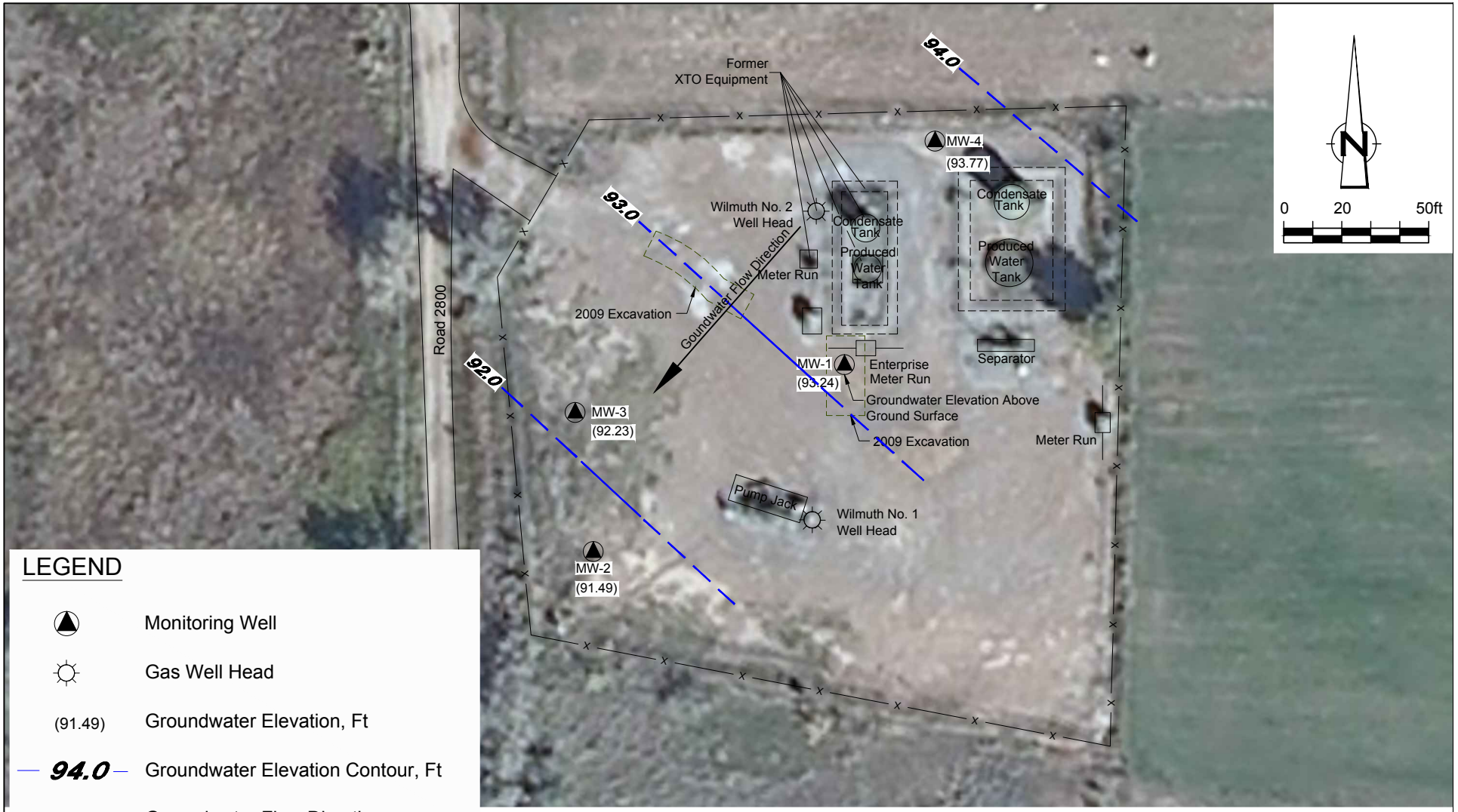

Figure 7

DECEMBER 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
WILMUTH NO. 1 NATURAL GAS WELL PRODUCTION SITE
SECTION 26, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

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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.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
SAN JUAN COUNTY, NEW MEXICO

Date/Time Period	*Event/Action*	*Description/Comments*
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.
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.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
SAN JUAN COUNTY, NEW MEXICO

Date/Time Period	*Event/Action*	*Description/Comments*
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.
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.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
WILMUTH NO. 1
SAN JUAN COUNTY, NEW MEXICO

Date/Time Period	*Event/Action*	*Description/Comments*
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.

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
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
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
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

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

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-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)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	21.6	585	**2.32**	**1100**
	GW-74937-062211-PG-05	6/22/2011	(Duplicate)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	--	--	--	--
	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
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)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	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

TABLE 3

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
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)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	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
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**250**	**600**	**0.2**	**1000**

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

APPENDIX A

2012

QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Wilmington No. 1 **JOB#** 074937

SAMPLE ID: GW-074937-3712-CB-MW-1 **WELL#** MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3-7-12	3-7-12	1620	3.32	10.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 4.36 (feet) WELL ELEVATION 95.8 (feet)

WELL DEPTH 25.16 (feet) GROUNDWATER ELEVATION 91.44 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
10.65 (°C)	7.33 (std)	0.829 (g/L)	925 (µS/cm)	117.7 (mV)	9.0 (gal)
10.81 (°C)	7.24 (std)	0.822 (g/L)	923 (µS/cm)	114.8 (mV)	9.5 (gal)
10.91 (°C)	7.21 (std)	0.821 (g/L)	926 (µS/cm)	112.0 (mV)	10.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: none COLOR: light brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~40° WINDY (Y)/N PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

20.8 x .16 = 3.32 = (9.98)

Dup collected @ 1625

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3-7-12 Jason Ploss

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Wilmuth No. 1 **JOB#** 074937

SAMPLE ID: GW074937.3712.CB.MW-2 **WELL#** MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1535	4.19	13.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 5.67 (feet) WELL ELEVATION 95.80 (feet)

WELL DEPTH 31.89 (feet) GROUNDWATER ELEVATION 90.13 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
11.75 (°C)	6.71 (std)	0.720 (g/L)	826 (µS/cm)	90.5 (mV)	12.0 (gal)
11.57 (°C)	6.81 (std)	0.715 (g/L)	818 (µS/cm)	86.6 (mV)	12.5 (gal)
11.46 (°C)	6.85 (std)	0.713 (g/L)	813 (µS/cm)	85.2 (mV)	13.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: none COLOR: tan SHEEN Y(N)

WEATHER CONDITIONS: TEMPERATURE ~45° WINDY (Y)/N PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

26.22 x .16 = 4.19 x 3 (12.58)

