3R – 340

2013 AGWMR

08 / 22 / 2014

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ConocoPhillips

Mr. Glenn von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

August 22, 2014

Re: NMOCD Case No. 3R-340, 2013 Annual Groundwater Monitoring Report

Dear Mr. von Gonten:

Enclosed is the 2013 Annual Groundwater Monitoring Report for the Randleman No. 1 site. This report, prepared by Conestoga-Rovers & Associates (CRA), contains the results of groundwater monitoring from March, June, September, and December 2013.

Please let me know if you have any questions.

Sincerely,

David C. Hathaway

David C. Hathaway, P.E.

Enc

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

Final Report

2013 Annual Groundwater Monitoring Report

ConocoPhillips Randleman No. 1
San Juan County, New Mexico
API# 30-045-10698
NMOCD# 3R-340

Prepared for: ConocoPhillips Company

Conestoga-Rovers & Associates
6121 Indian School Road, NE Suite 200
Albuquerque, New Mexico 87110

September 2014 • 074933 • Report No. 5

Partners in Sustainability

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Section 1.0 Introduction

This report discusses the 2013 quarterly groundwater monitoring events performed by Conestoga-Rovers & Associates, Inc. (CRA) at the ConocoPhillips Company (ConocoPhillips) Randleman No. 1 site located north of Aztec, New Mexico (Site). The Site is situated on private land in Section 13, Township 31N, Range 11W, of San Juan County, New Mexico. Geographical coordinates for the Site are 36°53'46.09"North and 107°56'43.78"West. A Site location map and detail map are included as **Figures 1** and **2**, respectively.

1.1 Background

The historical timeline for the Site is summarized below, and is also presented in **Table 1**.

In April 1997, an unlined surface impoundment was discovered to have been impacted by petroleum hydrocarbons. On April 29, 1997, excavation of the soil beneath the impoundment began. A total of 613 cubic yards of hydrocarbon impacted soil were removed and landfarmed at the nearby Randleman No. 3 site (Williams 2002). Three monitor wells were installed at the Site on May 14, 1997, and quarterly groundwater monitoring was conducted through March 1998. Evaluation of groundwater monitoring results led to another excavation in April 1998. In total, 2,220 cubic yards of hydrocarbon impacted soil were excavated "to address residual soil contamination extending to the south of the original excavated area" (Williams, 2002). Quarterly groundwater monitoring was continued through September 2000. After 4 consecutive quarters of groundwater monitoring results below New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for benzene, toluene, ethylbenzene, and total xylenes (BTEX), Williams Environmental Services (Williams) requested that the New Mexico Oil Conservation Division (NMOCD) grant closure status for the Site. In June 2002, the NMOCD granted closure for the Site, provided that Williams plug and abandon all Site groundwater monitor wells according to NMOCD standards (NMEMNRD, 2002). The historical excavation area and historical groundwater monitor wells are displayed in **Figure 2**.

On February 23, 2009, a release of approximately 60 barrels of condensate occurred as a result of a hole in an on-Site production tank.

Envirotech Inc. of Farmington, NM (Envirotech) excavated an area of approximately 42 ft x 51 ft x 7 ft deep on February 26, 2009. Seven composite soil samples were collected during excavation activities and were field analyzed for total petroleum hydrocarbons (TPH) using Environmental Protection Agency (EPA) Method 418.1. Additionally, samples were field analyzed for organic vapors using a photoionization detector (PID) and heated headspace techniques. TPH results ranged from 8 to 1,080 parts per million (ppm) in the walls of the excavation. Organic vapor concentrations ranged from 6.8 ppm to 898 ppm.

Because TPH and organic vapor levels were found to be above NMOCD action levels, the excavation was continued on February 27, 2009 (Envirotech, 2009). The total area of excavation measured 81 ft x 43 ft x 20 ft deep. The excavation area is depicted in **Figure 2**.
On March 2, 2009, groundwater was found seeping into the southeast corner of the excavation at a depth of approximately 20 feet below ground surface (bgs). A vacuum truck was utilized to recover groundwater from the excavation. After removal of accumulated groundwater, Envirotech obtained a soil sample from the southeast corner of the excavation at a depth of 20 feet bgs. TPH and organic vapor results were found to be above NMOCD action levels. During field analysis of the soil sample, groundwater continued to seep into the excavation. Groundwater was again removed from the excavation, and additional excavation was performed to obtain a soil sample below NMOCD action levels. A groundwater sample was collected and sent for laboratory analysis of volatile organic compounds by EPA Method 8260B. The groundwater sample was found to contain benzene, total xylenes and total naphthalenes above NMWQCC groundwater quality standards. Soon after the groundwater sample was taken, the excavation sidewalls collapsed, making further water removal via the vacuum truck impossible (Envirotech, 2009).

A total of 611 cubic yards of soil were removed from the Site and were transported to an NMOCD-permitted facility. Clean fill was obtained from the landowner to backfill the excavation. Envirotech recommended the installation of groundwater monitor wells at the Site under NMOCD guidelines (Envirotech, 2009).

Tetra Tech, Inc. (Tetra Tech) installed four groundwater monitor wells at the Site between June 9 and 10, 2009. A generalized geologic cross section was produced using soil boring data collected during monitor well installation (**Figure 3)**.

Following drilling activities in June 2009, the casings for Site monitor wells were surveyed using an arbitrary reference-elevation of 100 feet above mean sea level (amsl). Data obtained from the Site survey was used in conjunction with quarterly monitoring data to produce groundwater potentiometric surface maps for the Site (**Figures 4, 5, 6,** and **7**). Groundwater flow direction at the Site is to the east/southeast.

Tetra Tech began conducting groundwater monitoring events at the Site on June 12, 2009. Hydrocarbon absorbent socks were placed in Monitor Wells MW-2 and MW-3 on June 18, 2009 due to a light non-aqueous phase liquid (LNAPL) sheen being observed intermittently in purge water during groundwater sampling. The socks were removed during the March 2010 sampling event. Since the removal of the socks, LNAPL has not been detected in MW-2 or in MW-3. Soil and groundwater samples were also collected from the Kitten Canyon Wash on October 21, 2009 and analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX). In both the soil and groundwater collected from Kitten Canyon Wash, BTEX constituents were found to be below NMWQCC standards.

On June 15, 2011 Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM. CRA has continued quarterly groundwater monitoring since that time.

A new well, Monitor Well MW-5, was installed by National Exploration, Wells, and Pumps (National EWP) between May 24 and 25, 2013, at the Randleman 01A/01M gas well site, approximately 2000 feet north of the Site. The well -5 was installed to monitor groundwater quality in the up-gradient direction.

Section 2.0 Groundwater Monitoring Methodology and Analytical Results

2.1 Groundwater Monitoring Summary

Quarterly groundwater monitoring events were conducted on March 27, June 19, September 12, and December 12, 2013. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3, MW-4 and newly-installed Monitor Well MW-5, depth to groundwater in each well was measured using an oil/water interface probe (**Table 2)**. Groundwater potentiometric surface maps compiled utilizing March, June, September, and December 2013 groundwater elevation measurements are presented as **Figures 4, 5, 6,** and **7**, respectively.

A supplemental groundwater sample was collected from Monitor Well MW-1 on October 1, 2013 to perform a metals treatability study on Site groundwater.

2.2 Groundwater Monitoring Methodology

During groundwater monitoring events, Site monitor wells were purged of at least three casing volumes of groundwater using a 1.5-inch diameter, polyethylene, dedicated bailer. While bailing each well, groundwater parameters 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.

Groundwater samples were analyzed for BTEX by EPA Method 8260; sulfate and chloride by EPA Method E300.0; total dissolved solids (TDS) by EPA Method 2540C; and dissolved manganese by EPA Method 6010. A summary of analytical results is displayed in **Table 3**.

The metals treatability sample from Monitor Well MW-3 was collected after the same purging and field parameter measurement protocol employed during quarterly sampling events. The sample was shipped to CRA's Innovative Technologies Group (ITG) for evaluation for potential groundwater treatment by pH adjustment, biosparging and oxidant injection.

2.3 Groundwater Monitoring Analytical Results

The 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. Exceedences of NMWQCC groundwater quality standards in Site monitor wells are discussed below.

March 2013

- Benzene
  - The NMWQCC domestic water supply groundwater quality standard for benzene is 0.010 milligrams per liter (mg/L). In March 2013, groundwater samples collected from MW-2 contained benzene at a concentration of 0.0215 mg/L.

- Chloride
  - The NMWQCC domestic water supply groundwater quality standard for chloride is 250 mg/L. In March 2013, the groundwater sample collected from MW-4 contained chloride at a concentration of 2,270 mg/L.

- Sulfate
  - The NMWQCC domestic water supply groundwater quality standard for sulfate is 600 mg/L; groundwater samples collected in March 2013 from Monitor Wells MW-1, MW-2, MW-3, and MW-4 were found to contain sulfate at concentrations of 1,940 mg/L, 1,150 mg/L, 1,530 mg/L, and 3,180 mg/L, respectively.

- Dissolved Manganese
  - The NMWQCC domestic water supply groundwater quality standard for dissolved manganese is 0.2 mg/L. In March 2013, groundwater samples collected from Monitor Wells MW-1, MW-2, MW-3, and MW-4 were found to contain concentrations of dissolved manganese at 1.270 mg/L, 1.060 mg/L, 1.810 mg/L, and 1.460 mg/L, respectively.

- Total Dissolved Solids
  - The NMWQCC groundwater quality standard for TDS is 1,000 mg/L. The March 2013 groundwater samples collected from MW-1, MW-2, MW-3, and MW-4 exceeded this standard with concentrations of 4,240 mg/L, 2,050 mg/L, 2,500 mg/L and 8,320 mg/L, respectively.

June 2013

- Benzene
  - In June 2013, groundwater samples collected from MW-2 contained benzene at a concentration of 0.0318 mg/L.

- Chloride
  - In June 2013, the groundwater sample collected from up-gradient MW-4 and the newly-installed up-gradient MW-5 contain chloride at concentrations of 2,000 mg/L, and 3,900 mg/L, respectively.

- Sulfate
  - Groundwater samples collected in June 2013 from Monitor Wells MW-1, MW-2, MW-3, MW-4 and MW-5 were found to contain sulfate at concentrations of 1,400 mg/L, 1,000 mg/L, 1,240 mg/L, 2,790 mg/L, and 1,550 mg/L, respectively.

- Dissolved Manganese
  - In June 2013, groundwater samples collected from Monitor Wells MW-2, MW-3, MW-4 and MW-5 were found to contain concentrations of dissolved manganese exceeding the standard at 1.190 mg/L, 1.660 mg/L, 1.440 mg/L, and 0.225 mg/L, respectively.

September 2013

- Chloride
  - In September 2013, the groundwater samples collected from up-gradient Monitor Wells MW-4 and MW-5 were found to contain chloride at concentrations of 2,520 mg/L and 4,040 mg/L, respectively.

- Sulfate
  - In September 2013, the groundwater samples collected from MW-1, MW-2, MW-3, MW-4 and MW-5 were found to contain Sulfate at concentrations of 1,590 mg/L, 1,390 mg/L, 920 mg/L, 3,080 mg/L, and 1,630 mg/L, respectively.

- Dissolved Manganese

- In September 2013, groundwater samples collected from Monitor Wells MW-2, MW-3, MW-4 and MW-5 were found to contain dissolved manganese concentrations of 2.20 mg/L, 0.989 mg/L, 1.180 mg/L, and 0.245 mg/L, respectively.

- Total Dissolved Solids
  - September 2013 groundwater samples collected from Monitor Wells MW-1, MW-2, MW-3, MW-4, and MW-5 contained TDS concentrations of 3,870 mg/L, 2,210 mg/L, 2,120 mg/L, 6,570 0.245 and 10,800 mg/L, respectively.

December 2013

- Chloride
  - In December 2013, the groundwater sample collected from up-gradient Monitor Wells MW-4 and MW-5 was found to contain chloride at concentrations of 2,570 mg/L and 4,130 mg/L, respectively.

- Sulfate
  - Groundwater samples collected in December 2013 from Monitor Wells MW-1, MW-2, MW-3, MW-4, and MW-5 were found to contain sulfate at concentrations of 1,470 mg/L, 1,220 mg/L, 1,290 mg/L, 3,320 mg/L, and 1,870 mg/L, respectively.

- Dissolved Manganese
  - In December 2013, groundwater samples collected from Monitor Wells MW-2, MW-3, MW-4 and MW-5 were found to contain dissolved manganese concentrations of 1.390 mg/L, 1.200 mg/L, 1.610 mg/L, and 0.232 mg/L, respectively.

- Total Dissolved Solids
  - December 2013 groundwater samples collected from Monitor Wells MW-1, MW-2, MW-3, MW-4, and MW-5 contained TDS at concentrations of 2,370 mg/L, 2,080 mg/L, 2,080 mg/L, 8,340 mg/L, and 8,250 mg/L, respectively.

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

Section 3.0 Monitor Well Installation

On May 24th and 25th, 2013, Monitor Well MW-5 was installed by National Exploration, Wells, and Pumps (National EWP) at the Randleman 01A/01M gas well site, approximately 2000 feet north of the Site.

Soil cuttings generated during the drilling were field screened for volatile organic compounds (VOCs) using the heated headspace method at least at every 5 ft. interval. The calibrated photoionization detector did not register VOCs greater than 5.0 parts per million (ppm). As a result, generated cuttings were thin-spread on the Site.

Two soil samples were collected from the MW-5 soil boring during drilling operations. Samples were collected at 32 feet and 44 feet bgs, and analyzed for manganese, chloride and sulfate. Concentrations of these constituents in both of these samples were consistent with baseline soil samples collected in 2009 from Monitor Wells MW-2, MW-3 and MW-4 during their installation (**Appendix C**). Soil concentrations of manganese, chloride and sulfate from the MW-5 soil sample results were below the 2009 results of Monitor Well MW-4, the up-gradient well at the Randleman No. 1 well pad. This may be an indication that concentrations of these constituents at MW-4 are not necessarily representative of background, but rather represent impacts from the 2009 release of condensate at the Site.

MW-5 was installed to a total depth of 55 feet bgs. The well was constructed of 2-inch diameter, schedule 40, flush-joint, PVC casing and screen. The monitoring well consists of a 0.5-foot long, threaded PVC bottom plug and 15 feet of flush-joint, threaded, factory-slotted (0.010-inch) well screen. The annular space around the well screen was filled with 10/20 gradation silica sand to approximately two feet above the well screen, followed by approximately three feet of 3/8-inch bentonite chips. A cement/bentonite grout was placed from the top of the bentonite chips to ground surface. The wellhead is protected with a flush-mount completion set within a 36-inch by 36-inch by 4-inch thick concrete pad surrounded by 4 steel bollards. A boring log and well completion diagram is included in **Appendix D**.

Monitor Well MW-5 was developed by National EWP using a stainless steel bailer. Approximately 50 gallons of groundwater were recovered during the development process until turbidity stabilized. Groundwater samples were collected from MW-5 during the June, September, and December quarterly groundwater sampling events.

Section 4.0 Conclusions and Recommendations

Chloride and TDS in groundwater of MW-5 occur in concentrations above NMWQCC groundwater quality standards, and above that of down-gradient Monitor Wells MW-1 through MW-4.

Concentrations of manganese and sulfate were also above NMWQCC groundwater quality standards in MW-5 groundwater, but below or at those of on-Site Monitor wells MW-2, MW-3 and MW-4. This may indicate that background concentrations of these constituents are above NMWQCC groundwater quality standards and are being further exacerbated by anaerobic conditions caused by the intrinsic biodegradation of hydrocarbons at the Site. Because background concentrations of these constituents are shown to occur above the NMWQCC standard, CRA herein petitions the NMOCD to discontinue the sampling and analyses of chloride, sulfate, dissolved manganese and TDS in Site wells.
Benzene was detected at concentrations above the NMWQCC standard in groundwater samples from Monitor Well MW-2 during March and June of 2013. CRA recommends continued quarterly groundwater sampling of BTEX constituents at the Site.

CRA recommends an investigation be made as to the source of the elevated chlorides in groundwater of Monitor Wells MW-4 and MW-5.

CRA recommends continued quarterly monitoring of BTEX constituents. Remediation Site closure will be requested when groundwater analytical results for BTEX constituents are documented to be below NMWQCC for eight consecutive quarters.

The metals treatability study conducted on groundwater collected from Monitor Well MW-3 in October 2013 concluded that pH adjustment of Site groundwater would precipitate manganese to concentrations below NMWQCC groundwater quality standards. However, due to recalcitrant concentrations of benzene, which would be unaffected by this method, pH adjustment is not currently being considered.

Section 5.0 References

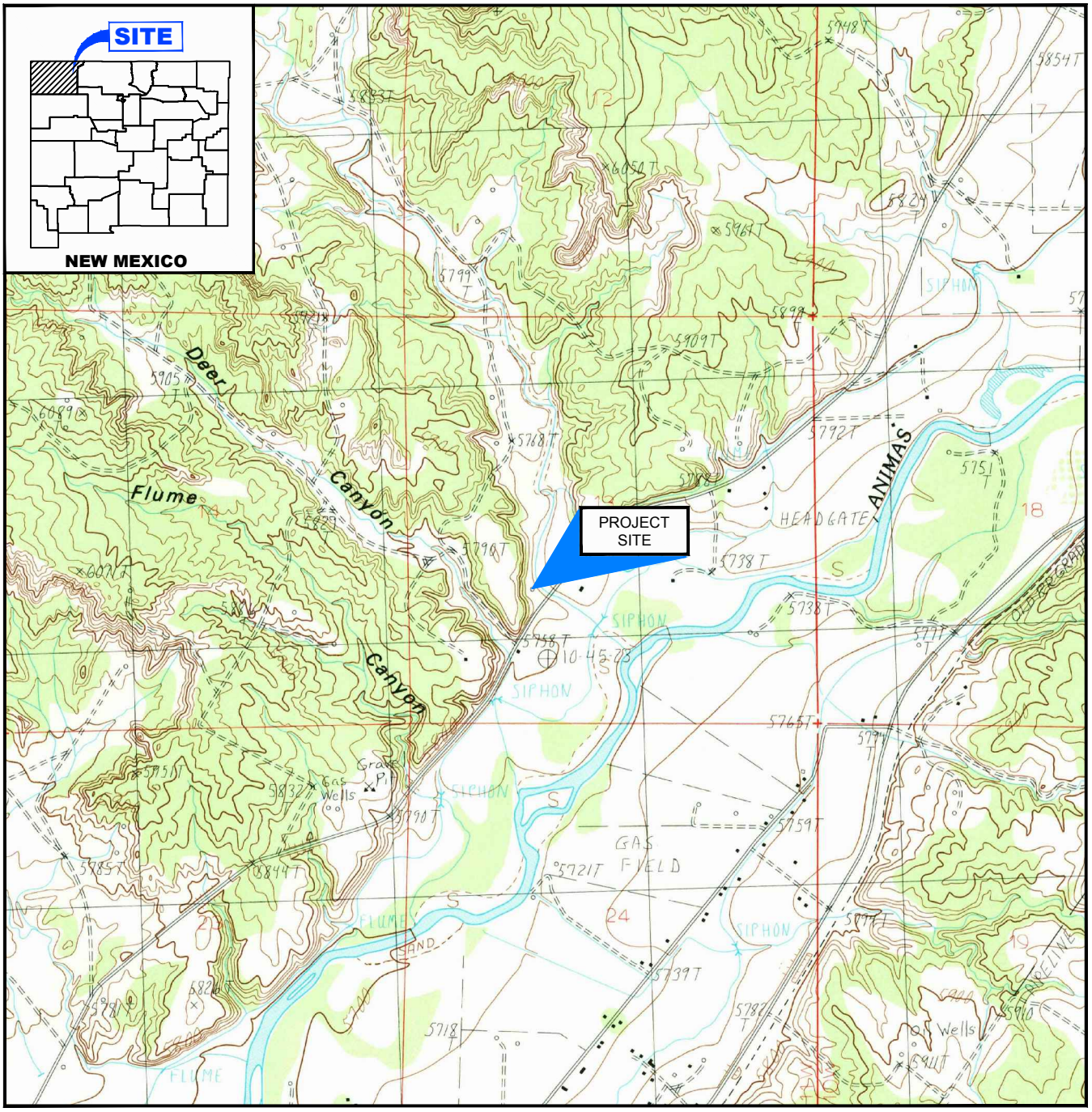
Envirotech Incorporated (2009). *Spill Cleanup Report, Located at: Burlington Resources [sic] Randleman #1 Well Site, Section 13, Township 31N, Range 11W, San Juan County, New Mexico*. Prepared for ConocoPhillips. Report Dated February 2009. 3 pp.

