3R - 071

2012 AGWMR

02/19/2013

CONESTOGA-ROVERS
& ASSOCIATES

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February 19, 2013

Reference No. 074925, 074927, 074928
074929, 074932, 074934
075038

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

Dear Mr. von Gonten:

Re: Groundwater Monitoring Reports - 2012

Enclosed, please find a copy of the reports listed below compiled by Conestoga-Rovers and Associates, Inc.

3R434 1. Farmington B Com No. 1E Annual Groundwater Monitoring Report - September 2012
3R434 2. Faye Burdette No. 1 Annual Groundwater Monitoring Report - September 2012
3R069 3. Hampton No. 4M Annual Groundwater Monitoring Report - September 2012
3R431 4. Howell K No. 1 Annual Groundwater Monitoring Report - September 2012
3R071 5. Johnston Federal No. 4 Metering Station Annual Groundwater Monitoring Report - September 2012
3R426 6. San Juan 27-5 No. 34A Annual Groundwater Monitoring Report - September 2012
3R428 7. Sategna No. 2E Quarterly Groundwater Monitoring Report - September 2012

If you have any questions or require additional information, please contact me at (505) 884-0672 or keblanchard@craworld.com.

Sincerely,
CONESTOGA-ROVERS & ASSOCIATES

Kelly E. Blanchard

Kelly E. Blanchard
Project Manager

JP/cjg/1
Encl.

cc: Brandon Powell, NMOCD
Terry Lauck, ConocoPhillips (electronic only)

Equal
Employment Opportunity
Employer

SEPTEMBER 2012 ANNUAL GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS JOHNSTON FEDERAL No. 4 METERING STATION
SAN JUAN COUNTY, NEW MEXICO

API# 30-045-10130
NMOCD# 3RP-71

Prepared For:

CONOCOPHILLIPS COMPANY

Risk Management and Remediation

420 South Keeler Avenue

Bartlesville, OK, 74004

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2013 FEB 20 A 11: 20

FEBRUARY 2012
REF. NO. 074925 (3)
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1.0 INTRODUCTION

This report presents the results of an annual groundwater monitoring event conducted by Conestoga-Rovers & Associates (CRA) on September 26, 2012 at the ConocoPhillips Company (ConocoPhillips) Johnston Federal No. 4 Metering Station (Site) located on Bureau of Land Management (BLM) land, approximately 13 miles east-northeast of Aztec, San Juan County, New Mexico in Unit Letter M, Section 27, Township 31N, Range 9W (**Figure 1**). A Site detail map is included as **Figure 2**. The Johnston Federal No. 4 wellhead, API # 30-045-10130, is located approximately one-half mile to the southwest of the metering station.

1.1 BACKGROUND

Burlington Resources (Burlington) conducted initial site assessments of two Burlington production pits in August 1998. Soil from the separator pit was collected and analyzed for total petroleum hydrocarbons (TPH). The concentration of TPH in separator pit (Production Pit #1, **Figure 2**) soils was found to be below New Mexico Oil Conservation Division (NMOCD) recommended action levels for this constituent, and the pit was subsequently granted closure by NMOCD. Soil from the tank drain pit (Production Pit #2, **Figure 2**) was collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and TPH. Concentrations of these constituents were found to be above NMOCD recommended action levels. Following laboratory results, approximately 3,055 cubic yards of hydrocarbon-impacted soil was excavated in December 1998. Once complete, the excavation was backfilled with clean fill material, and the NMOCD granted pit closure.

A groundwater monitor well, MW-1, was installed at the Site to a depth of 50 feet below ground surface (bgs) in May of 1999. Burlington Resources sampled Monitor Well MW-1 on a quarterly basis until the acquisition of Burlington Resources by ConocoPhillips in March of 2006. Tetra Tech, Inc. (Tetra Tech) began sampling MW-1 in November 2007. In August 2008, three additional groundwater monitor wells were installed under the supervision of Tetra Tech by WDC Exploration and Drilling of Peralta, NM (WDC). The existing Burlington Resources/ConocoPhillips monitor well network at the Site includes MW-1, MW-2, MW-3, and MW-4. El Paso Natural Gas (El Paso) owns three additional Site monitor wells. The monitoring schedule of the El Paso-owned monitor wells is not known. Monitor Wells MW-1, MW-2, MW-3, and MW-4 were incorporated into an annual sampling schedule beginning on October 24, 2008.

On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM.

A historical timeline for the Site is presented in **Table 1** and a generalized geologic cross section for the Site is presented as **Figure 3**.

2.0 SAMPLING METHODOLOGY AND ANALYTICAL RESULTS

2.1 GROUNDWATER SAMPLING METHODOLOGY

Groundwater Elevation Measurements

On September 26, 2012, groundwater elevation measurements were recorded for Monitor Wells MW-1, MW-2, MW-3, and MW-4 using an oil/water interface probe. Groundwater elevations are detailed in **Table 2**. A groundwater potentiometric surface map is presented as **Figure 4.** Based on September 2012 monitoring event data, groundwater flow remains to the east-southeast and is consistent with recent and historical records at this Site. There was no measurable thickness of product present in the Site monitor wells during the 2012 annual groundwater sampling event; however, a slight hydrocarbon sheen was observed in the purge water generated from Monitor Well MW-1.

Groundwater sampling

Monitor Wells MW-1, MW-2, MW-3, and MW-4 were sampled. Approximately three well volumes were purged from each monitor well with a dedicated polyethylene 1.5-inch disposable bailer. Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Pace Analytical Services, Inc. of Lenexa, Kansas. The samples were analyzed for the presence of BTEX in accordance with Environmental Protection Agency (EPA) Method 8260, naphthalene by EPA Method 8270, sulfate by EPA Method 300.0, and for dissolved manganese and dissolved iron by EPA Method 6010. Groundwater sampling field forms are included as **Appendix A.**

2.2 GROUNDWATER ANALYTICAL RESULTS

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

- **Benzene**
  - The NMWQCC standard for benzene is 0.010 milligrams per liter (mg/L). The groundwater sample collected from MW-1 in September 2012 contained benzene at a concentration of 3.07 mg/L; the groundwater sample collected from MW-4 contained a benzene concentration of 0.0124 mg/L.
- **Total Xylenes**
  - The NMWQCC standard for total xylenes is 0.620 mg/L. The groundwater sample collected from MW-1 contained a concentration of total xylenes of 5.16 mg/L.
- **Naphthalenes**
  - The NMWQCC standard for naphthalenes is 0.03 mg/L. The groundwater sample collected from MW-1 contained a concentration of naphthalenes of 0.0398 mg/L.
- **Sulfate**
  - The NMWQCC standard for sulfate is 600 mg/L. Groundwater collected from Monitor Wells MW-2, MW-3, and MW-4 was found to exceed the standard for sulfate during September 2012. Sulfate concentrations were 1,210 mg/L, 892 mg/L, and 949 mg/L, respectively.
- **Dissolved Manganese**
  - The NMWQCC standard for dissolved manganese is 0.2 mg/L. Groundwater collected from Monitor Wells MW-1, MW-3, and MW-4 was found to exceed the standard for dissolved manganese during September 2012. Dissolved manganese concentrations were 0.67 mg/L, 0.67 mg/L, and 1.5 mg/L, respectively.

