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March 27, 2012

Reference No. 074935

Mr. Steve Austin Navajo Nation Environmental Protection Agency PO Box 1999 Shiprock, New Mexico 87420

Re: ConocoPhillips Company Charles et al No. 1, San Juan County, NM, Quarterly Groundwater Monitoring Report - September and December 2011

Dear Mr. Austin:

Enclosed, please find a copy of the above-referenced document as compiled by Conestoga-Rovers and Associates, Inc.

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

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Kelly & Blanchard

Kelly E. Blanchard Project Manager

KB/cd/2 Encl. (1)

cc: Glenn von Gonten, NMOCD

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SEPTEMBER AND DECEMBER 2011 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS CHARLES ET AL. No. 1 SAN JUAN COUNTY, NEW MEXICO API# 30-045-06623 NMOCD# 3R-432



Prepared For:

CONOCOPHILLIPS COMPANY

Risk Management and Remediation 420 South Keeler Avenue Bartlesville, OK, 74004

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1.0 INTRODUCTION

This report presents the results of the quarterly groundwater sampling events conducted on September 26 and December 12, 2011 by Conestoga-Rovers & Associates, Inc. (CRA) at the ConocoPhillips Company (ConocoPhillips) Charles et al. No. 1 remediation site (Site) located near the Angel Peak area of northwestern New Mexico. The Site is located on Navajo Nation land in Section 12, Township 27N, Range 9W, of San Juan County, New Mexico. Geographical coordinates for the Site are 36°35'10.25"North, 107°44'24.89"West. A Site vicinity map and Site plan are included as **Figures 1** and **2**, respectively.

1.1 <u>BACKGROUND</u>

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

The Charles et al. No. 1 natural gas well was spudded in April 1965 by the Austral Oil Company of Houston, TX. Operatorship of the well was transferred several times before a subsidiary of Burlington Resources became the operator in August 1992. The well was abandoned shortly thereafter due to low production. The well was recompleted and production was restored on May 20, 2003. ConocoPhillips acquired Burlington Resources on March 30, 2006.

A ConocoPhillips employee discovered an area of dead vegetation approximately 100 feet from the Blanco Wash and approximately ¹/₄ mile from the Charles et al. No. 1 wellhead while investigating a pipeline release on June 23, 2008 (Figure 2). ConocoPhillips reported the release to the NMOCD by phone and e-mail on June 24, 2008 and submitted a Form C-141 to NMOCD on June 30, 2008. Envirotech, Inc. (Envirotech) advanced several soil borings and installed seven piezometer/monitor wells using a hand auger between June 25 and 26, 2008. Solar-powered soil vapor extraction (SVE) equipment was installed over Monitor Well MW-1 on August 14, 2008 to facilitate the remediation of the area (Envirotech, 2009).

Envirotech conducted quarterly groundwater sampling events beginning June 25, 2008 and recommended discontinuing the sampling of Monitor Wells MW-5, MW-6, and MW-7 in March 2009. Tetra Tech, Inc. (Tetra Tech) began monitoring the Charles et al. No. 1 remediation site in March, 2010. On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM.

2.0 <u>GROUNDWATER MONITORING SUMMARY, METHODOLOGY, AND</u> <u>ANALYTICAL RESULTS</u>

2.1 <u>GROUNDWATER MONITORING SUMMARY</u>

Quarterly groundwater sampling events were conducted at the Site on September 26 and December 12, 2011. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3 and MW-4, depth to groundwater was measured in all Site monitor wells using an oil/water interface probe. Groundwater potentiometric surface maps reflecting September and December 2011 groundwater elevations are presented as Figures 3 and 4, respectively. A historical groundwater elevation summary is included in Table 2.

2.2 <u>GROUNDWATER MONITORING METHODOLOGY</u>

During the September and December 2011 groundwater monitoring events, Monitor Wells MW-1, MW-2, MW-3, and MW-4 were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyethylene dedicated bailer. While bailing Monitor Wells MW-1, MW-2, MW-3, and MW-4, groundwater parameters were collected using a YSI 556 multi-parameter sonde and results were recorded on CRA Groundwater Sampling Field 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, Kansas. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260.

2.3 GROUNDWATER MONITORING ANALYTICAL RESULTS

The Navajo Nation Environmental Protection Agency (NNEPA) has not established groundwater quality standards; however, drinking water quality on Navajo Nation land is mandated in Part II the Navajo Nation Primary Drinking Water Regulations (NNPDWR). Drinking water quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedences of NNPDWR water quality standards in Site monitor wells are discussed below.

September 2011

- Benzene The NNPDWR drinking water quality standard for benzene is 0.005 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 1.56 mg/L.
- Toluene The NNPDWR drinking water quality standard for toluene is 1.0 mg/L. The concentration of toluene found in the groundwater sample collected from Monitor Well MW-1 was 2.61 mg/L.

December 2011

• **Benzene** – The NNPDWR drinking water quality standard for benzene is 0.005 mg/L. The concentration of benzene found in the groundwater sample collected from Monitor Well MW-1 was 0.232 mg/L.

The corresponding laboratory analytical reports for the September and December 2011 groundwater sampling events are included in Appendix B. A historical laboratory analytical summary is available as Table 3. Site maps showing the concentration of benzene present in groundwater are included as Figures 5 and 6. A hydrograph showing benzene concentrations vs. groundwater levels over time in MW-1 is included as Figure 7.

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3.0 <u>CONCLUSIONS AND RECOMMENDATIONS</u>

Groundwater samples collected from MW-1 have continually exceeded NNPDWR drinking water quality standards for benzene from June 2008 to December 2011 and have intermittently exceeded the standards for toluene and ethylbenzene.

Based on historical groundwater quality data, groundwater samples collected from MW-3 and MW-4 have never exceeded NNPDWR drinking water quality standards for BTEX constituents during sampling conducted from June 2008 to December 2011. Groundwater samples collected from MW-2 have not exceeded the NNPDWR standards for BTEX constituents since the September 2008 sampling event when benzene was detected above the standard.

Due to intermittent presence of a hydrocarbon sheen, Tetra Tech placed an oil absorbent sock in MW-1 during the September 2010 monitoring event. The sock has remained in place continuously since.

CRA recommends continued quarterly groundwater sampling at the Site. Remediation Site closure will be requested when groundwater analytical results indicate that all monitored groundwater quality parameters are consistently below NNPDWR drinking water quality standards.

4.0 <u>REFERENCES</u>

Envirotech Incorporated (2009). *June 2009 Groundwater Monitoring Report*. Prepared for ConocoPhillips. Report Dated August 2009.

State of New Mexico Energy Minerals and Natural Resources Form C-141 (2003). Release Notification and Corrective Action. Dated June 30, 2008.

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FIGURES

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074935 (3)



074935-95(003)GN-DL004 MAR 16/2012



CHARLES et al. No. 1 SEC 12, T27N-R9W, SAN JUAN COUNTY, NEW MEXICO *ConocoPhillips Company*

074935-95(003)GN-DL001 MAR 16/2012



074935-95(003)GN-DL002 MAR 16/2012



074935-95(003)GN-DL002 MAR 16/2012





074935-95(003)GN-DL003 MAR 16/2012



TABLES

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TABLE 1

SITE HISTORICAL TIMELINE CONOCOPHILLIPS COMPANY CHARLES ET AL. NO. 1

Date/Time Period	Event/Action	Description/Comments		
April 12, 1965	Well Spudded	Well spudded by Austral Oil Company Inc.		
March 30, 1978	Operator Change	Change in operatorship to the Superior Oil Company.		
September 1, 1986	Operator Change	Change in operatorship to Mobil Producing TX and NM Inc.		
August 1, 1992	Operator Change	Change in operatorship to Meridian Oil Inc, a subsidiary of Burlington Resources.		
August 1, 2001	Well Abandoned	Burlington Resources abandons well due to low production.		
May 20, 2003	Well Returns to Production	The Charles et al. No. 1 natural gas well returned to production.		
March 31, 2006	Operator Change	ConocoPhillips acquires Burlington Resources.		
June 23, 2008	Release Discovered	A release was discovered from the pipe running from the wellhead to the meter house; upon walking the pipeline, an area of dead vegetation was also discovered approximately 100 feet from		
June 24, 2008	Release Reported	ConocoPhillips reported the release to the New Mexico Oil Conservation Division (NMOCD) via phone and email.		
June 25-26, 2008	Initial Site Assessment	Envirotech, Inc. of Farmington, NM advances several soil borings and installed piezometers using a hand auger to determine the extent of impact (Envirotech, 2009). Envirotech also installed Monitor Wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-7; and obtained water level measurements and samples from all of the wells.		
August 14, 2008	Soil Vapor Extraction System Installed	Envirotech, Inc. installed solar-powered Soil Vapor Extraction (SVE) equipment over the existing Monitor Well, MW-1; and obtained water level measurements and samples from all of the wells.		
October 2, 2008	Groundwater Monitoring	Envirotech, Inc. completed the third round of groundwater sampling.		
January 13, 2009	Groundwater Monitoring	Envirotech, Inc. completed the fourth round of groundwater sampling.		
March 23, 2009	Groundwater Monitoring	Envirotech, Inc. completed the fifth round of groundwater sampling and recommended sampling only Monitor Wells MW-1, MW-2, MW-3, and MW-4.		
June 29, 2009	Groundwater Monitoring	Envirotech, Inc. completed the sixth round of groundwater sampling and recommended drilling additional monitor wells downgradient of MW-2.		
March 30, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed the seventh round of groundwater sampling.		
June 11, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed the eighth round of groundwater sampling.		
September 21, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed the ninth round of groundwater sampling. An oil absorbant sock was placed in MW-1.		
December 16, 2010	Groundwater Monitoring	Tetra Tech, Inc. completed the tenth round of groundwater sampling. The benzene level in MW-1 exceeded the Navajo Nation Primary Drinking Water Regulations (NNPDWR) standard. Oil absorbant sock in MW-1 was replaced.		
March 18, 2011	Groundwater Monitoring	Tetra Tech, Inc. completed the 11th round of groundwater sampling. The benzene level in MW-1 exceeded the NNPDWR standard. Oil absorbant sock in MW-1 was replaced.		
 June 15, 2011	Transfer of Site Consulting Responsibilities	On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.		
June 23, 2011	Groundwater Monitoring	CRA completed the 12th round of groundwater sampling. Benzene and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.		
September 26, 2011	Groundwater Monitoring	CRA completed the 13th round of groundwater sampling, Benzene and ethylbenzene levels in MW-1 exceeded the NNPDWR standards. Oil absorbant sock in MW-1 was replaced.		
December 12, 2011	Groundwater Monitoring	CRA completed the 14th round of groundwater sampling. Benzene level in MW-1 exceeded the NNPDWR standard. Oil absorbant sock in MW-1 was replaced.		