Tetra Tech, Inc. (2009). *Groundwater Monitor Well Installation and Baseline Groundwater Monitoring Report, Randleman 1 Production Facility*. Table 2 Soil Boring Laboratory Analytical Results. Prepared for ConocoPhillips. Report Dated August 2009.

New Mexico Energy, Minerals and Natural Resources Department (2002). *Case # 3R0-340, Randleman #1 Dehy Pit, San Juan County [sic], New Mexico*. Letter from NMEMNRD to Williams Field Services. Dated June 14, 2002. 6 pp.

Williams Environmental Services (2002). *Randleman #1 Pit Remediation and Closure Report. Prepared for the New Mexico Oil Conservation Division*. Report Dated February 11, 2002. 3 pp.

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"CEDER HILL, NEW MEXICO"

Figure 1

SITE VICINITY MAP
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, N.M.
ConocoPhillips Company

074933-95(004)GN-DL001_Topo JUL 27/2012

ConocoPhillips high resolution aerial imagery 2008.

Figure 2

SITE PLAN
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

074933-95(004)GN-DL002_SD APR 11/2013

RE: 2010 Aerial Photograph.

Legend

- Monitor Well Location
- Gas Well Location

Figure 3

MW-5 LOCATON MAP

RANDLEMAN No. 1 NATURAL GAS WELL SITE

SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO

ConocoPhillips Company

74933-00(000)PR-BR002 4/4/2014

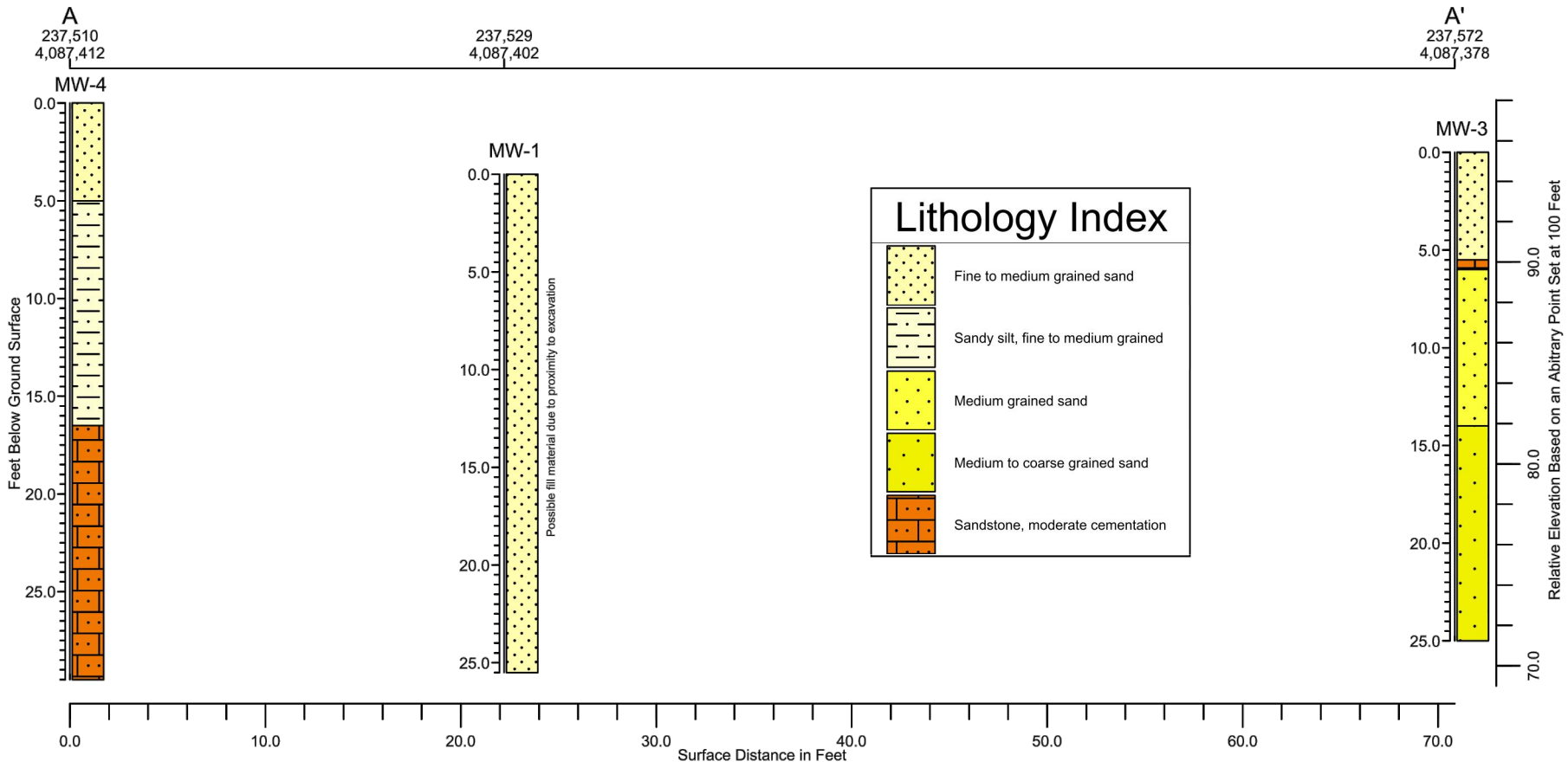
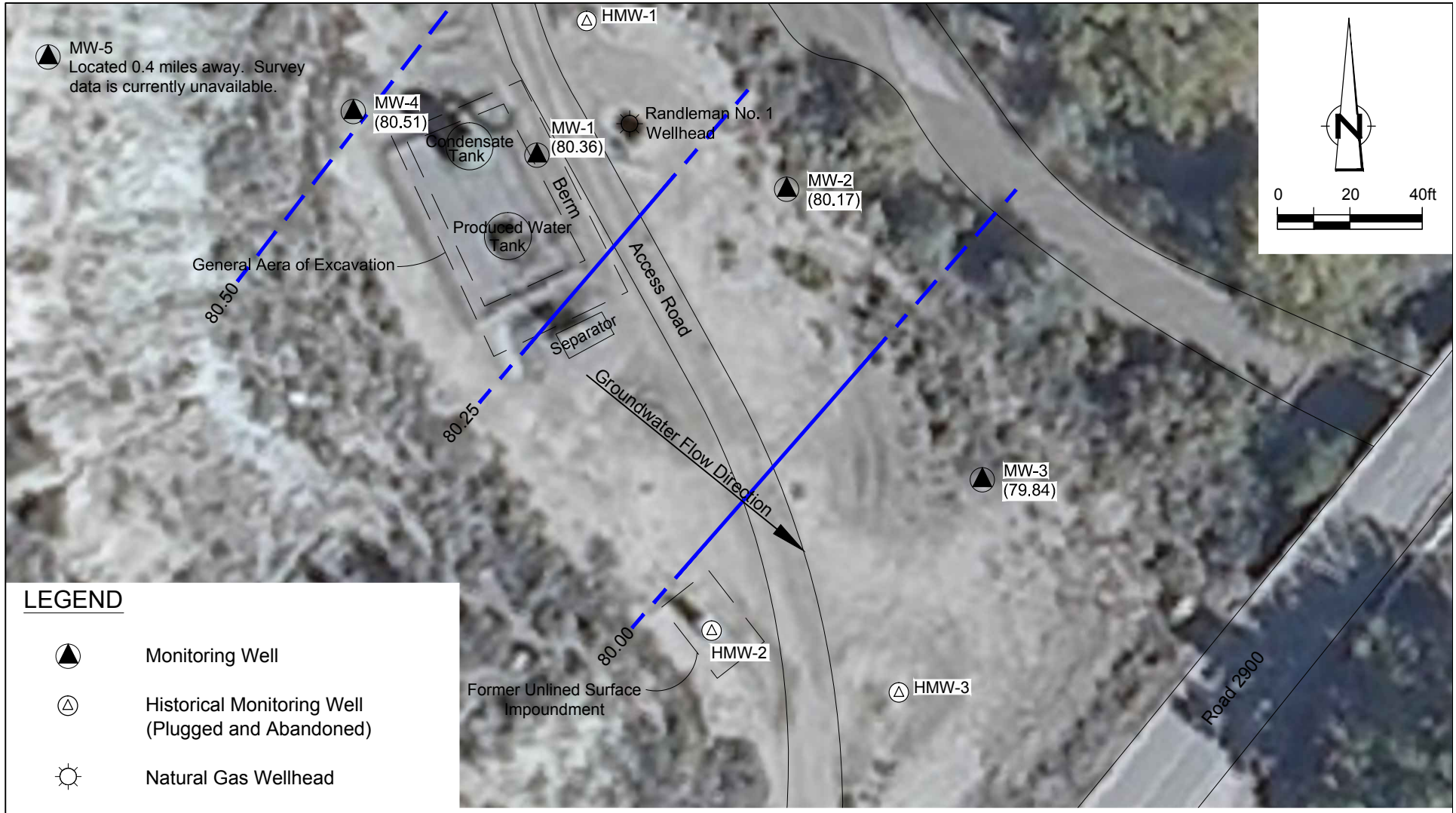


Figure 4

GEOLOGICAL CROSS SECTION
RANDLEMAN NO. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

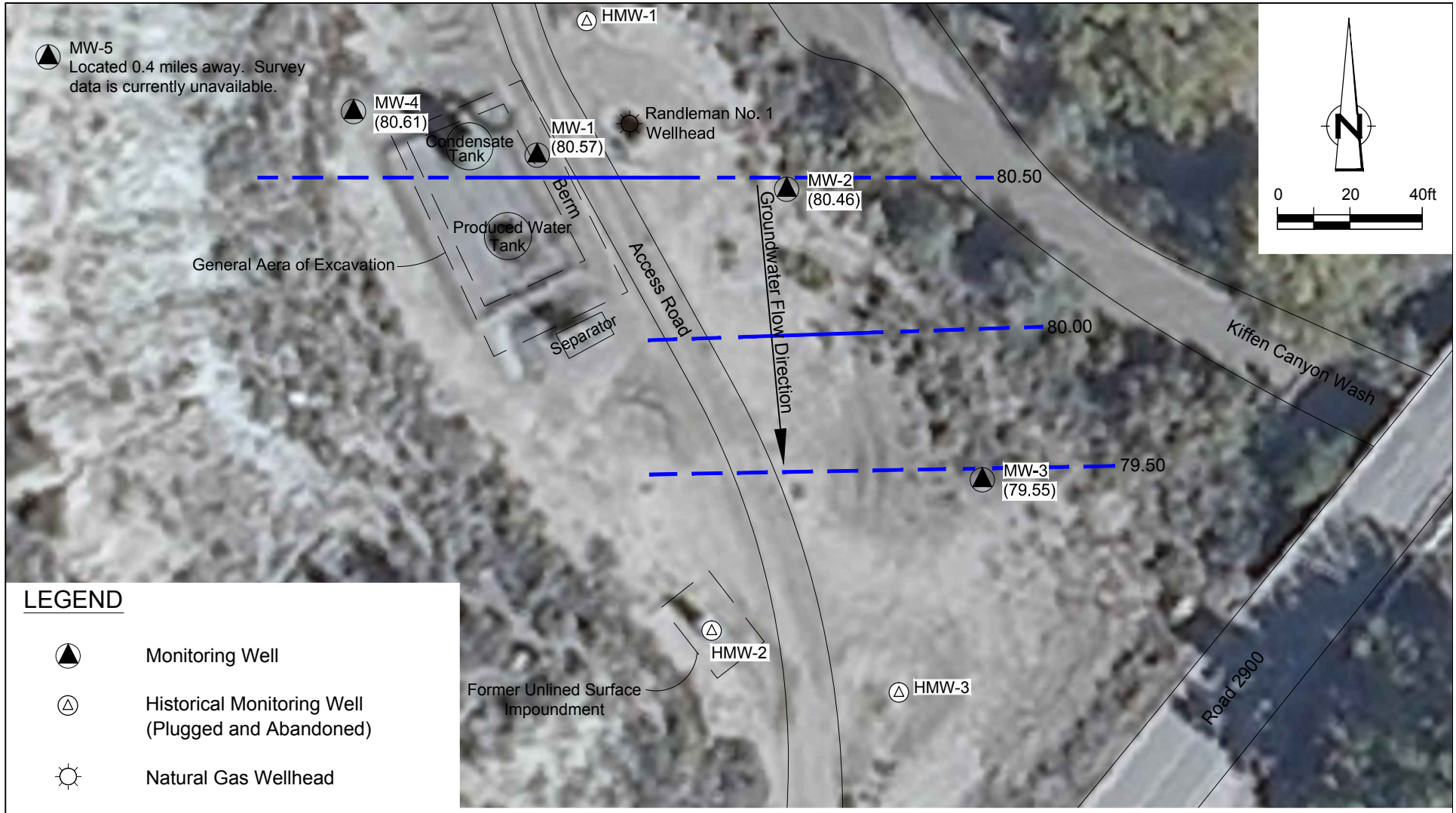


ConocoPhillips high resolution aerial imagery 2008.

Figure 5

MARCH 2013 GROUNDWATER POTENTIOMETRIC SURFACE MAP
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

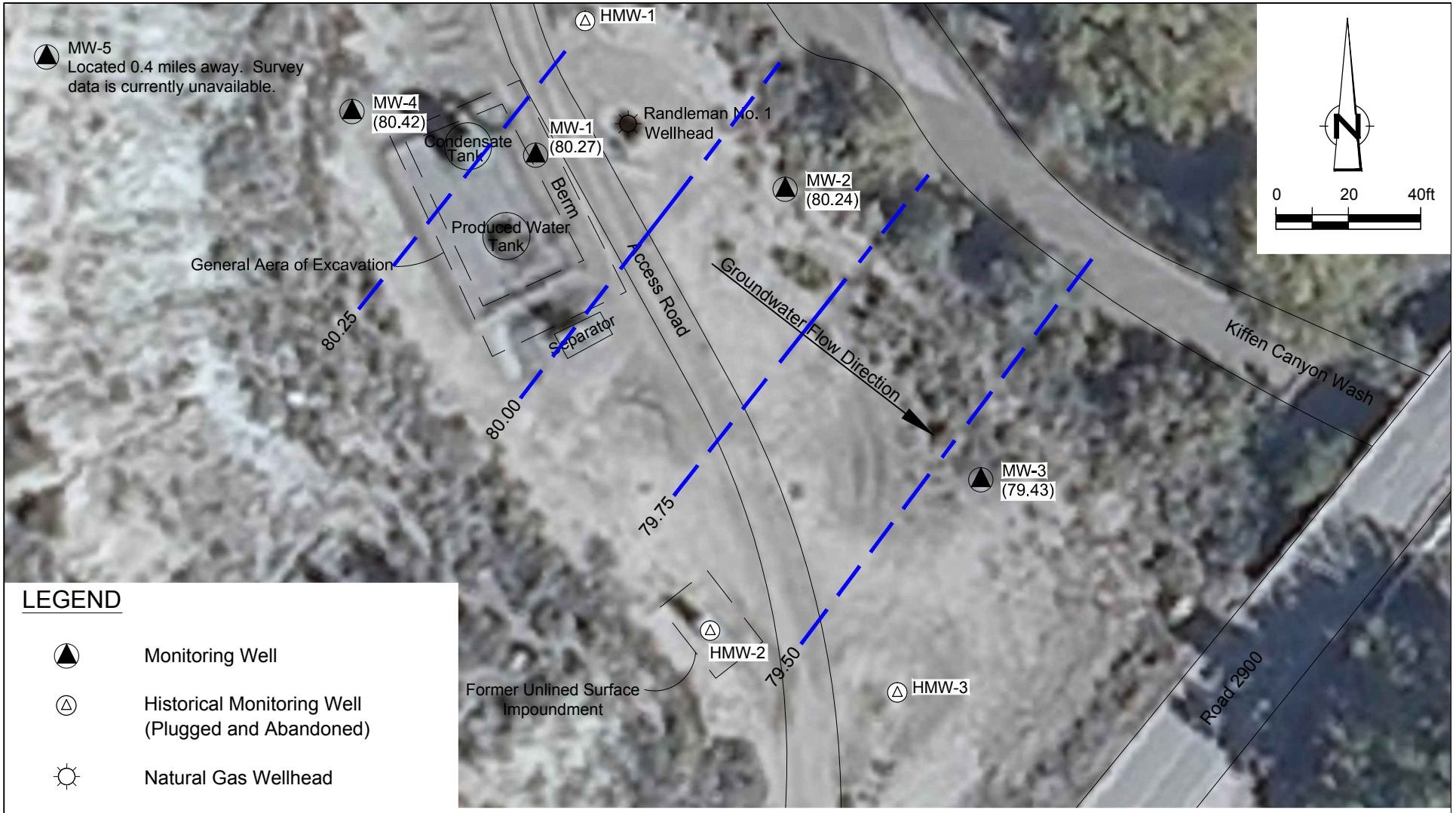
074933-95(005)GN-DL003_GG APR 4/2014



ConocoPhillips high resolution aerial imagery 2008.

Figure 6

JUNE 2013 GROUNDWATER POTENTIOMETRIC SURFACE MAP
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

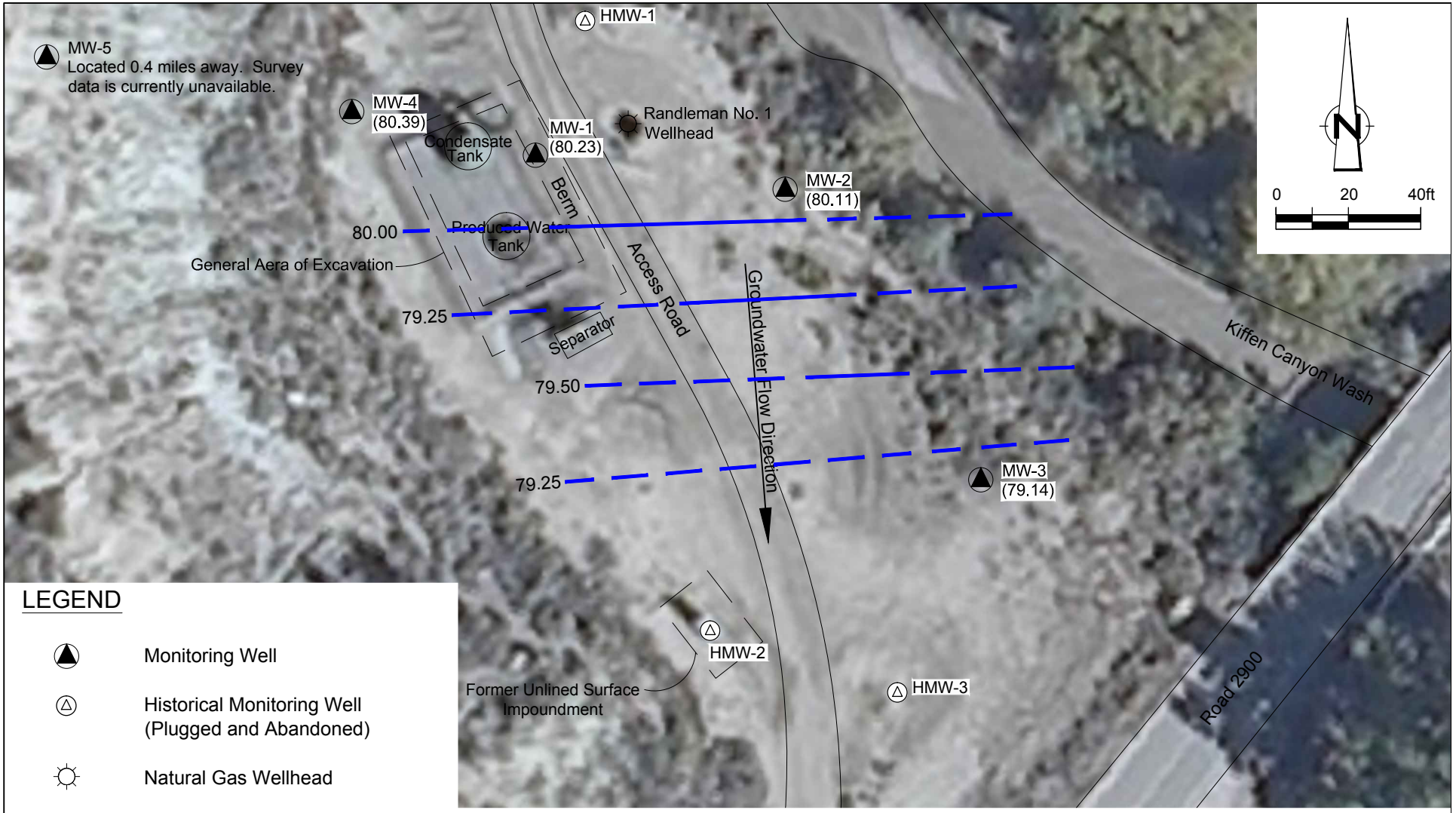


ConocoPhillips high resolution aerial imagery 2008.