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3.7.12 Jason Pless

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Wilmuth No. 1 **JOB#** 074937

SAMPLE ID: GW-074937-CB-MW-3 **WELL#** MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1545	4.26	13.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 5.59 (feet) WELL ELEVATION 96.32 (feet)

WELL DEPTH 32.26 (feet) GROUNDWATER ELEVATION 90.73 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
11.35 (°C)	6.98 (std)	0.0636 (g/L)	724 (µS/cm)	91.1 (mV)	13.25 (gal)
12.14 (°C)	6.95 (std)	0.0635 (g/L)	736 (µS/cm)	87.7 (mV)	13.50 (gal)
12.30 (°C)	6.99 (std)	0.0635 (g/L)	739 (µS/cm)	84.5 (mV)	13.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: None COLOR: lt. brn SHEEN Y/N No

WEATHER CONDITIONS: TEMPERATURE 420 WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

26.67 x .16 = 4.26 x 3 = 12.80

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3.7.12 (Cassie Brown) (Cassie Brown)

DATE PRINT SIGNATURE

8

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Wilmuth No. 1 **JOB#** 074937

SAMPLE ID: GW-074937-3712-CB-MW-4 **WELL#** MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.7.12	3.7.12	1630	4.07	12.50

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= ____ PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= ____ SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= ____ PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= ____ SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= ____ PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= ____ SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 6.83 (feet) WELL ELEVATION 98.7 (feet)

WELL DEPTH 32.30 (feet) GROUNDWATER ELEVATION 91.87 (feet)

TEMPERATURE (°C)	pH (std)	TDS (g/L)	CONDUCTIVITY (µS/cm)	ORP (mV)	VOLUME (gal)
11.50	7.17	0.695	794	107.7	12.0
11.91	7.14	0.683	789	105.0	12.25
12.24	7.15	0.672	781	99.4	12.50

FIELD COMMENTS

SAMPLE APPEARANCE: Slightly Cloudy ODOR: None COLOR: lt. brown SHEEN Y/N No

WEATHER CONDITIONS: TEMPERATURE 42 WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

25.47 x .16 = 4.07 x 3 = 12.22

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 3.7.12 PRINT Cassie Brown SIGNATURE Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Williamette No. 1 **JOB#** 074957

SAMPLE ID: GW-074957-060612-CB-MW-1 **WELL#** MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6/6/12	6/6/12	1100	3.85	12

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 1.11 (feet) WELL ELEVATION 95.80 (feet)

WELL DEPTH 25.20 (feet) GROUNDWATER ELEVATION 94.69 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
12.76 (°C)	6.99 (std)	0.722 (g/L)	851 (µS/cm)	68.3 (mV)	11.0 (gal)
12.79 (°C)	7.01 (std)	0.724 (g/L)	853 (µS/cm)	66.5 (mV)	11.5 (gal)
12.77 (°C)	7.01 (std)	0.725 (g/L)	855 (µS/cm)	64.9 (mV)	12.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear/Slightly cloudy ODOR: None COLOR: Clear SHEEN Y/N None

WEATHER CONDITIONS: TEMPERATURE 65 WINDY Y/N N PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

24.09 x .16 = 3.85 x 3 = 11.56

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6/6/12 DATE | Cassie Braun PRINT | Cassie Braun SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

.TE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-060612-MW-2 WELL# MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6/6/12	6/6/12	1620	4.62	16.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 3.05 (feet) WELL ELEVATION 95.80 (feet)

WELL DEPTH 31.95 (feet) GROUNDWATER ELEVATION 92.75 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
13.75 (°C)	7.27 (std)	0.616 (g/L)	745 (µS/cm)	48.8 (mV)	15.0 (gal)
13.76 (°C)	7.26 (std)	0.616 (g/L)	744 (µS/cm)	46.9 (mV)	15.5 (gal)
13.66 (°C)	7.20 (std)	0.615 (g/L)	742 (µS/cm)	45.6 (mV)	16.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: None COLOR: brown SHEEN Y (N)

WEATHER CONDITIONS: TEMPERATURE ~80 WINDY Y (N) PRECIPITATION Y (N) (IF Y TYPE)

SPECIFIC COMMENTS:

28.9 x .16 = 4.624 x 3 = (13.87)

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6/6/12 DATE | Abbie Baum PRINT | Abbie Baum SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-060612-CB-MW-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6.6.12	6.6.12	1046	4.71	14.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.........DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: G
SAMPLING DEVICE: G

A - SUBMERSIBLE PUMP, B - PERISTALTIC PUMP, C - BLADDER PUMP, D - GAS LIFT PUMP, E - PURGE PUMP, F - DIPPER BOTTLE, G - BAILER, H - WATERRA®, X - OTHER

X= ______ PURGING DEVICE OTHER (SPECIFY)
X= ______ SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: E
SAMPLING MATERIAL: E

A - TEFLON, B - STAINLESS STEEL, C - POLYPROPYLENE, D - PVC, E - POLYETHYLENE, X - OTHER

X= ______ PURGING MATERIAL OTHER (SPECIFY)
X= ______ SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: C
SAMPLING TUBING: C

A - TEFLON, B - TYGON, C - ROPE, D - POLYPROPYLENE, E - POLYETHYLENE, F - SILICONE, G - COMBINATION TEFLON/POLYPROPYLENE, X - OTHER

X= ______ PURGE TUBING OTHER (SPECIFY)
X= ______ SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE, B - PRESSURE, C - VACUUM

FIELD MEASUREMENTS

DEPTH TO WATER: 2.75 (feet) WELL ELEVATION: 96.32 (feet)

WELL DEPTH: 32.22 (feet) GROUNDWATER ELEVATION: 93.57 (feet)

TEMPERATURE (°C)	pH (std)	TDS (g/L)	CONDUCTIVITY (µS/cm)	ORP (mV)	VOLUME (gal)
13.18	7.58	0.607	723	53.4	13
13.05	7.41	0.605	718	57.4	13.5
12.89	7.24	0.605	715	60.3	14.0

FIELD COMMENTS

SAMPLE APPEARANCE: silty ODOR: None COLOR: light tan SHEEN Y/N: N

WEATHER CONDITIONS: TEMPERATURE: 85 WINDY Y/N: N PRECIPITATION Y/N (IF Y TYPE): N

SPECIFIC COMMENTS:

29.47x.16 = 4.71x3 = 14.14

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE: 6.6.12 PRINT: Cassie Brown SIGNATURE: Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Wilmuth No 1 JOB# 074937