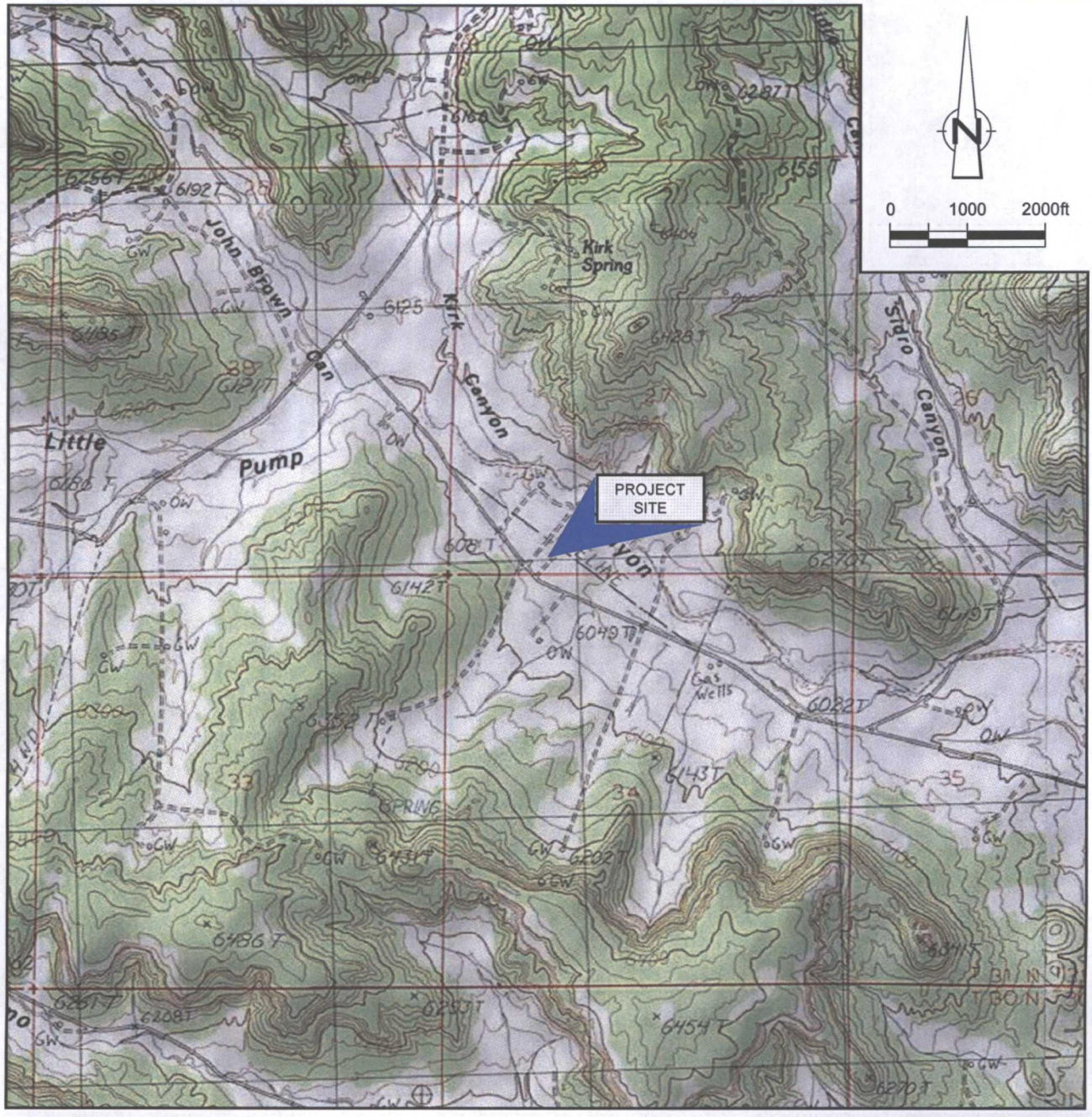
3.0 CONCLUSIONS AND RECOMMENDATIONS

Monitor Wells MW-1 and MW-4 continue to exceed NMWQCC standards for BTEX constituents. Concentrations of sulfate and dissolved manganese also continue to be detected above NMWQCC groundwater quality standards in Site monitor wells. CRA recommends continued annual sampling of Site monitor wells until all monitored groundwater quality parameters approach NMWQCC standards. CRA will begin a quarterly sampling schedule once all parameters are near or below NMWQCC standards.

CRA also recommends the installation of an additional downgradient monitor well for the purpose of further delineating the Site.

The next monitoring event at the Johnston Federal No. 4 Metering Station is scheduled to take place during September of 2013 and will include analyses for BTEX, naphthalene, dissolved manganese, dissolved iron, and sulfate.

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"TURLEY, NEW MEXICO"

LAT/LONG: 36.8626° NORTH, 107.7723° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO WEST

Figure 1

SITE LOCATION MAP
JOHNSTON FEDERAL No. 4 METERING STATION
SECTION 27, T31N-R09W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074925-95(003)GN-DL001 NOV 01/2012

Figure 2

SITE PLAN
JOHNSTON FEDERAL No. 4 METERING STATION
SECTION 27, T31N-R09W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074925-95(003)GN-DL001 NOV 01/2012