Figure 7

SEPTEMBER 2013 GROUNDWATER POTENTIOMETRIC SURFACE MAP
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074933-95(005)GN-DL003_GG APR 4/2014



LEGEND

- Monitoring Well
- Historical Monitoring Well (Plugged and Abandoned)
- Natural Gas Wellhead
- (79.14) Groundwater Elevation, Ft
- 81.00 Groundwater Elevation Contour, Ft
- Groundwater Flow Direction

ConocoPhillips high resolution aerial imagery 2008.

Figure 8

DECEMBER 2013 GROUNDWATER POTENTIOMETRIC SURFACE MAP
RANDLEMAN No. 1 NATURAL GAS WELL SITE
SECTION 13, T31N-R11W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

Tables

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
RANDLEMAN NO 1
SAN JUAN COUNTY, NM

DATE/TIME PERIOD	*EVENT/ACTION*	*DESCRIPTION/COMMENTS*
September 20, 1951	Well spudded	Well spudded by Southern Union Gas Company.
August 1, 1952	Transfer of ownership	Well acquired by Aztec Oil and Gas Company.
December 1, 1976	Transfer of ownership	Southland Royalty Company acquired Aztec Oil and Gas Company.
November 22, 1985	Transfer of ownership	Southland Royalty Company acquired by Burlington Resources.
April 1, 1997	Discovery of impacted soil	An unlined surface impoundment was discovered to have been impacted by petroleum hydrocarbons.
April 29, 1997	Excavation of impacted soil	Excavation of the soil beneath the impoundment began; once complete, a total of 613 cubic yards of hydrocarbon impacted soil were removed and landfarmed at the nearby Randleman #3 site.
May 14, 1997	Installation of monitor wells	Three groundwater monitor wells were installed at the Site. Groundwater monitoring was initiated on a quarterly basis through March 1998.
April 1, 1998	Excavation of impacted soil	Evaluation of groundwater monitoring results initiated another excavation of 2,220 cubic yards of hydrocarbon impacted soil "to address residual soil contamination extending to the south of the original excavated area" (Williams, 2002).
February 1, 2002	Closure requested	Quarterly groundwater monitoring was continued through September 2000, and after 4 consecutive quarters of groundwater quality monitoring results below New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for benzene, toluene, ethylbenzene, and total xylenes (BTEX), Williams Environmental Services (Williams) requested that the New Mexico Oil Conservation Division (OCD) grant closure status for the Site.
June 1, 2002	Closure granted by NMOCD	OCD granted closure for the Site, provided that Williams plug and abandon all Site groundwater monitoring wells according to OCD standards (NMEMNRD, 2002). The historical excavation area and historical groundwater monitor wells are displayed in Figure 2.
March 31, 2006	Transfer of ownership	ConocoPhillips Company acquired Burlington Resources and all assets.
February 23, 2009	Release from condensate tank	Approximately 60 barrels of condensate were found to have spilled from a hole located on the back side of an on-Site condensate tank into the bermed area. The spilled fluids remained in the berm and none of the condensate was recovered. Form C-141 stated that the spill impacted the soil on the ground surface around the tank, that the production tank was to be removed, and the affected soils were to be excavated.
February 26, 2009	Excavation and site assessment	Envirotech Inc. of Farmington, NM (Envirotech) performed the soil excavation and collected soil samples for analysis. The area of release was excavated to approximately 42 feet by 51 feet by 7 feet deep. 7 composite soil samples were collected from the excavation and were analyzed for total petroleum hydrocarbons (TPH) using EPA Method 418.1. Additionally, organic vapors were measured using a Photoionization Detector (PID). TPH results ranged from 8 parts per million (ppm) in the north wall sample to 1,080 ppm in the south wall sample. The OCD recommended action level for TPH at the Site was determined to be 100 ppm. Organic vapor concentrations ranged from 6.8 ppm from the north wall sample, to 898 ppm in the south wall sample. Due to high levels of TPH and organic vapors, the excavation was continued on February 27, 2009.
February 27, 2009	Further excavation and site assessment	Envirotech continued the excavation and sampling activities. Samples collected from the north, west, and east ends of the excavation on February 26, 2009 were found to be below OCD action levels for TPH, the focus of the excavation on February 27, 2009 was the south wall, the southeast wall, and the bottom of the southeast corner. The final excavation measured 81 feet by 43 feet by 20 feet deep (total depth is given for the deepest part of the excavation; other areas determined to be below OCD action levels went to approximately 8 feet bgs). Eight soil samples were collected and analyzed in the field for TPH and organic vapors. Excavation continued until all samples were found to be below 100 ppm for both TPH and organic vapors.
March 2, 2009	Further excavation and site assessment	Groundwater began to seep into the southeast corner of the excavation at 20 feet bgs. A vacuum truck was contracted to remove groundwater from the excavation. After removal of groundwater, a soil sample from the southeast corner of the excavation was collected. TPH and organic vapor results were found to be above OCD action levels. More water was then removed from the excavation, and additional soil removal was performed. A groundwater sample was collected from the area where water continued to seep into the excavation, and was analyzed for volatile organic compounds by EPA Method 8260. The groundwater sample was found to contain benzene, total xylenes and total naphthalenes above New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards. Once this sample had been obtained, the excavation caved in, making further water removal impossible (Envirotech, 2009). A total of 611 cubic yards of soil were romoved from the Site. Clean fill was used to backfill the excavation.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
RANDLEMAN NO 1
SAN JUAN COUNTY, NM

DATE/TIME PERIOD	*EVENT/ACTION*	*DESCRIPTION/COMMENTS*
June 9 through 11, 2009	Installation of monitor wells	Tetra Tech installs four groundwater monitor wells at the Site; MW-1, MW-2, MW-3 and MW-4.
June 12, 2009	Groundwater monitoring	Tetra Tech conducts the first groundwater monitoring event at the Site.
June 17, 2009	Depth to water measurements	Depth to water measurements were taken by Tetra Tech in Site monitor wells to determine if hydrocarbons were accumulating in the water column. Hydrocarbon sheen was detected in MW-2 and MW-3.
June 18, 2009	Absorbent socks placed in wells	Hydrocarbon-absorbent socks were placed in monitor wells MW-2 and MW-3 by Tetra Tech.
September 23, 2009	Groundwater monitoring	Second quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
October 1, 2009	Site assessment	Tetra Tech on Site to hand auger one boring near the Kiffen Canyon Wash, which is located downgradient and east of the Site. Groundwater and soil samples collected from boring. No BTEX impacts were found.
December 16, 2009	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
April 1, 2010	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
June 9, 2010	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
September 20, 2010	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech. Lock and cap were observed missing from MW-4. The ground surface near MW-3 shifted, resulting in the well casing sticking out of the completion. The PVC casing was cut and the site was resurveyed by Tetra Tech.
December 17, 2010	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
March 16, 2011	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by Tetra Tech.
June 15, 2011	Transfer of Site consulting responsibilities	Site consulting responsibilities transferred from Tetra Tech of Albuquerque, NM to CRA of Albuquerque, NM.
June 22, 2011	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
September 27, 2011	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
December 13, 2011	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
March 8, 2012	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
June 6, 2012	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
September 20, 2012	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
December 12, 2012	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
March 27, 2013	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
May 23, 2013	Installation of monitor well	National Exploration, Wells, & Pumps installs an upgradient groundwater monitoring well, MW-5.
June 19, 2013	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
September 12, 2013	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.
October 1, 2013	Groundwater monitoring	Supplemental metals treatability sampling from MW-3
December 12, 2013	Groundwater monitoring	Quarterly groundwater monitoring event at the Site conducted by CRA.

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
RANDLEMAN NO. 1
SAN JUAN COUNTY, NM

Well ID	*Total Depth (ft below TOC)*	*Top of Casing Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft)*
MW-1	25.5	95.19	9 - 24	6/12/2009	13.98	81.21
				6/14/2009	13.96	81.23
				9/23/2009	13.97	81.22
				12/16/2009	14.30	80.89
				4/1/2010	14.39	80.80
				6/9/2010	13.99	81.20
		94.9		9/20/2010	14.54	80.36
				12/17/2010	14.40	80.50
				3/16/2011	14.78	80.12
				6/22/2011	13.65	81.25
				9/27/2011	13.59	81.31
				12/13/2011	14.01	80.89
				3/8/2012	14.49	80.41
				6/6/2012	13.62	81.28
				9/20/2012	14.22	80.68
				12/12/2012	14.55	80.35
				3/27/2013	14.54	80.36
				6/19/2013	14.33	80.57
				9/12/2013	14.63	80.27
				12/12/2013	14.67	80.23
MW-2	23.8	96.79	8.9 - 23.8	6/12/2009	15.57	81.22
				6/14/2009	15.63	81.16
				9/23/2009	15.67	81.12
				12/16/2009	16.41	80.38
				4/1/2010	16.75	80.04
				6/9/2010	15.71	81.08
		96.51		9/20/2010	16.28	80.23
				12/17/2010	16.67	79.84
				3/16/2011	16.52	79.99
				6/22/2011	15.32	81.19
				9/27/2011	15.29	81.22
				12/13/2011	15.81	80.70
				3/8/2012	16.21	80.30
				6/6/2012	15.25	81.26
				9/20/2012	15.97	80.54
				12/12/2012	16.30	80.21
				3/27/2013	16.34	80.17
				6/19/2013	16.05	80.46
				9/12/2013	16.27	80.24
				12/12/2013	16.40	80.11
MW-3	22	96.31	6.5 - 21.5	6/12/2009	16.00	80.31
				6/14/2009	15.97	80.34
				9/23/2009	15.78	80.53
				12/16/2009	16.77	79.54
				4/1/2010	16.79	79.52
				6/9/2010	15.89	80.42
		96.07		9/20/2010	16.95	79.12
				12/17/2010	17.95	78.12
				3/16/2011	17.36	78.71
				6/22/2011	15.54	80.53
				9/27/2011	15.27	80.80
				12/13/2011	16.04	80.03
				3/8/2012	16.96	79.11
				6/6/2012	15.52	80.55
				9/20/2012	16.10	79.97
				12/12/2012	16.63	79.44
				3/27/2013	17.23	78.84
				6/19/2013	16.52	79.55
				9/12/2013	16.64	79.43
				12/12/2013	16.93	79.14

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
RANDLEMAN NO. 1
SAN JUAN COUNTY, NM

Well ID	*Total Depth (ft below TOC)*	*Top of Casing Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft)*
MW-4	29.5	98.83	11 - 26	6/12/2009	17.68	81.15
				6/14/2009	17.52	81.31
				9/23/2009	17.56	81.27
				12/16/2009	17.86	80.97
				4/1/2010	17.94	80.89
				6/9/2010	17.57	81.26
		98.54		9/20/2010	18.06	80.48
				12/17/2010	16.14	82.40
				3/16/2011	18.27	80.27
				6/22/2011	17.23	81.31
				9/27/2011	17.19	81.35
				12/13/2011	17.61	80.93
				3/8/2012	18.02	80.52
				6/6/2012	17.21	81.33
				9/20/2012	17.80	80.74
				12/12/2012	18.09	80.45
				3/27/2013	18.03	80.51
				6/19/2013	17.93	80.61
				9/12/2013	18.12	80.42
				12/12/2013	18.15	80.39
MW-5	59.23			6/19/2013	18.13	
				9/12/2013	19.53	
				12/12/2013	21.44	

Notes:
ft = Feet
TOC = Top of casing
bgs = below ground surface
* Elevation relative to an arbitrary data point of 100 feet; resurveyed during 9/20/10 sampling event

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
RANDLEMAN NO. 1
SAN JUAN COUNTY, NM

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Naphthalene (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total dissolved solids (TDS) (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.03**	**1.0**	**0.2**	**250**	**600**	**1000**
MW-1	MW-1	6/14/2009	(orig)	0.0051	0.0076	< 0.005	0.0097	< 0.005	--	--	119	**1690**	--
	MW-1	9/23/2009	(orig)	**0.018**	0.0054	0.0013	0.0116	< 0.001	< 0.02	0.17	80.5	**1640**	**2880**
	MW-1	12/16/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	0.108	127	**1960**	**3140**
	MW-1	4/1/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	0.0849	72.3	**1440**	**2850**
	MW-1	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	0.114	83.8	**1450**	**3340**
	MW-1	9/20/2010	(orig)	0.0053	< 0.001	< 0.001	< 0.001	--	--	**0.207**	84.9	**1710**	**4070**
	MW-1	12/17/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	0.131	93.5	**2100**	**4340**
	MW-1	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	0.102	120	**1690**	**3230**
	GW-74933-062211-PG-04	6/22/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	--	--	< 0.015	95.7	**2060**	**3120**
	GW-074933-092711-CM-009	9/27/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	0.0988	107	**2240**	**3420**
	GW-074933-121311-CB-MW-1	12/13/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**0.518**	113	**2600**	**4050**
	GW-074933-121311-CB-MW-DUP	12/13/2011	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--	--	--
	GW-074933-3812-CB-MW-1	3/8/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.230**	99.0	**2230**	**3590**
	GW-074933-3812-CB-DUP	3/8/2012	(Duplicate)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	--	--	--	--
	GW-074933-060612-CB-MW-1	6/6/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	0.0175	122	**1780**	**3250**
	GW-074933-092012-JP-MW-1	9/20/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	0.0177	79.2	--	**3260**
	GW-074933-121212-CM-MW-1	12/12/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	0.0227	99.1	**1850**	**3100**
	GW-074933-032713-JK-MW1	3/27/2013	(orig)	0.008	0.0051	0.0508	0.0856	--	--	**1.270**	**829**	**1940**	**4240**
	GW-074933-032713-JK-DUP	3/27/2013	(Duplicate)	0.008	0.0047	0.0493	0.0780	--	--	--	--	--	--
	GW-074933-061913-JK-MW1	6/19/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	<0.005	73.6	**1400**	--
	GW-074933-091213-CM-MW-1	9/12/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	0.0315	133	**1590**	**3870**
	GW-074933-121213-CM-MW-1	12/12/2013	(orig)	<0.001	<0.001	0.0010	<0.003	--	--	0.0065	77.8	**1470**	**2370**
MW-2	MW-2	6/14/2009	(orig)	0.0094	**1.1**	0.18	**2.28**	0.021	--	--	40.1	**1360**	--
	MW-2	9/23/2009	(orig)	0.0077	< 0.001	0.11	**0.72**	0.016	0.0239	**6.82**	39.4	**1390**	**2480**
	MW-2	12/16/2009	(orig)	**0.02**	0.0079	0.24	**0.7778**	--	--	**5.26**	63.3	**1510**	**2390**
	MW-2	4/1/2010	(orig)	0.009	0.027	0.18	0.547	--	--	**4.1**	56.5	**1170**	**2460**
	MW-2	6/9/2010	(orig)	0.0038	0.0093	0.099	0.2656	--	--	**3.24**	48.7	**1280**	**2590**
	MW-2	9/20/2010	(orig)	0.005	0.0076	0.061	0.1365	--	--	**2.7**	48.7	**1390**	**2440**
	MW-2	12/17/2010	(orig)	0.0068	0.019	0.071	0.1177	--	--	**2.28**	38.3	**1520**	**2760**
	MW-2	3/16/2011	(orig)	0.0088	0.093	0.083	0.259	--	--	**2.94**	66.7	**1470**	**2680**
	GW-74933-062211-PG-03	6/22/2011	(orig)	0.0013	0.0036	0.0058	0.0180	--	--	**2.59**	39.8	**1730**	**2510**
	GW-074933-092711-CM-008	9/27/2011	(orig)	0.0076	0.0091	0.0104	0.0316	--	--	**1.92**	34.4	**1330**	**2070**
	GW-074933-092711-CM-010	9/27/2011	(Duplicate)	0.0075	0.0093	0.0104	0.0314	--	--	--	--	--	--
	GW-074933-121311-CB-MW-2	12/13/2011	(orig)	0.009	0.0476	0.0144	0.07	--	--	**2.08**	36.9	**1150**	**2170**
	GW-074933-3812-CB-MW-2	3/8/2012	(orig)	**0.0107**	0.0959	0.0232	0.149	--	--	**2.01**	66.0	**1380**	**2500**
	GW-074933-060612-CB-MW-2	6/6/2012	(orig)	0.0054	0.0404	0.0139	0.0797	--	--	**2.12**	76.9	**1640**	**2560**
	GW-074933-060612-CB-DUP	6/6/2012	(Duplicate)	0.0066	0.0405	0.0135	0.0728	--	--	--	--	--	--
	GW-074933-092012-JP-MW-2	9/20/2012	(orig)	0.0063	0.0329	0.0120	0.0612	--	--	**1.800**	32.7	--	**2150**
	GW-074933-092012-JP-DUP	9/20/2012	(Duplicate)	0.0066	0.0338	0.0127	0.0623	--	--	--	--	--	--
	GW-074933-121212-CM-MW-2	12/12/2012	(orig)	**0.0106**	0.0670	0.0147	0.0991	--	--	**1.220**	40.3	**1160**	**2040**
	GW-074933-121212-CM-DUP	12/12/2012	(Duplicate)	**0.0103**	0.0662	0.0156	0.0984	--	--	--	--	--	--
	GW-074933-032713-JK-MW2	3/27/2013	(orig)	**0.0215**	0.0171	0.0263	0.110	--	--	**1.060**	70.0	**1150**	**2050**
	GW-074933-061913-JK-MW2	6/19/2013	(orig)	**0.0318**	0.104	0.0696	0.410	--	--	**1.190**	63.7	**1000**	--
	GW-074933-061913-JK-DUP	6/19/2013	(Duplicate)	**0.0320**	0.0986	0.0625	0.400	--	--	--	--	--	--
	GW-074933-091213-CM-MW-2	9/12/2013	(orig)	0.0043	0.0429	0.0118	0.0747	--	--	**2.200**	32.4	**1390**	**2210**
	GW-074933-091213-CM-DUP	9/12/2013	(Duplicate)	0.0032	0.0303	0.0084	0.0529	--	--	--	--	--	--
	GW-074933-121213-CM-MW-2	12/12/2013	(orig)	0.0084	0.109	0.0181	0.140	--	--	**1.390**	46.6	**1220**	**2080**
	GW-074933-121213-CM-DUP	12/12/2013	(Duplicate)	0.0073	0.108	0.0177	0.138	--	--	--	--	--	--

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
RANDLEMAN NO. 1
SAN JUAN COUNTY, NM