SAMPLE ID: GW-074937-060612-CB-MW-4 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6/6/12	6/6/12	1030	4.63	14.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 3.34 (feet) WELL ELEVATION 98.70 (feet)

WELL DEPTH 32.30 (feet) GROUNDWATER ELEVATION 95.36 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
13.71 (°C)	6.97 (std)	0.623 (g/L)	752 (µS/cm)	65.2 (mV)	13.0 (gal)
13.87 (°C)	7.04 (std)	0.625 (g/L)	758 (µS/cm)	52.7 (mV)	13.5 (gal)
13.86 (°C)	7.04 (std)	0.626 (g/L)	757 (µS/cm)	55.3 (mV)	14.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: None COLOR: light brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE 80° WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

28.98 x .16 = 4.63 x 3 = 13.9

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6/6/12 (DATE) Cassie Brown (PRINT) Cassie Brown (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

ITE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-091912-JP-MW-1 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.19.12	9.19.12	1130	4.8	15.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 0.0 (feet) WELL ELEVATION 95.8 (feet)

WELL DEPTH 30.0 (feet) GROUNDWATER ELEVATION — (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
17.55 (°C)	7.11 (std)	0.804 (g/L)	1061 (µS/cm)	79.1 (mV)	14.0 (gal)
17.25 (°C)	7.03 (std)	0.801 (g/L)	1049 (µS/cm)	73.7 (mV)	14.5 (gal)
17.07 (°C)	6.94 (std)	0.802 (g/L)	1046 (µS/cm)	72.3 (mV)	15.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: None COLOR: light brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~80° WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS: Water flowing out of casing

0.1 x 3 = 14.40

Dup @ 1135

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.19.12 DATE Jason Plas PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: AMEC Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-091912-JP-MW-2 WELL# MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.19.12	9.19.2012	1010	4.47	14.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 2.05 (feet) WELL ELEVATION 95.8 (feet)

WELL DEPTH 30.0 (feet) GROUNDWATER ELEVATION 93.75 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.53 (°C)	7.17 (std)	0.710 (g/L)	895 (µS/cm)	59.5 (mV)	13.0 (gal)
15.45 (°C)	7.12 (std)	0.710 (g/L)	893 (µS/cm)	58.8 (mV)	13.5 (gal)
15.32 (°C)	7.09 (std)	0.709 (g/L)	889 (µS/cm)	57.0 (mV)	14.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: None COLOR: brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~80° WINDY Y/(N) PRECIPITATION Y/(N) IF Y TYPE)

SPECIFIC COMMENTS:

Vol x3= 13.42

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.19.12 Jason Ross

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-091912-JP-MW-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.19.12	9.19.2012	1120	4.53	14.25

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	C	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 1.71 (feet) WELL ELEVATION 96.32 (feet)

WELL DEPTH 30.0 (feet) GROUNDWATER ELEVATION 94.61 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.22 (°C)	6.83 (std)	0.709 (g/L)	885 (µS/cm)	64.9 (mV)	13.75 (gal)
14.89 (°C)	6.76 (std)	0.704 (g/L)	874 (µS/cm)	69.8 (mV)	14.00 (gal)
14.93 (°C)	6.70 (std)	0.703 (g/L)	873 (µS/cm)	74.2 (mV)	14.25 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: None COLOR: light brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~80 WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

Vol x3 = 13.58

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.19.12 Jason Ross

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Wilmuth No.1 JOB# 074937

SAMPLE ID: GW-074937-091912-JP-MW-4 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9.19.12	9.19.2012	1000	5.26	16.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 2.11 (feet) WELL ELEVATION 98.7 (feet)

WELL DEPTH 35.0 (feet) GROUNDWATER ELEVATION 96.59 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.66 (°C)	7.93 (std)	0.735 (g/L)	931 (µS/cm)	48.3 (mV)	16.25 (gal)
15.67 (°C)	7.66 (std)	0.731 (g/L)	925 (µS/cm)	50.8 (mV)	16.5 (gal)
15.75 (°C)	7.44 (std)	0.729 (g/L)	923 (µS/cm)	53.7 (mV)	16.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: None COLOR: light brown SHEEN Y (N)

WEATHER CONDITIONS: TEMPERATURE ~80 WINDY Y (N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

Vol x 3 = 15.79

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

9.19.12 DATE | Jason Ploss PRINT | SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Wilmuth No.1 JOB# 074937

SAMPLE ID: GW-074937-121212-CM-MW1 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.12.12	12.12.12	1420	3.61	11.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER 2.56 (feet) WELL ELEVATION 95.80 (feet)

WELL DEPTH 25.13 (feet) GROUNDWATER ELEVATION 93.24 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DO mg/L
14.32 (°C)	7.20 (std)	0.895 (g/L)	1110 (µS/cm)	-30.0 (mV)	10.75 (gal)	5.04
14.31 (°C)	7.17 (std)	0.895 (g/L)	1108 (µS/cm)	-29.2 (mV)	11.25 (gal)	4.82
14.32 (°C)	7.16 (std)	0.894 (g/L)	1108 (µS/cm)	-28.1 (mV)	11.75 (gal)	4.50
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE 45° WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS:

3.61 X 3 = 10.83

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOL.

12/12/12 DATE Christine Mathews PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-121212-CM-MW-2 WELL# MW-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.12.12	12.12.12	1350	4.38	13.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER 4 31 (feet) WELL ELEVATION 95 80 (feet)

WELL DEPTH 31 71 (feet) GROUNDWATER ELEVATION 91 49 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	
12.45 (°C)	7.20 (std)	0.736 (g/L)	861 (µS/cm)	1.4 (mV)	12.5 (gal)	Dong 4.00
12.58 (°C)	7.22 (std)	0.736 (g/L)	865 (µS/cm)	-0.3 (mV)	13.0 (gal)	3.76
12.86 (°C)	7.21 (std)	0.738 (g/L)	872 (µS/cm)	-1.7 (mV)	13.5 (gal)	3.54
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 45° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

4.38 x 3 = 13.15

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 12/12/12 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Wilmuth No. 1 JOB# 074937

SAMPLE ID: GW-074937-121212-CM-MW-3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.12.12	12.12.12	1340	4.47	13.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER 4.09 (feet) WELL ELEVATION 96.32 (feet)

WELL DEPTH 32.03 (feet) GROUNDWATER ELEVATION 92.23 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DO mg/L
12.94 (°C)	7.19 (std)	0.728 (g/L)	862 (µS/cm)	28.2 (mV)	12.5 (gal)	5.90
13.14 (°C)	7.18 (std)	0.729 (g/L)	868 (µS/cm)	23.3 (mV)	13.0 (gal)	5.10
13.33 (°C)	7.19 (std)	0.728 (g/L)	871 (µS/cm)	18.0 (mV)	13.5 (gal)	5.82
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 45° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