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TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS JUNE 2008 - DECEMBER 2011 CONOCOPHILLIPS COMPANY CHARLES ET AL. NO. 1

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Well ID	TOC Elevation* (ft	Date Measured	Depth to Groundwater (ft	Relative Water Level (ft 4MSI)
	AMSL)		below TOC)	/EHSE)
	5917.87	6/25/2008	4.71	5913.16
		8/14/2008	5.21	5912.66
		10/2/2008	5.13	5911.92
		1/13/2009	4.41	5912.64
	1	3/23/2009	3.01	5914.04
		6/29/2009	2.12	5914.93
MW-1		3/30/2010	2.68	5914.37
	5917.05	6/11/2010	4.74	5912.31
		9/21/2010	5.52	5911.53
		12/16/2010	3.71	5913.34
		3/18/2011	2.98	5914.07
		6/23/2011	4.99	5912.06
] }	9/2//2011	4.55	5912.50
		12/12/2011	3.23	5914.64
	5917.33	6/25/2008	4.66	5912.67
· •		8/14/2008	5.35	5911.98
		10/2/2008	5.12	5911.41
MW-2		1/13/2009	3.15	5913.38
		3/23/2009	2.65	5913.88
	}	2/20/2010	4.20	5912.33
		<u> </u>	2.57	5913,90
	5916.53	9/21/2010	4.63	5911.90
		12/16/2010	2.53	5913.00
		3/18/2010	2 70	5013.83
		6/22/2011	2.70	5011 72
		9/27/2011	4.00	5911.75
		12/12/2011	4.50	5914.20
		6/25/2008	716	5013.41
	5920.57	8/14/2008	8.86	5011 71
		10/2/2008	7.63	5912.17
		1/13/2009	5.56	5914.24
		3/23/2009	5.56	5914.24
		6/29/2009	1 10	5918 70
		3/30/2010	5.38	5914.42
MW-3	5919.8	6/11/2010	7.44	5912.36
		9/21/2010	8.22	5911.58
		12/16/2010	6.06	5913.74
		3/18/2011	5.42	5914.38
		6/23/2011	7.68	5912.89
		9/27/2011	7.13	5912.67
		12/12/2011	5.78	5914.79
		6/25/2008		5916.21
	5920.48	8/14/2008	7.89	5912.59
		10/2/2008	7.73	5911.96
		1/13/2009	5.94	5913.75
		3/23/2009	5.64	5914.05
		6/29/2009	6.84	5912.85
MW-4		3/30/2010	5.40	5914.29
	5919.69	6/11/2010	7.23	5912.46
		9/21/2010	8.17	5911.52
		12/16/2010	6.24	5913.45
		3/18/2011	5.50	5914.19
		6/23/2011	7.50	5912.19
	ļ	9/27/2011	6.98	5912.71
		12/12/2011	5.94	5914.54

TABLE 2

MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS JUNE 2008 - DECEMBER 2011 CONOCOPHILLIPS COMPANY CHARLES ET AL. NO. 1

Well ID	TOC Elevation* (ft AMSL)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Water Level (ft AMSL)
		6/26/2008	8.23	5915.40
	5923.63	8/14/2008	8.68	5914.95
		10/2/2008	8.70	5912.85
		1/13/2009	6.96	5914.59
MW-5		3/23/2009	6.58	5914,97
	1 1	6/29/2009	4.10	5917.45
	1 1	3/30/2010	NM	NM
	5001 55	6/11/2010	8.20	5913.35
	5921.55	9/21/2010	9.25	5912.30
	[12/16/2010	7.40	5914.15
		3/18/2011	6.74	5914.81
	[6/23/2011	NM	NM
	[9/26/2011	8.25	5913.30
	1 [12/12/2011	7.12	5916.51
	E000 (0	6/26/2008	6.75	5913.93
MW-6	5920.68	8/14/2008	6.97	5913.71
		10/2/2008	6.83 .	5911.81
	5918.64	1/13/2009	4.89	5913.75
		3/23/2009	4.12	5914.52
		6/29/2009	1.80	5916.84
		3/30/2010	NM	NM
		6/11/2010	6.63	5912.01
		9/21/2010	7.41	5911.23
		12/16/2010	5.12	5913.52
		3/15/2011	4.49	5914.15
	Ι Γ	6/23/2011	6.80	5911.84
		9/26/2011	6.33	5912.31
		12/12/2011	4.84	5915.84
	5000 75	6/26/2008	6.32	5914.43
	5920.75	8/14/2008	7.17	5913.58
		10/2/2008	6.42	5912.32
		1/13/2009	NM	NM
		3/23/2009	4.67	5914.07
		6/29/2009	1.56	5917.18
MM-7	J	3/30/2010	NM	NM
101 0 0 -7	5019 74	6/11/2010	NM	NM
	5710.74	9/21/2010	NM	NM
		12/16/2010	4.91	5913.83
		3/18/2011	DRY (1)	NA
	[6/23/2011	6.55	5912.19
		9/26/2011	6.14	5912.60
	L [12/12/2011	DRY (1)	NA

<u>Notes:</u> 1. (1) Indication of well being dry is inconsistent with perviously recorded levels. Will

continue to monitor depth to groundwater and total depth to determine a potential cause.

2. ft = feet

3. AMSL = Above mean sea level

4. NA = Not available

5. NM = Not measured

6. Note: Measurements between 6/25/2008 and 6/29/2009 obtained by Envirotech, Inc.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY JUNE 2008 - DECEMBER 2011 CONOCOPHILLIPS COMPANY CHARLES ET AL. NO. 1

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)
	NNPDWR Standards			0.005	1	0.7	10
_	MW-1	6/25/2008	(orig)	1.85	0.486	0.971	0.379
	MW-1	9/25/2008	(orig)	0.575	0.66	0.293	1.547
	MW-1	1/13/2009	(orig)	0.494	0.581	0.474	3.572
	MW-1	3/23/2009	(orig)	0.21	0.311	0.378	1.418
	MW-1	6/29/2009	(orig)	0.839	0.107	0.674	3.404
	MW-1	3/30/2010	(orig)	0.48	0.11	0.25	1.573
	MW-1	6/11/2010	(orig)	3.2	0.45	0.69	4.51
	MW-1	9/21/2010	(orig)	2.3	1.1	0.25	4.84
MW-1	MW-1	12/16/2010	(orig)	0.18	0.2	0.25	1.79
	MW-1	3/18/2011	(orig)	0.15	0.14	0.16	1.083
	GW-74935-062311-PG04	6/23/2011	(orig)	3.20	0.933	0.972	5.80
	GW-74935-062311-PG05	6/23/2011	(Duplicate)	3.38	1.45	1.06	6.76
	GW-074935-092611-CM-008	9/26/2011	(orig)	1 56	2.61	0.624	6.59
	GW-074935-092611-CM-009	9/26/2011	(Duplicate)	1.57	3.02	0.756	7.26
	GW-074935-121211-CB-MW-1	12/12/2011	(orig)	0.232	0.02	0.5	3.94
	GW-074935-121211-CB-DUP	12/12/2011	(Duplicate)	0.202	0.994	0.58	4.65
	MW-2	6/25/2008	(orig)	0.0042	0.0046	0.0016	0.0011
	MW-2	9/25/2008	(orig)	0.0195	0.0258	0.0051	0.1008
	MW-2	1/13/2009	(orig)	0.0021	0.002	0.0022	0.0281
		3/23/2009	(orig)	0.0014	0.0004	0.0006	0.0073
		6/29/2009	(orig)	0.0015	< 0.0002	0.0002	0.0004
	MW-2	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
MW-2		6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-2	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG02	6/23/2011	(orig)	0.00060	< 0.0010	< 0.0010	< 0.0030
	GW-074935-092611-JP-010	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-2	12/12/2011	(orig)	0.00034	< 0.001	< 0.001	< 0.003
	MW-3	6/25/2008	(orig)	ND	ND	ND	ND
	MW-3	_9/25/2008 .	(orig)	ND	0.0023	0.0009	0.0121
	MW-3	1/13/2009	(orig)	ND	ND	ND	ND
ļļ	MW-3	3/23/2009	(orig)	< 0.0002	0.0002	0.0002	0.0014
	MW-3	6/29/2009	(orig)	<0.0002	0.0017	0.0007	0.0082
	MW-3	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
MW-3	MW-3	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-3	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG01	6/23/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030
	GYV-0/4935-092611-CM-006	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-3	12/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003

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TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY JUNE 2008 - DECEMBER 2011 CONOCOPHILLIPS COMPANY CHARLES ET AL. NO. 1

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)
	MW-4	6/25/2008	(orig)	0.0038	0.0199	0.0014	0.007
	MW-4	9/25/2008	(orig)	ND	ND	ND	ND
[MW-4	1/13/2009	(orig)	ND	ND	ND	ND
[MW-4	3/23/2009	(orig)	<0.0002	<0.0002	<0.0002	<0.0002
	MW-4	6/29/2009	(orig)	< 0.0002	<0.0002	0.0002	0.0029
	MW-4	3/30/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
MW-4 [MW-4	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	9/21/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	12/16/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	MW-4	3/18/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001
	GW-74935-062311-PG03	6/23/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030
[GW-074935-092611-SP-007	9/26/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	GW-074935-121211-CB-MW-4	12/12/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003
	MW-5	6/26/2008	(orig)	ND	ND	ND	ND
MW 5	MW-5	9/25/2008	(orig)	ND	ND	ND	ND
10100-5	MW-5	1/13/2009	(orig)	ND	ND	ND	ND
í T	MW-5	3/23/2009	(orig)	ND	ND	ND	ND
	MW-6	6/26/2008	(orig)	ND	ND	ND	ND
	MW-6	9/25/2008	(orig)	ND	ND	ND	ND
14144-0	MW-6	1/13/2009	(orig)	ND	ND	ND	ND
	MW-6	3/23/2009	(orig)	ND	ND	ND	ND
	MW-7	6/26/2008	(orig)	ND	ND	ND	ND
мw-7	MW-7	9/25/2008	(orig)	ND	ND	ND	ND
	MW-7	3/23/2009	(orig)	ND	ND	ND	ND

Notes:

1. MW = monitor well

2. ND = Not Detected

3. NNPDWR = Navajo Nation Primary Drinking Water Regulations

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

5. < 1.0 = Below laboratory detection limit of 1.0 mg/L

6. Bold = concentrations that exceed the NNEPA limits

7. Analytes sampled between 6/25/2008 and 6/29/2009 obtained by Envirotech, Inc.

APPENDIX A

SEPTEMBER AND DECEMBER 2011 QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

074935 (3)