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Naphthalene (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total dissolved solids (TDS) (mg/L)
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.03**	**1.0**	**0.2**	**250**	**600**	**1000**
MW-3	MW-3	6/14/2009	(orig)	0.01	**1.4**	0.49	**4.05**	**0.036**	**--**	**--**	40.3	**1510**	--
	MW-3 duplicate	6/14/2009	(Duplicate)	0.01	**1.4**	0.54	**4.3**	--	--	--	--	--	--
	MW-3	9/23/2009	(orig)	**0.013**	0.0085	0.089	0.32	0.0039	0.0486	**1.11**	64.5	**1500**	**2720**
	MW-3	12/16/2009	(orig)	**0.018**	0.017	0.096	0.28	--	--	**0.932**	99.1	**1920**	**2560**
	MW-3	4/1/2010	(orig)	**0.018**	0.076	0.19	0.59	--	--	**1.04**	5.34	**796**	**1650**
	MW-3	6/9/2010	(orig)	**0.012**	0.02	0.024	0.069	--	--	0.193	30.8	**989**	**2200**
	MW-3	9/20/2010	(orig)	0.009	0.011	0.079	0.142	--	--	**0.818**	49.9	493	**2840**
	MW-3	12/17/2010	(orig)	0.004	0.0034	0.048	0.071	--	--	**0.41**	64.8	**1760**	**2590**
	MW-3	3/16/2011	(orig)	0.0077	0.028	0.22	0.44	--	--	**1.63**	63.4	**1180**	**2500**
	GW-74933-062211-PG-01	6/22/2011	(orig)	0.0024	0.0203	0.0502	0.0980	--	--	**0.906**	92.2	**1780**	**3270**
	GW-74933-062211-PG-02	6/22/2011	(Duplicate)	0.0026	0.0224	0.0548	0.107	--	--	--	--	--	--
	GW-074933-092711-CM-007	9/27/2011	(orig)	< 0.001	< 0.001	0.0034	0.0043	--	--	**0.842**	**272**	**2130**	**2940**
	GW-074933-121311-CB-MW-3	12/13/2011	(orig)	0.00079 J	0.00053 J	0.0042	0.0042	--	--	**0.747**	82.7	**1840**	**2810**
	GW-074933-3812-CB-MW-3	3/8/2012	(orig)	**0.016**	0.0320	0.143	0.226	--	--	**1.760**	63.4	**1460**	**2730**
	GW-074933-060612-CB-MW-3	6/6/2012	(orig)	< 0.001	0.0038	0.0273	0.0267	--	--	**0.500**	88.8	**2100**	**3000**
	GW-074933-092012-JP-MW-3	9/20/2012	(orig)	0.0038	< 0.001	0.0428	0.0288	--	--	**0.578**	105	**--**	**2990**
	GW-074933-121212-CM-MW-3	12/12/2012	(orig)	**0.0137**	0.0132	0.0442	0.0613	--	--	**0.509**	72.1	**1550**	**2650**
	GW-074933-032713-JK-MW3	3/27/2013	(orig)	<0.001	<0.001	0.140	0.168	--	--	**1.810**	52.7	**1530**	**2500**
	GW-074933-061913-JK-MW3	6/19/2013	(orig)	<0.001	<0.001	0.0534	0.048	--	--	**1.660**	81.6	**1240**	**--**
	GW-074933-091213-CM-MW-3	9/12/2013	(orig)	0.0036	<0.001	0.0403	0.0485	--	--	**0.989**	87.2	**920**	**2120**
	GW074933-121213-CM-MW-3	12/12/2013	(orig)	0.0056	0.0131	0.0583	0.0761	--	--	**1.200**	57.8	**1290**	**2080**
MW-4	MW-4	6/14/2009	(orig)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	**--**	**--**	**2310**	**4190**	--
	MW-4	9/23/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0308	**2.73**	**2130**	**3320**	**8600**
	MW-4	12/16/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.8**	**3430**	**4110**	**9600**
	MW-4	4/1/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.52**	**2350**	**3110**	**8560**
	MW-4	6/9/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.06**	**2190**	**2710**	**4720**
	MW-4	9/20/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.24**	**2640**	**3260**	**9550**
	MW-4	12/17/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.68**	**2350**	**3570**	**9400**
	MW-4	3/16/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--	**1.82**	**2310**	**3300**	**8440**
	GW-74933-062211-PG-05	6/22/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	--	--	**1.61**	**2150**	**4050**	**8760**
	GW-074933-092711-CM-006	9/27/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.31**	**2350**	**3650**	**8270**
	GW-074933-121311-CB-MW-4	12/13/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.82**	**2240**	**1530**	**7850**
	GW-074933-3812-CB-MW-4	3/8/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	0.106	**2610**	**3250**	**8700**
	GW-074933-060612-CB-MW-4	6/6/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.290**	**2520**	**3740**	**8270**
	GW-074933-092012-JP-MW-4	9/20/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.320**	**2420**	**--**	**7590**
	GW-074933-121212-CM-MW-4	12/12/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--	**1.510**	**2460**	**3250**	**8830**
	GW-074933-032713-JK-MW4	3/27/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**1.460**	**2270**	**3180**	**8320**
	GW-074933-061913-JK-MW4	6/19/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**1.440**	**2000**	**2790**	**--**
	GW-074933-091213-CM-MW-4	9/12/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**1.180**	**2520**	**3080**	**6570**
	GW-074933-121213-CM-MW-4	12/12/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**1.610**	**2570**	**3320**	**8430**
MW-5	GW-074933-061913-JK-MW5	6/19/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**0.255**	**3900**	**1550**	**--**
	GW-074933-091213-CM-MW-5	9/12/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**0.245**	**4040**	**1630**	**10800**
	GW-074933-121213-CM-MW-5	12/12/2013	(orig)	<0.001	<0.001	<0.001	<0.003	--	--	**0.232**	**4130**	**1870**	**8250**

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
Previous report submitted in March 2012 reported TDS values in the analytical summary table with incorrect unit conversion for June 2009 through March 2011, this table reflects the correct unit conversions for all historical data.

Appendix A

2013 ANNUAL GROUNDWATER MONITORING REPORT

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Rademacher #1 JOB# 074933
SAMPLE ID: GW-074933-032713-SK-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)
3/27/13	3/27/13	1130	1.75	5.25

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	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		

FIELD MEASUREMENTS

DEPTH TO WATER: 14.54 (feet) WELL ELEVATION: (feet)

WELL DEPTH: 25.47 (feet) GROUNDWATER ELEVATION: 10.75 (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.17 (°C)	7.12 (std)	3.870 (g/L)	5958 (µS/cm)	2.43 (mg/L)	-294.5 (mV)	4.25 (gal)
13.08 (°C)	7.14 (std)	3.872 (g/L)	5957 (µS/cm)	1.98 (mg/L)	-285.4 (mV)	4.75 (gal)
13.09 (°C)	7.31 (std)	4.109 (g/L)	6349 (µS/cm)	1.75 (mg/L)	-291.2 (mV)	5.25 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

DUP FROM THIS WELL

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

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman #7 JOB# 074933

SAMPLE ID: GW-074933-032713-JK-MW2 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)
3/27/13	3/27/13	1215	1.19	3.5

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	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	B	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		

FIELD MEASUREMENTS

DEPTH TO WATER 16.34 (feet) WELL ELEVATION (feet)

WELL DEPTH 23.80 (feet) GROUNDWATER ELEVATION 7.46 (feet)

TEMPERATURE	pH	TDS		DO	ORP	VOLUME
10.7 (°C)	7.36 (std)	1.915 (g/L)	2944 SC (µS/cm)	0.95 (mg/L)	315.8 (mV)	2.5 (gal)
10.53 (°C)	7.49 (std)	1.898 (g/L)	2919 (µS/cm)	0.92 (mg/L)	318.9 (mV)	3.0 (gal)
10.43 (°C)	7.55 (std)	1.889 (g/L)	2906 (µS/cm)	0.96 (mg/L)	318.7 (mV)	3.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

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

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RANDELMAN #1 JOB# 074933

SAMPLE ID: CTW-074933-032713-SLK-MW3 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)
3/27/13	3/01/13	1245	0.75	2.25

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	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		

FIELD MEASUREMENTS

DEPTH TO WATER 17.23 (feet) WELL ELEVATION (feet)

WELL DEPTH 220' (feet) GROUNDWATER ELEVATION 4.78 (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.12 (°C)	7.15 (std)	2.015 (g/L)	3691 (µS/cm)	1.31 (mg/L)	-215.6 (mV)	1.25 (gal)
11.6 (°C)	7.12 (std)	1.943 (g/L)	3065 (µS/cm)	1.54 (mg/L)	-253.5 (mV)	1.75 (gal)
11.56 (°C)	7.14 (std)	1.991 (g/L)	3064 (µS/cm)	1.51 (mg/L)	-267.3 (mV)	2.25 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

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

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RANDLEMAN #1 JOB# 074933

SAMPLE ID: GW-074933-032713-SK-MW4 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)
3/27/13	3/27/13	1330	1.83	5.5

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	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		

FIELD MEASUREMENTS

DEPTH TO WATER	18.03	(feet)	WELL ELEVATION		(feet)
WELL DEPTH	29.5	(feet)	GROUNDWATER ELEVATION	11.47	(feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.8 (°C)	7.19 (std)	6.838 (g/L)	10533 (µS/cm)	1.35 (mg/L)	-281.4 (mV)	4.5 (gal)
13.22 (°C)	7.42 (std)	7.487 (g/L)	11552 (µS/cm)	1.30 (mg/L)	-271.5 (mV)	5.0 (gal)
13.38 (°C)	7.53 (std)	7.861 (g/L)	11917 (µS/cm)	1.01 (mg/L)	-268.8 (mV)	5.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

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

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: D.A. Elman 1 JOB# 074933
SAMPLE ID: GW-074933-061913-SK-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)
6.19.13	6.19.13	0900	1.38	4.25

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	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	G	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	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER 14.33 (feet) WELL ELEVATION (feet)

WELL DEPTH 23.52 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.68 (°C)	7.18 (std)	2.187 (g/L)	3360 (µS/cm)	2.38 (mg/L)	-7.1 (mV)	3.25 (gal)
13.51 (°C)	6.78 (std)	2.160 (g/L)	3322 (µS/cm)	1.75 (mg/L)	20.1 (mV)	3.75 (gal)
13.29 (°C)	6.71 (std)	2.159 (g/L)	3321 (µS/cm)	1.48 (mg/L)	27.7 (mV)	4.25 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

9.19 x .15 = 1.38 (x3) 4.14

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

DATE PRINT Josh Kirchner SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RMDBrown JOB# 074933

SAMPLE ID: EA-074933-061913-JK-MW2 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)
6.19.13	6.19.13	0955	1.55	4.75

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	G	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	G	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		

FIELD MEASUREMENTS

DEPTH TO WATER 16.05 (feet) WELL ELEVATION (feet)

WELL DEPTH 26.40 (feet) GROUNDWATER ELEVATION (feet)

(10.35)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.78 (°C)	7.00 (std)	1.719 (g/L)	2696 ~~6.51~~ (µS/cm)	6.54 (mg/L)	-289.8 (mV)	3.75 (gal)
11.72 (°C)	6.66 (std)	1.730 (g/L)	2662 (µS/cm)	6.40 (mg/L)	~296.1 (mV)	4.25 (gal)
11.59 (°C)	7.12 (std)	1.741 (g/L)	2680 (µS/cm)	6.47 (mg/L)	~297.5 (mV)	4.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE 90 WINDY Y/N ✓ PRECIPITATION Y/N (IF Y TYPE) ✓

SPECIFIC COMMENTS: 10.35 X .15 = 1.55 ≤ 4.75

DUP COLLECTED

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

DATE PRINT Josh Kirchner SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RALDEMAN JOB# 074933
SAMPLE ID: GW-074933-001913-JK-MW3 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)
6.19.13	6.19.13	1045	1.23	3.75

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; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: G — same codes — X= SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: E — A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: E — same codes — X= SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: L — A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: L — same codes — X= SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER 16.52 (feet) WELL ELEVATION (feet)

WELL DEPTH 24.71 (feet) GROUNDWATER ELEVATION (feet)

8.19

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.89 (°C)	6.88 (std)	2,022 (g/L)	3108 (µS/cm)	9.96 (mg/L)	257.4 (mV)	2.75 (gal)
11.77 (°C)	6.38 (std)	2,022 (g/L)	3086 (µS/cm)	5.74 (mg/L)	-236.4 (mV)	3.25 (gal)
11.45 (°C)	6.28 (std)	1,990 (g/L)	3060 (µS/cm)	5.67 (mg/L)	-262.5 (mV)	3.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS: 8.19 x 1.5 = 1.228 x 3 = 3.69 (3.75)

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

DATE PRINT Josh Kramer SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RAMSEY JOB# 074933
SAMPLE ID: GW-074933-061913-JK-MW4 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)
6.19.13	6.19.13	1130	1.54	5.0

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®
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE	
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER	
PURGE TUBING	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	

X= PURGING DEVICE OTHER (SPECIFY)
X= SAMPLING DEVICE OTHER (SPECIFY)
X= PURGING MATERIAL OTHER (SPECIFY)
X= SAMPLING MATERIAL OTHER (SPECIFY)
X= PURGE TUBING OTHER (SPECIFY)
X= SAMPLING TUBING OTHER (SPECIFY)

FIELD MEASUREMENTS

DEPTH TO WATER: 17.93 (feet) WELL ELEVATION: (feet)
WELL DEPTH: 28.19 (feet) GROUNDWATER ELEVATION: (feet)
10.26

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.67 (°C)	7.45 (std)	7.607 (g/L)	11713 (µS/cm)	4.77 (mg/L)	-222.4 (mV)	3.75 (gal)
13.59 (°C)	7.38 (std)	7.664 (g/L)	11759 (µS/cm)	4.69 (mg/L)	-219.7 (mV)	4.25 (gal)
13.55 (°C)	7.34 (std)	7.720 (g/L)	11878 (µS/cm)	4.65 (mg/L)	-209.1 (mV)	4.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N
WEATHER CONDITIONS: TEMPERATURE WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)
SPECIFIC COMMENTS: (10.26 x .15) x 3 = 4.617

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

DATE PRINT JOSH REAMER SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Rawhide Mine JOB# 074933

SAMPLE ID: GW-074933-061913-SK-MW5 WELL# MW5

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)
6.19.13	6.19.13	1345	6.17	18.5

PURGING AND SAMPLING EQUIPMENT

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

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

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

FIELD MEASUREMENTS

DEPTH TO WATER 18.13 (feet) WELL ELEVATION _____ (feet)

WELL DEPTH 59.23 41.1 (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.73 (°C)	8.22 (std)	9.607 (g/L)	14786 (µS/cm)	7.08 (mg/L)	232.3 (mV)	17.5 (gal)
15.46 (°C)	8.24 (std)	9.563 (g/L)	14757 (µS/cm)	5.92 (mg/L)	238.7 (mV)	18. (gal)
15.26 (°C)	8.28 (std)	9.680 (g/L)	14774 (µS/cm)	5.06 (mg/L)	238.2 (mV)	18.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: _____ ODOR: _____ COLOR: _____ SHEEN Y/N _____

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

SPECIFIC COMMENTS: _____

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

DATE _____ PRINT Josh Kraine SIGNATURE _____

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: RANDLEMAN No. 1 JOB# 074933

SAMPLE ID: GW-074933-091213-CM-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)
9/12/13	9/12/13	1535	1.43	4.50

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	6	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	6	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		For METALS ONLY

FIELD MEASUREMENTS

DEPTH TO WATER	14.63	(feet)	WELL ELEVATION		(feet)		
WELL DEPTH	23.59	(feet)	GROUNDWATER ELEVATION		(feet)		

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.15 (°C)	7.24 (std)	2.351 (g/L)	3617 (µS/cm)	2.17 (mg/L)	-131.8 (mV)	3.5 (gal)
15.30 (°C)	6.89 (std)	2.337 (g/L)	3594 (µS/cm)	2.41 (mg/L)	-122.8 (mV)	4.0 (gal)
15.64 (°C)	6.80 (std)	2.303 (g/L)	3542 (µS/cm)	2.44 (mg/L)	-117.6 (mV)	4.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: CLOUDY ODOR: NONE COLOR: BROWN SHEEN Y/N Y

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

SPECIFIC COMMENTS:

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

DATE 9/12/13 PRINT Christine Mathews SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No. 1 JOB# 074933

SAMPLE ID: GW-074933-091213-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)
9/12/13	9/12/13	1515	1.66	5.00

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	B	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	0.45 for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER	16.27	(feet)		WELL ELEVATION		(feet)	
WELL DEPTH	26.67	(feet)		GROUNDWATER ELEVATION		(feet)	

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.40 (°C)	7.29 (std)	1.842 (g/L)	2833 (µS/cm)	1.60 (mg/L)	-229.8 (mV)	4.0 (gal)
13.44 (°C)	7.11 (std)	1.816 (g/L)	2791 (µS/cm)	1.14 (mg/L)	-232.3 (mV)	4.5 (gal)
13.49 (°C)	6.99 (std)	1.798 (g/L)	2764 (µS/cm)	1.27 (mg/L)	-236.3 (mV)	5.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: Bio-Reducing COLOR: dark gray SHEEN Y/N No

WEATHER CONDITIONS: TEMPERATURE 80 WINDY Y/N No PRECIPITATION Y/N (IF Y TYPE) No

SPECIFIC COMMENTS:

Dup collected @ 1520

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

DATE 9/12/13 PRINT Christine Matthews SIGNATURE Christine Matthews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No.1 JOB# 074933

SAMPLE ID: GW-074933-091213-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)
9/12/13	9/12/13	~~1405~~ 1695	1.24	~~3.75~~ 3.5

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	B	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	C	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	0.45 for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER	16.64 (feet)	WELL ELEVATION	(feet)
WELL DEPTH	24.41 (feet)	GROUNDWATER ELEVATION	(feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.37 (°C)	7.41 (std)	2.013 (g/L)	3094 (µS/cm)	3.94 (mg/L)	~~340~~ (mV)	1.75 (gal)
14.02 (°C)	7.21 (std)	1.959 (g/L)	3012 (µS/cm)	2.42 (mg/L)	-326.4 (mV)	3.25 (gal)
13.46 (°C)	7.02 (std)	1.964 (g/L)	3021 (µS/cm)	2.00 (mg/L)	-323.0 (mV)	~~3.25~~ 3.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: bio/sulfur COLOR: dark gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) yes - rain

SPECIFIC COMMENTS:

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

DATE 9/12/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No.1 JOB# 074933
SAMPLE ID: GW-074933-091213-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)
9/12/13	9/12/13	1505	1.62	5.00

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	FOR METALS ONLY	

FIELD MEASUREMENTS

DEPTH TO WATER 18.12 (feet) WELL ELEVATION (feet)

WELL DEPTH 28.24 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.98 (°C)	7.21 (std)	8.851 (g/L)	13621 (µS/cm)	2.82 (mg/L)	-31.2 (mV)	4.0 (gal)
14.82 (°C)	7.14 (std)	8.810 (g/L)	13552 (µS/cm)	2.38 (mg/L)	-38.4 (mV)	4.5 (gal)
14.63 (°C)	7.09 (std)	8.760 (g/L)	13481 (µS/cm)	2.17 (mg/L)	-40.6 (mV)	5.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: CLOUDY ODOR: NONE COLOR: LIGHT BROWN SHEEN Y/N N

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

SPECIFIC COMMENTS:

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

DATE 9/12/13 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No1 JOB# 074933
SAMPLE ID: GW-074933-091213-CM-MW-5 WELL# MW-5

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)
9/12/13	9/12/13	1715		19

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	0.45 metals only	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME	
14.90 (°C)	8.44 (std)	10.16 (g/L)	15645 (µS/cm)	4.50 (mg/L)	-230.5 (mV)	~~3.0~~ (gal)	18.0
14.81 (°C)	8.35 (std)	10.28 (g/L)	15823 (µS/cm)	3.04 (mg/L)	-238.2 (mV)	~~3.5~~ (gal)	18.5
14.79 (°C)	8.33 (std)	10.31 (g/L)	15860 (µS/cm)	2.73 (mg/L)	-239.9 (mV)	19.0 (gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: bio/sulfur COLOR: gray SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 60° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): yes - rain

SPECIFIC COMMENTS:

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

DATE 9/12/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Ranchlemen No. 1 JOB# 074933

SAMPLE ID: GW-074933-121213-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)
12/12/13	12/12/13	1335	1.413	4.25

PURGING AND SAMPLING EQUIPMENT

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

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

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	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	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	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	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER 14.67 (feet) WELL ELEVATION (feet)

WELL DEPTH 23.5 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.98 (°C)	6.73 (std)	2.040 (g/L)	3138 (µS/cm)	2.33 (mg/L)	-155.4 (mV)	3.25 (gal)
15.11 (°C)	6.64 (std)	2,033 (g/L)	3126 (µS/cm)	2.35 (mg/L)	-149.7 (mV)	3.75 (gal)
15.06 (°C)	6.59 (std)	2,040 (g/L)	3138 (µS/cm)	2.49 (mg/L)	-144.9 (mV)	4.25 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

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

WEATHER CONDITIONS: TEMPERATURE 34° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

1.413 x 3 = 4.24

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

DATE 12/12/13 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No. 1 JOB# 074933

SAMPLE ID: GW-074922-121213-AM-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)
12/12/13	12/12/13	1310	1.606	5.0

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	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER 16.4 (feet) WELL ELEVATION (feet)

WELL DEPTH 26.44 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.45 (°C)	7.11 (std)	1.686 (g/L)	2594 (µS/cm)	1.60 (mg/L)	-308.9 (mV)	4.0 (gal)
13.44 (°C)	7.04 (std)	1.672 (g/L)	2573 (µS/cm)	2.03 (mg/L)	-298.7 (mV)	4.5 (gal)
13.42 (°C)	6.96 (std)	1.663 (g/L)	2559 (µS/cm)	1.82 (mg/L)	-299.5 (mV)	5.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: slight COLOR: dark gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 35° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

1.606 x 3 = 4.82

Duplicate collected @ 1315

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

DATE 12/12/13 PRINT Christine Matteo SIGNATURE Christine Matteo

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Randleman No. 1 JOB# 074933

SAMPLE ID: GW-074933-12/12/13-CM1-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)
12/12/13	12/12/13	1610	1.211	2.5

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	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER 16.93 (feet) WELL ELEVATION (feet)

WELL DEPTH 24.5 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.70 (°C)	7.20 (std)	2.007 (g/L)	3041 (µS/cm)	1.91 (mg/L)	-309.0 (mV)	2.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: sulfur COLOR: gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 35° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

1.211 x 3 = 3.634 Bailed dry @ 2 gallons - will allow to recharge prior to sampling

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

DATE 12/12/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Rundleman No. 1 JOB# 074933
SAMPLE ID: GW-074933-121213-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)
12/12/13	12/12/13	1410	1.584	4.75

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		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER 18.15 (feet) WELL ELEVATION (feet)

WELL DEPTH 28.05 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.06 (°C)	6.98 (std)	8.342 (g/L)	12.867 (µS/cm)	1.96 (mg/L)	-119.6 (mV)	3.75 (gal)
14.46 (°C)	7.04 (std)	8.448 (g/L)	12.984 (µS/cm)	1.83 (mg/L)	-120.3 (mV)	4.25 (gal)
14.53 (°C)	7.06 (std)	8.459 (g/L)	13.017 (µS/cm)	1.59 (mg/L)	-119.6 (mV)	4.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

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

WEATHER CONDITIONS: TEMPERATURE 35° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

1.584 x 3 = 4.75

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

DATE 12/12/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Rankleman No. 1 JOB# 074933

SAMPLE ID: GW-074933-121213-CM-MW-5 WELL# MW-5

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)
12/12/13	12/12/13	1535	6.00	18.00

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		For metals only.