Duplicate of TDS collected @ 1345

4.47 x 3 = 13.41

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12/12/12 DATE | Christine Mathews PRINT | SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Wilmuth No.1 JOB# 074937

SAMPLE ID: GW-074937-121212-CM-MW-4 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.12.12	12.12.12	1440	4.36	13.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER 4.93 (feet) WELL ELEVATION 98.7 (feet)

WELL DEPTH 32.15 (feet) GROUNDWATER ELEVATION 93.77 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DO mg/L
11.58 (°C)	7.24 (std)	0.754 (g/L)	861 (µS/cm)	-2.5 (mV)	12.5 (gal)	3.45
11.74 (°C)	7.19 (std)	0.755 (g/L)	868 (µS/cm)	-0.5 (mV)	13.0 (gal)	3.01
12.51 (°C)	7.18 (std)	0.754 (g/L)	878 (µS/cm)	0.8 (mV)	13.5 (gal)	2.54
12.55 (°C)	7.18 (std)	0.752 (g/L)	884 (µS/cm)	1.1 (mV)	13.75 (gal)	2.40
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: none COLOR: brown SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 45° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

4.36 x 3 = 13.10

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS.

12/12/12 DATE | Christine Mathews PRINT | Christine Mathews SIGNATURE

APPENDIX B

2012

QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORTS

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

March 23, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2012. 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 Tracy

alice.tracy@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60117005001	**GW-074937-3712-CB-MW-1**	Water	03/07/12 16:20	03/10/12 09:00
60117005002	**GW-074937-3712-CB-MW-2**	Water	03/07/12 15:35	03/10/12 09:00
60117005003	**GW-074937-3712-CB-MW-3**	Water	03/07/12 15:45	03/10/12 09:00
60117005004	**GW-074937-3712-CB-MW-4**	Water	03/07/12 16:30	03/10/12 09:00

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SAMPLE ANALYTE COUNT

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60117005001	**GW-074937-3712-CB-MW-1**	EPA 6010	JGP	1
		SM 2540C	CMG	1
60117005002	**GW-074937-3712-CB-MW-2**	EPA 6010	JGP	1
		SM 2540C	CMG	1
60117005003	**GW-074937-3712-CB-MW-3**	EPA 6010	JGP	1
		SM 2540C	CMG	1
60117005004	**GW-074937-3712-CB-MW-4**	EPA 6010	JGP	1
		SM 2540C	CMG	1

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PROJECT NARRATIVE

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 23, 2012

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

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 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:

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PROJECT NARRATIVE

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 23, 2012

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below.

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 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: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Sample: GW-074937-3712-CB-MW-1 **Lab ID: 60117005001** Collected: 03/07/12 16:20 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**955**	ug/L	5.0	0.90	1	03/14/12 16:35	03/20/12 11:54	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**980**	mg/L	5.0	5.0	1		03/14/12 10:29		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Sample: GW-074937-3712-CB-MW-2 **Lab ID: 60117005002** Collected: 03/07/12 15:35 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1620**	ug/L	5.0	0.90	1	03/14/12 16:35	03/20/12 12:08	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**857**	mg/L	5.0	5.0	1		03/14/12 10:29		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Sample: GW-074937-3712-CB-MW-3 **Lab ID: 60117005003** Collected: 03/07/12 15:45 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1690**	ug/L	5.0	0.90	1	03/14/12 16:35	03/20/12 12:12	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**739**	mg/L	5.0	5.0	1		03/14/12 10:30		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Sample: GW-074937-3712-CB-MW-4 **Lab ID: 60117005004** Collected: 03/07/12 16:30 Received: 03/10/12 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1700**	ug/L	5.0	0.90	1	03/14/12 16:35	03/20/12 12:15	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**772**	mg/L	5.0	5.0	1		03/14/12 10:30		

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QUALITY CONTROL DATA

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

QC Batch: MPRP/17310 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60117005001, 60117005002, 60117005003, 60117005004

METHOD BLANK: 965102 Matrix: Water
Associated Lab Samples: 60117005001, 60117005002, 60117005003, 60117005004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	03/20/12 11:47	

LABORATORY CONTROL SAMPLE: 965103

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 965104 965105

Parameter	Units	60117005001 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	955	1000	1000	1810	1820	86	87	75-125	0	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

QC Batch: WET/33974 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60117005001, 60117005002, 60117005003, 60117005004

METHOD BLANK: 964961 Matrix: Water
Associated Lab Samples: 60117005001, 60117005002, 60117005003, 60117005004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	03/14/12 10:27	

SAMPLE DUPLICATE: 964962

Parameter	Units	60117174001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3340	3460	4	17	

SAMPLE DUPLICATE: 964963

Parameter	Units	60117117002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1060	890	17	17	

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QUALIFIERS

Project: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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: WILMUTH NO 1 (074937)
Pace Project No.: 60117005

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60117005001	**GW-074937-3712-CB-MW-1**	EPA 3010	MPRP/17310	EPA 6010	ICP/14765
60117005002	**GW-074937-3712-CB-MW-2**	EPA 3010	MPRP/17310	EPA 6010	ICP/14765
60117005003	**GW-074937-3712-CB-MW-3**	EPA 3010	MPRP/17310	EPA 6010	ICP/14765
60117005004	**GW-074937-3712-CB-MW-4**	EPA 3010	MPRP/17310	EPA 6010	ICP/14765
60117005001	**GW-074937-3712-CB-MW-1**	SM 2540C	WET/33974		
60117005002	**GW-074937-3712-CB-MW-2**	SM 2540C	WET/33974		
60117005003	**GW-074937-3712-CB-MW-3**	SM 2540C	WET/33974		
60117005004	**GW-074937-3712-CB-MW-4**	SM 2540C	WET/33974		

Alice Tracy - Wilmuth No. 1

From: "Brown, Cassandre M." <cmbrown@craworld.com>
To: "Alice Tracy" <Alice.Tracy@pacelabs.com>
Date: 3/12/2012 1:05 PM
Subject: Wilmuth No. 1

Hi Alice –

Per our discussion on the phone, the samples you received on 3/10/2012 for the Wilmuth No. 1 Site located in Aztec, NM should be ran for TDS and dissolved Mn only.