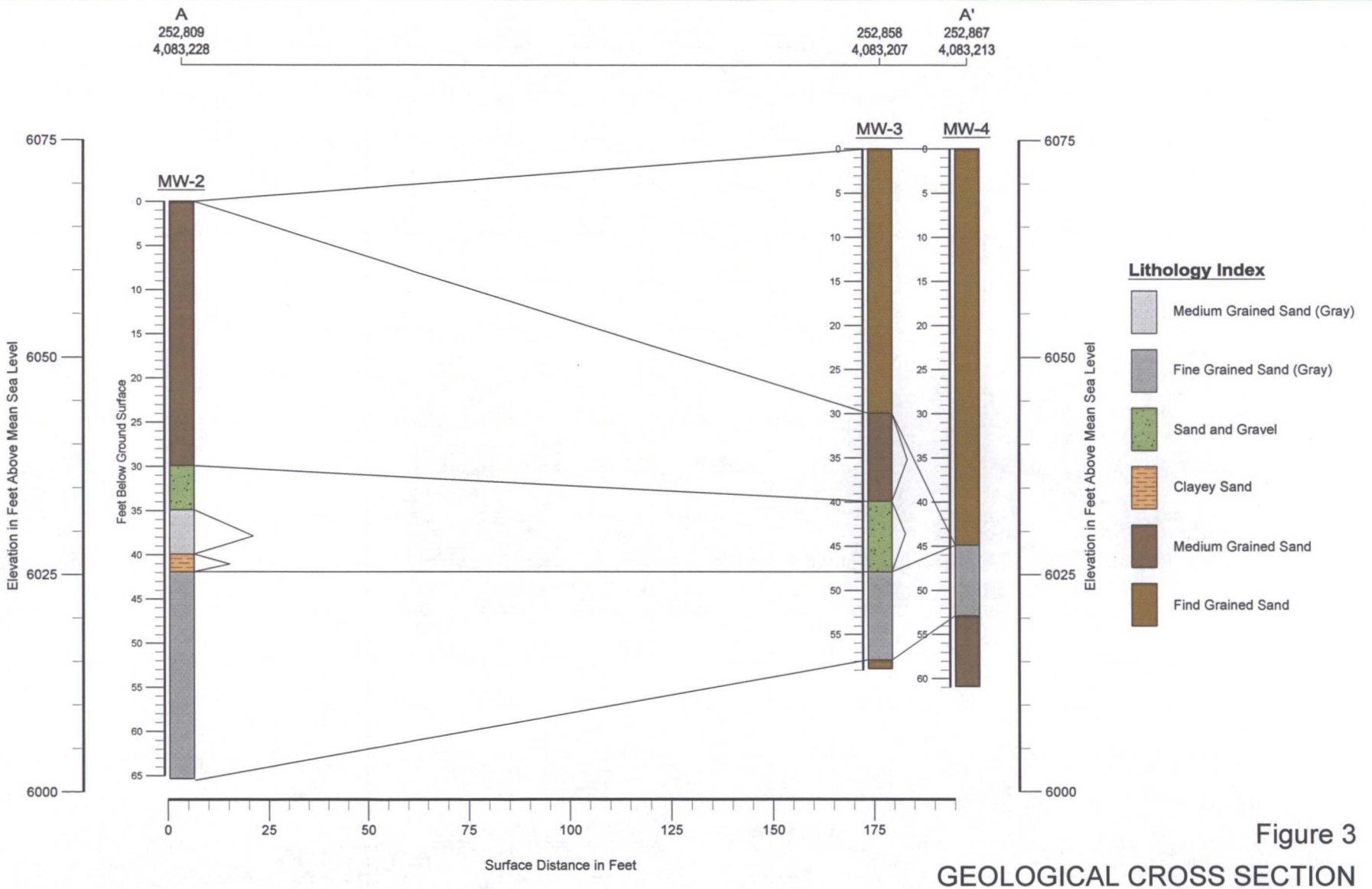


Figure 3

GEOLOGICAL CROSS SECTION
JOHNSTON FEDERAL No. 4 METERING STATION
SECTION 27, T31N-R09W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074925-95(003)GN-DL001 NOV 01/2012

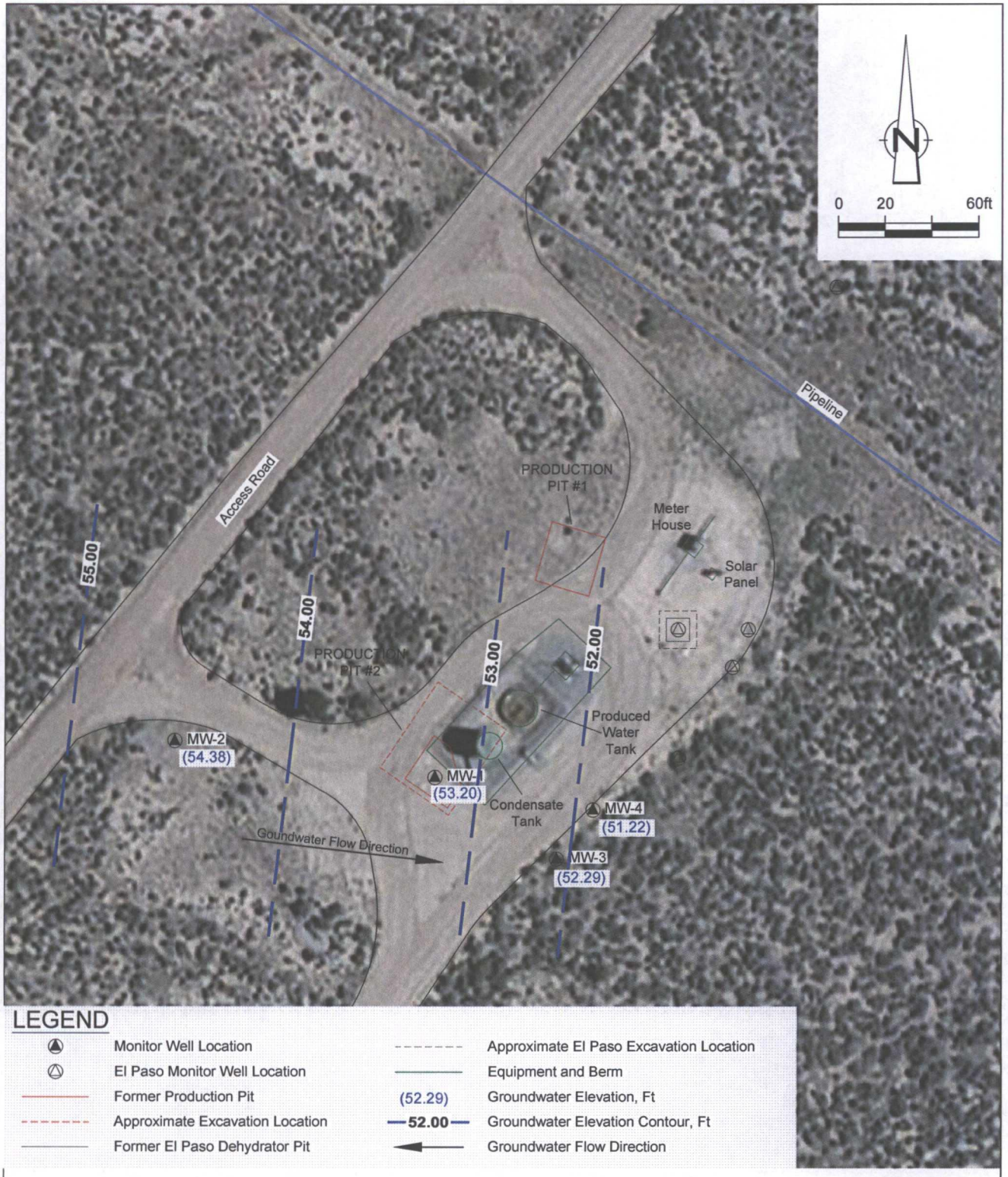


Figure 4

SEPTEMBER 2012 GROUNDWATER POTENTIOMETRIC SURFACE MAP
JOHNSTON FEDERAL No. 4 METERING STATION
SECTION 27, T31N-R09W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074925-95(003)GN-DL001 NOV 01/2012

Figure 5

SEPTEMBER 2012 BENZENE CONCENTRATION MAP
JOHNSTON FEDERAL No. 4 METERING STATION
SECTION 27, T31N-R09W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074925-95(003)GN-DL001 NOV 01/2012

TABLES

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4 METERING STATION
SAN JUAN COUNTY, NM

Date/Time Period	Event/Action	Description/Comments
August 1952	Well Spudded	Well was spudded by Anderson-Prichard Oil Corp. on August 21, 1952.
April 1961	Transfer of Well Ownership	Ownership of the well transferred from Anderson-Prichard Oil Corp. to Union Texas Natural Gas Corporation on April 26, 1961.
September 1971	Transfer of Well Ownership	Meridian Oil Inc., a wholly-owned subsidiary of Burlington Resources, took over operation of well from Union Texas Petroleum Corp. on September 17, 1991.
August 1994	Initial Site Assesment	El Paso Energy conducted a site assessment of a former unlined pit near the metering station.
September 1994	Pit Excavation	El Paso Energy excavated ~60 cubic yards of soil from their former unlined pit.
August 1995	Monitor Well Installation	El Paso contracted Philip Environmental Services Corp. to install a monitor well in the vicinity of their former pit on August 9, 1995.
December 1995	Monitor Well Installation	El Paso contracted Philip Environmental Services Corp. to install two downgradient monitor wells between December 12 and 15, 1995.
August 1997	Product Removal	El Paso Energy commenced product removal from their MW-1 on August 26, 1997.
September 1997	Piezometer Installation	El Paso contracted Philip Environmental Services Corp. to install 3 temporary piezometers on September 15, 1997.
July 1998	NMOCD Communication With Site Operators	New Mexico Oil Conservation Division (NMOCD) issued a response letter to El Paso Field Services (EPFS) on July 8, 1998, indicating that they would be sending letters to the operators of the sites (including Burlington Resources) and that EPFS should work cooperatively with the operators on investigation and remediation activities.
July 1998	NMOCD Requests Groundwater Investigation by Burlington Resources	NMOCD issued a letter to Burlington Resources on July 9, 1998, referencing work done at the Site by EPFS and requiring Burlington Resources (BR) to immediately implement their previously approved pit closure plan. The letter also required BR to submit a comprehensive groundwater investigation and remediation plan for all pit closure Sites in the San Juan Basin that encounter groundwater.
August 1998	Burlington Resources Granted Closure of Pit #1	Burlington Resources sampled Pit #1 on August 10, 1998 and laboratory analytical results indicated closure was warranted.
August 1998	Initial Site Assessment	Initial site assessment conducted on the site separator pit. Soil from this area was collected and analyzed for total petroleum hydrocarbons (TPH) and was found to contain TPH below NMOCD recommended action levels. The pit was subsequently granted closed status by NMOCD.
August 1998	Initial Site Assessment	Initial site assessment conducted on the tank drain pit. Soil from this area was collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and for TPH. Concentrations of these constituents were found to be above NMOCD recommended action levels.
December 1998	Pit Excavation	Burlington Resources excavated ~3,055 cubic yards of hydrocarbon-impacted soil from Pit #2 (58 ft x 45 ft x 30 ft deep), starting on December 17, 1998. The excavation extended to ~30 feet below ground surface (practical extent). The bottom of the excavation was sampled on December 28, 1998.
May 1999	Monitor Well Installation	Monitor Well MW-1 installed to a depth of 50 feet below ground surface (bgs); the screened interval was placed from 35 to 50 feet bgs, and was installed in the center of pit #2. Burlington Resources began monitoring MW-1 on a quarterly basis.
June 1999	Confirmation of Groundwater Impacts	Laboratory analysis of groundwater from MW-1 shows levels of benzene, toluene, and total xylenes in excess of New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards. Burlington Resources notified NMOCD via E-mail on June 1, 1999.
July 2001	NMOCD Communication With Site Operators	NMOCD response letter sent to EPFS on July 18, 2001 again urges EPFS to work cooperatively with the operators to investigate and remediate contaminated groundwater.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4 METERING STATION
SAN JUAN COUNTY, NM