FIELD MEASUREMENTS

DEPTH TO WATER 21.44 (feet) WELL ELEVATION (feet)

WELL DEPTH 59.00 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.65 (°C)	7.94 (std)	10.20 (g/L)	15706 (µS/cm)	1.42 (mg/L)	-272.1 (mV)	17.0 (gal)
14.23 (°C)	8.02 (std)	10.26 (g/L)	15780 (µS/cm)	1.27 (mg/L)	-275.7 (mV)	17.5 (gal)
14.28 (°C)	8.00 (std)	10.27 (g/L)	15857 (µS/cm)	1.10 (mg/L)	-282.2 (mV)	18.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy/silty ODOR: sulfur COLOR: gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 35° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

6.00 X 3 = 18

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

DATE 12/12/13 PRINT Christine Matthews SIGNATURE Christine Matthews

Appendix B

2013 QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORTS

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

March 04, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on March 29, 2013. 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.

REVISED

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: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

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

CERTIFICATIONS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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

SAMPLE SUMMARY

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60141430001	**GW-074933-032713-JK-MW1**	Water	03/27/13 11:30	03/29/13 08:35
60141430002	**GW-074933-032713-JK-MW2**	Water	03/27/13 12:15	03/29/13 08:35
60141430003	**GW-074933-032713-JK-MW3**	Water	03/27/13 12:45	03/29/13 08:35
60141430004	**GW-074933-032713-JK-MW4**	Water	03/27/13 13:30	03/29/13 08:35
60141430005	**GW-074933-032713-JK-DUP**	Water	03/27/13 08:00	03/29/13 08:35
60141430006	**BLANK**	Water	03/27/13 00:00	03/29/13 08:35

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60141430001	**GW-074933-032713-JK-MW1**	EPA 6010	TJG	1
		EPA 8260	SDR	9
		SM 2540C	JGH	1
		EPA 300.0	OL	2
60141430002	**GW-074933-032713-JK-MW2**	EPA 6010	TJG	1
		EPA 8260	SDR	9
		SM 2540C	JGH	1
		EPA 300.0	OL	2
60141430003	**GW-074933-032713-JK-MW3**	EPA 6010	TJG	1
		EPA 8260	SDR	9
		SM 2540C	JGH	1
		EPA 300.0	OL	2
60141430004	**GW-074933-032713-JK-MW4**	EPA 6010	TJG	1
		EPA 8260	JTK	9
		SM 2540C	JGH	1
		EPA 300.0	OL	2
60141430005	**GW-074933-032713-JK-DUP**	EPA 8260	JTK	9
60141430006	**BLANK**	EPA 8260	JTK	9

Pace Analytical Services, Inc.
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Lenexa, KS 66219
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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

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, where applicable, with any exceptions noted below.

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

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

Additional Comments:

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

PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

General Information:
6 samples were analyzed for EPA 8260. 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.

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.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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

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

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

QC Batch: MSV/52788

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/52794

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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

PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

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, where applicable, with any exceptions noted below.

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

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

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

Additional Comments:

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

PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

General Information:
4 samples were analyzed for EPA 300.0. 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.

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

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

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

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

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

Additional Comments:

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

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

ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: GW-074933-032713-JK-MW1 **Lab ID: 60141430001** Collected: 03/27/13 11:30 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1270**	ug/L	10.0	2	04/01/13 15:00	04/10/13 09:48	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**8.0**	ug/L	1.0	1		04/05/13 07:00	71-43-2	
Ethylbenzene	**50.8**	ug/L	1.0	1		04/05/13 07:00	100-41-4	
Toluene	**5.1**	ug/L	1.0	1		04/05/13 07:00	108-88-3	
Xylene (Total)	**85.6**	ug/L	3.0	1		04/05/13 07:00	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	100	%	80-120	1		04/05/13 07:00	1868-53-7	
Toluene-d8 (S)	101	%	80-120	1		04/05/13 07:00	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120	1		04/05/13 07:00	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		04/05/13 07:00	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/05/13 07:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4240**	mg/L	5.0	1		04/03/13 09:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**829**	mg/L	100	100		04/04/13 20:56	16887-00-6	
Sulfate	**1940**	mg/L	200	200		04/04/13 21:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: GW-074933-032713-JK-MW2 **Lab ID: 60141430002** Collected: 03/27/13 12:15 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1060**	ug/L	5.0	1	04/01/13 15:00	04/10/13 09:56	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**21.5**	ug/L	1.0	1		04/05/13 07:17	71-43-2	
Ethylbenzene	**26.3**	ug/L	1.0	1		04/05/13 07:17	100-41-4	
Toluene	**17.1**	ug/L	1.0	1		04/05/13 07:17	108-88-3	
Xylene (Total)	**110**	ug/L	3.0	1		04/05/13 07:17	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102	%	80-120	1		04/05/13 07:17	1868-53-7	
Toluene-d8 (S)	101	%	80-120	1		04/05/13 07:17	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120	1		04/05/13 07:17	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-120	1		04/05/13 07:17	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/05/13 07:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2050**	mg/L	5.0	1		04/03/13 09:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**70.0**	mg/L	5.0	5		04/04/13 21:29	16887-00-6	
Sulfate	**1150**	mg/L	100	100		04/04/13 21:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: GW-074933-032713-JK-MW3 **Lab ID: 60141430003** Collected: 03/27/13 12:45 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1810**	ug/L	5.0	1	04/01/13 15:00	04/10/13 09:58	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		04/05/13 07:34	71-43-2	
Ethylbenzene	**140**	ug/L	1.0	1		04/05/13 07:34	100-41-4	
Toluene	ND	ug/L	1.0	1		04/05/13 07:34	108-88-3	
Xylene (Total)	**168**	ug/L	3.0	1		04/05/13 07:34	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102	%	80-120	1		04/05/13 07:34	1868-53-7	
Toluene-d8 (S)	105	%	80-120	1		04/05/13 07:34	2037-26-5	
4-Bromofluorobenzene (S)	96	%	80-120	1		04/05/13 07:34	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	80-120	1		04/05/13 07:34	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/05/13 07:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2500**	mg/L	5.0	1		04/03/13 09:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**52.7**	mg/L	5.0	5		04/04/13 22:02	16887-00-6	
Sulfate	**1530**	mg/L	100	100		04/04/13 22:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: GW-074933-032713-JK-MW4 **Lab ID: 60141430004** Collected: 03/27/13 13:30 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1460**	ug/L	25.0	5	04/01/13 15:00	04/10/13 10:00	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		04/04/13 22:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		04/04/13 22:08	100-41-4	
Toluene	ND	ug/L	1.0	1		04/04/13 22:08	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		04/04/13 22:08	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	101	%	80-120	1		04/04/13 22:08	1868-53-7	
Toluene-d8 (S)	97	%	80-120	1		04/04/13 22:08	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		04/04/13 22:08	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	80-120	1		04/04/13 22:08	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/04/13 22:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**8320**	mg/L	5.0	1		04/03/13 09:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**2270**	mg/L	200	200		04/04/13 22:35	16887-00-6	
Sulfate	**3180**	mg/L	200	200		04/04/13 22:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: GW-074933-032713-JK-DUP **Lab ID: 60141430005** Collected: 03/27/13 08:00 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**8.0**	ug/L	1.0	1		04/04/13 22:23	71-43-2	
Ethylbenzene	**49.3**	ug/L	1.0	1		04/04/13 22:23	100-41-4	
Toluene	**4.7**	ug/L	1.0	1		04/04/13 22:23	108-88-3	
Xylene (Total)	**78.0**	ug/L	3.0	1		04/04/13 22:23	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	99	%	80-120	1		04/04/13 22:23	1868-53-7	
Toluene-d8 (S)	99	%	80-120	1		04/04/13 22:23	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		04/04/13 22:23	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-120	1		04/04/13 22:23	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/04/13 22:23		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Sample: BLANK **Lab ID: 60141430006** Collected: 03/27/13 00:00 Received: 03/29/13 08:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		04/04/13 22:39	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		04/04/13 22:39	100-41-4	
Toluene	ND	ug/L	1.0	1		04/04/13 22:39	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		04/04/13 22:39	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	105	%	80-120	1		04/04/13 22:39	1868-53-7	
Toluene-d8 (S)	97	%	80-120	1		04/04/13 22:39	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		04/04/13 22:39	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	80-120	1		04/04/13 22:39	17060-07-0	
Preservation pH	**1.0**		1.0	1		04/04/13 22:39		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

QC Batch: MPRP/22118 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

METHOD BLANK: 1163012 Matrix: Water
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	04/10/13 09:44	

LABORATORY CONTROL SAMPLE: 1163013

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: 1163014 1163015

Parameter	Units	60141430001 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	1270	1000	1000	2180	2290	91	102	75-125	5	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

QC Batch: MSV/52788 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60141430001, 60141430002, 60141430003

METHOD BLANK: 1164748 Matrix: Water
Associated Lab Samples: 60141430001, 60141430002, 60141430003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	04/05/13 02:49	
Ethylbenzene	ug/L	ND	1.0	04/05/13 02:49	
Toluene	ug/L	ND	1.0	04/05/13 02:49	
Xylene (Total)	ug/L	ND	3.0	04/05/13 02:49	
1,2-Dichloroethane-d4 (S)	%	112	80-120	04/05/13 02:49	
4-Bromofluorobenzene (S)	%	99	80-120	04/05/13 02:49	
Dibromofluoromethane (S)	%	104	80-120	04/05/13 02:49	
Toluene-d8 (S)	%	94	80-120	04/05/13 02:49	

LABORATORY CONTROL SAMPLE: 1164749

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.5	88	73-122	
Ethylbenzene	ug/L	20	18.6	93	76-123	
Toluene	ug/L	20	18.0	90	76-122	
Xylene (Total)	ug/L	60	57.7	96	76-122	
1,2-Dichloroethane-d4 (S)	%			93	80-120	
4-Bromofluorobenzene (S)	%			92	80-120	
Dibromofluoromethane (S)	%			94	80-120	
Toluene-d8 (S)	%			103	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

QC Batch: MSV/52794 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60141430004, 60141430005, 60141430006

METHOD BLANK: 1165026 Matrix: Water
Associated Lab Samples: 60141430004, 60141430005, 60141430006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	04/04/13 21:52	
Ethylbenzene	ug/L	ND	1.0	04/04/13 21:52	
Toluene	ug/L	ND	1.0	04/04/13 21:52	
Xylene (Total)	ug/L	ND	3.0	04/04/13 21:52	
1,2-Dichloroethane-d4 (S)	%	104	80-120	04/04/13 21:52	
4-Bromofluorobenzene (S)	%	101	80-120	04/04/13 21:52	
Dibromofluoromethane (S)	%	108	80-120	04/04/13 21:52	
Toluene-d8 (S)	%	93	80-120	04/04/13 21:52	

LABORATORY CONTROL SAMPLE: 1165027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.1	90	73-122	
Ethylbenzene	ug/L	20	18.0	90	76-123	
Toluene	ug/L	20	17.5	88	76-122	
Xylene (Total)	ug/L	60	54.7	91	76-122	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			103	80-120	
Dibromofluoromethane (S)	%			102	80-120	
Toluene-d8 (S)	%			96	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

QC Batch: WET/40527 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

METHOD BLANK: 1163115 Matrix: Water
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	04/03/13 09:57	

SAMPLE DUPLICATE: 1163116

Parameter	Units	60141430001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4240	4340	2	17	

SAMPLE DUPLICATE: 1163117

Parameter	Units	60141455007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	156	157	1	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

QC Batch: WETA/24125 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

METHOD BLANK: 1164449 Matrix: Water
Associated Lab Samples: 60141430001, 60141430002, 60141430003, 60141430004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	04/04/13 13:28	
Sulfate	mg/L	ND	1.0	04/04/13 13:28	

LABORATORY CONTROL SAMPLE: 1164450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1164451 1164452

Parameter	Units	60141234001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	170	100	100	276	285	106	115	64-118	3	12	
Sulfate	mg/L	140	100	100	242	253	102	114	61-119	4	10	

MATRIX SPIKE SAMPLE: 1164453

Parameter	Units	60141414004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1020	2500	3290	91	64-118	
Sulfate	mg/L	3550	2500	5870	93	61-119	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

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.

BATCH QUALIFIERS

Batch: MSV/52788

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/52794

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60141430

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60141430001	**GW-074933-032713-JK-MW1**	EPA 3010	MPRP/22118	EPA 6010	ICP/17652
60141430002	**GW-074933-032713-JK-MW2**	EPA 3010	MPRP/22118	EPA 6010	ICP/17652
60141430003	**GW-074933-032713-JK-MW3**	EPA 3010	MPRP/22118	EPA 6010	ICP/17652
60141430004	**GW-074933-032713-JK-MW4**	EPA 3010	MPRP/22118	EPA 6010	ICP/17652
60141430001	**GW-074933-032713-JK-MW1**	EPA 8260	MSV/52788		
60141430002	**GW-074933-032713-JK-MW2**	EPA 8260	MSV/52788		
60141430003	**GW-074933-032713-JK-MW3**	EPA 8260	MSV/52788		
60141430004	**GW-074933-032713-JK-MW4**	EPA 8260	MSV/52794		
60141430005	**GW-074933-032713-JK-DUP**	EPA 8260	MSV/52794		
60141430006	**BLANK**	EPA 8260	MSV/52794		
60141430001	**GW-074933-032713-JK-MW1**	SM 2540C	WET/40527		
60141430002	**GW-074933-032713-JK-MW2**	SM 2540C	WET/40527		
60141430003	**GW-074933-032713-JK-MW3**	SM 2540C	WET/40527		
60141430004	**GW-074933-032713-JK-MW4**	SM 2540C	WET/40527		
60141430001	**GW-074933-032713-JK-MW1**	EPA 300.0	WETA/24125		
60141430002	**GW-074933-032713-JK-MW2**	EPA 300.0	WETA/24125		
60141430003	**GW-074933-032713-JK-MW3**	EPA 300.0	WETA/24125		
60141430004	**GW-074933-032713-JK-MW4**	EPA 300.0	WETA/24125		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO# : 60141430

60141430

Optional
Proj Due Date:
Proj Name:

Client Name: COP CRA NM

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

Tracking #: 8023 6946 6630 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-112 / 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: 3/28/13 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: AMF Date: 4/1/13

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.	
Start: 1445	Start:
End: 1450	End:
Temp:	Temp:

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical
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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:	4517146300
Project Name:	Randleman No. 1
Project Number:	074933

Section C — Invoice Information:

Attention:	ePayables
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

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	300.0 Sulfate	300.0 Chloride	2540 TDS	6010 Dissolved Mn	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074933-032713-JK-MW 1	WT		3.27.13	1130				5			✓	✓					✓	✓	✓	✓	✓			60141430
2	GW-074933-032713-JK-MW 2	WT		3.27.13	1215				5			✓	✓					✓	✓	✓	✓	✓			02
3	GW-074933-032713-JK-MW 3	WT		3.27.13	1245				5			✓	✓					✓	✓	✓	✓	✓			03
4	GW-074933-032713-JK-MW 4	WT		3.27.13	1330				5			✓	✓					✓	✓	✓	✓	✓			04
5	GW-074933-032713-JK-DUP	WT		3.27.13					3				✓					✓							05
6	BLANK			3.27.13					3				✓					✓							06
7																									
8																									
9																									
10																									
11																									
12																									

1BP3F1-5 1BP3H 3DG9H

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)
	Joshua Kirchner CRA	3.28.13	1400	Brent Cox	3/29/13	835	1.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOSHUA KIRCHNER

SIGNATURE of SAMPLER: Joshua Kirchner DATE Signed (MM/DD/YY): 3.27.13

*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.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 04, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2013. 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.

REVISED

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: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

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CERTIFICATIONS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60147446001	**GW-074933-061913-JK-MW1**	Water	06/19/13 09:00	06/21/13 07:00
60147446002	**GW-074933-061913-JK-MW2**	Water	06/19/13 09:55	06/21/13 07:00
60147446003	**GW-074933-061913-JK-MW3**	Water	06/19/13 10:45	06/21/13 07:00
60147446004	**GW-074933-061913-JK-MW4**	Water	06/19/13 11:38	06/21/13 07:00
60147446005	**GW-074933-061913-JK-DUP**	Water	06/19/13 00:00	06/21/13 07:00
60147446006	**TRIP BLANK**	Water	06/19/13 09:00	06/21/13 07:00
60147446007	**GW-074933-061913-JK-MW5**	Water	06/19/13 13:45	06/21/13 07:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60147446001	**GW-074933-061913-JK-MW1**	EPA 6010	TJT	1
		EPA 8260	PRG	9
		EPA 300.0	OL	2
60147446002	**GW-074933-061913-JK-MW2**	EPA 6010	TJT	1
		EPA 8260	PRG	9
		EPA 300.0	OL	2
60147446003	**GW-074933-061913-JK-MW3**	EPA 6010	TJT	1
		EPA 8260	PRG	9
		EPA 300.0	OL	2
60147446004	**GW-074933-061913-JK-MW4**	EPA 6010	TJT	1
		EPA 8260	PRG	9
		EPA 300.0	OL	2
60147446005	**GW-074933-061913-JK-DUP**	EPA 8260	PRG	9
60147446006	**TRIP BLANK**	EPA 8260	PRG	9
60147446007	**GW-074933-061913-JK-MW5**	EPA 6010	TJT	1
		EPA 8260	JTS	9
		EPA 300.0	OL	2

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

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, where applicable, with any exceptions noted below.

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

General Information:
7 samples were analyzed for EPA 8260. 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.

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.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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

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

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

QC Batch: MSV/54593

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/54632

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 04, 2014

General Information:
5 samples were analyzed for EPA 300.0. 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.