ITE/PROJECT NAME: Charles 54 / No JOB# C24935 SAMPLE ID: GW-574935-092611-011-008 WELL# MWI- 9-32-11 9-32-11 GM-574935-092611-011-008 WELL# MWI- 9-32-11 9-32-11 GM-574935-092611-011-008 WELL# MWI- 9-32-11 9-32-11 GM-574935-092611-011-008 WELL# MWI- 9-32-11 GM-574935-092611 GM-574935-092611 GM-574935-092611 GM-574935-092611 9-32-11 GM-574935-0927611 GM-59977 GM-59977 GM-59977 GM-59977 9-3000000000000000000000000000000000000	W	ELL SAMPLING	FIELD INFO	RMATION	FORM	
SAMPLE D: QW-074935-092611-001-008 WELL# MW-1 9	ITE/PROJECT NAME:	Charles Et	al Nol	JOB#	074935	
9-24-11 9-26-11 SAMPLENTE ONDO DYD 9-10000 0.426 1.725 PURCE DATE ON DO YD ON DO YD PURCING EQUIPMENT CALLONE) CALLONE CALLONE PURCING EQUIPMENT DEDICATED Ø N ON DO YD SAMPLING EQUIPMENT CORCLEONED CURCINC DEVICE G A. SUMMERSING EPUMP C. AALUE CURCINC DEVICE OTHER (SPECTY) SAMPLING DEVICE G A. SUMMERSING EPUMP P. DEPERSION C. AAUKES STELL X. OTHER YMERSING DEVICE OTHER (SPECTY) SAMPLING DEVICE G A. TOTION POUC YMERSING DEVICE OTHER (SPECTY) SAMPLING MATERIAL E A. TOTION POUCHING CONTROL NAM X. OTHER YMERSING DEVICE OTHER (SPECTY) SAMPLING TUBING C A. SUMMENT OTHER (SPECTY) X. OTHER YMERSING CONTROL NAMERAL OTHER (SPECTY) SAMPLING TUBING C A. SUMMENT OTHER (SPECTY) X. OTHER YMERSING CONTROL NAMERAL OTHER (SPECTY) SAMPLING TUBING C A. TOTION	SAMPLE ID:	<u>GW-074935-00</u>	9:2611-CM-008	WELL#	nw-l	
PURCING EQUIPMENTDEDICATED @ N CIRCLE ONE] CIRCLE ONE] CIRCLE ONE] PURCING DEVICE G A - SUIMENSERIE PUMP D - GAS LIFT PUMP G. RAILIR X= SAMPLING DEVICE G A - SUIMENSERIE PUMP D - GAS LIFT PUMP R. WATERAO X= SAMPLING DEVICE G A - SUIMENSERIE PUMP P- DUPER ROTTLE X= OTHER X= SAMPLING DEVICE G A - TRELON D - PUC X= SAMPLING DEVICE OTHER GENCIPY) SAMPLING MATERIAL E A - TRELON D - PUCATED PUMP X= OTHER SAMPLING DEVICE OTHER GENCIPY) SAMPLING MATERIAL E C - POLYPROPYLENE X= OTHER X= TURGING MATERIAL OTHER GENCIPY) SAMPLING TUBING C A - TRELON D - TOCATROPYLENE X= OTHER Y= SAMPLING TUBING C A - TRELON D - TOCATROPYLENE X= OTHER Y= SAMPLING TUBING C A - TRELON D - TOCATROPYLENE X= OTHER Y= SAMPLING TUBING C A - TRELON D - TOCATROPYLENE X= OTHER GENECTY) Y= SAMPLING TUBING C A - TRELON D - TOCAT	9 - 24 - 11 PURGE DATE (MM DD YY)	M 9.26.11 SAMPLE DATE (MM DD YY) PLURC	TELL PURGING INFORM	MATION J J J J J J J J J J J J J J J J J J J	N CASING N CASING NS) (GAL	5 DL. PURGED LONS)
PURCING DEVICE G. A. SUMMERSIBLE PUMP D. GAS LEFT PUMP G. BAILER X- SAMPLING DEVICE G. C. BLADDER PUMP P. JURGE PUMP H. WATHERAME Y- SAMPLING DEVICE G. C. BLADDER PUMP P. JURGE PUMP H. WATHERAME Y- PURCING DEVICE G. C. BLADDER PUMP P. JURGE PUMP H. WATHERAME Y- PURCING MATERIAL E. A. TEPLON DPYC Y- Y- SAMPLING MATERIAL E. C. TOLYPROPYLENE X- OTHER Y- Y- SAMPLING MATERIAL E. C. TOLYPROPYLENE X- OTHER Y- Y- SAMPLING TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- SAMPLING TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- SAMPLING TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- SAMPLING TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- PURCET TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- SAMPLING TUBING C. A. TEPLON D. FOLYPROPYLENE X- OTHER Y- PURCET TUBING C. A.	PURGING EQUIPMENTDEDICA	ATED (ON) N (CIRCLE ONE)		SAMP	LING EQUIPMENTDEDIC	ATED 🖄 N . (CIRCLE ONE)
SAMPLING DEVICE Image: Construction of the construction		G A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP G - I E - PURGE PUMP H - V	AILER VATERRA®	X= PURGING DEVICE OTH	IER (SPECIFY)
PURCING MATERIAL					X [™] SAMPLING DEVICE OT	HER (SPECIFY)
FURGE TUBING C A - TEFLON D - POLYPROPYLENE G - COMBINATION SAMPLING TUBING C C - ROYE F - STELCONE X - OTHER THELON/POLYPROPYLENE X - TEFLON/POLYPROPYLENE X - TEFLON/POLYPROPY	PURGING MATERIAL	A - TEFLON B - STAINLESS STEEL C - POLYPROPYLENE	D - PVC E - POLYETHYLENE X - OTHER		X≕ PURGING MATERIAL C X=	OTHER (SPECIFY)
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $					SAMPLING MATERIAL	OTHER (SPECIFY)
SAMPLING TUBING OTHER GEVECES 0.45 FILTERING DEVICES 0.45 DEPTH TO WATER FILED MEASUREMENTS WELL ELEVATION 5 9 10 55 (feet) WELL ELEVATION 5 9 10 55 (feet) CONDUCTIVITY OULUME UPH TO WATER PH TOS CONDUCTIVITY OULUME VOLUME 144.794 (fed) 1.22.6 (mV) J.25.6 (mV) J.25.6 (mV) LIPS (feet) 2.322.3 (mS/cm) - 322.6 (mV) J.25.6 (mV) <th< td=""><td>SAMPLING TUBING</td><td>B - TYGON C - ROPE</td><td>E - POLYETHYLENE T F - SILICONE X - C</td><td>EFLON/POLYPROPYLENI THER</td><td> PURGE TUBING OTHER X= </td><td>R (SPECIFY)</td></th<>	SAMPLING TUBING	B - TYGON C - ROPE	E - POLYETHYLENE T F - SILICONE X - C	EFLON/POLYPROPYLENI THER	 PURGE TUBING OTHER X= 	R (SPECIFY)
FIELD MEASUREMENTS DEPTH TO WATER WELL DEPTH WELL DEPTH TOS CONDUCTIVITY ORP VOLUME LILI DEPTH TEMPERATURE pH CONDUCTIVITY ORP VOLUME LILI DEPTH LILI DEPTH TOS CONDUCTIVITY ORP VOLUME (gr colspan="2">GR ORP <tr< th=""><th>FILTERING DEVICES 0.45</th><th>NA - IN-LINE DISPOSABLE</th><th>B - PRESSURE</th><th>C-VACUUM</th><th>SAMPLING TUBING OT</th><th>THER (SPECIFY)</th></tr<>	FILTERING DEVICES 0.45	NA - IN-LINE DISPOSABLE	B - PRESSURE	C-VACUUM	SAMPLING TUBING OT	THER (SPECIFY)
WELL DEPTH $\begin{array}{c c c c c c c c c c c c c c c c c c c $	DEPTH TO WATER	4 55	. FIELD MEASUREME	NTS ELEVATION	5917,05	(feet)
$\frac{\left \begin{array}{c}14.79\\14.79\\14.88\\1^{(\circ)}\right ^{(\circ)} \left \begin{array}{c}7.36\\7.44\\16td\right \left \begin{array}{c}1.876\\8.38\\6(rL)\right ^{(\circ)} \left \begin{array}{c}2.323\\10.5/cm\right ^{(\circ)} \left \begin{array}{c}-3.27.6\\9.107\\1.50\\6(a)\right ^{(\circ)} \left \begin{array}{c}7.44\\16td\right ^{(\circ)} \left \begin{array}{c}1.876\\1.809\\1.809\\6(rL)\right ^{(\circ)} \left \begin{array}{c}2.247\\10.5/cm\right ^{(\circ)} \left \begin{array}{c}-3.37.7\\107\\1.50\\6(a)\right ^{(\circ)} \left \begin{array}{c}7.5\\6(a)\right ^{(\circ)} \left \begin{array}{c}1.50\\6(a)\right ^{(\circ)} \left \begin{array}{c$	WELL DEPTH TEMPERATURE	рн тс	(feet) GROUNDWATE	R ELEVATION	6912,50 ORP	(feet) VOLUME
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	<u>[4,79]</u> (c) <u>[</u>	7.36(std)8	26 (g/L) 2	323 (µS/cm)	-322.6 (mV)	1.25 (gal)
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		(std) 2	$238^{(g/L)} - 2$	200 (µS/cm)	-334,7 (mV)	(gal)
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		(std)	(g/L)	μs/cm)	(mV)	(gal)
SAMPLE APPEARANCE: MEATHER CONDITIONS: SPECIFIC COMMENTS: $ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(°)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
$\frac{1}{10000000000000000000000000000000000$	SAMPLE APPEARANCE:	DUDY odor:	FIELD COMMENT	black	SHEED Y/Y	
JUDIUINES, = 1.31 gal JUDIUINES, = 1.31 gal JUDICALC GW-074935-042611-(M-009) ICERTIFY THAT SAMPLING PROCEDURES TYPERE IN ACCORDANCE WITH APPLICABLE CRA PROTOPLIS G:26:11 Gason 1035 JATE PRINT		t well volum	e= 2.73' x	0.16 = 0	,436	
I CERTIFY THAT SAMPLING PROCIDURES WHERE IN ACCORDANCE WITH APPLICABLE CRA PROTO DLS 9:26:11 DATE PRINT SIQNATORE SIQNATORE	Daolic	all GIN-17492	3 Johnnes = 1 5- 897611- M	31 gal	1745	
DATE PRINT SIGNATURE	I CERTIFY THAT SAMPLING PROCIN	DURES TYPRE IN ACCORDANCE WIT	H APPLICABLE CRA PROTO			
	DATE I	PRINT V	SIQNAYO	RE		

TE/PROJECT NA	ME: Charles Et al. JOB# 074935
SAMPLE	ID: <u>GW-074935-042611-JP-010</u> WELL# MW-Z
PURCE DATE (MM DD YY)	WELL PURGING INFORMATION 9.26.1 1805 0.508 1.55 SAMPLE DATE SAMPLE TIME WATER VOL, IN CASING ACTUAL VOL, PURGED (MM DD YY) (24 HOUR) (GALLONS) (GALLONS) PURGING AND SAMPLING EQUIPMENT Contract of the same sector of the same
PURGING EQUIPMENT	DEDICATED ON SAMPLING EQUIPMENTDEDICATED ON (CIRCLE ONE)
PURGING DEVICE	G A - SUBMERSIBLE PUMP D - GÅS LIFT PUMP G - BAILER X= B - PERISTALTIC PUMP E - PURGE PUMP H - WATERRA® PURGING DEVICE OTHER (SPECIFY)
SAME LING DEVICE	SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL SAMPLING MATERIAL	L A - TEFLON D - PVC X= B - STAINLESS STEEL E - POLYETHYLENE PURGING MATERIAL OTHER (SPECIFY) L C - POLYPROPYLENE X - OTHER
PURGE TUBING SAMPLING TUBING	C A - TEFLON D - POLYPROPYLENE G - COMBINATION X= B - TYGON E - POLYETHYLENE TEFLON/POLYPROPYLENE Y= C C - ROPE F - SILICONE X - OTHER Y= NAATERIAL OTHER (SPECIFY) X - OTHER X=
DEPTH TO WATH WELL DEPT TEMPERATURE [[4.44](°C) []3.97](°C) []4.16](°C) []60](°C) []70](°C) SAMPLE APPEARANCE: VEATHER CONDITIONS: SECIFIC COMMENTS: []75]10] DULCE	$\begin{array}{c cccc} & & & & & & & & & & & & & & & & & $