Date/Time Period	Event/Action	Description/Comments
April 2003	NMOCD Requests Monitor Well Installation	NMOCD response letter to EPFS sent on April 3, 2003, requires EPFS to install additional monitor wells to determine the real extent of groundwater impacts.
March 2006	Acquisition of Burlington Resources by ConocoPhilips Company	ConocoPhillips Company acquired Burlington Resources on March 31, 2006.
November 2007 and January 2008	3rd and 4th Quarter 2007 Groundwater Monitoring	Johnston Federal No. 4 Monitoring Station groundwater sampled during Nov. 2007 and Jan. 2008 by Tetra Tech.
March 2008	Reporting	2007 Annual Groundwater Monitoring Report submitted to NMOCD.
March 2008	Groundwater Monitoring	Tetra Tech conducts quarterly groundwater monitoring at the Site for BTEX.
April 2008	NMOCD Requests Further Investigation	NMOCD indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten.
April 2008	1st Quarter 2008 Groundwater Monitoring	Tetra Tech conducts quarterly groundwater monitoring at the Site for BTEX in MW-1 on April 30, 2008. Note: Prior to this date the location of MW-1 was not clear and the wrong well was sampled. This was the first quarter that ConocoPhillips MW-1 was sampled. BTEX constituents were found to be above NMWQCC standards in MW-1.
July 2008	2nd Quarter 2008 Groundwater Monitoring	Tetra Tech conducts quarterly groundwater monitoring at the Site for BTEX in MW-1.
August 2008	Groundwater Monitor Well Installation	Monitor Wells MW-2, MW-3, and MW-4 installed under the supervision of Tetra Tech by WDC Exploration and Wells of Peralta, NM.
October 2008	3rd Quarter 2008 groundwater Monitoring	Tetra Tech conducts quarterly monitoring at the Site for MW-1 through MW-4. MW-2, MW-3 and MW-4 groundwater samples are analyzed for baseline parameters including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics as requested by the NMOCD. In addition, an expanded list (beyond BTEX analysis) of VOCs were included for MW-1.
January 2009	4th Quarter 2008 Groundwater Monitoring	Tetra Tech conducts quarterly monitoring at the Site for MW-1 through MW-4. The groundwater sample obtained for MW-1 is analyzed for baseline parameters including major ions, total metals, SVOCs, VOCs, diesel range organics, and gasoline range organics. As of January 2009, baseline parameters have been collected for all 4 groundwater monitor wells at the Site.
September 25, 2009	2009 Annual Groundwater Monitoring	Tetra Tech conducts annual groundwater monitoring at the Site for MW-1 through MW-4 with analyses for BTEX, naphthalene, dissolved Fe and Mn and sulfate.
September 22, 2010	2010 Annual Groundwater Monitoring	Tetra Tech conducts annual groundwater monitoring at the Site for MW-1 through MW-4 with analyses for BTEX, naphthalene, dissolved Mn and sulfate.
June 15, 2011	Transfer of Site Consulting Responsibilities	Site consulting responsibilities tranferred from Tetra Tech, Inc. to Conestoga-Rovers & Associates, Inc. (CRA) of Albuquerque, NM.
September 28, 2011	2011 Annual Groundwater Monitoring	CRA conducts annual groundwater monitoring at the Site for MW-1 through MW-4 with analyses for BTEX, naphthalene, dissolved Mn, dissolved Fe, and sulfate.
September 26, 2012	2012 Annual Groundwater Monitoring	CRA conducts annual groundwater monitoring at the Site for MW-1 through MW-4 with analyses for BTEX, naphthalene, dissolved Mn, dissolved Fe, and sulfate.

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
SAN JUAN COUNTY, NM

Well ID	Total Depth (ft bgs)	Screen Interval (ft)	*Elevation (ft) (TOC)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Groundwater Elevation
MW-1	51.79	35 - 50	100	5/25/1999	NM	NM
				9/1/1999	47.02	52.98
				12/1/1999	46.96	53.04
				1/18/2000	44.05	55.95
				5/17/2000	46.90	53.10
				9/8/2000	46.91	53.09
				12/20/2000	46.88	53.12
				3/27/2001	NM	NM
				6/27/2001	47.05	52.95
				9/17/2001	46.93	53.07
				12/19/2001	46.97	53.03
				3/25/2002	46.99	53.01
				6/25/2002	47.01	52.99
				9/24/2002	46.98	53.02
				12/30/2002	47.40	52.60
				3/27/2003	NM	NM
				6/27/2003	NM	NM
				10/10/2003	NM	NM
				12/10/2003	NM	NM
				3/16/2004	47.28	52.72
				6/22/2004	47.06	52.94
				9/30/2004	47.24	52.76
				12/13/2004	47.14	52.86
				3/23/2005	46.91	53.09
				6/22/2005	46.93	53.07
				10/28/2005	46.87	53.13
				12/14/2005	46.72	53.28
				3/20/2006	46.75	53.25
				6/21/2006	46.84	53.16
				10/20/2006	46.89	53.11
				12/13/2006	46.92	53.08
				11/9/2007	NM	NM
				1/15/2008	NM	NM
				4/30/2008	46.45	53.55
				7/23/2008	46.63	53.37
				10/24/2008	46.60	53.40
				1/29/2009	46.57	53.43
				4/23/2009	46.40	53.60
				9/25/2009	46.52	53.48
				9/22/2010	46.60	53.40
				9/28/2011	46.65	53.35
				9/26/2012	46.80	53.20