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

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

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

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

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

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-MW1 **Lab ID: 60147446001** Collected: 06/19/13 09:00 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	ND	ug/L	5.0	1	06/25/13 13:45	07/03/13 10:48	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/27/13 19:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/27/13 19:18	100-41-4	
Toluene	ND	ug/L	1.0	1		06/27/13 19:18	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/27/13 19:18	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	102	%	80-120	1		06/27/13 19:18	1868-53-7	
Toluene-d8 (S)	103	%	80-120	1		06/27/13 19:18	2037-26-5	
4-Bromofluorobenzene (S)	94	%	80-120	1		06/27/13 19:18	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	80-120	1		06/27/13 19:18	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 19:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**73.6**	mg/L	10.0	10		07/02/13 10:00	16887-00-6	
Sulfate	**1400**	mg/L	200	200		07/03/13 09:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-MW2 **Lab ID: 60147446002** Collected: 06/19/13 09:55 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1190**	ug/L	50.0	10	06/25/13 13:45	07/03/13 10:59	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**31.8**	ug/L	1.0	1		06/27/13 19:32	71-43-2	
Ethylbenzene	**69.6**	ug/L	1.0	1		06/27/13 19:32	100-41-4	
Toluene	**104**	ug/L	1.0	1		06/27/13 19:32	108-88-3	
Xylene (Total)	**410**	ug/L	3.0	1		06/27/13 19:32	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	88	%	80-120	1		06/27/13 19:32	1868-53-7	
Toluene-d8 (S)	106	%	80-120	1		06/27/13 19:32	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		06/27/13 19:32	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	80-120	1		06/27/13 19:32	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 19:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**63.7**	mg/L	10.0	10		07/02/13 10:54	16887-00-6	
Sulfate	**1000**	mg/L	100	100		07/03/13 10:46	14808-79-8	

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-MW3 **Lab ID: 60147446003** Collected: 06/19/13 10:45 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1660**	ug/L	50.0	10	06/25/13 13:45	07/03/13 11:02	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/27/13 19:47	71-43-2	
Ethylbenzene	**53.4**	ug/L	1.0	1		06/27/13 19:47	100-41-4	
Toluene	ND	ug/L	1.0	1		06/27/13 19:47	108-88-3	
Xylene (Total)	**48.0**	ug/L	3.0	1		06/27/13 19:47	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	96	%	80-120	1		06/27/13 19:47	1868-53-7	
Toluene-d8 (S)	104	%	80-120	1		06/27/13 19:47	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120	1		06/27/13 19:47	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		06/27/13 19:47	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 19:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**81.6**	mg/L	10.0	10		07/02/13 11:50	16887-00-6	
Sulfate	**1240**	mg/L	100	100		07/03/13 11:41	14808-79-8	

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-MW4 **Lab ID: 60147446004** Collected: 06/19/13 11:38 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1440**	ug/L	50.0	10	06/25/13 13:45	07/03/13 11:04	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/27/13 20:01	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/27/13 20:01	100-41-4	
Toluene	ND	ug/L	1.0	1		06/27/13 20:01	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/27/13 20:01	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	106	%	80-120	1		06/27/13 20:01	1868-53-7	
Toluene-d8 (S)	95	%	80-120	1		06/27/13 20:01	2037-26-5	
4-Bromofluorobenzene (S)	90	%	80-120	1		06/27/13 20:01	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		06/27/13 20:01	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 20:01		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**2000**	mg/L	500	500		07/03/13 11:59	16887-00-6	
Sulfate	**2790**	mg/L	500	500		07/03/13 11:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-DUP **Lab ID: 60147446005** Collected: 06/19/13 00:00 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**32.0**	ug/L	1.0	1		06/27/13 20:16	71-43-2	
Ethylbenzene	**62.5**	ug/L	1.0	1		06/27/13 20:16	100-41-4	
Toluene	**98.6**	ug/L	1.0	1		06/27/13 20:16	108-88-3	
Xylene (Total)	**400**	ug/L	3.0	1		06/27/13 20:16	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	97	%	80-120	1		06/27/13 20:16	1868-53-7	
Toluene-d8 (S)	100	%	80-120	1		06/27/13 20:16	2037-26-5	
4-Bromofluorobenzene (S)	96	%	80-120	1		06/27/13 20:16	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120	1		06/27/13 20:16	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 20:16		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: TRIP BLANK **Lab ID: 60147446006** Collected: 06/19/13 09:00 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/27/13 16:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/27/13 16:22	100-41-4	
Toluene	ND	ug/L	1.0	1		06/27/13 16:22	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/27/13 16:22	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	108	%	80-120	1		06/27/13 16:22	1868-53-7	
Toluene-d8 (S)	99	%	80-120	1		06/27/13 16:22	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		06/27/13 16:22	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	80-120	1		06/27/13 16:22	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/27/13 16:22		

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Sample: GW-074933-061913-JK-MW5 **Lab ID: 60147446007** Collected: 06/19/13 13:45 Received: 06/21/13 07:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**255**	ug/L	50.0	10	06/25/13 13:45	07/03/13 11:06	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/29/13 06:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/29/13 06:33	100-41-4	
Toluene	ND	ug/L	1.0	1		06/29/13 06:33	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/29/13 06:33	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	100	%	80-120	1		06/29/13 06:33	1868-53-7	
Toluene-d8 (S)	101	%	80-120	1		06/29/13 06:33	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		06/29/13 06:33	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-120	1		06/29/13 06:33	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/29/13 06:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**3900**	mg/L	200	200		07/03/13 12:17	16887-00-6	
Sulfate	**1550**	mg/L	200	200		07/03/13 12:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

QC Batch: MPRP/23230 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446007

METHOD BLANK: 1210643 Matrix: Water
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	07/03/13 10:44	

LABORATORY CONTROL SAMPLE: 1210644

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: 1210645 1210646

Parameter	Units	60147446001 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	ND	1000	1000	986	979	99	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

QC Batch: MSV/54593 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446005, 60147446006

METHOD BLANK: 1211905 Matrix: Water
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446005, 60147446006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/27/13 15:38	
Ethylbenzene	ug/L	ND	1.0	06/27/13 15:38	
Toluene	ug/L	ND	1.0	06/27/13 15:38	
Xylene (Total)	ug/L	ND	3.0	06/27/13 15:38	
1,2-Dichloroethane-d4 (S)	%	108	80-120	06/27/13 15:38	
4-Bromofluorobenzene (S)	%	100	80-120	06/27/13 15:38	
Dibromofluoromethane (S)	%	109	80-120	06/27/13 15:38	
Toluene-d8 (S)	%	94	80-120	06/27/13 15:38	

LABORATORY CONTROL SAMPLE: 1211906

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.7	104	73-122	
Ethylbenzene	ug/L	20	19.0	95	76-123	
Toluene	ug/L	20	19.0	95	76-122	
Xylene (Total)	ug/L	60	58.5	98	76-122	
1,2-Dichloroethane-d4 (S)	%			109	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Dibromofluoromethane (S)	%			110	80-120	
Toluene-d8 (S)	%			98	80-120	

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

QC Batch: MSV/54632 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60147446007

METHOD BLANK: 1213485 Matrix: Water
Associated Lab Samples: 60147446007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/29/13 03:12	
Ethylbenzene	ug/L	ND	1.0	06/29/13 03:12	
Toluene	ug/L	ND	1.0	06/29/13 03:12	
Xylene (Total)	ug/L	ND	3.0	06/29/13 03:12	
1,2-Dichloroethane-d4 (S)	%	99	80-120	06/29/13 03:12	
4-Bromofluorobenzene (S)	%	100	80-120	06/29/13 03:12	
Dibromofluoromethane (S)	%	99	80-120	06/29/13 03:12	
Toluene-d8 (S)	%	97	80-120	06/29/13 03:12	

LABORATORY CONTROL SAMPLE: 1213486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.1	96	73-122	
Ethylbenzene	ug/L	20	20.7	103	76-123	
Toluene	ug/L	20	19.4	97	76-122	
Xylene (Total)	ug/L	60	60.3	100	76-122	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Dibromofluoromethane (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

QC Batch: WETA/25317 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446007

METHOD BLANK: 1214447 Matrix: Water
Associated Lab Samples: 60147446001, 60147446002, 60147446003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	07/02/13 09:25	

METHOD BLANK: 1215140 Matrix: Water
Associated Lab Samples: 60147446001, 60147446002, 60147446003, 60147446004, 60147446007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	07/03/13 09:15	
Sulfate	mg/L	ND	1.0	07/03/13 09:15	

LABORATORY CONTROL SAMPLE: 1214448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 1215141

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1214449 1214450

Parameter	Units	60147446001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	73.6	50	50	116	113	84	79	64-118	3	12	
Sulfate	mg/L	1400	1000	1000	2350	2360	95	96	61-119	0	10	

MATRIX SPIKE SAMPLE: 1214451

Parameter	Units	60147790001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	424	250	667	97	64-118	
Sulfate	mg/L	435	250	684	99	61-119	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

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.

BATCH QUALIFIERS

Batch: MSV/54593

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/54632

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074933 RANDLEMAN NO. 1
Pace Project No.: 60147446

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60147446001	**GW-074933-061913-JK-MW1**	EPA 3010	MPRP/23230	EPA 6010	ICP/18311
60147446002	**GW-074933-061913-JK-MW2**	EPA 3010	MPRP/23230	EPA 6010	ICP/18311
60147446003	**GW-074933-061913-JK-MW3**	EPA 3010	MPRP/23230	EPA 6010	ICP/18311
60147446004	**GW-074933-061913-JK-MW4**	EPA 3010	MPRP/23230	EPA 6010	ICP/18311
60147446007	**GW-074933-061913-JK-MW5**	EPA 3010	MPRP/23230	EPA 6010	ICP/18311
60147446001	**GW-074933-061913-JK-MW1**	EPA 8260	MSV/54593		
60147446002	**GW-074933-061913-JK-MW2**	EPA 8260	MSV/54593		
60147446003	**GW-074933-061913-JK-MW3**	EPA 8260	MSV/54593		
60147446004	**GW-074933-061913-JK-MW4**	EPA 8260	MSV/54593		
60147446005	**GW-074933-061913-JK-DUP**	EPA 8260	MSV/54593		
60147446006	**TRIP BLANK**	EPA 8260	MSV/54593		
60147446007	**GW-074933-061913-JK-MW5**	EPA 8260	MSV/54632		
60147446001	**GW-074933-061913-JK-MW1**	EPA 300.0	WETA/25317		
60147446002	**GW-074933-061913-JK-MW2**	EPA 300.0	WETA/25317		
60147446003	**GW-074933-061913-JK-MW3**	EPA 300.0	WETA/25317		
60147446004	**GW-074933-061913-JK-MW4**	EPA 300.0	WETA/25317		
60147446007	**GW-074933-061913-JK-MW5**	EPA 300.0	WETA/25317		

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Sample Condition Upon Receipt

WO# : 60147446

60147446

Client Name: COP CRA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 8026 7058 6095 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-112 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.0

Temperature should be above freezing to 6°C

Date and initials of person examining contents: KE 6/21/13

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): May 20		15.
Headspace in VOA vials (>6mm):	☑Yes ☐No ☐N/A	1 of 3 trip blanks
		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: AAF Date: 6/21/13

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: 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.:	4517146300
Project Name:	Randleman No. 1
Project Number:	074933

Section C — Invoice Information:

Attention:	ePayables
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

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	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	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	300.0 Sulfate & Chloride	8015 TPH GRO	8015 TPH DRO	6010 Dissolved Mn						Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	~~GW-06190~~					6-19-13																							601 47444
2	GW-074933-061913-JK-MW1						0900		5										✓	✓		✓		1 (BP2U)		1 (BP3N) 1.5	3 (DG9H)			
3	GW-074933-061913-JK-MW2						0955												✓	✓		✓					1.5			
4	GW-074933-061913-JK-MW3						1045												✓	✓		✓					1.5			
5	GW-074933-061913-JK-MW4						1130												✓	✓		✓					1.5			
6	GW-074933-061913-JK-MW5						1245		1										✓	✓		✓					1.5			
7	GW-074933-061913-JK-DUP					↓	—		3										✓											
8																									3 (DG9H)				
9																														
10																														
11																														
12																														

KE 6/21/13

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	CRA	6-20-13	1530	PASI	6/21/13	7:00	4.0	Y	N	Y

SAMPLER NAME AND SIGNATURE				
PRINT Name of SAMPLER:	JOSH KLEINER			
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY):	061913	

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

*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

Pace Analytical Services, Inc.
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September 26, 2013

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

RE: Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 14, 2013. 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
Jeff Walker, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60153139001	**GW-074933-091213-CM-MW-1**	Water	09/12/13 15:35	09/14/13 08:20
60153139002	**GW-074933-091213-CM-MW-2**	Water	09/12/13 15:15	09/14/13 08:20
60153139003	**GW-074933-091213-CM-MW-3**	Water	09/12/13 16:05	09/14/13 08:20
60153139004	**GW-074933-091213-CM-MW-4**	Water	09/12/13 15:05	09/14/13 08:20
60153139005	**GW-074933-091213-CM-DUP**	Water	09/12/13 15:20	09/14/13 08:20
60153139006	**TB-074933-091213-CM-001**	Water	09/12/13 15:00	09/14/13 08:20
60153139007	**GW-074933-091213-CM-MW-5**	Water	09/12/13 15:00	09/14/13 08:20

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SAMPLE ANALYTE COUNT

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60153139001	**GW-074933-091213-CM-MW-1**	EPA 6010	NDJ	1
		EPA 8260	JTS	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60153139002	**GW-074933-091213-CM-MW-2**	EPA 6010	NDJ	1
		EPA 8260	JTS	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60153139003	**GW-074933-091213-CM-MW-3**	EPA 6010	NDJ	1
		EPA 8260	JTS	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60153139004	**GW-074933-091213-CM-MW-4**	EPA 6010	NDJ	1
		EPA 8260	JTS	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60153139005	**GW-074933-091213-CM-DUP**	EPA 8260	JTS	8
60153139006	**TB-074933-091213-CM-001**	EPA 8260	JTS	8
60153139007	**GW-074933-091213-CM-MW-5**	EPA 6010	NDJ	1
		EPA 8260	SDR	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2

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PROJECT NARRATIVE

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 26, 2013

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: 074933 Randleman No. 1
Pace Project No.: 60153139

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 26, 2013

General Information:
7 samples were analyzed for EPA 8260. 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.

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.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits 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.

QC Batch: MSV/56369

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/56416

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 26, 2013

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:

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PROJECT NARRATIVE

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 26, 2013

General Information:
5 samples were analyzed for EPA 300.0. 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.

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:

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

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-MW-1 **Lab ID: 60153139001** Collected: 09/12/13 15:35 Received: 09/14/13 08:20 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	**31.5**	ug/L	5.0	0.49	1	09/19/13 00:00	09/20/13 12:29	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.060	1		09/17/13 23:23	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/17/13 23:23	100-41-4	
Toluene	ND	ug/L	1.0	0.17	1		09/17/13 23:23	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/17/13 23:23	1330-20-7	
Surrogates									
Toluene-d8 (S)	101	%	80-120		1		09/17/13 23:23	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		09/17/13 23:23	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-120		1		09/17/13 23:23	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/17/13 23:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**3870**	mg/L	5.0	5.0	1		09/19/13 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**133**	mg/L	10.0	5.0	10		09/26/13 14:14	16887-00-6	
Sulfate	**1590**	mg/L	200	32.0	200		09/26/13 13:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-MW-2 **Lab ID: 60153139002** Collected: 09/12/13 15:15 Received: 09/14/13 08:20 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	**2200**	ug/L	5.0	0.49	1	09/19/13 00:00	09/20/13 12:31	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**4.3**	ug/L	1.0	0.060	1		09/17/13 23:38	71-43-2	
Ethylbenzene	**11.8**	ug/L	1.0	0.18	1		09/17/13 23:38	100-41-4	
Toluene	**42.9**	ug/L	1.0	0.17	1		09/17/13 23:38	108-88-3	
Xylene (Total)	**74.7**	ug/L	3.0	0.42	1		09/17/13 23:38	1330-20-7	
Surrogates									
Toluene-d8 (S)	101	%	80-120		1		09/17/13 23:38	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120		1		09/17/13 23:38	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	80-120		1		09/17/13 23:38	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/17/13 23:38		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2210**	mg/L	5.0	5.0	1		09/19/13 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**32.4**	mg/L	5.0	2.5	5		09/26/13 12:04	16887-00-6	
Sulfate	**1390**	mg/L	200	32.0	200		09/26/13 12:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-MW-3 **Lab ID: 60153139003** Collected: 09/12/13 16:05 Received: 09/14/13 08:20 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	**989**	ug/L	5.0	0.49	1	09/19/13 00:00	09/20/13 12:33	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**3.6**	ug/L	1.0	0.060	1		09/17/13 23:54	71-43-2	
Ethylbenzene	**40.3**	ug/L	1.0	0.18	1		09/17/13 23:54	100-41-4	
Toluene	ND	ug/L	1.0	0.17	1		09/17/13 23:54	108-88-3	
Xylene (Total)	**48.5**	ug/L	3.0	0.42	1		09/17/13 23:54	1330-20-7	
Surrogates									
Toluene-d8 (S)	101	%	80-120		1		09/17/13 23:54	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		09/17/13 23:54	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-120		1		09/17/13 23:54	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/17/13 23:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2120**	mg/L	5.0	5.0	1		09/19/13 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**87.2**	mg/L	10.0	5.0	10		09/26/13 12:21	16887-00-6	
Sulfate	**920**	mg/L	100	16.0	100		09/26/13 12:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-MW-4 **Lab ID: 60153139004** Collected: 09/12/13 15:05 Received: 09/14/13 08:20 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	**1180**	ug/L	5.0	0.49	1	09/19/13 00:00	09/20/13 12:36	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.060	1		09/18/13 00:10	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/18/13 00:10	100-41-4	
Toluene	ND	ug/L	1.0	0.17	1		09/18/13 00:10	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/18/13 00:10	1330-20-7	
Surrogates									
Toluene-d8 (S)	101	%	80-120		1		09/18/13 00:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		09/18/13 00:10	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		09/18/13 00:10	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/18/13 00:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**6570**	mg/L	5.0	5.0	1		09/19/13 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2520**	mg/L	500	250	500		09/26/13 12:52	16887-00-6	
Sulfate	**3080**	mg/L	500	80.0	500		09/26/13 12:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-DUP **Lab ID: 60153139005** Collected: 09/12/13 15:20 Received: 09/14/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	**3.2**	ug/L	1.0	0.060	1		09/18/13 00:26	71-43-2	
Ethylbenzene	**8.4**	ug/L	1.0	0.18	1		09/18/13 00:26	100-41-4	
Toluene	**30.3**	ug/L	1.0	0.17	1		09/18/13 00:26	108-88-3	
Xylene (Total)	**52.9**	ug/L	3.0	0.42	1		09/18/13 00:26	1330-20-7	
Surrogates									
Toluene-d8 (S)	100	%	80-120		1		09/18/13 00:26	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120		1		09/18/13 00:26	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-120		1		09/18/13 00:26	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/18/13 00:26		

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: TB-074933-091213-CM-001 **Lab ID: 60153139006** Collected: 09/12/13 15:00 Received: 09/14/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.060	1		09/18/13 00:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/18/13 00:41	100-41-4	
Toluene	ND	ug/L	1.0	0.17	1		09/18/13 00:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/18/13 00:41	1330-20-7	
Surrogates									
Toluene-d8 (S)	103	%	80-120		1		09/18/13 00:41	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120		1		09/18/13 00:41	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		09/18/13 00:41	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/18/13 00:41		

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ANALYTICAL RESULTS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Sample: GW-074933-091213-CM-MW-5 **Lab ID: 60153139007** Collected: 09/12/13 15:00 Received: 09/14/13 08:20 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	**245**	ug/L	5.0	0.49	1	09/19/13 00:00	09/20/13 12:42	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.055	1		09/19/13 14:02	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.056	1		09/19/13 14:02	100-41-4	
Toluene	ND	ug/L	1.0	0.066	1		09/19/13 14:02	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.12	1		09/19/13 14:02	1330-20-7	
Surrogates									
Toluene-d8 (S)	103	%	80-120		1		09/19/13 14:02	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120		1		09/19/13 14:02	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	80-120		1		09/19/13 14:02	17060-07-0	
Preservation pH	**1.0**		1.0	0.10	1		09/19/13 14:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**10800**	mg/L	5.0	5.0	1		09/19/13 13:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4040**	mg/L	500	250	500		09/26/13 13:23	16887-00-6	
Sulfate	**1630**	mg/L	200	32.0	200		09/26/13 13:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

QC Batch: MPRP/24349 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139007

METHOD BLANK: 1256522 Matrix: Water
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	09/20/13 12:26	

LABORATORY CONTROL SAMPLE: 1256523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	973	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1256524 1256525

Parameter	Units	60153083001 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	1050	1000	1000	2010	1990	96	94	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

QC Batch: MSV/56369 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139005, 60153139006

METHOD BLANK: 1254978 Matrix: Water
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139005, 60153139006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/17/13 22:04	
Ethylbenzene	ug/L	ND	1.0	09/17/13 22:04	
Toluene	ug/L	ND	1.0	09/17/13 22:04	
Xylene (Total)	ug/L	ND	3.0	09/17/13 22:04	
1,2-Dichloroethane-d4 (S)	%	98	80-120	09/17/13 22:04	
4-Bromofluorobenzene (S)	%	99	80-120	09/17/13 22:04	
Toluene-d8 (S)	%	101	80-120	09/17/13 22:04	

LABORATORY CONTROL SAMPLE: 1254979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.4	102	73-122	
Ethylbenzene	ug/L	20	20.2	101	76-123	
Toluene	ug/L	20	20.6	103	76-122	
Xylene (Total)	ug/L	60	61.1	102	76-122	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			100	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

QC Batch: MSV/56416 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60153139007

METHOD BLANK: 1256328 Matrix: Water
Associated Lab Samples: 60153139007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/19/13 13:12	
Ethylbenzene	ug/L	ND	1.0	09/19/13 13:12	
Toluene	ug/L	ND	1.0	09/19/13 13:12	
Xylene (Total)	ug/L	ND	3.0	09/19/13 13:12	
1,2-Dichloroethane-d4 (S)	%	105	80-120	09/19/13 13:12	
4-Bromofluorobenzene (S)	%	100	80-120	09/19/13 13:12	
Toluene-d8 (S)	%	101	80-120	09/19/13 13:12	

LABORATORY CONTROL SAMPLE: 1256329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.9	95	73-122	
Ethylbenzene	ug/L	20	19.8	99	76-123	
Toluene	ug/L	20	20.0	100	76-122	
Xylene (Total)	ug/L	60	59.0	98	76-122	
1,2-Dichloroethane-d4 (S)	%			103	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

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QUALITY CONTROL DATA

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

QC Batch: WET/43500 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139007

METHOD BLANK: 1256433 Matrix: Water
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/19/13 13:56	

LABORATORY CONTROL SAMPLE: 1256434

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	943	94	80-120	

SAMPLE DUPLICATE: 1256435

Parameter	Units	60153136008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	320	327	2	17	

SAMPLE DUPLICATE: 1256436

Parameter	Units	60153253003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2600	2800	7	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

QC Batch: WETA/26335 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60153139001, 60153139002, 60153139003, 60153139004, 60153139007

METHOD BLANK: 1260043 Matrix: Water
Associated Lab Samples: 60153139003, 60153139004, 60153139007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	09/26/13 10:03	
Sulfate	mg/L	ND	1.0	09/26/13 10:03	

METHOD BLANK: 1260522 Matrix: Water
Associated Lab Samples: 60153139001, 60153139002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	09/26/13 11:36	
Sulfate	mg/L	ND	1.0	09/26/13 11:36	

LABORATORY CONTROL SAMPLE: 1260044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 1260523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1260045 1260046

Parameter	Units	60153139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	133	50	50	183	186	99	106	80-120	2	15	
Sulfate	mg/L	1590	1000	1000	2540	2550	95	95	80-120	0	15	

MATRIX SPIKE SAMPLE: 1260047

Parameter	Units	60153139002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	32.4	25	54.9	90	80-120	
Sulfate	mg/L	1390	1000	2260	87	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

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.