Thanks!
Cassie

Cassie Brown, Geologist
Conestoga-Rovers & Associates (CRA)
6121 Indian School Rd NE Ste. 200
Albuquerque, NM, USA 87110
Office: (505) 884-0672
Cell: (505) 377-3919
Fax: (505) 884-4932
Email: cmbrown@craworld.com

www.CRAworld.com

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical™ www.pacelabs.com

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

Page: 1 of 1

Section A — **Required** Client Information:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200, Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone:	(505)884-0672
Fax:	(505)884-4932
Requested Due Date/TAT:	standard

Section B — **Required** Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	4515956756
Project Name:	Wilmuth No 1
Project Number:	074937

Section C — Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Tracy
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☒ OTHER NMOCD

Site Location STATE: NM

Section D Required Client Information

Valid Matrix Codes

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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ (Y/N)	8260 BTEX	Sulfate by 300	SM 2540C TDS	EPA 6010 Dissolved Mn			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60117005
1	GW-074937-3712-CB-MW-1	WT	G	—		3.7.12	1620		2	X		X								X		X	1BP3U	1BP3N	1.5	001
2	GW-074937-3712-CB-MW-2	WT	G	—		3.7.12	1535		2	X		X								X		X	↓	↓		002
3	GW-074937-3712-CB-MW-3	WT	G	—		3.7.12	1545		2	X		X								X		X	↓	↓		003
4	GW-074937-3712-CB-MW-4	WT	G	—		3.7.12	1630		2	X		X								X		X	↓	↓		004
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
~~Include MDLs on report J-flag~~	Cassie Bown / CRA	3.8.12	1730	Pace	3-10-12	0900	1.2	Y	Y	Y
* metals were field filtered										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Cassie Bown

SIGNATURE of SAMPLER: Cassie Bown

DATE Signed (MM/DD/YY): 3.8.12

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical®
www.pacelabs.com

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP CRA Project #: 60117005

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ _____

Optional
Proj Due Date: 3/22/12
Proj Name:

Tracking #: 8986353985 47 Pace Shipping Label Used? Yes ☑ No ☐

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☑ No ☐ PW 3-10-12

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ Zip Lc

Thermometer Used: (T-191) / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.2

Date and initials of person examining contents: PW 3-10-12

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
-Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): _____		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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

Start: 1230	Start:
End: 1235	End:
Temp:	Temp:

Project Manager Review: APT Date: 3/12/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

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

June 19, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: Wilmuth No 1
Pace Project No.: 60122912

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2012. 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 Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: Wilmuth No 1
Pace Project No.: 60122912

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: Wilmuth No 1
Pace Project No.: 60122912

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60122912001	**GW-074937-060612-CB-MW-1**	Water	06/06/12 11:00	06/08/12 08:45
60122912002	**GW-074937-060612-CB-MW-2**	Water	06/06/12 10:20	06/08/12 08:45
60122912003	**GW-074937-060612-CB-MW-4**	Water	06/06/12 10:30	06/08/12 08:45
60122912004	**GW-074937-060612-CB-MW-3**	Water	06/06/12 10:45	06/08/12 08:45

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SAMPLE ANALYTE COUNT

Project: Wilmuth No 1
Pace Project No.: 60122912

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60122912001	**GW-074937-060612-CB-MW-1**	EPA 6010	JDH	1
		SM 2540C	DJR	1
60122912002	**GW-074937-060612-CB-MW-2**	EPA 6010	JDH	1
		SM 2540C	DJR	1
60122912003	**GW-074937-060612-CB-MW-4**	EPA 6010	JDH	1
		SM 2540C	DJR	1
60122912004	**GW-074937-060612-CB-MW-3**	EPA 6010	JDH	1
		SM 2540C	DJR	1

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PROJECT NARRATIVE

Project: Wilmuth No 1
Pace Project No.: 60122912

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: June 19, 2012

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

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 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:

Analyte Comments:

QC Batch: MPRP/18387

B: Analyte was detected in the associated method blank.

- GW-074937-060612-CB-MW-1 (Lab ID: 60122912001)
  - Manganese, Dissolved
- GW-074937-060612-CB-MW-2 (Lab ID: 60122912002)
  - Manganese, Dissolved
- GW-074937-060612-CB-MW-3 (Lab ID: 60122912004)
  - Manganese, Dissolved
- GW-074937-060612-CB-MW-4 (Lab ID: 60122912003)
  - Manganese, Dissolved

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PROJECT NARRATIVE

Project: Wilmuth No 1
Pace Project No.: 60122912

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: June 19, 2012

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below.

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 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: Wilmuth No 1
Pace Project No.: 60122912

Sample: GW-074937-060612-CB-MW-1 **Lab ID: 60122912001** Collected: 06/06/12 11:00 Received: 06/08/12 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**886**	ug/L	5.0	0.60	1	06/15/12 15:55	06/18/12 11:49	7439-96-5	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**851**	mg/L	5.0	5.0	1		06/13/12 09:48		

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ANALYTICAL RESULTS

Project: Wilmuth No 1
Pace Project No.: 60122912

Sample: GW-074937-060612-CB-MW-2 **Lab ID: 60122912002** Collected: 06/06/12 10:20 Received: 06/08/12 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1260**	ug/L	5.0	0.60	1	06/15/12 15:55	06/18/12 11:55	7439-96-5	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**688**	mg/L	5.0	5.0	1		06/13/12 09:49		

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ANALYTICAL RESULTS

Project: Wilmuth No 1
Pace Project No.: 60122912

Sample: GW-074937-060612-CB-MW-4 **Lab ID: 60122912003** Collected: 06/06/12 10:30 Received: 06/08/12 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1460**	ug/L	5.0	0.60	1	06/15/12 15:55	06/18/12 12:01	7439-96-5	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**662**	mg/L	5.0	5.0	1		06/13/12 09:49		

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ANALYTICAL RESULTS

Project: Wilmuth No 1
Pace Project No.: 60122912

Sample: GW-074937-060612-CB-MW-3 **Lab ID: 60122912004** Collected: 06/06/12 10:45 Received: 06/08/12 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	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	0.60	1	06/15/12 15:55	06/18/12 12:03	7439-96-5	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**709**	mg/L	5.0	5.0	1		06/13/12 09:49		

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QUALITY CONTROL DATA

Project: Wilmuth No 1
Pace Project No.: 60122912

QC Batch: MPRP/18387 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60122912001, 60122912002, 60122912003, 60122912004

METHOD BLANK: 1014959 Matrix: Water
Associated Lab Samples: 60122912001, 60122912002, 60122912003, 60122912004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	11.2	5.0	06/18/12 11:47	

LABORATORY CONTROL SAMPLE: 1014960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	934	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1014961 1014962

Parameter	Units	60122912001 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	886	1000	1000	1770	1790	88	91	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Wilmuth No 1
Pace Project No.: 60122912