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
SAN JUAN COUNTY, NM

Well ID	Total Depth (ft bgs)	Screen Interval (ft)	*Elevation (ft) (TOC)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Groundwater Elevation
MW-2	65.5	41.5 - 61.5	97.71	10/24/2008	42.85	54.86
				1/29/2009	42.83	54.88
				4/23/2009	42.75	54.96
				9/25/2009	42.82	54.89
				9/22/2010	43.01	54.70
				9/28/2011	43.14	54.57
				9/26/2012	43.33	54.38
MW-3	59	35 - 55	94.65	10/24/2008	43.91	50.74
				1/29/2009	41.97	52.68
				4/23/2009	41.87	52.78
				9/25/2009	42.04	52.61
				9/22/2010	42.17	52.48
				9/28/2011	42.22	52.43
				9/26/2012	42.36	52.29
MW-4	61	37 - 57	94.79	10/24/2008	43.11	51.68
				1/29/2009	43.11	51.68
				4/23/2009	43.06	51.73
				9/25/2009	43.20	51.59
				9/22/2010	43.39	51.40
				9/28/2011	43.45	51.34
				9/26/2012	43.57	51.22

Notes:
ft = Feet
TOC = Top of casing
bgs = below ground surface
* Elevation relative to the TOC of MW-1, set at arbitrary 100 feet.
NM = Not measured

TABLE 3

GROUNDWATER LABORATORY ANALYTICAL RESULTS SUMMARY
CONOCOPHILLIPS COMPANY
JOHNSTON FEDERAL No. 4
SAN JUAN COUNTY, NM

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Napthalene (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
MW-1	MW-1	5/25/1999	(orig)	**8.7**	**2.9**	**2.8**	**2.9**	--	--	--	--
	MW-1	12/1/1999	(orig)	**4.7**	**1.3**	**0.9**	**10**	--	--	--	--
	MW-1	1/18/2000	(orig)	**3.6**	**0.82**	**0.84**	**7.5**	--	--	--	--
	MW-1	5/17/2000	(orig)	**6.9**	**1.1**	**1.5**	**17**	--	--	--	--
	MW-1	9/8/2000	(orig)	**4.6**	0.62	**0.93**	**10**	--	--	--	--
	MW-1	12/20/2000	(orig)	< 0.0002	0.0005	0.034	0.061	--	--	--	--
	MW-1	3/27/2001	(orig)	**5.43**	0.641	**0.991**	**9.83**	--	--	--	--
	MW-1	6/27/2001	(orig)	**5.87**	**0.9**	**0.99**	**10.4**	--	--	--	--
	MW-1	9/17/2001	(orig)	**5.91**	0.75	**0.98**	**10.7**	--	--	--	--
	MW-1	12/19/2001	(orig)	**7.2**	0.65	**1.02**	**11.3**	--	--	--	--
	MW-1	3/25/2002	(orig)	**5.52**	**0.83**	**1.19**	**10.5**	--	--	--	--
	MW-1	6/26/2002	(orig)	**0.516**	0.0662	0.0787	**0.863**	--	--	--	--
	MW-1	9/24/2002	(orig)	**5.31**	**8**	**0.88**	**13.96**	--	--	--	--
	MW-1	12/30/2002	(orig)	**7.66**	**10.2**	**0.76**	**14.14**	--	--	--	--
	MW-1	6/22/2004	(orig)	**6.16**	**8.1**	0.47	**15.84**	--	--	--	--
	MW-1	3/20/2006	(orig)	**3.17**	**3.74**	**1.06**	**30.13**	--	--	--	--
	MW-1	6/21/2006	(orig)	**4.9**	**3.28**	0.448	**2.39**	--	--	--	--
	MW-1	12/13/2006	(orig)	**5.3**	**7.2**	**0.87**	**15.45**	--	--	--	--
	MW-1	3/27/2007	(orig)	**6.87**	**5.72**	0.21	**12.16**	--	--	--	--
	MW-1	6/25/2007	(orig)	**5.68**	**1.83**	0.4	**9.48**	--	--	--	--
	MW-1	4/30/2008	(orig)	**6.3**	**1.8**	0.28 J	**8.6**	--	--	--	--
	MW-1	7/23/2008	(orig)	**7.1**	**2.2**	0.45	**10.6**	--	--	--	--
	MW-1	10/24/2008	(orig)	**6**	**2.1**	0.4	**9**	**0.044**	--	--	--
	MW-1	1/29/2009	(orig)	**6.7**	**2.2**	0.63	**14.5**	**0.061**	315	--	--
	MW-1	9/25/2009	(orig)	**3.9**	**1.5**	0.68	**9.8**	**0.04**	429	< 0.02	**1.11**
	MW-1	9/22/2010	(orig)	**3.5**	**0.98**	0.63	**7.5**	**0.049**	190	--	**0.752**
	GW-074925-092811-CM-004	9/28/2011	(orig)	**3.36**	**1.05**	0.667	**6.81**	**0.037**	202	< 0.05	**0.774**
	GW-074925-092811-CM-005	9/28/2011	(Duplicate)	**3.43**	**1.12**	**0.779**	**8.29**	--	--	--	--
	GW-074925-092612-CM-MW-1	9/26/2012	(orig)	**3.07**	0.599	0.577	**5.16**	**0.0398**	113	< 0.05	**0.67**
MW-2	MW-2	10/24/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.005	**974**	--	--
	MW-2	1/29/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--	--	--
	MW-2	9/25/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	**1260**	< 0.02	0.04
	MW-2	9/22/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	**1350**	--	0.0074
	GW-074925-092811-CM-002	9/28/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.0001	**1290**	**2.49**	0.0956
	GW-074925-092612-CM-MW-2	9/26/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.0005	**1210**	< 0.05	< 0.005
MW-3	MW-3	10/24/2008	(orig)	**0.02**	< 0.0005	< 0.0005	0.024	< 0.005	**714**	--	--
	MW-3	1/29/2009	(orig)	**0.012**	< 0.0005	< 0.0005	0.005	--	--	--	--
	MW-3	9/25/2009	(orig)	0.0021	< 0.001	< 0.001	< 0.002	< 0.001	**1070**	< 0.02	**1.24**
	MW-3	9/22/2010	(orig)	0.0042	< 0.001	< 0.001	< 0.001	< 0.001	**1060**	--	**1.11**
	GW-074925-092811-CM-003	9/28/2011	(orig)	0.0038	< 0.001	< 0.001	< 0.003	< 0.0001	**809**	**1.58**	**0.704**
	GW-074925-092612-CM-MW-3	9/26/2012	(orig)	0.0016	< 0.001	< 0.001	< 0.003	< 0.0005	**892**	0.063	**0.67**
MW-4	MW-4	10/24/2008	(orig)	**0.024**	< 0.0005	0.006	0.01	< 0.005	**678**	--	--
	MW-4	1/29/2009	(orig)	**0.11**	0.006	0.009	0.147	< 0.005	--	--	--
	MW-4	9/25/2009	(orig)	0.0088	< 0.001	0.0057	0.002	< 0.001	**968**	0.508	**1.24**
	MW-4	9/22/2010	(orig)	**0.019**	0.005	0.0069	0.0057	< 0.001	**1040**	--	**1.27**
	GW-074925-092811-CM-001	9/28/2011	(orig)	**0.0256**	0.0078	0.0017	0.0106	< 0.0001	**960**	0.532	**1.82**
	GW-074925-092612-CM-MW-4	9/26/2012	(orig)	**0.0124**	0.0023	< 0.001	< 0.003	< 0.0005	**949**	0.57	**1.5**
	GW-074925-092612-CM-DUP	9/26/2012	(Duplicate)	**0.0130**	0.0022	< 0.001	0.0031	--	--	--	--
NMWQCC Groundwater Quality Standards				**0.01**	**0.75**	**0.75**	**0.62**	**0.03**	**600**	**1**	**0.2**

Notes:
NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
<0.7 = Below laboratory detection limit of 0.7 mg/L
J = Estimated value between MDL and PQL
Bold = concentrations that exceed the NMWQCC groundwater quality standard