WE	LL SAMPLING FI	ELD INFORM	ATION FOR	М	
(Charles Etal	U.1	JOB#	1935	
SAMPLE ID:	GW-074935-09261	11-0065M-0062	vell#M	V-3	
9.26.11 PURGE DATE (MM DD YY)	WELL 9 · Z6 · 1	PURGING INFORMATION SAMPLE TIME (24 HOUR) AND SAMPLING EQUIPM	N WATER VOL. IN CASING (GALLONS)	G ACTUAL VO	5 L. PURGED ONS)
PURGING EQUIPMENTDEDICATE	O(Y) N (CIRCLE ONE)		SAMPLING EC	UIPMENTDEDICA	ATED (Y) N (CIRCLE ONE)
PURGING DEVICE G	A - SUBMERSIBLE PUMP D - GA B - PERISTALTIC PUMP E - PU C - BLADDER PUMP F - DH	AS LIFT PUMP G - BAILER RGE PUMP H - WATERRA PPER BOTTLE X - OTHER	X= 10 X=	PURGING DEVICE OTHI	ER (SPECIFY)
PURGING MATERIAL	A - TEFLON D - PV B - STAINLESS STEEL E - PO	C LYETHYLENE	X=	SAMPLING DEVICE OTF	IER (SPECIFY) THER (SPECIFY)
		116K	X=	SAMPLING MATERIAL C	OTHER (SPECIFY)
PURGE TUBING C	A - TEFLON D - FC B - TYGON E - PO C - ROPE F - SIL	LYPROPYLENE G - COMBINA LYETHYLENE TEFLON/I ICONE X - OTHER	TION X= POLYPROPYLENE X=	PURGE TUBING OTHER	(SPECIFY)
FILTERING DEVICES 0.45	A A - IN-LINE DISPOSABLE	B - PRESSURE C - VACI	JÜM	SAMPLING TUBING OTH	HER (SPECIFY)
	FI)	ELD MEASUREMENTS			k.
DEPTH TO WATER	7 13 (feet) WELL ELEV A' feet) GROUNDWATER ELEV	$\frac{1}{5}$	119 80	(feet)
$\begin{array}{c c} \text{TEMPERATURE} \\ 14,16,100,170 \\ 14,01,00,100 \\ 13,94,100,100 \\ 13,94,100,100 \\ 16,1$	H 7 (std) 1	(g/L) 2275 (g/L) 2271 (g/L) 2270 (g/L) 2270	TY(μS/cm)(μS/cm)(μS/cm)	0 RP 7 1.5 (mV) 6 8, (mV) 6 3, 8 (mV) (mV)	VOLUME (gal) (gal) (gal) (gal) (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
SAMPLE APPEARANCE:	OULLY ODOR: Bio	FIELD COMMENTS $\frac{VVC(\Omega, \Gamma)}{VC(\Omega, \Gamma)}$ color: $\frac{VVC(\Omega, \Gamma)}{VC(\Omega, \Gamma)}$ $= 3.25' \times 0.12$	$\frac{0}{0} \frac{0}{0} \frac{0}{0} \frac{0}{5}$	EN Y (N) N Y (N) AF Y TYPE)	···
		5 volumes =	1:26	<u>_</u>	
		·····		· · · · · · · · · · · · · · · · · · ·	
I CERTIFY THAT SAMPLING PROCEDUR 9.26.11 DATE	es were in accordance with app	PLICABLE CRA PROPOCOIS			
	<u>.</u>		<u> </u>		
	÷				
	, , ,				

VVE					
	Cilleanies ET al	- 1P-0.7		MIN-U	
	<u>4w 417735 - 07 2611</u>				
97611 1	9,26,11 1 1	1725 I	ION 10.51		ו יביר
PURGE DATE	SAMPLE DATE	SAMPLE TIME	WATER VOL. IN	CASING ACTUAL	VOL. PURGED
(MM DD YY)	(MM DD YY) PURCING A	(24 HOUR)	(GALLON PMENIT	NS) (G.	ALLONS)
PURGING EQUIPMENTDEDICATE	D (C) N		SAMPL	ING EQUIPMENTDEI	DICATED 🕜 N
	(CIRCLE ONE)			16.0	(CIRCLE ONE)
PURGING DEVICE	A - SUBMERSIBLE PUMP D - GAS	LIFT PUMP G - BAILEI	2 P P A @		THER CRECTEN
SAMPLING DEVICE G	C-BLADDER PUMP F-DIPP	R BOTTLE X-OTHER		YUKGING DEVICE C	JITER (SPECIFY)
				SAMPLING DEVICE	OTHER (SPECIFY)
PURGING MATERIAL	A - TEFLON D - PVC	ETUVI UNIZ		χ=	I OTHER (CRECIE)A
SAMPLING MATERIAL	C-POLYPROPYLENE X-OTH	GIIII LEINE IR		YUKGING MATERIA	IL OTHER (SPECIPT)
· · · · ·				SAMPLING MATER	AL OTHER (SPECIFY)
PURGE TUBING	A - TEFLON D - POLY	PROPYLENE G - COMBI	NATION	X=	
SAMPLING TUBING	B - TYGON E - POLY C - ROPE F - SILIC	ETHYLENE TEFLOR ONE X-OTHER	WFOLTEROFTLENE	PURGE TUBING OTI X=	HER (SPECIFY)
	Ĩa.			SAMPLING TUBING	OTHER (SPECIFY)
VILTERING DEVICES 0.45	A - IN-LINE DISPOSABLE	B - PRESSURE C - VA	ACUUM		
	I AA FIEL	D MEASUREMENTS			
DEPTH TO WATER	6 70 (fee	t) WELL ELEV	ATION	5919 691	(feet)
WELL DEPTH	10 37 (fee	t) GROUNDWATER ELE		5912 71	(feet)
TEMPERATURE	oH TDS	CONDUCT	VITY	ORP	VOLUME
3.70 rs 7.0	<u>3</u> (std) <u>1,313</u>	(g/L) [583	(µS/cm)	-36.9 (mV) [. 7.5 (ga
13.39 (0) 6.0	(std) 1.322	(g/L) 1583	(µS/cm)	-30.0 (mV)) 1.5 (ga
13,45= 10 100	(std) 1-338	Tg/L) -+604	(μS/cm))(ga
13,45 100 16,	90 (std) 1, 393	(g/L) 1670	(µS/cm)	- 27, 2 (mV)	1.75 (ga
	(std)	(g/L)	(uS/cm)		(o
			\(µ0) Cm)		
		ELD COMMENTS		SHEFNY	
ZEATHER CONDITIONS:TEMPERA	UREBS	WINDY Y/ (2)	PRECI	PITATION Y/ QIFY TYPE)	
PECIFIC COMMENTS:	Volume =	3.39' X O.1	b = .64	1	
<u> </u>	·	Vuonas - 1	12 pat		
<u>,</u>	5 00	iurres - 11	<u>v s gar</u>		
·····		· · · · · · · · · · · · · · · · · · ·			
				· · ·	· · · · · ·
I CERTIFY THAT SAMPLING PROCEDUR	ES WERE IN ACCORDANCE WITH APPLI	CABLE CRA PROTOCOLS			
		~ 11			

ν	VELL SAMPLIN	G FIELD INFO	ORMATION F	ORM	
J <i>fe/project name:</i>	Charles et	al .	JOB# ለ	74935	
SAMPLE ID:	After C.W. or	4955-121211- CB-MW		460-1	
L 12 (2 (1 PURCE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WELL PURCE SAMPLE TIME (24 HOUR)	RMATION 15 WATER VOL. IN (GALLON	CASING ACTUAL VI (GAL	25 DL PURGED LONS)
PURGING EQUIPMENTDEDIC	CATERY N (CIRCLE ONE)		SAMPL	ING EQUIPMENTDEDIC	CATE Y N (CIRCLE ONE)
PURGING DEVICE	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP G	- BAILER	X=	HER (SPECTEX)
SAMPLING DEVICE	C - BLADDER PUMP	F - DIPPER BOTTLE X	- OTHER	X=SAMPLING DEVICE OF	THER (SPECIFY)
PURGING MATERIAL	A - TEFLON	D-PVC		X≖	
SAMPLING MATERIAL	C - POLYPROPYLENE	E - POLYETHYLENE X - OTHER		X= SAMPLING MATERIAL	OTHER (SPECIFY)
PURGE TUBING	A - TEFLON	D - POLYPROPYLENE G	- COMBINATION	X=	
SAMPLING TUBING	C - ROPE	E - POLYETHYLENE F - SILICONE X	- OTHER	PURGE TUBING OTHER	R (SPECIFY)
FILTERING DEVICES 0.45	A - IN-LINE DISPOSAE	LE B - PRESSURE	C-VACUUM	SAMPLING TUBING OF	HER (SPECIFI)
		FIELD MEASUREM	ENTS		
DEPTH TO WATER	3.23	(feet) WE	LL ELEVATION	5917.05	(feet)
WELL DEPTH	7.3	(feet) GROUNDWA	TER ELEVATION	3913 82	(feet)
TEMPERATURE	рН	rds cor	IDUCTIVITY	ORP	VOLUME
	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)		(mV)	(gal)
	(std)	(g/L)	(#\$/ <u>.cm</u>)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
SAMPLE APPEARANCE:	MPERATURE - COL		TS DIOR: <u>Hadd</u> PRECI	SHEEN Y/N YITATION Y/N (IF Y TYPE) - S	ADE
4,07×0.10= D.	15 13-1	.95	· · · · · · · · · · · · · · · · · · ·		· · ·
I CERTIFY THAT SAMPLING PROC DATE	EDURES WERE IN ACCORDANCE W	TTH APPLICABLE CRA PROTO	A Subri	<u> </u>	
	Jul Q	\$ 1335 \$ 1335	le molevs due to		

WE	LL SAMPLING FIELD	INFORMATION	FORM
.TE/PROJECT NAME:	Charles of . a	јов#	074935
SAMPLE ID:	GW-01495-12121	<u>I. (B-MU</u> LWELL#	MW-2
PURGE DATE (MM DD YY)	2.12. WELL PURGI SAMPLE DATE SAM (MM DD YY) (24)	NG INFORMATION	ACTUAL VOL. PURGED (GALLONS)
PURGING EQUIPMENTDEDICATE	PURGING AND S	AMPLING EQUIPMENT SAMI	PLING EQUIPMENTDEDICATE
PURGING DEVICE	A - SUBMERSIBLE PUMP D - GAS LIFT PU B - PERISTALTIC PUMP E - PURGE PUM	JMP G - BAILER IP H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	C - BLADDER PUMP F - DIPPER BOT	TLE X-OTHER	X=SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	A - TEFLON D - PVC B - STAINLESS STEEL E - POLYETHYL	ENE .	X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	C - POLYPROPYLENE X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
	A - TEFLON D - POLYPROPY B - TYGON E - POLYETHYL	LENE G - COMBINATION ENE TEFLON/POLYPROPYLEN	E PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C - ROPE F - SILICONE	X - OTHER	X=
FILTERING DEVICES 0.45	A - IN-LINE DISPOSABLE B - PF	RESSURE C-VACUUM	
(DEPTH TO WATER WELL DEPTH	FIELD ME	ASUREMENTS WELL ELEVATION	<u>59165</u> ? (feet) <u>5914</u> 20 (feet)
4815,80 (c) (4)	59 (std) 31657 (g/L)	CONDUCTIVITY	ORP VOLUME $[-6, \frac{2}{7}, \frac{2}{7}]$ (mV) $[1, \frac{2}{7}, \frac{2}{5}]$ (gal)
454 5184 (c) (11	$\left(\rho \left(\rho \right) \right) = \left[\frac{3 1 2 4}{(g/L)} \right] \left(\frac{g}{L} \right) $	3 <u>(154</u> (μ5/cm)	$ \begin{array}{c c} -(\begin{array}{c} 7 \\ \end{array} \begin{array}{c} B \\ \end{array} \end{array} \end{array} $ (mV) $ \begin{array}{c} 2 \\ \end{array} \begin{array}{c} C \\ \end{array} \end{array} $ (gal) $ \begin{array}{c} C \\ \end{array} $
(°C)	(g/L)	(µS/cm)	(mV) (gal)
(°C)	(std) (g/L)	(µS/cm)	(mV) (gal)
	FIELD (COMMENTS	
SAMPLE APPEARANCE: WEATHER CONDITIONS: TEMPER	ODOR:	COLOR:	SHEEN Y/N CIPITATION Y/N (IF Y TYPE)
SPECIFIC COMMENTS:	stack and love		· · · · · · · · · · · · · · · · · · ·
4.3/x 0.16= 0.70	X3=2.10	· · · · ·	
mailed die	M& Ladlin Lot	VP/bange Defar P	cellecting parameter
I CERTIFY THAT SAMPLING PROCEDUR	THE WERE IN ACCORDINCE WITH APPLICABLE		n