QC Batch: WET/35515 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60122912001, 60122912002, 60122912003, 60122912004

METHOD BLANK: 1013090 Matrix: Water
Associated Lab Samples: 60122912001, 60122912002, 60122912003, 60122912004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	06/13/12 09:47	

SAMPLE DUPLICATE: 1013091

Parameter	Units	60122870017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2230	2200	1	17	

SAMPLE DUPLICATE: 1013092

Parameter	Units	60122948004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	8270	8240	0	17	

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QUALIFIERS

Project: Wilmuth No 1
Pace Project No.: 60122912

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Wilmuth No 1
Pace Project No.: 60122912

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60122912001	**GW-074937-060612-CB-MW-1**	EPA 3010	MPRP/18387	EPA 6010	ICP/15405
60122912002	**GW-074937-060612-CB-MW-2**	EPA 3010	MPRP/18387	EPA 6010	ICP/15405
60122912003	**GW-074937-060612-CB-MW-4**	EPA 3010	MPRP/18387	EPA 6010	ICP/15405
60122912004	**GW-074937-060612-CB-MW-3**	EPA 3010	MPRP/18387	EPA 6010	ICP/15405
60122912001	**GW-074937-060612-CB-MW-1**	SM 2540C	WET/35515		
60122912002	**GW-074937-060612-CB-MW-2**	SM 2540C	WET/35515		
60122912003	**GW-074937-060612-CB-MW-4**	SM 2540C	WET/35515		
60122912004	**GW-074937-060612-CB-MW-3**	SM 2540C	WET/35515		

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP CRA NM Project #: 60122912

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ _____

Optional
Proj Due Date: 08/20
Proj Name: Wilmington Mall

Tracking #: 8993 9001 6610 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: (T-191) / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.4

Date and initials of person examining contents: JM 08/8/12 1105

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☑Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	no containers received for
-Includes date/time/ID/analyses Matrix: water		13. 8260 BTEX.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed JM / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): N/A		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Per Cassy - we will not be receiving sample volume for 8260 BTEX analysis. Please move forward w/ other analysis 08/8/12 AMF

Project Manager Review: AMF Date: 08/8/12

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

Start:	1100	Start:	
End:	1105	End:	
Temp:		Temp:	

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

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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:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone:	(505)884-0672 Fax: (505)884-4932
Requested Due Date/TAT:	standard

Section B
Required Project Information:

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	4515956756
Project Name:	Wilmuth No 1
Project Number:	074937

Section C
Invoice Information:

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Tracy
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Section D
Required Client Information

Valid Matrix Codes

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

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

Pace Project No./ Lab I.D.: 60122912

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-060612-CB-MW-1	WG	G	—	—	6/6/12	1100		2	X		X							X	X	X		1(883W) 1(883F) 001
2	GW-074937-060612-CB-MW-2	WG	G	—	—	6/6/12	1020		2	X		X							X	X	X		↓ 002
3	~~GW-074937-060612-CB-MW-3~~	~~WG~~	~~G~~	—	—	~~6/6/12~~	~~1030~~ 1045		2	X		X							X	X	X		
4	GW-074937-060612-CB-MW-4	WG	G	—	—	6/6/12	1130		2	X		X							X	X	X		1(883W) 1(883F) 003
5	GW-074937-060612-CB-MW-3	WG	G	—	—	6/6/12	1045		2	X		X							X	X	X		↓ 004
6																							
7																							
8																							
9																							
10																							
11																							
12																							

(Row 3 crossed out, initialed "MB 6/7/12")

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
~~Include MDLs on report - J flag.~~	Cassie Brown / CRA	~~6/6/12~~ 6/7/12	1530	[signature] / Pace	6/8/12	845	1.4	Y	Y	Y
*Note: Metals containers were field-filtered							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Cassie Brown

SIGNATURE of SAMPLER: Cassie Brown

DATE Signed (MM/DD/YY): 06/07/2012

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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

October 02, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 22, 2012. 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 Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa

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

CERTIFICATIONS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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

SAMPLE SUMMARY

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60129622001	**GW-074937-091912JP-MW-1**	Water	09/19/12 11:30	09/22/12 08:50
60129622002	**GW-074937-091912JP-MW-2**	Water	09/19/12 10:10	09/22/12 08:50
60129622003	**GW-074937-091912JP-MW-3**	Water	09/19/12 11:20	09/22/12 08:50
60129622004	**GW-074937-091912JP-MW-4**	Water	09/19/12 10:00	09/22/12 08:50
60129622005	**GW-074937-091912JPDUP**	Water	09/19/12 11:35	09/22/12 08:50

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SAMPLE ANALYTE COUNT

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60129622001	**GW-074937-091912JP-MW-1**	EPA 6010	JGP	1
		SM 2540C	NDL	1
60129622002	**GW-074937-091912JP-MW-2**	EPA 6010	JGP	1
		SM 2540C	NDL	1
60129622003	**GW-074937-091912JP-MW-3**	EPA 6010	JGP	1
		SM 2540C	NDL	1
60129622004	**GW-074937-091912JP-MW-4**	EPA 6010	JGP	1
		SM 2540C	NDL	1
60129622005	**GW-074937-091912JPDUP**	EPA 6010	JGP	1

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PROJECT NARRATIVE

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 02, 2012

General Information:
5 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

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 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 NO 1
Pace Project No.: 60129622

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 02, 2012

General Information:
4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below.

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 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 NO 1
Pace Project No.: 60129622

Sample: GW-074937-091912JP-MW-1 **Lab ID: 60129622001** Collected: 09/19/12 11:30 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**915**	ug/L	5.0	0.60	1	09/24/12 13:45	10/01/12 11:35	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**853**	mg/L	5.0	5.0	1		09/25/12 15:46		

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Sample: GW-074937-091912JP-MW-2 **Lab ID: 60129622002** Collected: 09/19/12 10:10 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1390**	ug/L	5.0	0.60	1	09/24/12 13:45	10/01/12 11:37	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**736**	mg/L	5.0	5.0	1		09/25/12 15:47		

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Sample: GW-074937-091912JP-MW-3 **Lab ID: 60129622003** Collected: 09/19/12 11:20 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1600**	ug/L	5.0	0.60	1	09/24/12 13:45	10/01/12 11:40	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**723**	mg/L	5.0	5.0	1		09/25/12 15:47		

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Sample: GW-074937-091912JP-MW-4 **Lab ID: 60129622004** Collected: 09/19/12 10:00 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1900**	ug/L	5.0	0.60	1	09/24/12 13:45	10/01/12 11:42	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**771**	mg/L	5.0	5.0	1		09/25/12 15:47		