APPENDIX A

SEPTEMBER 2012 ANNUAL GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Johnston Fed 4 JOB# 074925

SAMPLE ID: GW-074925-092612-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)
09 26 2012	09 26 2012	1430	0.7808	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	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 46.80 (feet) WELL ELEVATION 100.00 (feet)

WELL DEPTH 51.68 (feet) GROUNDWATER ELEVATION 53.20 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DTW
15.90 (°C)	5.81 (std)	1.361 (g/L)	1728 (µS/cm)	-296.9 (mV)	1.75 (gal)	9.30
15.69 (°C)	6.04 (std)	1.369 (g/L)	1732 (µS/cm)	-317.4 (mV)	2.00 (gal)	4.17
15.51 (°C)	6.12 (std)	1.380 (g/L)	1738 (µS/cm)	-321.3 (mV)	2.25 (gal)	3.31
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: Hazy, slight sheen ODOR: hydrocarbons COLOR: light grey SHEEN Y/N yes, slight

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

SPECIFIC COMMENTS:

0.7808 x 3 = 2.3424

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

9/26/12 Christine Mathews [signature]

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Johnston Fed 4 JOB# 074925

SAMPLE ID: GW-074925-092612-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)
9.26.12	9.26.12	1515	3.378	10.0

PURGING AND SAMPLING EQUIPMENT

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

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

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

FIELD MEASUREMENTS

DEPTH TO WATER: 43.37 (feet) WELL ELEVATION: 97.71 (feet)

WELL DEPTH: 64.44 60.09 (feet) GROUNDWATER ELEVATION: 54.38 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DO
14.13 (°C)	6.99 (std)	1.443 (g/L)	1759 (µS/cm)	-125.7 (mV)	9.0 (gal)	7.23
13.99 (°C)	6.98 (std)	1.444 (g/L)	1755 (µS/cm)	-112.5 (mV)	9.5 (gal)	6.55
13.93 (°C)	7.06 (std)	1.446 (g/L)	1754 (µS/cm)	-104.3 (mV)	10.0 (gal)	6.26
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

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

WEATHER CONDITIONS: TEMPERATURE 75° WINDY Y (N) PRECIPITATION Y (N) (IF Y TYPE)

SPECIFIC COMMENTS:

3.378 X 3 = 10.13

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

9/26/12 Christine Mathews Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Johnston Fed 4 JOB# 074925

SAMPLE ID: GW-074925-092612-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)
09 26 2012	09 26 2012	1600	3.018	9.0

PURGING AND SAMPLING EQUIPMENT

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

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

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

FIELD MEASUREMENTS

DEPTH TO WATER: 42.36 (feet) WELL ELEVATION: 94.65 (feet)

WELL DEPTH: 57.45 (feet) GROUNDWATER ELEVATION: 52.29 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DO mg/L
15.54 (°C)	7.01 (std)	1.281 (g/L)	1615 (µS/cm)	-94.7 (mV)	8.25 (gal)	1.51
15.34 (°C)	7.00 (std)	1.286 (g/L)	1614 (µS/cm)	-77.3 (mV)	8.5 (gal)	3.53
15.33 (°C)	7.03 (std)	1.286 (g/L)	1613 (µS/cm)	-64.4 (mV)	8.75 (gal)	3.13
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

3.018 X 3 = 9.054

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

9/26/12 DATE Christine Mathews PRINT [signature] SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Johnston Fed 4 JOB# 074925

SAMPLE ID: GW-074925-092612-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)
9.26.12	9.26.12	1620	2.643	8.0

PURGING AND SAMPLING EQUIPMENT

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

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

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

FIELD MEASUREMENTS

DEPTH TO WATER	43.57 (feet)		WELL ELEVATION	94.79 (feet)	
WELL DEPTH	60.09 (feet)		GROUNDWATER ELEVATION	51.22 (feet)	

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	PO
15.31 (°C)	6.81 (std)	1.292 (g/L)	1621 (µS/cm)	-109.6 (mV)	7.0 (gal)	4.03
15.32 (°C)	6.81 (std)	1.290 (g/L)	1618 (µS/cm)	-108.5 (mV)	7.5 (gal)	3.88
15.28 (°C)	6.81 (std)	1.291 (g/L)	1617 (µS/cm)	-106.4 (mV)	8.0 (gal)	3.10
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

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

SPECIFIC COMMENTS:

Dup @ 1625

2.643 x 3 = 7.93

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

9/26/12 Christine Mathews

DATE PRINT SIGNATURE

APPENDIX B

SEPTEMBER 2012 ANNUAL GROUNDWATER LABORATORY ANALYTICAL REPORT

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

October 12, 2012

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

RE: Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 29, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

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

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CERTIFICATIONS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

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

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SAMPLE SUMMARY

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60130142001	GW-074925-092612-CM-MW-1	Water	09/26/12 14:30	09/29/12 08:30
60130142002	GW-074925-092612-CM-MW-2	Water	09/26/12 15:15	09/29/12 08:30
60130142003	GW-074925-092612-CM-MW-3	Water	09/26/12 16:00	09/29/12 08:30
60130142004	GW-074925-092612-CM-MW-4	Water	09/26/12 16:20	09/29/12 08:30
60130142005	GW-074925-092612-CM-DUP	Water	09/26/12 16:25	09/29/12 08:30
60130142006	TB-074925-092612-CM-001	Water	09/26/12 17:00	09/29/12 08:30

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SAMPLE ANALYTE COUNT

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60130142001	GW-074925-092612-CM-MW-1	EPA 6010	JGP	2
		EPA 8270C by SIM	BRM	3
		EPA 5030B/8260	PRG	9
		EPA 300.0	AJM	1
60130142002	GW-074925-092612-CM-MW-2	EPA 6010	JGP	2
		EPA 8270C by SIM	BRM	3
		EPA 5030B/8260	PRG	9
		EPA 300.0	AJM	1
60130142003	GW-074925-092612-CM-MW-3	EPA 6010	JGP	2
		EPA 8270C by SIM	BRM	3
		EPA 5030B/8260	PRG	9
		EPA 300.0	AJM	1
60130142004	GW-074925-092612-CM-MW-4	EPA 6010	JGP	2
		EPA 8270C by SIM	BRM	3
		EPA 5030B/8260	PRG	9
		EPA 300.0	AJM	1
60130142005	GW-074925-092612-CM-DUP	EPA 5030B/8260	PRG	9
60130142006	TB-074925-092612-CM-001	EPA 5030B/8260	PRG	9

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PROJECT NARRATIVE

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 12, 2012

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

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

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

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

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

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

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

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

QC Batch: MPRP/19736

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60129930002

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

- MS (Lab ID: 1071191)
  - Manganese, Dissolved
- MSD (Lab ID: 1071192)
  - Manganese, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Method: **EPA 8270C by SIM**
Description: 8270 MSSV PAH by SIM
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 12, 2012

General Information:
4 samples were analyzed for EPA 8270C by SIM. 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 3510C 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: MSSV/11106

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

Additional Comments:

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(913)599-5665

PROJECT NARRATIVE

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 12, 2012

General Information:
6 samples were analyzed for EPA 5030B/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/48976

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

QC Batch: MSV/49015

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

Additional Comments:

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9608 Loiret Blvd.
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PROJECT NARRATIVE

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Method: EPA 300.0
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 12, 2012