	WELL SAMPLING FIELD INFORMATION FORM	
.TE/PROJECT NA	ME: JOB# 074952	
SAMPLE	$\exists ID: (40.014435.10111.08.1005 Well# M0-3$	
PURGE DATE (MM DD YY)	WELL PURGING INFORMATION 3AMPLE DATE 3AMPLE TIME WATER VOL. IN CASING ACTUAL VOL. PURGED (MM DD YY) (24 HOUR) (GALLONS) (GALLONS)	
	PURGING AND SAMPLING EQUIPMENT	
PURGING EQUIPMENT	DEDICATED Y N (CIRCLE ONE) SAMPLING EQUIPMENTDEDICATED Y N (CIRCLE ONE) (CIRCLE ONE)	
URGING DEVICE	A - SUBMERSIBLE PUMP D - GAS LIFT PUMP G - BAILER X= B - PERISTALTIC PUMP E - PURGE PUMP H - WATERRA® PURGING DEVICE OTHER (SPECIFY)	1
SAMPLING DEVICE	C-BLADDER PUMP F-DIPPER BOTTLE X-OTHER X=	
PURGING MATERIAL	A-TEFLON D-PVC X=	
AMPLING MATERIAL	B-STAINLESS STEEL E-POLYETHYLENE PURGING MATERIAL OTHER (SPECIFY) C-POLYPROPYLENE X-OTHER X=	
	SAMPLING MATERIAL OTHER (SPECIFY)	1
URGE TUBING	A - TEFLON D - POLYPROPYLENE G - COMBINATION X= B - TYGON E - POLYETHYLENE TEFLON/POLYPROPYLENE PURGE TUBING OTHER (SPECIFY)	
AMPLING TUBING	C - ROPE F - SILICONE X - OTHER X= SAMPLING TUBING OTHER (SPECIFY)	
ILTERING DEVICES 0.45	A - IN-LINE DISPOSABLE B - PRESSURE C - VACUUM	
	FIELD MEASUREMENTS	
DEPTH TO WAT	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
TEMPERATURE	pH TDS CONDUCTIVITY ORP VOLUME	
2 0,26 ro	$(\underline{\beta}, \underline{44} (\text{std}) \underline{2}, \underline{24} (\underline{\beta}/L) \underline{2244} (\underline{\mu}S/cm) \underline{718} (mV) \underline{4.5} (mV) $	gal)
$3 \left[\frac{3}{27} 3 \mathcal{O} \right] (9)$	$\frac{(r_1 4)^{(\text{std})}}{(r_1 4)^{(\text{std})}} = \frac{(r_1 4)^{(1)}}{(r_1 4)^{(1)}} = \frac{(r_1 4)^{(1)}}{(r_1 4)^{(1$	gal)
$\frac{q_{1} c_{1} q_{1}}{1} = \frac{q_{1}}{1} c_{2}$	[(std)] [(g/L)] [(us/cm)] [(mv)] [(gal) gal)
(°C)	(std) (g/L) (uS/cm) (mV) (mV)	gal)
	Al I FIELD COMMENTS	-
AMPLE APPEARANCE: 'EATHER CONDITIONS:	TEMPERATURE (35) WINDY Y/N V PRECIPITATION Y/N (IF Y TYPE) SILVE	
PECIFIC COMMENTS:		
4.55 X D.1	l = 0.73 X3 = 2.18	
······································		

the second s

	WELL SAMPLING FIFLD INFORMATION FORM
IE/PROJECT NA	IME: <u>Uparties of ac</u> JOB# <u>074935</u>
SAMPL.	EID: $Mu - Mu $
PURGE DATE (MM DD YY)	2.12.1 WELL PURGING INFORMATION 7 SAMPLE DATE (MM DD YY)
PURGING EQUIPMENT	DEDICATED (Y) N SAMPLING EQUIPMENTDEDICATED (Y) N (CIRCLE ONE) (CIRCLE ONE)
PURGING DEVICE	A - SUBMERSIBLE PUMP D - GAS LIFT PUMP G - BAILER X= B - PERISTALTIC PUMP E - PURGE PUMP H - WATERRA® PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	A - TEFLON D - PVC X= B - STAINLESS STEEL E - POLYETHYLENE PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	C - POLYPROPYLENE X - OTHER X=
PURGE TUBING	(*) A - TEFLON D - POLYPROPYLENE G - COMBINATION X= B - TYGON E - POLYETHYLENE TEFLON/POLYPROPYLENE PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C - ROPE F - SILICONE X - OTHER X=
FILTERING DEVICES 0.45	SAMPLING TUBING OTHER (SPECIFY)
	FIELD MEASUREMENTS
DEPTH TO WA	TER 5 74 (feet) WELL ELEVATION 577457 (feet) PTH 6 35 (feet) GROUNDWATER ELEVATION 5774574 (feet)
TEMPERATURE	PH TDS CONDUCTIVITY ORP VOLUME
Ad-4,113 (°C)	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
A12 41 (13 (0)	$(1,1)$ (std) $(3,122)$ (g/L) $(2(f_1))$ (µS/cm) $(47,5)$ (mV) $(1,3)$ (gal)
10 4107 100	$(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$ $(\mathfrak{g}/\mathfrak{l})$
141V 415 (°C)	$(\mu_1 g_5)$ (std) $(2_1 g_6 g_1)$ (g/L) (294) (μ_5/cm) (μ_5/cm) (213) (gal)
(°C)	(std) (g/L) (µS/cm) (mV) (gal)
SAMPLE APPEARANCE: WEATHER CONDITIONS: SPECIFIC COMMENTS:	CULLUY ODOR: NO COLOR: COLOR: COLOR: COLOR: COLOR: COLOR: PRECIPITATION Y/N (IF Y TYPE) COLOR: PRECIPITATION Y/N (IF Y TYPE) COLOR: COL
37 117 011	< /4
4, 412 0.16	
-ball20	digin 0, 0, 9 galler a low true to very aver
I CERTIFY THAT SAMPLIN	IG PROCEDURE WHERE IN ACCOMPANCE WITH APPLICABLE CRA PROVINCIOLS

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APPENDIX B

SEPTEMBER AND DECEMBER 2011 QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORTS

074935 (3)



October 13, 2011

Angela Bown COP Conestoga-Rovers & Associa 6121 Indian School Rd #200 Albuquerque, NM 87110

RE: Project: CHARLES ET AL NO.1 . Pace Project No.: 60107174

Dear Angela Bown:

Enclosed are the analytical results for sample(s) received by the laboratory on September 29, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

AWA CECUETE

Anna Custer for Dianna Meier dianna.meier@pacelabs.com Project Manager

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project:CHARLES ET AL NO.1Pace Project No.:60107174

Kansas Certification IDs

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

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SAMPLE SUMMARY

Project: CHARLES ET AL NO.1 Pace Project No.: 60107174

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60107174001	GW-074935-092611-CM-006	Water	09/26/11 16:45	09/29/11 09:00
60107174002	GW-074935-092611-SP-007	Water	09/26/11 17:25	09/29/11 09:00
60107174003	GW-074935-092611-CM-008	Water	09/26/11 17:35	09/29/11 09:00
60107174004	GW-074935-092611-CM-009	Water	09/26/11 17:45	09/29/11 09:00
60107174005	GW-074935-092611-JP-010	Water	09/26/11 18:05	09/29/11 09:00
60107174006	TB-092611-001	Water	09/26/11 18:10	09/29/11 09:00

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SAMPLE ANALYTE COUNT

Project: CHARLES ET AL NO.1 Pace Project No.: 60107174

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60107174001	GW-074935-092611-CM-006	EPA 8260	BRM	. 9
60107174002	GW-074935-092611-SP-007	EPA 8260	BRM	9
60107174003	GW-074935-092611-CM-008	EPA 8260	BRM	9
60107174004	GW-074935-092611-CM-009	EPA 8260	BRM	9
60107174005	GW-074935-092611-JP-010	EPA 8260	BRM	9
60107174006	TB-092611-001	EPA 8260	BRM	9

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PROJECT NARRATIVE

Project: Pace Project	CHARLES ET AL NO.1 No.: 60107174	·.
Method: Description: Client: Date:	EPA 8260 8260 MSV UST, Water COP Conestoga-Rovers & Associates, Inc. NM October 13, 2011	
General Info 6 samples we	rmation: re 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 Calibra All criteria we	ations (including MS Tune as applicable): re within method requirements with any exceptions noted below.	
Continuing C All criteria we	Calibration: re within method requirements with any exceptions noted below.	
Internal Stan All internal sta	dards: andards were within QC limits with any exceptions noted below.	
Surrogates: All surrogates	were within QC limits with any exceptions noted below.	
QC Batch: MS S0: S • G	SV/40680 urrogate recovery outside laboratory control limits. W-074935-092611-CM-008 (Lab ID: 60107174003) • Dibromofluoromethane (S)	
Method Blan All analytes w	k: ere below the report limit in the method blank with any exceptions noted below.	:
Laboratory C All laboratory	control Spike: control spike compounds were within QC limits with any exceptions noted below.	
Matrix Spikes All percent red	s: coveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.	
QC Batch: MS	SV/40680	
A matrix s	pike/matrix spike duplicate was not performed due to insufficient sample volume.	
A matrix s	5V/40730 pike/matrix spike duplicate was not performed due to insufficient sample volume.	
Duplicate Sa All duplicate s	mple: ample results were within method acceptance criteria with any exceptions noted below.	
Additional Co	omments:	
This data pac	kage has been reviewed for quality and completeness and is approved for release.	