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ANALYTICAL RESULTS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

Sample: GW-074937-091912JPDUP **Lab ID: 60129622005** Collected: 09/19/12 11:35 Received: 09/22/12 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**939**	ug/L	5.0	0.60	1	09/24/12 13:45	10/01/12 11:44	7439-96-5	

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QUALITY CONTROL DATA

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

QC Batch: MPRP/19622 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60129622001, 60129622002, 60129622003, 60129622004, 60129622005

METHOD BLANK: 1066225 Matrix: Water
Associated Lab Samples: 60129622001, 60129622002, 60129622003, 60129622004, 60129622005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	10/01/12 11:09	

LABORATORY CONTROL SAMPLE: 1066226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	999	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1066227 1066228

Parameter	Units	60129643004 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	1320	1000	1000	2270	2270	95	95	75-125	0	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

QC Batch: WET/37321 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60129622001, 60129622002, 60129622003, 60129622004

METHOD BLANK: 1066889 Matrix: Water
Associated Lab Samples: 60129622001, 60129622002, 60129622003, 60129622004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/25/12 15:41	

SAMPLE DUPLICATE: 1066890

Parameter	Units	60129346001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	651	655	1	17	

SAMPLE DUPLICATE: 1066891

Parameter	Units	60129541001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	664	668	1	17	

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QUALIFIERS

Project: 074937 WILMUTH NO 1
Pace Project No.: 60129622

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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 NO 1
Pace Project No.: 60129622

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60129622001	**GW-074937-091912JP-MW-1**	EPA 3010	MPRP/19622	EPA 6010	ICP/16166
60129622002	**GW-074937-091912JP-MW-2**	EPA 3010	MPRP/19622	EPA 6010	ICP/16166
60129622003	**GW-074937-091912JP-MW-3**	EPA 3010	MPRP/19622	EPA 6010	ICP/16166
60129622004	**GW-074937-091912JP-MW-4**	EPA 3010	MPRP/19622	EPA 6010	ICP/16166
60129622005	**GW-074937-091912JPDUP**	EPA 3010	MPRP/19622	EPA 6010	ICP/16166
60129622001	**GW-074937-091912JP-MW-1**	SM 2540C	WET/37321		
60129622002	**GW-074937-091912JP-MW-2**	SM 2540C	WET/37321		
60129622003	**GW-074937-091912JP-MW-3**	SM 2540C	WET/37321		
60129622004	**GW-074937-091912JP-MW-4**	SM 2540C	WET/37321		

CHAIN-OF-CUSTODY / Analytical Request Document

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

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Page: 1 of 1

Section A — Required Client Information		Section B — Required Project Information		Section C — Invoice Information	
Company:	COP CRA NM	Report To:	Christine Mathews	Attention:	ENFOS
Address	6121 Indian School Rd NE, Ste 200	Copy To:	Kelly Blanchard, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4515956756	Pace Quote Reference:	
Phone	(505)884-0672 Fax: (505)884-4932	Project Name:	Wilmuth No 1	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074937	Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: NM

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

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

Requested Analysis Filtered (Y/N)

Pace Project No./ Lab I.D.: 60129622

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-091912-JP-MW-1	WT	G			9.19.12	1130		2	X		X							X	X		1BP3F[1.5] 1BP3U 01
2	GW-074937-091912-JP-MW-2	WT	G			9.19.12	1010		2	X		X							X	X		02
3	GW-074937-091912-JP-MW-3	WT	G			9.19.12	1120		2	X		X							X	X		03
4	GW-074937-091912-JP-MW-4	WT	G			9.19.12	1000		2	X		X							X	X		04
5	GW-074937-091912-JP-DUP	WT	G			9.19.12	1135		1			X							X			05
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Sarah Fickett / CRA	9.21.2012	1200	[signature]	9-22-12	850	1.2	Y	N	Y

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sarah Fickett

SIGNATURE of SAMPLER: Sarah Fickett

DATE Signed (MM/DD/YY): 09/21/2012

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev.08, 12-Oct-2007

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP CRA NM

Project #: 60129622

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐ _____

Optional
Proj Due Date: 10/4
Proj Name:

Tracking #: 8993 9001 6584 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 ☑ ZPLC

Thermometer Used: T-191 / T-194 **Type of Ice:** (Wet) Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 1.2

Date and initials of person examining contents: 9-22-12 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes	☐No	☐N/A	1.
Chain of Custody filled out:	☑Yes	☐No	☐N/A	2.
Chain of Custody relinquished:	☑Yes	☐No	☐N/A	3.
Sampler name & signature on COC:	☑Yes	☐No	☐N/A	4.
Samples arrived within holding time:	☑Yes	☐No	☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time requested:	☐Yes	☑No	☐N/A	7.
Sufficient volume:	☑Yes	☐No	☐N/A	8.
Correct containers used:	☑Yes	☐No	☐N/A	
-Pace containers used:	☑Yes	☐No	☐N/A	9.
Containers intact:	☑Yes	☐No	☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes	☐No	☑N/A	11.
Filtered volume received for dissolved tests?	☑Yes	☐No	☐N/A	12.
Sample labels match COC:	☑Yes	☐No	☐N/A	
-Includes date/time/ID/analyses Matrix: WT				13.
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes	☑No		Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes	☐No	☑N/A	
Pace Trip Blank lot # (if purchased): _____				15.
Headspace in VOA vials (>6mm):	☐Yes	☐No	☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes	☐No	☑N/A	17. List State:

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: MXF Date: 9/24/12

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

Start: 1145	Start:
End: 1150	End:
Temp:	Temp:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NCDENR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

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December 27, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074937 WILMUTH NO 1
Pace Project No.: 60135324

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2012. 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 Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: WILMUTH NO 1
Pace Project No.: 60135324

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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SAMPLE SUMMARY

Project: WILMUTH NO 1
Pace Project No.: 60135324

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60135324001	**GW-074937-121212-CM-MW-1**	Water	12/12/12 14:20	12/13/12 08:30
60135324002	**GW-074937-121212-CM-MW-2**	Water	12/12/12 13:50	12/13/12 08:30
60135324003	**GW-074937-121212-CM-MW-3**	Water	12/12/12 13:40	12/13/12 08:30
60135324004	**GW-074937-121212-CM-MW-4**	Water	12/12/12 14:40	12/13/12 08:30
60135324005	**GW-074937-121212-CM-DUP**	Water	12/12/12 13:45	12/13/12 08:30

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SAMPLE ANALYTE COUNT

Project: WILMUTH NO 1
Pace Project No.: 60135324

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60135324001	**GW-074937-121212-CM-MW-1**	EPA 6010	JGP	1
		SM 2540C	FJF	1
60135324002	**GW-074937-121212-CM-MW-2**	EPA 6010	JGP	1
		SM 2540C	FJF	1
60135324003	**GW-074937-121212-CM-MW-3**	EPA 6010	JGP	1
		SM 2540C	FJF	1
60135324004	**GW-074937-121212-CM-MW-4**	EPA 6010	JGP	1
		SM 2540C	FJF	1
60135324005	**GW-074937-121212-CM-DUP**	SM 2540C	FJF	1

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PROJECT NARRATIVE

Project: WILMUTH NO 1
Pace Project No.: 60135324

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 27, 2012

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

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 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: WILMUTH NO 1
Pace Project No.: 60135324

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 27, 2012

General Information:
5 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below.