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 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: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: GW-074925-092612-CM-MW-1 **Lab ID: 60130142001** Collected: 09/26/12 14:30 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	ND	mg/L	0.050	0.017	1	10/02/12 10:45	10/05/12 12:56	7439-89-6	
Manganese, Dissolved	**0.67**	mg/L	0.0050	0.00060	1	10/02/12 10:45	10/05/12 12:56	7439-96-5	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C								
Naphthalene	**39.8**	ug/L	2.5	0.28	5	10/03/12 00:00	10/09/12 13:36	91-20-3	
Surrogates									
2-Fluorobiphenyl (S)	79	%	40-120		5	10/03/12 00:00	10/09/12 13:36	321-60-8	
Terphenyl-d14 (S)	89	%	43-122		5	10/03/12 00:00	10/09/12 13:36	1718-51-0	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	**3070**	ug/L	25.0	2.4	25		10/06/12 00:17	71-43-2	
Ethylbenzene	**577**	ug/L	25.0	5.8	25		10/06/12 00:17	100-41-4	
Toluene	**599**	ug/L	25.0	3.8	25		10/06/12 00:17	108-88-3	
Xylene (Total)	**5160**	ug/L	75.0	10.2	25		10/06/12 00:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	80-120		25		10/06/12 00:17	460-00-4	
Dibromofluoromethane (S)	101	%	80-120		25		10/06/12 00:17	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	80-120		25		10/06/12 00:17	17060-07-0	
Toluene-d8 (S)	101	%	80-120		25		10/06/12 00:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	25		10/06/12 00:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**113**	mg/L	10.0	3.4	10		10/11/12 23:17	14808-79-8	

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ANALYTICAL RESULTS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: GW-074925-092612-CM-MW-2 **Lab ID: 60130142002** Collected: 09/26/12 15:15 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	ND	mg/L	0.050	0.017	1	10/02/12 10:45	10/05/12 12:58	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.0050	0.00060	1	10/02/12 10:45	10/05/12 12:58	7439-96-5	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C								
Naphthalene	ND	ug/L	0.50	0.057	1	10/03/12 00:00	10/06/12 04:34	91-20-3	
Surrogates									
2-Fluorobiphenyl (S)	73	%	40-120		1	10/03/12 00:00	10/06/12 04:34	321-60-8	
Terphenyl-d14 (S)	83	%	43-122		1	10/03/12 00:00	10/06/12 04:34	1718-51-0	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.098	1		10/06/12 00:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		10/06/12 00:32	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		10/06/12 00:32	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		10/06/12 00:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/06/12 00:32	460-00-4	
Dibromofluoromethane (S)	102	%	80-120		1		10/06/12 00:32	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		10/06/12 00:32	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/06/12 00:32	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/06/12 00:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1210**	mg/L	100	34.0	100		10/10/12 21:26	14808-79-8	

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ANALYTICAL RESULTS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: GW-074925-092612-CM-MW-3 **Lab ID: 60130142003** Collected: 09/26/12 16:00 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	**0.063**	mg/L	0.050	0.017	1	10/02/12 10:45	10/05/12 13:00	7439-89-6	
Manganese, Dissolved	**0.67**	mg/L	0.0050	0.00060	1	10/02/12 10:45	10/05/12 13:00	7439-96-5	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C								
Naphthalene	ND	ug/L	0.50	0.057	1	10/03/12 00:00	10/06/12 04:51	91-20-3	
Surrogates									
2-Fluorobiphenyl (S)	72	%	40-120		1	10/03/12 00:00	10/06/12 04:51	321-60-8	
Terphenyl-d14 (S)	80	%	43-122		1	10/03/12 00:00	10/06/12 04:51	1718-51-0	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	**1.6**	ug/L	1.0	0.098	1		10/06/12 00:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		10/06/12 00:47	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		10/06/12 00:47	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		10/06/12 00:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/06/12 00:47	460-00-4	
Dibromofluoromethane (S)	107	%	80-120		1		10/06/12 00:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		10/06/12 00:47	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/06/12 00:47	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/06/12 00:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**892**	mg/L	100	34.0	100		10/10/12 21:43	14808-79-8	

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ANALYTICAL RESULTS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: GW-074925-092612-CM-MW-4 **Lab ID: 60130142004** Collected: 09/26/12 16:20 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron, Dissolved	**0.57**	mg/L	0.050	0.017	1	10/02/12 10:45	10/05/12 13:07	7439-89-6	
Manganese, Dissolved	**1.5**	mg/L	0.0050	0.00060	1	10/02/12 10:45	10/05/12 13:07	7439-96-5	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C								
Naphthalene	ND	ug/L	0.50	0.057	1	10/03/12 00:00	10/06/12 05:08	91-20-3	
Surrogates									
2-Fluorobiphenyl (S)	77	%	40-120		1	10/03/12 00:00	10/06/12 05:08	321-60-8	
Terphenyl-d14 (S)	87	%	43-122		1	10/03/12 00:00	10/06/12 05:08	1718-51-0	
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	**12.4**	ug/L	1.0	0.098	1		10/06/12 01:01	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		10/06/12 01:01	100-41-4	
Toluene	**2.3**	ug/L	1.0	0.15	1		10/06/12 01:01	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		10/06/12 01:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/06/12 01:01	460-00-4	
Dibromofluoromethane (S)	103	%	80-120		1		10/06/12 01:01	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	80-120		1		10/06/12 01:01	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/06/12 01:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/06/12 01:01		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**949**	mg/L	100	34.0	100		10/10/12 22:36	14808-79-8	

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ANALYTICAL RESULTS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: GW-074925-092612-CM-DUP **Lab ID: 60130142005** Collected: 09/26/12 16:25 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	**13.0**	ug/L	1.0	0.098	1		10/06/12 01:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		10/06/12 01:16	100-41-4	
Toluene	**2.2**	ug/L	1.0	0.15	1		10/06/12 01:16	108-88-3	
Xylene (Total)	**3.1**	ug/L	3.0	0.41	1		10/06/12 01:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/06/12 01:16	460-00-4	
Dibromofluoromethane (S)	100	%	80-120		1		10/06/12 01:16	1868-53-7	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		10/06/12 01:16	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/06/12 01:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/06/12 01:16		

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ANALYTICAL RESULTS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Sample: TB-074925-092612-CM-001 **Lab ID: 60130142006** Collected: 09/26/12 17:00 Received: 09/29/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Benzene	ND	ug/L	1.0	0.098	1		10/05/12 02:43	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		10/05/12 02:43	100-41-4	
Toluene	ND	ug/L	1.0	0.15	1		10/05/12 02:43	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.41	1		10/05/12 02:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/05/12 02:43	460-00-4	
Dibromofluoromethane (S)	98	%	80-120		1		10/05/12 02:43	1868-53-7	
1,2-Dichloroethane-d4 (S)	95	%	80-120		1		10/05/12 02:43	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/05/12 02:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/05/12 02:43		

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QUALITY CONTROL DATA

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

QC Batch: MPRP/19736 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004

METHOD BLANK: 1071189 Matrix: Water
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	mg/L	ND	0.050	10/05/12 12:14	
Manganese, Dissolved	mg/L	ND	0.0050	10/05/12 12:14	

LABORATORY CONTROL SAMPLE: 1071190

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	mg/L	10	9.8	98	80-120	
Manganese, Dissolved	mg/L	1	0.98	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1071191 1071192

Parameter	Units	60129930002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron, Dissolved	mg/L	ND	10	10	10.8	10.8	108	107	75-125	1	20	
Manganese, Dissolved	mg/L	2190 ug/L	1	1	5.1	5.1	287	290	75-125	1	20	M1

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QUALITY CONTROL DATA

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

QC Batch: MSV/48976
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60130142006

METHOD BLANK: 1072870 Matrix: Water
Associated Lab Samples: 60130142006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/04/12 21:50	
Ethylbenzene	ug/L	ND	1.0	10/04/12 21:50	
Toluene	ug/L	ND	1.0	10/04/12 21:50	
Xylene (Total)	ug/L	ND	3.0	10/04/12 21:50	
1,2-Dichloroethane-d4 (S)	%	99	80-120	10/04/12 21:50	
4-Bromofluorobenzene (S)	%	100	80-120	10/04/12 21:50	
Dibromofluoromethane (S)	%	102	80-120	10/04/12 21:50	
Toluene-d8 (S)	%	98	80-120	10/04/12 21:50	