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BATCH QUALIFIERS

Batch: MSV/56369

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/56416

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074933 Randleman No. 1
Pace Project No.: 60153139

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60153139001	**GW-074933-091213-CM-MW-1**	EPA 3010	MPRP/24349	EPA 6010	ICP/18990
60153139002	**GW-074933-091213-CM-MW-2**	EPA 3010	MPRP/24349	EPA 6010	ICP/18990
60153139003	**GW-074933-091213-CM-MW-3**	EPA 3010	MPRP/24349	EPA 6010	ICP/18990
60153139004	**GW-074933-091213-CM-MW-4**	EPA 3010	MPRP/24349	EPA 6010	ICP/18990
60153139007	**GW-074933-091213-CM-MW-5**	EPA 3010	MPRP/24349	EPA 6010	ICP/18990
60153139001	**GW-074933-091213-CM-MW-1**	EPA 8260	MSV/56369		
60153139002	**GW-074933-091213-CM-MW-2**	EPA 8260	MSV/56369		
60153139003	**GW-074933-091213-CM-MW-3**	EPA 8260	MSV/56369		
60153139004	**GW-074933-091213-CM-MW-4**	EPA 8260	MSV/56369		
60153139005	**GW-074933-091213-CM-DUP**	EPA 8260	MSV/56369		
60153139006	**TB-074933-091213-CM-001**	EPA 8260	MSV/56369		
60153139007	**GW-074933-091213-CM-MW-5**	EPA 8260	MSV/56416		
60153139001	**GW-074933-091213-CM-MW-1**	SM 2540C	WET/43500		
60153139002	**GW-074933-091213-CM-MW-2**	SM 2540C	WET/43500		
60153139003	**GW-074933-091213-CM-MW-3**	SM 2540C	WET/43500		
60153139004	**GW-074933-091213-CM-MW-4**	SM 2540C	WET/43500		
60153139007	**GW-074933-091213-CM-MW-5**	SM 2540C	WET/43500		
60153139001	**GW-074933-091213-CM-MW-1**	EPA 300.0	WETA/26335		
60153139002	**GW-074933-091213-CM-MW-2**	EPA 300.0	WETA/26335		
60153139003	**GW-074933-091213-CM-MW-3**	EPA 300.0	WETA/26335		
60153139004	**GW-074933-091213-CM-MW-4**	EPA 300.0	WETA/26335		
60153139007	**GW-074933-091213-CM-MW-5**	EPA 300.0	WETA/26335		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60153139

60153139

Client Name: COP CRA NM

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 8023 2502 9677 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-112) / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.5

Date and initials of person examining contents: 9/14/13 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: Includes date/time/ID/analyses Matrix: WT	☑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	Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☑Yes ☐No ☐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: _____

Project Manager Review: MKT Date: 9/16/13

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

Start: 1110	Start:
End: 1120	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: 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:	ePayables
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Jeff Walker, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4517653457	Pace Quote Reference:	
Phone:	(505)884-0672 Fax: (505)884-4932	Project Name:	Randleman No. 1	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074933	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)

ITEM #	SAMPLE ID	SAMPLE TYPE (see valid codes to left)	MATRIX CODE	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	300.0 Sulfate & Chloride	6010 Dissolved Mn	2540 TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60153139
1	GW-074933-091213-CM-MW-1	G	WT	G	9/12/13	1535				5	X		XX							X	XXX	X			001
2	GW-074933-091213-CM-MW-2	G	WT	G	9/12/13	1515				5	X		XX							X	XXX	X			002
3	GW-074933-091213-CM-MW-3	G	WT	G	9/12/13	1605				5	X		XX							X	XXX	X			003
4	GW-074933-091213-CM-MW-4	G	WT	G	9/12/13	1505				5	X		XX							X	XXX	X			004
5	GW-074933-091213-CM-DUP	G	WT	G	9/12/13	1520				3				X						X					005
6	TB-074933-091313-CM-QD	G	WT	G	9/13/13	1500				3				X						X					006
7	GW-074933-091313-CM-MW-5	G	WT	G	9/13/13	1715				5	X		XX							X	XXX	X			007
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)
metals field filtered	Christine Mathews/CRA	9/13/13	1600	Brent Ackerly/PACE	9/14	0820	0.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: Christine Mathews DATE Signed (MM/DD/YY): 9/13/13

*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.

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

December 30, 2013

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on December 17, 2013. 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: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

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CERTIFICATIONS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159759001	**GW-074933-121213-CM-MW-1**	Water	12/12/13 13:35	12/17/13 09:00
60159759002	**GW-074933-121213-CM-MW-2**	Water	12/12/13 13:10	12/17/13 09:00
60159759003	**GW-074933-121213-CM-MW-3**	Water	12/12/13 16:10	12/17/13 09:00
60159759004	**GW-074933-121213-CM-MW-4**	Water	12/12/13 14:10	12/17/13 09:00
60159759005	**GW-074933-121213-CM-DUP**	Water	12/12/13 13:15	12/17/13 09:00
60159759006	**GW-074933-121213-CM-MW-5**	Water	12/12/13 15:35	12/17/13 09:00
60159759007	**TB-074933-121213-CM-001**	Water	12/12/13 16:30	12/17/13 09:00

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SAMPLE ANALYTE COUNT

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159759001	**GW-074933-121213-CM-MW-1**	EPA 6010	SMW	1
		EPA 8260	EAK	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60159759002	**GW-074933-121213-CM-MW-2**	EPA 6010	SMW	1
		EPA 8260	EAK	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60159759003	**GW-074933-121213-CM-MW-3**	EPA 6010	SMW	1
		EPA 8260	EAK	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60159759004	**GW-074933-121213-CM-MW-4**	EPA 6010	SMW	1
		EPA 8260	EAK	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60159759005	**GW-074933-121213-CM-DUP**	EPA 8260	EAK	8
60159759006	**GW-074933-121213-CM-MW-5**	EPA 6010	SMW	1
		EPA 8260	EAK	8
		SM 2540C	RAH	1
		EPA 300.0	OL	2
60159759007	**TB-074933-121213-CM-001**	EPA 8260	EAK	8

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 30, 2013

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, where applicable, with any exceptions noted below.

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 30, 2013

General Information:
7 samples were analyzed for EPA 8260. 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.

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.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

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

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

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

QC Batch: MSV/58458

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60159783008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1308189)
  - Benzene
  - Ethylbenzene
  - Toluene

R1: RPD value was outside control limits.

- MSD (Lab ID: 1308190)
  - Toluene

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 30, 2013

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, where applicable, with any exceptions noted below.

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 30, 2013

General Information:
5 samples were analyzed for EPA 300.0. 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.

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

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

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

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

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

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-MW-1 **Lab ID: 60159759001** Collected: 12/12/13 13:35 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**6.5**	ug/L	5.0	1	12/24/13 09:00	12/26/13 10:57	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		12/19/13 23:12	71-43-2	
Ethylbenzene	**1.0**	ug/L	1.0	1		12/19/13 23:12	100-41-4	
Toluene	ND	ug/L	1.0	1		12/19/13 23:12	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		12/19/13 23:12	1330-20-7	
Surrogates								
Toluene-d8 (S)	96	%	80-120	1		12/19/13 23:12	2037-26-5	
4-Bromofluorobenzene (S)	92	%	80-120	1		12/19/13 23:12	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	80-120	1		12/19/13 23:12	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/19/13 23:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2370**	mg/L	5.0	1		12/19/13 14:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**77.8**	mg/L	10.0	10		12/24/13 11:35	16887-00-6	
Sulfate	**1470**	mg/L	200	200		12/27/13 11:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-MW-2 **Lab ID: 60159759002** Collected: 12/12/13 13:10 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1390**	ug/L	5.0	1	12/24/13 09:00	12/26/13 11:10	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**8.4**	ug/L	1.0	1		12/19/13 23:27	71-43-2	
Ethylbenzene	**18.1**	ug/L	1.0	1		12/19/13 23:27	100-41-4	
Toluene	**109**	ug/L	1.0	1		12/19/13 23:27	108-88-3	
Xylene (Total)	**140**	ug/L	3.0	1		12/19/13 23:27	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	80-120	1		12/19/13 23:27	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		12/19/13 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-120	1		12/19/13 23:27	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/19/13 23:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2080**	mg/L	5.0	1		12/19/13 14:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**46.6**	mg/L	10.0	10		12/24/13 12:21	16887-00-6	
Sulfate	**1220**	mg/L	100	100		12/27/13 12:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-MW-3 **Lab ID: 60159759003** Collected: 12/12/13 16:10 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1200**	ug/L	5.0	1	12/24/13 09:00	12/26/13 11:13	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**5.6**	ug/L	1.0	1		12/19/13 23:43	71-43-2	
Ethylbenzene	**58.3**	ug/L	1.0	1		12/19/13 23:43	100-41-4	
Toluene	**13.1**	ug/L	1.0	1		12/19/13 23:43	108-88-3	
Xylene (Total)	**76.1**	ug/L	3.0	1		12/19/13 23:43	1330-20-7	
Surrogates								
Toluene-d8 (S)	103	%	80-120	1		12/19/13 23:43	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120	1		12/19/13 23:43	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-120	1		12/19/13 23:43	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/19/13 23:43		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2080**	mg/L	5.0	1		12/19/13 14:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**57.8**	mg/L	10.0	10		12/24/13 12:52	16887-00-6	
Sulfate	**1290**	mg/L	100	100		12/27/13 13:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-MW-4 **Lab ID: 60159759004** Collected: 12/12/13 14:10 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**1610**	ug/L	5.0	1	12/24/13 09:00	12/26/13 11:17	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		12/19/13 23:58	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/19/13 23:58	100-41-4	
Toluene	ND	ug/L	1.0	1		12/19/13 23:58	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		12/19/13 23:58	1330-20-7	
Surrogates								
Toluene-d8 (S)	103	%	80-120	1		12/19/13 23:58	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	1		12/19/13 23:58	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		12/19/13 23:58	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/19/13 23:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**8430**	mg/L	5.0	1		12/19/13 14:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**2570**	mg/L	500	500		12/27/13 13:17	16887-00-6	
Sulfate	**3320**	mg/L	500	500		12/27/13 13:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-DUP **Lab ID: 60159759005** Collected: 12/12/13 13:15 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**7.3**	ug/L	1.0	1		12/20/13 00:13	71-43-2	
Ethylbenzene	**17.7**	ug/L	1.0	1		12/20/13 00:13	100-41-4	
Toluene	**108**	ug/L	1.0	1		12/20/13 00:13	108-88-3	
Xylene (Total)	**138**	ug/L	3.0	1		12/20/13 00:13	1330-20-7	
Surrogates								
Toluene-d8 (S)	104	%	80-120	1		12/20/13 00:13	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120	1		12/20/13 00:13	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	80-120	1		12/20/13 00:13	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/20/13 00:13		

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: GW-074933-121213-CM-MW-5 **Lab ID: 60159759006** Collected: 12/12/13 15:35 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Manganese, Dissolved	**232**	ug/L	5.0	1	12/24/13 09:00	12/26/13 11:20	7439-96-5	
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		12/20/13 00:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/20/13 00:28	100-41-4	
Toluene	ND	ug/L	1.0	1		12/20/13 00:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		12/20/13 00:28	1330-20-7	
Surrogates								
Toluene-d8 (S)	108	%	80-120	1		12/20/13 00:28	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120	1		12/20/13 00:28	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120	1		12/20/13 00:28	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/20/13 00:28		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**8250**	mg/L	5.0	1		12/19/13 14:56		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**4130**	mg/L	500	500		12/27/13 13:48	16887-00-6	
Sulfate	**1870**	mg/L	200	200		12/27/13 13:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Sample: TB-074933-121213-CM-001 **Lab ID: 60159759007** Collected: 12/12/13 16:30 Received: 12/17/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		12/20/13 00:43	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/20/13 00:43	100-41-4	
Toluene	ND	ug/L	1.0	1		12/20/13 00:43	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		12/20/13 00:43	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		12/20/13 00:43	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/20/13 00:43	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	80-120	1		12/20/13 00:43	17060-07-0	
Preservation pH	**1.0**		1.0	1		12/20/13 00:43		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

QC Batch: MPRP/25711 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

METHOD BLANK: 1311138 Matrix: Water
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Manganese, Dissolved	ug/L	ND	5.0	12/26/13 10:51	

LABORATORY CONTROL SAMPLE: 1311139

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Manganese, Dissolved	ug/L	1000	964	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311140 1311141

Parameter	Units	60159759001 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	6.5	1000	1000	981	969	97	96	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

QC Batch: MSV/58458 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759005, 60159759006, 60159759007

METHOD BLANK: 1308187 Matrix: Water
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759005, 60159759006, 60159759007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/19/13 19:26	
Ethylbenzene	ug/L	ND	1.0	12/19/13 19:26	
Toluene	ug/L	ND	1.0	12/19/13 19:26	
Xylene (Total)	ug/L	ND	3.0	12/19/13 19:26	
1,2-Dichloroethane-d4 (S)	%	99	80-120	12/19/13 19:26	
4-Bromofluorobenzene (S)	%	93	80-120	12/19/13 19:26	
Toluene-d8 (S)	%	94	80-120	12/19/13 19:26	

LABORATORY CONTROL SAMPLE: 1308188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.9	90	73-122	
Ethylbenzene	ug/L	20	18.4	92	76-123	
Toluene	ug/L	20	18.9	94	76-122	
Xylene (Total)	ug/L	60	54.4	91	76-122	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1308189 1308190

Parameter	Units	60159783008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	15.4	20	20	24.3	30.3	44	75	48-150	22	31	M1
Ethylbenzene	ug/L	7.9	20	20	17.8	24.1	49	81	50-147	30	31	M1
Toluene	ug/L	ND	20	20	9.1	15.7	44	77	51-147	54	32	M1,R1
Xylene (Total)	ug/L	ND	60	60	28.2	49.9	45	81	49-145	56	31	MS,RS
1,2-Dichloroethane-d4 (S)	%						104	95	80-120			
4-Bromofluorobenzene (S)	%						100	95	80-120			
Toluene-d8 (S)	%						101	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

QC Batch: WET/45236 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

METHOD BLANK: 1308453 Matrix: Water
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/19/13 14:54	

LABORATORY CONTROL SAMPLE: 1308454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	993	99	80-120	

SAMPLE DUPLICATE: 1308455

Parameter	Units	60159759001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2370	2390	1	17	

SAMPLE DUPLICATE: 1308456

Parameter	Units	60159804004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	570	531	7	17	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

QC Batch: WETA/27642 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

METHOD BLANK: 1311153 Matrix: Water
Associated Lab Samples: 60159759001, 60159759002, 60159759003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/24/13 10:33	

METHOD BLANK: 1312692 Matrix: Water
Associated Lab Samples: 60159759001, 60159759002, 60159759003, 60159759004, 60159759006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/27/13 10:43	
Sulfate	mg/L	ND	1.0	12/27/13 10:43	

LABORATORY CONTROL SAMPLE: 1311154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 1312693

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1311155 1311156

Parameter	Units	60159759001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	77.8	50	50	131	123	107	89	80-120	7	15	
Sulfate	mg/L	1470	1000	1000	2540	2510	107	104	80-120	1	15	

MATRIX SPIKE SAMPLE: 1311157

Parameter	Units	60159759002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	46.6	50	91.1	89	80-120	
Sulfate	mg/L	1220	500	1650	85	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

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

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS	Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.
R1	RPD value was outside control limits.
RS	The RPD value in one of the constituent analytes was outside the control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074933 RANDLEMAN NO 1
Pace Project No.: 60159759

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159759001	**GW-074933-121213-CM-MW-1**	EPA 3010	MPRP/25711	EPA 6010	ICP/19729
60159759002	**GW-074933-121213-CM-MW-2**	EPA 3010	MPRP/25711	EPA 6010	ICP/19729
60159759003	**GW-074933-121213-CM-MW-3**	EPA 3010	MPRP/25711	EPA 6010	ICP/19729
60159759004	**GW-074933-121213-CM-MW-4**	EPA 3010	MPRP/25711	EPA 6010	ICP/19729
60159759006	**GW-074933-121213-CM-MW-5**	EPA 3010	MPRP/25711	EPA 6010	ICP/19729
60159759001	**GW-074933-121213-CM-MW-1**	EPA 8260	MSV/58458		
60159759002	**GW-074933-121213-CM-MW-2**	EPA 8260	MSV/58458		
60159759003	**GW-074933-121213-CM-MW-3**	EPA 8260	MSV/58458		
60159759004	**GW-074933-121213-CM-MW-4**	EPA 8260	MSV/58458		
60159759005	**GW-074933-121213-CM-DUP**	EPA 8260	MSV/58458		
60159759006	**GW-074933-121213-CM-MW-5**	EPA 8260	MSV/58458		
60159759007	**TB-074933-121213-CM-001**	EPA 8260	MSV/58458		
60159759001	**GW-074933-121213-CM-MW-1**	SM 2540C	WET/45236		
60159759002	**GW-074933-121213-CM-MW-2**	SM 2540C	WET/45236		
60159759003	**GW-074933-121213-CM-MW-3**	SM 2540C	WET/45236		
60159759004	**GW-074933-121213-CM-MW-4**	SM 2540C	WET/45236		
60159759006	**GW-074933-121213-CM-MW-5**	SM 2540C	WET/45236		
60159759001	**GW-074933-121213-CM-MW-1**	EPA 300.0	WETA/27642		
60159759002	**GW-074933-121213-CM-MW-2**	EPA 300.0	WETA/27642		
60159759003	**GW-074933-121213-CM-MW-3**	EPA 300.0	WETA/27642		
60159759004	**GW-074933-121213-CM-MW-4**	EPA 300.0	WETA/27642		
60159759006	**GW-074933-121213-CM-MW-5**	EPA 300.0	WETA/27642		

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Sample Condition Upon Receipt

WO# : 60159759

60159759

Client Name: COP_CRA

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 803974916571 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 ☒ 2ugL

Thermometer Used: T-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.4

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 12/12/17

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: WT	☐Yes ☒No ☐N/A	mw3-collection date+time on COC 12/12 1315 on VOA 12/12 1610 and bottles 13. mw 4 collection date+time on COC 12/12 1610
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	VOA 12/12 1410 and bottles Dup - collection date+time on COC 12/12 ~~12/13~~ 1410 12/17
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	14. VOA 12/12 1315 and bottles
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased): Lot 111113-3BFD	☒Yes ☐No ☐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: _____

Project Manager Review: AAF Date: 12/7/17

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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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	COP CRA NM	Report To:	Christine Mathews	Attention:	ePayables
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Jeff Walker, Angela Bown	Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:	4517653457	Pace Quote Reference:	
Phone:	(505)884-0672 Fax: (505)884-4932	Project Name:	Randleman No. 1	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	074933	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	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	300.0 Sulfate & Chloride	6010 Dissolved Mn	2540 TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60159759
1	GW-074933-121213-CM-MW-1	WT	G			12/12/13	1335		5	1		1	3						X	X	X	X		3(DGRH) BP3U, BP3N 001
2	GW-074933-121213-CM-MW-2	WT	G			12/12/13	1310		5	1		1	3						X	X	X	X		↓ ↓ ↓ 002
3	GW-074933-121213-CM-MW-3	WT	G			12/12/13	1315		5	1		1	3						X	X	X	X		↓ ↓ ↓ 003
4	GW-074933-121213-CM-MW-4	WT	G			12/12/13	1610		5	1		1	3						X	X	X	X		↓ ↓ ↓ 004
5	GW-074933-121213-CM-DUP	WT	G			12/12/13	1410		3				3						X					↓ 005
6	GW-074933-121213-CM-MW-5	WT	G			12/12/13	1535		5	1		1	3						X	X	X	X		↓ ↓ ↓ 006
7	TB-074933-121213-CM-001	WT	G			12/12/13	1630		3				3						X					3(DGRH) TB 007
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)
	Christine Mathews / CRA	12/16/13	1430	Shandelle McKay / BAS I	12/17	0900	2.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: Christine Mathews DATE Signed (MM/DD/YY): 12/16/13

*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.