REPORT OF LABORATORY ANALYSIS

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Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: GW-074935-092611-CM-00)6 Lab ID:	60107174001	Collected: 09/26/11 16:45			Received: 09/29/11 09:00 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytica	I Method: EPA 8	260						
Benzene	ND ι	ıg/L	1.0	0.055	1		10/08/11 05:19	71-43-2	
Ethylbenzene	ND ι	ıg/L	1.0	0.056	1		10/08/11 05:19	100-41-4	
Toluene	ND L	ıg/L	1.0	0.066	· 1		10/08/11 05:19	108-88-3	
Xylene (Total)	ND ι	ıg/L	3.0	0.12	1		10/08/11 05:19	1330-20-7	
Dibromofluoromethane (S)	110 9	6	86-112		1		10/08/11 05:19	1868-53-7	
Toluene-d8 (S)	99 9	6	90-110		1		10/08/11 05:19	2037-26-5	
4-Bromofluorobenzene (S)	100 9	6	87-113		1		10/08/11 05:19	460-00-4	
1,2-Dichloroethane-d4 (S)	108 9	6	82-119		1		10/08/11 05:19	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/08/11 05:19		

Date: 10/13/2011 04:11 PM

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Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: GW-074935-092611-SP-007	7 Lab ID	: 60107174002	Collecte	d: 09/26/11	17:25	Received: 09	/29/11 09:00 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytic	al Method: EPA 8	260						
Benzene	ND	ug/L	1.0	0.055	1		10/08/11 05:36	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.056	1		10/08/11 05:36	100-41-4	
Toluene	ND	ug/L	1.0	0.066	1		10/08/11 05:36	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.12	1		10/08/11 05:36	1330-20-7	
Dibromofluoromethane (S)	109	%	86-112		1		10/08/11 05:36	1868-53-7	
Toluene-d8 (S)	98	%	90-110		1		10/08/11 05:36	2037-26-5	
4-Bromofluorobenzene (S)	99	%	87-113		1		10/08/11 05:36	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	82-119		1		10/08/11 05:36	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/08/11 05:36		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: GW-074935-092611-CM-008	3 Lab ID	: 60107174003	Collected	: 09/26/1 1	17:35	Received: 09	/29/11 09:00 Ma	atrix: Water	
(Report						
Parameters	Results	Units	Limit	MDL	DF .	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytica	al Method: EPA 8	260						
Benzene	1560	ug/L	50.0	2.8	50		10/09/11 15:58	71-43-2	
Ethylbenzene	624	ug/L	5.0	0.28	5		10/08/11 05:52	100-41-4	
Toluene	2610	ug/L	50.0	3.3	50		10/09/11 15:58	108-88-3	
Xylene (Total)	6590	ug/L	150	6.0	50		10/09/11 15:58	1330-20-7	
Dibromofluoromethane (S)	113	%	86-112		5.		10/08/11 05:52	1868-53-7	S0
Toluene-d8 (S)	100	%	90-110	•	5		10/08/11 05:52	2037-26-5	
4-Bromofluorobenzene (S)	101	% ·	87-113		5		10/08/11 05:52	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	82-119		5		10/08/11 05:52	17060-07-0	
Preservation pH	1.0		1.0	0.10	5		10/08/11 05:52		

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Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: GW-074935-092611-CM-00	9 LabiD	60107174004	Collecte	d: 09/26/11	17:45	Received: 09	0/29/11 09:00 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytic	al Method: EPA 8	260						
Benzene	1570	ug/L	50.0	2.8	50		10/09/11 16:14	71-43-2	
Ethylbenzene	756	ug/L	5.0	0.28	5		10/08/11 06:09	100-41-4	
Toluene	3020	ug/L	50.0	3.3	50		10/09/11 16: 14	108-88-3	
Xylene (Total)	7260	ug/L	150	6.0	50		10/09/11 16:14	1330-20-7	
Dibromofluoromethane (S)	110	%	86-112		5		10/08/11 06:09	1868-53-7	
Toluene-d8 (S)	99	%	90-110		5		10/08/11 06:09	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-113		5		10/08/11 06:09	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	82-119		5		10/08/11 06:09	17060-07-0	
Preservation pH	1.0		1.0	0.10	5		10/08/11 06:09		

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ANALYTICAL RESULTS

Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: GW-074935-092611-JP-010	Lab ID:	60107174005	Collecte	d: 09/26/11	18:05	Received: 09	/29/11 09:00 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical	Method: EPA 8	260						
Benzene	ΝDι	ıg/L	1.0	0.055	1		10/09/11 16:31	71-43-2	
Ethylbenzene	NDL	ıg/L	1.0	0.056	1		10/09/11 16:31	100-41-4	
Toluene	NDL	ıg/L	1.0	0.066	1		10/09/11 16:31	108-88-3	
Xylene (Total)	ΝDι	ıg/L	3.0	0.12	1 🕤		10/09/11 16:31	1330-20-7	
Dibromofluoromethane (S)	107 %	6	86-112		1		10/09/11 16:31	1868-53-7	
Toluene-d8 (S)	99 %	6	90-110		1		10/09/11 16:31	2037-26-5	
4-Bromofluorobenzene (S)	97 %	6	87-113		1		10/09/11 16:31	460-00-4	
1,2-Dichloroethane-d4 (S)	102 %	6	82-119		1		10/09/11 16:31	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/09/11 16:31		

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Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

Sample: TB-092611-001	Lab ID: 60107174006		Collected: 09/26/11 18:10 F			Received: 09	Received: 09/29/11 09:00 Matrix: Water		
Deremetere	Desults	1 1- 14-	Report	MDI	55	Desert	A	040.11	0.1
Parameters					F	Prepared	Analyzed	CAS NO.	Qual
8260 MSV UST, Water	Analytical	260							
Benzene	ND uş	g/L	1.0	0.055	1		10/08/11 06:42	71-43-2	
Ethylbenzene	ND ug	g/L	1.0	0.056	1		10/08/11 06:42	100-41-4	
Toluene	ND ug	g/L	1.0	0.066	1		10/08/11 06:42	108-88-3	
Xylene (Total)	ND ug	g/L	3.0	0.12	1		10/08/11 06:42	1330-20-7	
Dibromofluoromethane (S)	109 %)	86-112		1		10/08/11 06:42	1868-53-7	
Toluene-d8 (S)	99 %)	90-110		1		10/08/11 06:42	2037-26-5	
4-Bromofluorobenzene (S)	102 %)	87-113		1		10/08/11 06:42	460-00-4	
1,2-Dichloroethane-d4 (S)	105 %	•	82-119		1		10/08/11 06:42	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/08/11 06:42		

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QUALITY CONTROL DATA

Project:	CHARLES ET AL NO	.1				
Pace Project No.:	60107174					
QC Batch:	MSV/40680		Analysis Meth	od: E	PA 8260	
QC Batch Method:	EPA 8260		Analysis Desc	ription: 8	260 MSV. UST-WAT	ER
Associated Lab Sam	ples: 6010717400	I, 601071740	02, 60107174003, 60	107174004, 6	0107174006	
METHOD BLANK:	887910		Matrix: \	Water		
Associated Lab Sam	ples: 6010717400	1, 601071740	02, 60107174003, 60	107174004, 6	0107174006	
			Blank	Reporting		
Parame	eter	Units	Result	Limit	Analyzed	Qualifiers
Benzene		/L	ND	1.0	10/08/11 00:56	
Ethylbenzene	ug	/L	ND	1.0	10/08/11 00:56	
Toluene	ug	/L	ND	1.0	10/08/11 00:56	
Xylene (Total)	ug	/L	ND	3.0	10/08/11 00:56	
1,2-Dichloroethane-d	4 (S) %		109	82-119	10/08/11 00:56	
4-Bromofluorobenzer	ne (S) %		100	87-113	10/08/11 00:56	

108

98

86-112 10/08/11 00:56

90-110 10/08/11 00:56

LABORATORY CONTROL SAMPLE: 887911

%

%

Dibromofluoromethane (S)

Toluene-d8 (S)

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L		20.2	101	82-117	
Ethylbenzene	ug/L	20	21.5	108	79-121	
Toluene	ug/L	20	20.5	102	80-120	
Xylene (Total)	ug/L	60	62.8	105	79-120	
1,2-Dichloroethane-d4 (S)	%			107	82-119	
4-Bromofluorobenzene (S)	%			101	87-113	
Dibromofluoromethane (S)	%			108	86-112	
Toluene-d8 (S)	%			99	90-110	

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QUALITY CONTROL DATA

Project:	CHARLES I	ET AL NO.1					•
Pace Project No.:	60107174						
QC Batch:	MSV/4073	0	Analysis Meth	iod: Ef	PA 8260		
QC Batch Method:	EPA 8260		Analysis Desc	ription: 82	60 MSV UST-WAT	ER	
Associated Lab Sam	ples: 601	07174003, 6010717400	4, 60107174005				
METHOD BLANK:	888881	, <u>, , , , , , , , , , , , , , , , , , </u>	Matrix:	Water			
Associated Lab Sam	ples: 601	07174003, 6010717400	4, 60107174005				
			Blank	Reporting			
Param	eter	Units	Result	Limit	Analyzed	Qualifiers	
Benzene		ug/L	ND	1.0	10/09/11 11:15		
Ethylbenzene		ug/L	ND	1.0	10/09/11 11:15		
Toluene		ug/L	ND	1.0	10/09/11 11:15		
Xylene (Total)		ug/L	ND	3.0	10/09/11 11:15		
1,2-Dichloroethane-d	l4 (S)	%	106	82-119	10/09/11 11:15		
4-Bromofluorobenzer	ne (S)	%	99	87-113	10/09/11 11:15		
Dibromofluoromethar	ne (S)	%	108	86-112	10/09/11 11:15		· · · ·

99

90-110 10/09/11 11:15

LABORATORY CONTROL SAMPLE: 888882

%

Toluene-d8 (S)

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	92	82-117	
Ethylbenzene	ug/L	20	1 9.1	95	79-121	
Toluene	ug/L	20	1 9.1	95	80-120	
Xylene (Total)	ug/L	60	57.0	95	79-120	
1,2-Dichloroethane-d4 (S)	%			104	82-119	
4-Bromofluorobenzene (S)	%			98	87-113	
Dibromofluoromethane (S)	%			108	86-112	
Toluene-d8 (S)	%			99	90-110	

Date: 10/13/2011 04:11 PM

REPORT OF LABORATORY ANALYSIS

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e Analvtical

QUALIFIERS

Project: CHARLES ET AL NO.1

Pace Project No.: 60107174

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

BATCH QUALIFIERS

Batch: MSV/40680

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

Batch: MSV/40730

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

ANALYTE QUALIFIERS

S0 Surrogate recovery outside laboratory control limits.

Date: 10/13/2011 04:11 PM

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CHARLES ET AL NO.1 Pace Project No.: 60107174

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60107174001	GW-074935-092611-CM-006	EPA 8260	MSV/40680		
60107174002	GW-074935-092611-SP-007	EPA 8260	MSV/40680		
60107174003	GW-074935-092611-CM-008	EPA 8260	MSV/40680		
60107174003	GW-074935-092611-CM-008	EPA 8260	MSV/40730		
60107174004	GW-074935-092611-CM-009	EPA 8260	MSV/40680		
60107174004	GW-074935-092611-CM-009	EPA 8260	MSV/40730		
60107174005	GW-074935-092611-JP-010	EPA 8260	MSV/40730		
60107174006	TB-092611-001	EPA 8260	MSV/40680		

Date: 10/13/2011 04:11 PM

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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.