LABORATORY CONTROL SAMPLE: 1072871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.3	102	74-123	
Ethylbenzene	ug/L	20	20.6	103	76-123	
Toluene	ug/L	20	19.0	95	75-123	
Xylene (Total)	ug/L	60	60.0	100	76-123	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Dibromofluoromethane (S)	%			105	80-120	
Toluene-d8 (S)	%			98	80-120	

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QUALITY CONTROL DATA

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

QC Batch: MSV/49015 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004, 60130142005

METHOD BLANK: 1073928 Matrix: Water
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004, 60130142005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/05/12 23:04	
Ethylbenzene	ug/L	ND	1.0	10/05/12 23:04	
Toluene	ug/L	ND	1.0	10/05/12 23:04	
Xylene (Total)	ug/L	ND	3.0	10/05/12 23:04	
1,2-Dichloroethane-d4 (S)	%	98	80-120	10/05/12 23:04	
4-Bromofluorobenzene (S)	%	103	80-120	10/05/12 23:04	
Dibromofluoromethane (S)	%	100	80-120	10/05/12 23:04	
Toluene-d8 (S)	%	99	80-120	10/05/12 23:04	

LABORATORY CONTROL SAMPLE: 1073929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.6	108	74-123	
Ethylbenzene	ug/L	20	20.5	103	76-123	
Toluene	ug/L	20	19.2	96	75-123	
Xylene (Total)	ug/L	60	60.2	100	76-123	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			104	80-120	
Dibromofluoromethane (S)	%			105	80-120	
Toluene-d8 (S)	%			97	80-120	

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QUALITY CONTROL DATA

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

QC Batch: OEXT/35317 Analysis Method: EPA 8270C by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004

METHOD BLANK: 1071883 Matrix: Water
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Naphthalene	ug/L	ND	0.50	10/06/12 02:51	
2-Fluorobiphenyl (S)	%	69	40-120	10/06/12 02:51	
Nitrobenzene-d5 (S)	%	70	28-140	10/06/12 02:51	
Terphenyl-d14 (S)	%	75	43-122	10/06/12 02:51	

LABORATORY CONTROL SAMPLE: 1071884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	10	6.5	65	41-120	
2-Fluorobiphenyl (S)	%			68	40-120	
Nitrobenzene-d5 (S)	%			70	28-140	
Terphenyl-d14 (S)	%			69	43-122	

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QUALITY CONTROL DATA

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

QC Batch: WETA/21982 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60130142001, 60130142002, 60130142003, 60130142004

METHOD BLANK: 1076514 Matrix: Water
Associated Lab Samples: 60130142002, 60130142003, 60130142004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/10/12 19:24	

METHOD BLANK: 1077255 Matrix: Water
Associated Lab Samples: 60130142001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/11/12 20:58	

LABORATORY CONTROL SAMPLE: 1076515

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

LABORATORY CONTROL SAMPLE: 1077256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE SAMPLE: 1076516

Parameter	Units	60130681001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	10000	10200	102	61-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1076517 1076518

Parameter	Units	60130544003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	142	50	50	186	183	88	83	61-119	1	10	

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

QUALIFIERS

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

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: OEXT/35317
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/48976
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/49015
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074925 JOHNSTON FEDERALNO4
Pace Project No.: 60130142

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60130142001	GW-074925-092612-CM-MW-1	EPA 3010	MPRP/19736	EPA 6010	ICP/16257
60130142002	GW-074925-092612-CM-MW-2	EPA 3010	MPRP/19736	EPA 6010	ICP/16257
60130142003	GW-074925-092612-CM-MW-3	EPA 3010	MPRP/19736	EPA 6010	ICP/16257
60130142004	GW-074925-092612-CM-MW-4	EPA 3010	MPRP/19736	EPA 6010	ICP/16257
60130142001	GW-074925-092612-CM-MW-1	EPA 3510C	OEXT/35317	EPA 8270C by SIM	MSSV/11106
60130142002	GW-074925-092612-CM-MW-2	EPA 3510C	OEXT/35317	EPA 8270C by SIM	MSSV/11106
60130142003	GW-074925-092612-CM-MW-3	EPA 3510C	OEXT/35317	EPA 8270C by SIM	MSSV/11106
60130142004	GW-074925-092612-CM-MW-4	EPA 3510C	OEXT/35317	EPA 8270C by SIM	MSSV/11106
60130142001	GW-074925-092612-CM-MW-1	EPA 5030B/8260	MSV/49015		
60130142002	GW-074925-092612-CM-MW-2	EPA 5030B/8260	MSV/49015		
60130142003	GW-074925-092612-CM-MW-3	EPA 5030B/8260	MSV/49015		
60130142004	GW-074925-092612-CM-MW-4	EPA 5030B/8260	MSV/49015		
60130142005	GW-074925-092612-CM-DUP	EPA 5030B/8260	MSV/49015		
60130142006	TB-074925-092612-CM-001	EPA 5030B/8260	MSV/48976		
60130142001	GW-074925-092612-CM-MW-1	EPA 300.0	WETA/21982		
60130142002	GW-074925-092612-CM-MW-2	EPA 300.0	WETA/21982		
60130142003	GW-074925-092612-CM-MW-3	EPA 300.0	WETA/21982		
60130142004	GW-074925-092612-CM-MW-4	EPA 300.0	WETA/21982		

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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

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:	

Section B Required Project Information

Report To:	Christine Mathews
Copy To:	Kelly Blanchard, Angela Bown
Purchase Order No.:	
Project Name:	Johnston Federal No. 4
Project Number:	74925

Section C Invoice Information:

Attention:	COP epayables
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	5514, 20

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

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START / GRAB DATE	COLLECTED COMPOSITE START / GRAB 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	Y/N	Analysis Test: 8260 BTEX	8270 Napthalene	6010 Dissolved Fe & Mn	300.0 Sulfate							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																														60130142
1	SW-074925-092612-CM-MW-1	WT	G	9.26.12	1430				7	X		X	X						X	X	X	X	3	DRO	H	BP3U	2	AG4U	BP3SFAS		001
2	SW-074925-092612-CM-MW-2	WT	G	9.26.12	1515				7	X		X	X						X	X	X	X									002
3	SW-074925-092612-CM-MW-3	WT	G	9.26.12	1600				7	X		X	X						X	X	X	X									003
4	SW-074925-092612-CM-MW-4	WT	G	9.26.12	1620				7	X		X	X						X	X	X	X									004
5	SW-074925-092612-CM-DUP	WT	G	9.26.12	1625				5				X						X												005
6	TB-074925-092612-CM-001	WT		9.26.12	1700								X						X												006
7																															
8																															
9																															
10																															
11																															
12																															

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature]/CRA	9.28.12	1600	E Brackett	9/29	0830	4.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christie Mathews

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 9.28.12

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

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

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Sample Condition Upon Receipt – ESI Tech Specs

Client Name: COP- CRA NM Project #: 60130142

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

Optional
Proj Due Date: 10/15
Proj Name:

Tracking #: 8987 2945 2979 Pace Shipping Label Used? Yes ☐ No ☑

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

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

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

Cooler Temperature: 4.2 Date and initials of person examining contents: 9/29/12

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
-Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12. BA AFF
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): 081312-3		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: MM Date: 10/1/12

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

Start: 1224	Start:
End: 1232	End:
Temp:	Temp:

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