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 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: WILMUTH NO 1
Pace Project No.: 60135324

Sample: GW-074937-121212-CM-MW-1 **Lab ID: 60135324001** Collected: 12/12/12 14:20 Received: 12/13/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**979**	ug/L	5.0	0.60	1	12/19/12 14:45	12/26/12 15:56	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**927**	mg/L	5.0	5.0	1		12/18/12 12:01		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1
Pace Project No.: 60135324

Sample: GW-074937-121212-CM-MW-2 **Lab ID: 60135324002** Collected: 12/12/12 13:50 Received: 12/13/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	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	0.60	1	12/19/12 14:45	12/26/12 16:09	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**709**	mg/L	5.0	5.0	1		12/18/12 12:02		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1
Pace Project No.: 60135324

Sample: GW-074937-121212-CM-MW-3 **Lab ID: 60135324003** Collected: 12/12/12 13:40 Received: 12/13/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1570**	ug/L	5.0	0.60	1	12/19/12 14:45	12/26/12 16:13	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**709**	mg/L	5.0	5.0	1		12/18/12 12:02		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1
Pace Project No.: 60135324

Sample: GW-074937-121212-CM-MW-4 **Lab ID: 60135324004** Collected: 12/12/12 14:40 Received: 12/13/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Manganese, Dissolved	**1420**	ug/L	5.0	0.60	1	12/19/12 14:45	12/26/12 16:16	7439-96-5	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**731**	mg/L	5.0	5.0	1		12/18/12 12:02		

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ANALYTICAL RESULTS

Project: WILMUTH NO 1
Pace Project No.: 60135324

Sample: GW-074937-121212-CM-DUP **Lab ID: 60135324005** Collected: 12/12/12 13:45 Received: 12/13/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**717**	mg/L	5.0	5.0	1		12/18/12 12:03		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: WILMUTH NO 1
Pace Project No.: 60135324

QC Batch: MPRP/20910 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60135324001, 60135324002, 60135324003, 60135324004

METHOD BLANK: 1117297 Matrix: Water
Associated Lab Samples: 60135324001, 60135324002, 60135324003, 60135324004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	12/26/12 15:46	

LABORATORY CONTROL SAMPLE: 1117298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1117299 1117300

Parameter	Units	60135324001 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	979	1000	1000	1950	1920	97	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: WILMUTH NO 1
Pace Project No.: 60135324

QC Batch: WET/38853 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60135324001, 60135324002, 60135324003, 60135324004, 60135324005

METHOD BLANK: 1116277 Matrix: Water
Associated Lab Samples: 60135324001, 60135324002, 60135324003, 60135324004, 60135324005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/18/12 11:59	

SAMPLE DUPLICATE: 1116278

Parameter	Units	60135274001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	449	430	4	17	

SAMPLE DUPLICATE: 1116279

Parameter	Units	60135336001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2040	2020	1	17	

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QUALIFIERS

Project: WILMUTH NO 1
Pace Project No.: 60135324

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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: WILMUTH NO 1
Pace Project No.: 60135324

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60135324001	**GW-074937-121212-CM-MW-1**	EPA 3010	MPRP/20910	EPA 6010	ICP/16950
60135324002	**GW-074937-121212-CM-MW-2**	EPA 3010	MPRP/20910	EPA 6010	ICP/16950
60135324003	**GW-074937-121212-CM-MW-3**	EPA 3010	MPRP/20910	EPA 6010	ICP/16950
60135324004	**GW-074937-121212-CM-MW-4**	EPA 3010	MPRP/20910	EPA 6010	ICP/16950
60135324001	**GW-074937-121212-CM-MW-1**	SM 2540C	WET/38853		
60135324002	**GW-074937-121212-CM-MW-2**	SM 2540C	WET/38853		
60135324003	**GW-074937-121212-CM-MW-3**	SM 2540C	WET/38853		
60135324004	**GW-074937-121212-CM-MW-4**	SM 2540C	WET/38853		
60135324005	**GW-074937-121212-CM-DUP**	SM 2540C	WET/38853		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60135324

60135324

Client Name: CoP CRA NM

Optional
Proj Due Date: 12/26
Proj Name:

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8011 3631 7109 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: T-191 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.6

Date and initials of person examining contents: DS 12/13/12 1200

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: water	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed: MA / Lot # of added preservative:
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased): MA		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

AFF

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: MAF Date: 12/13/12

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

Start:	Start:
End:	End:
Temp:	Temp:

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A — Required Client Information

Company:	COP CRA NM
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone: (505)884-0672	Fax: (505)884-4932
Requested Due Date/TAT:	standard

Section B — Required Project Information

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown, Cassie Brown
Purchase Order No.:	
Project Name:	Wilmuth No 1
Project Number:	074937

Section C — Invoice Information

Attention:	ENFOS
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	5514, 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Section D — Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

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 COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNC_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	EPA 6010 Dissolved Mn	SM 2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074937-121212-CM-MW-1	WT	G		1420	12.12.12	~~1340~~		2	X		X						X	X		60135324 (BP3F) (BP3U) 001
2	GW-074937-121212-CM-MW-2	WT	G		1350	12.12.12	~~1350~~		2	X		X						X	X		002
3	GW-074937-121212-CM-MW-3	WT	G		1340	12.12.12			2	X		X						X	X		003
4	GW-074937-121212-CM-MW-4	WT	G		1440	12.12.12			2	X		X						X	X		004
5	GW-074937-121212-CM-DUP	WT	G		1345	12.12.12			1										X		(BP3U) 005
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Christine Mathews / CRA	12.12.12	1530		12/13/12	830	0.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: Christine Mathews DATE Signed (MM/DD/YY): 12/12/12

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
0.6	Y	Y	Y

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007