ection A equired Client Information:	Section B Required Project Information:	· · · · · · · · · · · · · · · · · · ·		Section C	ation:		_	*	Page;	Γ	of	1
ompany: COP CRA NM	Report To: Christine Mathews			Attention:	ENFOS]			ł-		7
ddress: 6121 Indian School Rd NE, Ste 200	Copy To: Kelly Blanchard, A	ngela Bown		Company Nam	e:		REGULATOR	Y AGENC	Y		de parta.	
Albequerque, NM 87110				Address:	· · · · · · · · · · · · · · · · · · ·		T NPDES	K GROU	ND WATI		DRINKING	WATER
mail To: cmathews@craworld.com	Purchase Order No.:			Pace Cuote	··· · · · · · · · · · · · · · · · · ·	I, UST						
hone: (505)884-0672 Fax: (505)884-4932	Project Name: Charles et al	No.1		Pace Project	Colleen Koporc		Site Location					
equested Due Date/TAT: standard	Project Number: 17/192	5	·	Pace Frofile #:	5341, 4		STATE:	- NN	ń		```````````````````````````````````````	
				.		Requested	Analysis Filter	ed (Y/N)	V			
Section D Valid Matrix C Required Client Information MATRIX DRINKING WATER WATER	odes (f) (AW)	COLLECTED	NO		Preservatives	t N/A						
(A-Z, 0-9 / ,-) Sample ID MUST BE UNIQUE Sample IDS MUST BE UNIQUE	COMPCO P STAF P STAF CODDE (see valid c (see valid c))			DNTAINERS Bryed	5 0	/sis_Test4			al Chlorine (Y/N)	ĺ	1071	7 4
	MATRIX SAMPLE			A # OF CC Unpres	HNO ₃ HCI NaOH Na ₂ S ₂ O Methan Other	4 Anal)			Residua	Pace	Project N	o./ Lab I.D
1 GW-01995-09 201-011		9.61	1995	2						50	<u>)e-49</u>	DI
2 GW - 019-05-01001-05 1/11-01025-097/11-00		9.21	125	3					$\left \right $		}	
4 (SIN) - 074935- 097617- (N		9.761	1745	3					╞╴╏╴╏			
5 GUI-074935-09260-51	P-OIDATG	9.261	1805	3	X				┝╌┟╴╏			- D
6 TB-09261 -001	WI	9:26:1	1810	2	X					2/0	Ø14)	Th
7												
8												
9												
10												
11 .								_ _				
		O						<u></u>				
Clude MDLs on report - J-fan	AVI OVACINIA			1122			DATE			SAMP		
	BUUUUU			0120		n fait	- 7/20 44 9/29/4	900	1-3	<u> </u>	<u> </u>	<u> </u>
	Y;			4,								
· · · · · ·										2 2		
	····· /	SAMPLER NAME A	ND SIGNATU	RE O	and a second					5	gied €	act
		PRINT Nam	e of SAMPLER	6100	the Mai	Henry	<u>**</u>	1	i	(V/V)	y Se⊱ rr (Y/h	as Int 'N)
		SIGNATURI	E of SAMPLER		N/WALLIN	DATE Signed	9/10	$\frac{1}{1}$	Tem	Recei	Coole	amplı (Y
				******	Α ΥΝΕ <i>ΛΕΙΠ</i>ΑΓΕΙΛ	TAME & (MM/DD/YY)			1 1	_	~ - N	S

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2			
/ Pace Analytical Sample Condit	ion Upon Receipt – ESI 1	Tech Specs	
Client Name: Col UA	<u>vm</u> P	Project #:	6007174
Courier: Fed Ex 🗹 UPS 🗆 USPS 🗆 Client 🗆	Commercial 🗆 Pace 🗆 🛛	Other 🗆	Optional
Tracking #: 6708 0337 7909	Pace Shipping Label Used? Yo	es*¶⊠″No⊡	Proj Due Date: 10(11(1) Proj Name:
Custody Seal on Cooler/Box Present: Yes 🗹 No	□ Seals intact: Yes 129	No 🗆	
Packing Material: Bubble Wrap 🗹 Bubble B	ags 🗆 🛛 Foam 🗆 I	None 🗆 👘 Oth	ner 🗆
Thermometer Used: T-197 / T-194 T	ype of Ice: Wet Blue None	Samples rece	ived on ice, cooling process has begun.
Cooler Temperature://3	(circle one)	Date a	nd initials of person examining
Temperature should be above freezing to 6°C		conter	nts: (135
Chain of Custody present:	ØYes ⊡No ⊡N/A 1.		
Chain of Custody filled out:	∰Yes □No □N/A 2.	. <u>.</u>	
Chain of Custody relinquished:	Pres INO IN/A 3.		
Sampler name & signature on COC:	ØYes □No □N/A 4.		
Samples arrived within holding time:	₽Yes □No □N/A 5.		
Short Hold Time analyses (<72hr):	□Yes \$27No □N/A 6.		
Rush Turn Around Time requested:	□Yes ZNO □N/A 7.		
Sufficient volume:	\$%4Yes ⊡No ⊡N/A 8.	·.	
Correct containers used:	₽ZYes □No □N/A		
-Pace containers used:	Øyes □No □N/A 9.	· · ·	
Containers intact:	ØYes ⊡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:	\$PYes ⊡No ⊡N/A		
-Includes date/time/ID/analyses Matrix:	retar 13.		
All containers needing preservation have been checked.	⊡Yes ⊡No 🕬N/Å		
All containers needing preservation are found to be in compliance with EPA recommendation.	□Yes □No 2N/A 14.		
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	ZYes DNo Completed	n Ma	Lot # of added
Trip Blank present:	ØYes □No □N/A	1	
Pace Trip Blank lot # (if purchased): Lovered	15.		
Headspace in VOA vials (>6mm):	□Yes ŹŃo □N/A		
	16.		
Project sampled in USDA Regulated Area:	□Yes □No ZN/A 17. List S	State:	h
Client Notification/ Resolution: Copy C	OC to Client? Y / (N)	Field Data Required	1? Y / N
Person Contacted: D	ate/Time:	r. w	emp Log: Record start and finish times hen unpacking cooler, if >20 min,
Comments/ Resolution:		[re	tort: //20 Stort
	······································	<u>s</u>	Tart 1155 End
	D-4	7/20/11	

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).

F-KS-C-004-Rev.0, 02February2011



December 27, 2011

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

RE: Project: CHARLES ET AL NO. 1 (074935) Pace Project No.: 60112073

Dear Christine Matthews:

Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2011. 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,

SWA (ECUSE

Anna Custer

anna.custer@pacelabs.com Project Manager

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: CHARLES ET AL NO. 1 (074935) Pace Project No.: 60112073

Kansas Certification IDs

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

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SAMPLE SUMMARY

 Project:
 CHARLES ET AL NO. 1 (074935)

 Pace Project No.:
 60112073

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60112073001	GW-074935-121211-CB-MW-3	Water	12/12/11 13:25	12/14/11 09:00
60112073002	GW-074935-121211-CB-MW-4	Water	12/12/11 14:10	12/14/11 09:00
60112073003	GW-074935-121211-CB-MW-2	Water	12/12/11 14:00	12/14/11 09:00
60112073004	GW-074935-121211-CB-MW-1	Water	12/12/11 13:30	12/14/11 09:00
60112073005	GW-074935-121211-CB-DUP	Water	12/12/11 13:35	12/14/11 09:00
60112073006	TB-074935-121211-CB-TB1	Water	12/12/11 14:20	12/14/11 09:00

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SAMPLE ANALYTE COUNT

Project: CHARLES ET AL NO. 1 (074935) Pace Project No.: 60112073

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60112073001	GW-074935-121211-CB-MW-3	EPA 8260	PRG	9
60112073002	GW-074935-121211-CB-MW-4	EPA 8260	PRG	9
60112073003	GW-074935-121211-CB-MW-2	EPA 8260	PRG	9
60112073004	GW-074935-121211-CB-MW-1	EPA 8260	PRG	9
60112073005	GW-074935-121211-CB-DUP	EPA 8260	PRG	9
60112073006	TB-074935-121211-CB-TB1	EPA 8260	PRG	9

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PROJECT NARRATIVE

Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Method: EPA 8260

 Description:
 8260 MSV UST, Water

 Client:
 COP Conestoga-Rovers & Associates, Inc. NM

 Date:
 December 27, 2011

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 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/42517

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

QC Batch: MSV/42540

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

Duplicate Sample:

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

Additional Comments:

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

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: GW-074935-121211-CB- MW-3	Lab ID:	60112073001	Collecte	d: 12/12/11	13:25	Received: 12/14/11 09:00 Matrix: Water					
Decomotoro	Populto	Linite	Report	MDI	DE	Drepered	Apolyzad		Qual		
							Analyzeu	CAS NO.	Quai		
8260 MSV UST, Water	Analytica	I Method: EPA 8	3260								
Benzene	ND u	ug/L	1.0	0.050	1		12/16/11 05:51	71-43-2			
Ethylbenzene	ND เ	Jg/L	1.0	0.080	1		12/16/11 05:51	100-41-4			
Toluene	ND ι	Jg/L	1.0	0.070	1		12/16/11 05:51	108-88-3			
Xylene (Total)	ND u	ug/L	3.0	0.18	1		12/16/11 05:51	1330-20-7			
Surrogates		-									
Dibromofluoromethane (S)	106 9	%	86-112		1		12/16/11 05:51	1868-53-7			
Toluene-d8 (S)	99 9	6	90-110		1		12/16/11 05:51	2037-26-5			
4-Bromofluorobenzene (S)	100 9	%	87-113		1		12/16/11 05:51	460-00-4			
1,2-Dichloroethane-d4 (S)	103 9	%	82-119		1		12/16/11 05:51	17060-07-0			
Preservation pH	1.0		1.0	0.10	1		12/16/11 05:51				

Date: 12/27/2011 12:30 PM

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: GW-074935-121211-CB- MW-4	Lab ID: 6	Lab ID: 60112073002		Collected: 12/12/11 14:10			/14/11 09:00 M	trix: Water	
Parameters	Results	l Inits	Report	MDI	DE	Prenared	Applyzed	CAS No	Qual
8260 MSV UST, Water	Analytical M	lethod: EPA 8	260						
Benzene	ND ug/	Ľ	1.0	0.050	1		12/16/11 06:05	71-43-2	
Ethylbenzene	ND ug/	Ľ	1.0	0.080	1		12/16/11 06:05	100-41-4	
Toluene	ND ug/	۲L	1.0	0.070	1		12/16/11 06:05	108-88-3	
Xylene (Total)	ND ug/	Ľ	3.0	0.18	1		12/16/11 06:05	1330-20-7	
Surrogates	-								,
Dibromofluoromethane (S)	103 %		86-112		1		12/16/11 06:05	1868-53-7	
Toluene-d8 (S)	100 %		90-110		1		12/16/11 06:05	2037-26-5	
4-Bromofluorobenzene (S)	103 %		87-113		1		12/16/11 06:05	460-00-4	
1,2-Dichloroethane-d4 (S)	102 %		82-119		1		12/16/11 06:05	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		12/16/11 06:05		

Date: 12/27/2011 12:30 PM

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: GW-074935-121211-CB- MW-2	Lab ID	Lab ID: 60112073003		Collected: 12/12/11 14:00			Received: 12/14/11 09:00 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV UST, Water	Analytica	al Method: EPA 8	3260							
Benzene	0.34J	ug/L	1.0	0.050	1		12/16/11 06:19	71-43-2		
Ethylbenzene	ND	ug/L	1.0	0.080	1		12/16/11 06:19	100-41-4		
Toluene	ND	ug/L	1.0	0.070	1		12/16/11 06:19	108-88-3		
Xylene (Total)	ND	ug/L	3.0	0.18	1	•	12/16/11 06:19	1330-20-7		
Surrogates										
Dibromofluoromethane (S)	104	%	86-112		1		12/16/11 06:19	1868-53-7		
Toluene-d8 (S)	97	%	90-110		1		12/16/11 06:19	2037-26-5		
4-Bromofluorobenzene (S)	99	%	87-113		1		12/16/11 06:19	460-00-4		
1,2-Dichloroethane-d4 (S)	102	%	82-119		1		12/16/11 06:19	17060-07-0		
Preservation pH	1.0		1.0	0.10	1		12/16/11 06:19			

Date: 12/27/2011 12:30 PM

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: GW-074935-121211-CB- MW-1	Lab IE): 60112073004	Collected	12/12/11	13:30	Received: 12	/14/11 09:00 M	atrix: Water	
	,		Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytic	al Method: EPA 8	260						
Benzene	232	ug/L	20.0	1.0	20		12/16/11 16:47	71-43-2	
Ethylbenzene	500	ug/L	20.0	1.6	20		12/16/11 16:47	100-41-4	
Toluene	947	ug/L	20.0	1.4	20		12/16/11 16:47	108-88-3	
Xylene (Total)	3940	ug/L	60.0	3.6	20		12/16/11 16:47	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	103	%	86-112		20		12/16/11 16:47	1868-53-7	
Toluene-d8 (S)	. 99	%	90-110		20		12/16/11 16:47	2037-26-5	
4-Bromofluorobenzene (S)	100	%	87-113		20		12/16/11 16:47	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	82-119		20		12/16/11 16:47	17060-07-0	
Preservation pH	1.0		1.0	0.10	20		12/16/11 16:47		