Appendix C

TABLE 2-SOIL BORING ANALYTICAL RESULTS-GROUNDWATER MONITOR WELL INSTALLATION AND BASELINE GROUNDWATER MONITORING REPORT, TETRATECH, INC., AUGUST 2009

Table 2. Soil Boring Laboratory Analytical Results - ConocoPhillips Randleman #1

Constituent			Sample ID (soil samples collected on June 9th, 2009 and June 10th, 2009)				
Ions	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
Bromide	E300.0	mg/kg - dry	<6.31	<6.22	<5.66	<5.29	NE
Chloride	E300.0	mg/kg - dry	<6.31	<6.22	<5.66	324	NE
Fluoride	E300.0	mg/kg - dry	9.36	13.4	<5.66	<5.29	NE
Orthophospate (as P)	E300.0	mg/kg - dry	<6.31	<6.22	<5.66	<5.29	NE
Sulfate	E300.0	mg/kg - dry	351	187	2050	254	NE
Nitrate (as N)	E300.0	mg/kg - dry	<6.31	< 6.22	<5.66	< 5.29	NE
Nitrite (as N)	E300.0	mg/kg - dry	<6.31	< 6.22	<5.66	< 5.29	NE
Metals, Total	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
Mercury	SW7471A	mg/kg - dry	<0.0378	<0.0373	<0.0339	<0.0318	NE
Aluminum	SW6010B	mg/kg - dry	3,010	2,050	3,020	6,320	NE
Boron	SW6010B	mg/kg - dry	2.18	1.48	1.93	2.88	NE
Calcium	SW6010B	mg/kg - dry	3,250	1,350	3,940	14,200	NE
Iron	SW6010B	mg/kg - dry	5,420	3,400	4,950	11,600	NE
Magnesium	SW6010B	mg/kg - dry	943	563	835	2,360	NE
Potassium	SW6010B	mg/kg - dry	642	361	534	883	NE
Sodium	SW6010B	mg/kg - dry	117	130	262	635	NE
Strontium	SW6010B	mg/kg - dry	45.2	60.7	74	73.5	NE
Tin	SW6010B	mg/kg - dry	0.656	<0.622	0.871	0.699	NE
Antimony	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	<0.529	NE
Arsenic	SW6020A	mg/kg - dry	2.42	1.51	1.9	2.35	NE
Barium	SW6020A	mg/kg - dry	66.3	177	145	245	NE
Beryllium	SW6020A	mg/kg - dry	<0.504	<0.498	<0.452	<0.424	NE
Cadmium	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	<0.529	NE
Chromium	SW6020A	mg/kg - dry	2.68	2.06	3.93	48.9	NE
Cobalt	SW6020A	mg/kg - dry	2.24	1.63	2.48	4.49	NE
Copper	SW6020A	mg/kg - dry	5.37	2.99	5.77	11.2	NE
Lead	SW6020A	mg/kg - dry	3.97	2.51	4.26	5.94	NE
Manganese	SW6020A	mg/kg - dry	140	100	193	364	NE
Molybdenum	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	1.84	NE
Nickel	SW6020A	mg/kg - dry	2.81	2.17	3.37	6.41	NE
Selenium	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	<0.529	NE
Silver	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	<0.529	NE
Thallium	SW6020A	mg/kg - dry	<0.631	<0.622	<0.566	<0.529	NE
Vanadium	SW6020A	mg/kg - dry	6.26	3.84	6.29	15.6	NE
Zinc	SW6020A	mg/kg - dry	13.4	7.24	12.6	22.2	NE
SVOCS (detections only)	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
As listed	8270C	µg/kg - dry	--	--	--	--	--
VOCs (detections and BTEX only)	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
1,2,4-Trimethylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	2900	< 5.3	NE
1,3,5-Trimethylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	220	< 5.3	NE
4-Isopropyltoluene	8260B	µg/kg - dry	<6.3	< 6.2	49	< 5.3	NE
Isopropylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	110	< 5.3	NE
Naphthalene	8260B	µg/kg - dry	<6.3	< 6.2	11	< 5.3	NE
n-Butylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	12	< 5.3	NE
n-Propylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	180	< 5.3	NE
sec-Butylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	48	< 5.3	NE
tert-Butylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	54	< 5.3	NE
Benzene	8260B	µg/kg - dry	<6.3	< 6.2	<5.7	<5.3	10,000
Toluene	8260B	µg/kg - dry	<6.3	< 6.2	92	<5.3	NE
Ethylbenzene	8260B	µg/kg - dry	<6.3	< 6.2	200	<5.3	NE
Total Xylenes	8260B	µg/kg - dry	<6.3	< 6.2	1,410	<5.3	NE
Total BTEX	--	µg/kg - dry	<6.3	< 6.2	1,702	<5.3	50,000
Other	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
Alkalinity*	E310.1	mg/kg - dry	227	NA	NA	NA	NE
Percent Moisture	D2216	%	20.7	19.6	11.6	5.55	NE
Semivolatile Hydrocarbons	**Method**	**Units**	**MW-2 (7-8.5 feet)**	**MW-3 (7.5 - 9 feet)**	**MW-3 (12.5-14 feet)**	**MW-4 (12.5-14 feet)**	**NMOCD**
Gasoline Range Organics	SW8015B	mg/kg - dry	<0.13	<0.12	2.3	<0.11	100
Diesel Range Organics	SW8015B	mg/kg - dry	<6.3	<6.2	30	<5.3	

Notes:

MW = monitor well

NMOCD = New Mexico Oil Conservation Division recommended action level

SVOCs = semi-volatile organic compounds

VOCs = volatile organic compounds

mg/kg - dry = milligrams per kilogram, analyzed after residual water removed from the soil

µg/kg - dry = micrograms per kilogram

P = phosphate

N = nitrogen

NE = not established

*SPL failed to analyze MW-3 or MW-4 soil boring soil samples for alkalinity where "NA" is noted in the table. The chain of custody reveals that Tetra Tech requested this analysis on all soil samples, however.

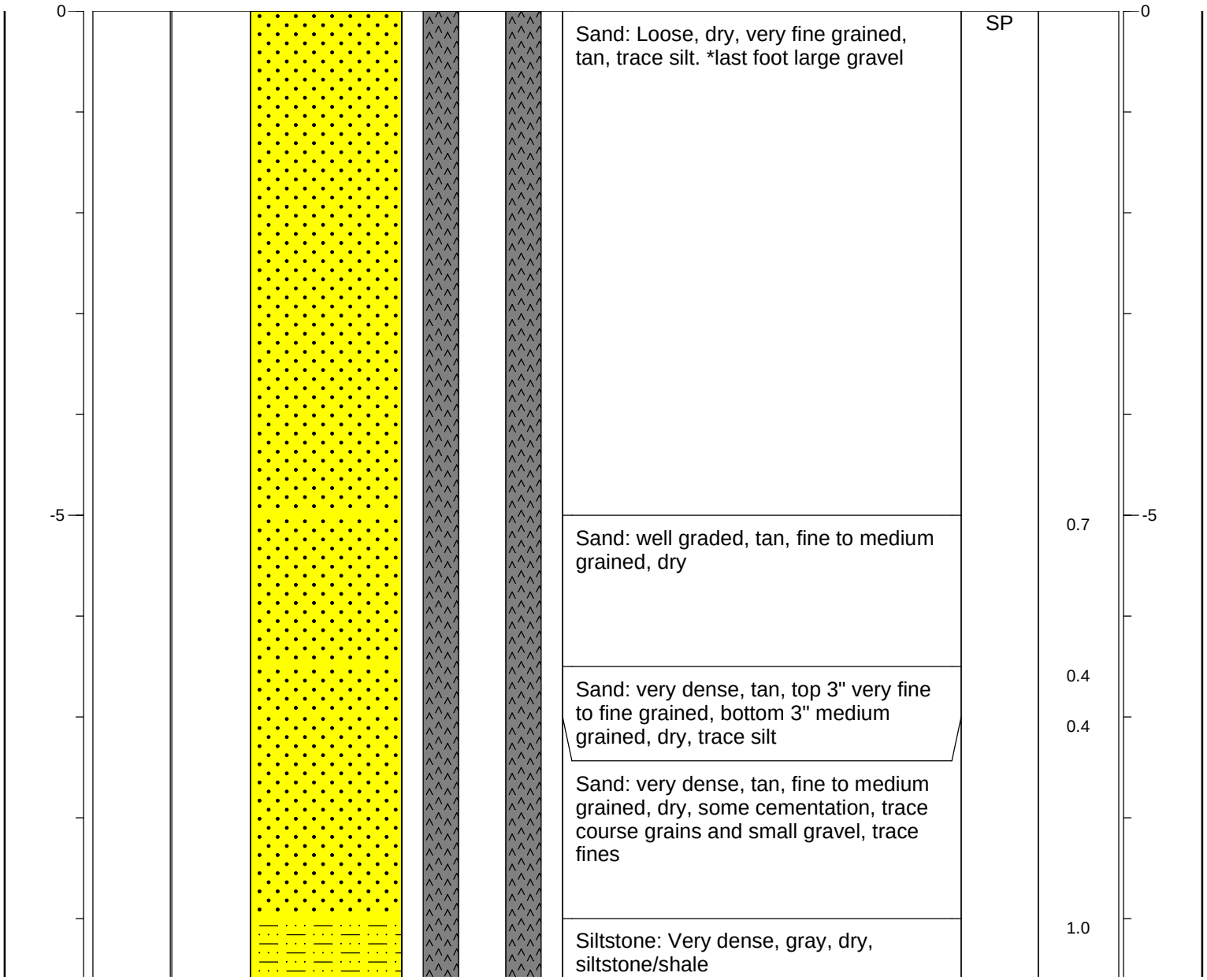
Appendix D

MW-5 BORING LOG AND MONITOR WELL COMPLETION DIAGRAM

PROJECT NAME: Randleman No. 1
LOCATION: Aztec, New Mexico
FIELD LOGGED BY: Christine Mathews
SURFACE ELEVATION (msl): N/A
GROUNDWATER ELEVATION (msl): N/A
REMARKS: Boring completed as 2" PVC Groundwater Monitoring Well
COORDINATES: 36.901478, -107.947044

SOIL BORING NO: MW-5
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: National EWP
DATE/TIME HOLE STARTED: May 23, 2013
DATE/TIME HOLE COMPLETED: May 24, 2013

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
0					Sand: Loose, dry, very fine grained, tan, trace silt. *last foot large gravel	SP		0
-5					Sand: well graded, tan, fine to medium grained, dry		0.7	-5
					Sand: very dense, tan, top 3" very fine to fine grained, bottom 3" medium grained, dry, trace silt		0.4	
					Sand: very dense, tan, fine to medium grained, dry, some cementation, trace course grains and small gravel, trace fines		0.4	
					Siltstone: Very dense, gray, dry, siltstone/shale		1.0	



TD = 58 feet

CONESTOGA-ROVERS & ASSOCIATES

BORING LOG AND WELL COMPLETION FORM

PROJECT NAME: Randleman No. 1
LOCATION: Aztec, New Mexico
FIELD LOGGED BY: Christine Mathews
SURFACE ELEVATION (msl): N/A
GROUNDWATER ELEVATION (msl): N/A
REMARKS: Boring completed as 2" PVC Groundwater Monitoring Well
COORDINATES: 36.901478, -107.947044

SOIL BORING NO: MW-5
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DRILLED BY: National EWP
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DATE/TIME HOLE COMPLETED: May 24, 2013

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
-10					Sandstone: Dense, gray to green, sandstone, moist, fine to medium grained, well cemented, trace silt, black and silver minerals		1.8	-10
					Shale: Dense to very dense, gray to purple shale, laminations		1.7	
-15					Shale: dense to very dense, light gray, laminated, crumbly		2.6	-15
					Shale: very dense, gray shale, dry to moist		2.1	
					Shale: very dense, gray shale, dry, laminated		2.4	
					Shale: very dense, gray shale, dry, laminated		2.2	

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DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
-20					Shale: very dense, gray to brown shale, dry, laminated		2.6	-20
					Siltstone: Gray to brown silt stone, dry, with trace very fine grained sand		2.3	
					Sandstone: Very dense, gray to grayish-blue, dry, fine grained sandstone		2.1	
-25					Sandstone: gray to grayish-blue, dry, very fine to fine grained sandstone		1.7	-25
					Sandstone: dense to very dense, gray to grayish-blue, moist, very fine to fine grained sandstone		1.4	
					Sandstone: dense to very dense, gray		1.8	

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SOIL BORING NO: MW-5
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DATE/TIME HOLE COMPLETED: May 24, 2013

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
-30					to grayish-blue, moist, fine grained sandstone, silver and black minerals			-30
					Sandstone: very dense, gray to grayish-blue, dry to moist, fine grained sandstone		0.7	
	X	MW-5 (32)			Sandstone: very dense, gray to grayish-blue, dry to moist, fine grained sandstone		0.7	
					Sandstone: very dense, gray to grayish-blue, dry to moist, fine grained sandstone		2.5	
-35								-35
					Sandstone: very dense, gray to grayish-blue, dry to moist, fine grained sandstone		2.8	
					Sandstone: very dense, gray to grayish-blue, dry to moist, fine grained sandstone		2.4	

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DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
-40					Sandstone: very dense, gray to grayish-blue, moist to damp, fine grained sandstone, sample drill cuttings with shovel			-40
	X	MW-5 (44)					1.9	
-45					Sandstone: very dense, gray to grayish-blue, moist to damp, fine grained sandstone, sample drill cuttings with shovel		1.8	-45
					Sandstone: very dense, dark gray-			

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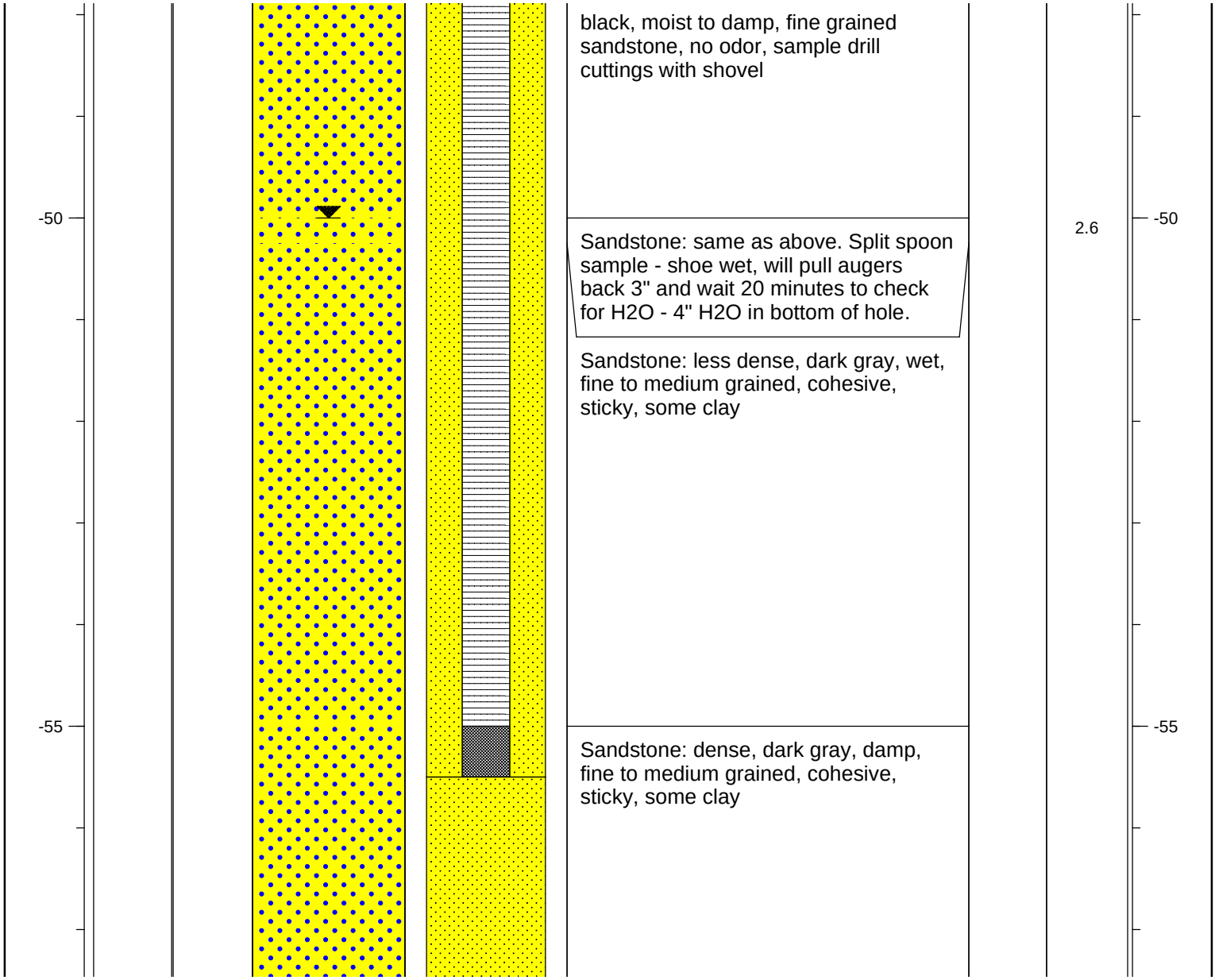
DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	PID (ppm)	DEPTH (bgs) - ft
-50					black, moist to damp, fine grained sandstone, no odor, sample drill cuttings with shovel Sandstone: same as above. Split spoon sample - shoe wet, will pull augers back 3" and wait 20 minutes to check for H2O - 4" H2O in bottom of hole. Sandstone: less dense, dark gray, wet, fine to medium grained, cohesive, sticky, some clay		2.6	-50
-55					Sandstone: dense, dark gray, damp, fine to medium grained, cohesive, sticky, some clay			-55



PROJECT NAME: Randleman No. 1
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SURFACE ELEVATION (msl): N/A
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