Date: 12/27/2011 12:30 PM

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: GW-074935-121211-CB- DUP	Lab ID	: 60112073005	Collecter	d: 12/12/1 ⁻	13:35	Received: 12	2/14/11 09:00 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytic	al Method: EPA 8	3260						
Benzene	244	ug/L	20.0	1.0	20		12/16/11 17:01	71-43-2	
Ethylbenzene	580	ug/L	20.0	1.6	20		12/16/11 17:01	100-41-4	
Toluene	994	ug/L	20.0	1.4	20		12/16/11 17:01	108-88-3	
Xylene (Total)	4650	ug/L	60.0	3.6	20		12/16/11 17:01	1330-20-7	
Surrogates		-							
Dibromofluoromethane (S)	105	%	86-112		20		12/16/11 17:01	1868-53-7	
Toluene-d8 (S)	98	%	90-110		20		12/16/11 17:01	2037-26-5	
4-Bromofluorobenzene (S)	102	%	87-113		20		12/16/11 17:01	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	82-119		20		12/16/11 17:01	17060-07-0	
Preservation pH	1.0		1.0	0.10	20		12/16/11 17:01		

Date: 12/27/2011 12:30 PM

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Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

Sample: TB-074935-121211-CB-TB1	Lab ID	: 60112073006	Collecte	d: 12/12/11	14:20	Received: 12	/14/11 09:00 Ma	atrix: Water	
Parametera	Posulte	Unite	Report	MDI	DE	Propered	Applyzod		Qual
	Tresuits				DF				Quai
8260 MSV UST, Water	Analytica	al Method: EPA 8	260						
Benzene	ND	ug/L	1.0	0.050	1		12/16/11 17:15	71-43-2	
Ethylbenzene	0.14J	ug/L	1.0	0.080	1		12/16/11 17:15	100-41-4	
Toluene	0.12J	ug/L	1.0	0.070	1		12/16/11 17:15	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.18	1		12/16/11 17:15	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	106	%	86-112		1		12/16/11 17:15	1868-53-7	
Toluene-d8 (S)	99	%	90-110		1		12/16/11 17:15	2037-26-5	
4-Bromofluorobenzene (S)	102	%	87-113		1		12/16/11 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	82-119		1		12/16/11 17:15	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		12/16/11 17:15		

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QUALITY CONTROL DATA

Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.:	60112073		
QC Batch:	MSV/42517	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV UST-WATER
Associated Lab Sam	ples: 60112073001, 60112073002, 60	112073003	

METHOD BLANK: 926898 Matrix: Water Associated Lab Samples: 60112073001, 60112073002, 60112073003 Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Benzene ug/L ND 12/16/11 02:45 1.0 Ethylbenzene ug/L ND 1.0 12/16/11 02:45 Toluene ug/L ND 1.0 12/16/11 02:45 Xylene (Total) ND 12/16/11 02:45 ug/L 3.0 1,2-Dichloroethane-d4 (S) % 100 82-119 12/16/11 02:45 4-Bromofluorobenzene (S) % 98 87-113 12/16/11 02:45 Dibromofluoromethane (S) % 103 86-112 12/16/11 02:45 Toluene-d8 (S) % 98 90-110 12/16/11 02:45

LABORATORY CONTROL SAMPLE: 926899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L		20.1	101	82-117	
Ethylbenzene	ug/L	20	19.2	96	79-121	
Toluene	ug/L	20	19.0	95	80-120	
Xylene (Total)	ug/L	60	57.0	95	79-120	
1,2-Dichloroethane-d4 (S)	%			105	82-119	
4-Bromofluorobenzene (S)	%			98	87-113	
Dibromofluoromethane (S)	%			105	86-112	
Toluene-d8 (S)	%			96	90-110	

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QUALITY CONTROL DATA

Project:CHARLES ET AL NO. 1 (074935)Pace Project No.:60112073

QC Batch:	MSV/42540	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV UST-WATER
Associated Lab Sam	ples: 60112073004, 60112073005,	60112073006	
METHOD BLANK:	927833	Matrix: Water	

Associated Lab Samples:	60112073004, 60112073005, 60112073	006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/16/11 13:28	
Ethylbenzene	ug/L	ND	1.0	12/16/11 13:28	
Toluene	ug/L	ND	1.0	12/16/11 13:28	
Xylene (Total)	ug/L	ND	3.0	12/16/11 13:28	
1,2-Dichloroethane-d4 (S)	%	104	82-119	12/16/11 13:28	
4-Bromofluorobenzene (S)	%	104	87-113	12/16/11 13:28	
Dibromofluoromethane (S)	%	105	86-112	12/16/11 13:28	
Toluene-d8 (S)	%	101	90-110	12/16/11 13:28	

LABORATORY CONTROL SAMPLE: 927834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits [:]	Qualifiers
Benzene	ug/L	20	18.6	93	82-117	
Ethylbenzene	ug/L	20	18.4	92	79-121	
Toluene	ug/L	20	17.6	88	80-120	
Xylene (Total)	ug/L	60	54.3	<u>`</u> 91	79-120	
1,2-Dichloroethane-d4 (S)	%			100	82-119	
4-Bromofluorobenzene (S)	%			92	87-113	
Dibromofluoromethane (S)	%			104	86-112	
Toluene-d8 (S)	%			96	90-110	

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QUALIFIERS

Project: CHARLES ET AL NO. 1 (074935)

Pace Project No.: 60112073

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

BATCH QUALIFIERS

Batch: MSV/42517

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume. Batch: MSV/42540

Datch: 14/3 V/42 340

[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: CHARLES ET AL NO. 1 (074935) Pace Project No.: 60112073

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60112073001	GW-074935-121211-CB-MW-3	EPA 8260	MSV/42517		
60112073002	GW-074935-121211-CB-MW-4	EPA 8260	MSV/42517		
60112073003	GW-074935-121211-CB-MW-2	EPA 8260	MSV/42517		
60112073004	GW-074935-121211-CB-MW-1	EPA 8260	MSV/42540		
60112073005	GW-074935-121211-CB-DUP	EPA 8260	MSV/42540		
60112073006	TB-074935-121211-CB-TB1	EPA 8260	MSV/42540		

Date: 12/27/2011 12:30 PM

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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.

Section A Required Client Information:	Section B Regulred Project Information:	!	Section C Invoice Information:		Page: of
Company: COP CRA NM	Report To: Christine Mathews		Atterition: ENFOS		
Address: 6121 Indian School Rd NE, Ste 200	Copy To: Kelly Blanchard, Angela Bown		Company Name:	REGULATORY AGENC	
Albequerque, NM 87110			Address:		
Email To: cmathews@craworld.com	Purchase Order No.: 4515860232	tr	Pace Quote		OTHER NIMCH
Phone: (505)884-0672 Fax: (505)884-4932	Project Name: Charles et al No.1		Pace Project Alice Tracy	Site Location	
Requested Due Date/TAT: standard /	Project Number: 074935		Pace Profile # 5514, 4		4
		L	Request	d Analysis Filtered (Y/N)	
Section D Valid Matrix Co Required Client information <u>MATRIX</u> DRINKING WATER I	Detes <u>CODE</u> pw s S COLLECTED	z	Preservatives		
WATER WATER PRODUCT SOILSOLD OIL OIL (A-Z, 0-9 /) Sample IDR INST BE INICIDE TISSUE	WT B II COMPOSITE COMPOSITE P D B START ENDIGRAB SL P U START ENDIGRAB OL SI U U U WP SI U U U AR U U U U TS CO U U U	MP AT COLLECTIO	ed et X		Morine (Y/N)
			# OF CONT Unpreserv H2SO4 HNO3 HNO3 HCI Na2S203 Methanol Other Other		Pace Project No./ Lab I.D.
1 GW-074936-121211. (B-MU	V-5 WIG - 12,12/1	525	2	3 D <u>69#</u>	
2 Gw-674936-121211. (B-ML		410	3 + 0 + 0 +	┼╢┼┼┼┼┼	
3 (JW-01440)-14110(B-11)			-2	╶┼╢╎╏╞╌┠╼┼╌╂╼	11
- GW-014455-101111. 12		226		╶╆╌╢╌╂╌┼╴┼╴┼╴┼	111
5 TR-674036 112 12 11 1/25		MA 1	2		The state
		<u>44</u>			
8					
айанаа Марика					
x10					
2011					
12					
ADDITIONAL COMMENTS	RELINQUISHED BY AFFILIATION	DATE	TIME ACCEPTED BY / AFFILIATION	DATE	SAMPLE CONDITIONS
nclude MDLs on report - J-flag	Cable Braun/CRA K	2-13-11	6700 E Brockett	12/14 0900	4.8 4 4 4
· · · · · · · · · · · · · · · · · · ·					
			······		
···	SAMPLER NAME AND	SIGNATUR			
	PRINT Name of	f SAMPLER:	Cathin Bollin		ip in "
	SIGNATURE of	f SAMPLER:	CALEN BALK DATE Signe	12·B·11	Custor Sampl
"Important Note: By signing this form you are accepting P	Pace's NET 30 day payment terms and agreeing to late charges of 1.51	% per month for	any involces not paid within 30 days.		F-ALL-Q-020rev.08, 12-Oct-2007

57	
Pace Analytical Sample Condition Upon Receipt – E	SI Tech Specs
Client Name: COP, CRA NM	Project #: 00/12073
Courier: Fed Ex Z UPS USPS Client Commercial Pace	Other
Tracking #: 898608913871 Pace Shipping Label Used?	Yes No D Proj Name:
Custody Seal on Cooler/Box Present: Yes No D Seals intact: Yes	No 🗆
Packing Material: Bubble Wrap Bubble Bags Foany	None Other Other
Thermometer Used: T-197 / T-194 Type of Ice: Wet Blue N	lone 🛛 Samples received on ice, cooling process has begun.
Cooler Temperature:4.8 (circle one)	Date and initials of person examining
Temperature should be above freezing to 6°C	
Chain of Custody present:	
Chain of Custody filled out:	
Chain of Custody relinquished:	· · · · · · · · · · · · · · · · · · ·
Sampler name & signature on COC:	
Samples arrived within holding time:	
Short Hold Time analyses (<72hr):	·
Rush Turn Around Time requested: □Yes □N/A 7.	
Sufficient volume:	
Correct containers used:	
-Pace containers used:	
Unpreserved 5035A soils frozen w/in 48hrs?	
Eiltorod volume received for discolved testo?	
	· · · · · · · · · · · · · · · · · · ·
Sample labels match COC:	
-Includes date/time/ID/analyses Matrix: 0	
All containers needing preservation are found to be in	
compliance with EPA recommendation.	when Lot # of added
Phenolics Yes No comp	preservative
Headspace in VOA vials (>6mm):	
LIYES LINA	
Client Notification/ Resolution: Copy COC to Client? Y (N)	Field Data Required? Y / N
Person Contacted: Date/Time:	when unpacking cooler, if >20 min,
Comments/ Resolution:	recheck sample temps.
/	Start: 1(1:30 Start:
A A	
Project Ivianager Review: Date:	y of this form will be sent to the NCDENR Certification Office

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).

F-KS-C-004-Rev.0, 02February2011