



3R-173

**SEPTEMBER AND DECEMBER 2011 QUARTERLY  
GROUNDWATER MONITORING REPORT**

**CONOCOPHILLIPS FLORA VISTA No. 1  
SAN JUAN COUNTY, NEW MEXICO  
API# 30-045-20073  
NMOCD# 3R173**

**Prepared For:**

**CONOCOPHILLIPS COMPANY**

**Risk Management and Remediation  
420 South Keeler Avenue  
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## 1.0 INTRODUCTION

This report presents the results of the quarterly groundwater monitoring events conducted by Conestoga-Rovers & Associates (CRA) on September 29, 2011 and December 14, 2011 at the Flora Vista No. 1 natural gas well site (Site), operated by Burlington Resources Oil & Gas Company LP (Burlington), a wholly-owned subsidiary of ConocoPhillips Company (ConocoPhillips) (Figure 1). The Site is located on private property in Unit Letter F, Section 22, Township 30N, Range 12W, of San Juan County, New Mexico. The Site consists of a gas well and associated equipment and installations. A detailed Site layout map is provided as Figure 2.

### 1.1 BACKGROUND

A previous operator removed an earthen dehydrator pit from service in March 1994. Hydrocarbon impacted soil was subsequently excavated in April 1994 and again in November 1995. A pit closure report was submitted to New Mexico Oil Conservation Division (NMOCD) in August 1996 by El Paso Field Services. NMOCD issued a letter to El Paso Field Services on January 24, 1997 approving pit closure and remediation.

Burlington encountered hydrocarbon-impacted soil at the Site during a production facility resetting activity in early 2003. Burlington subsequently directed the excavation of approximately 9,443 cubic yards of soil in an attempt to remove it. Groundwater was observed in the bottom of the excavation at approximately 25 feet below the ground surface. Field screening was conducted during excavation to determine extent of impacted soil. To enhance the remediation of the remaining amounts of residual hydrocarbon contamination in the excavated area, approximately 80 barrels (bbls) of a potassium permanganate oxidizer solution was sprayed on the soil.

In September 2003, Envirotech installed a groundwater monitor well (MW-1) slightly downgradient from the center of the excavation (Figure 2). Subsequent monitoring during September 2003 included analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as total petroleum hydrocarbons (TPH). Groundwater analyses indicated the presence of benzene and total xylenes above regulatory standards. Monitor Wells MW-2, MW-3, and MW-4 were installed at the Site in August 2008 in response to an April 2008 request from NMOCD for Site characterization and enhanced laboratory analyses.

A generalized geologic cross section was prepared using boring logs from the August 2008 monitor well installation and is presented as **Figure 3**. On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech to CRA of Albuquerque, NM. The Flora Vista No. 1 Site history is summarized in **Table 1**.

## **2.0 GROUNDWATER MONITORING SUMMARY, METHODOLOGY, AND ANALYTICAL RESULTS**

### **2.1 GROUNDWATER MONITORING SUMMARY**

On September 29, 2011 and December 14, 2011, groundwater elevation measurements were recorded in Monitor Wells MW-1, MW-2, MW-3, and MW-4 using an oil/water interface probe. Groundwater elevations are detailed in **Table 2**. Groundwater potentiometric surface maps created from September and December 2011 data are presented as **Figures 4** and **6**, respectively. Based on the September and December 2011 monitoring events data, groundwater flow is to the southwest and is consistent with historic monitoring event records for this Site.

### **2.2 GROUNDWATER MONITORING METHODOLOGY**

Approximately three well volumes were purged from Monitor Wells MW-1, MW-2, MW-3, and MW-4 with a dedicated polyethylene 1.5-inch disposable bailer prior to sampling. Purge water generated during purging of Site monitor wells was placed in the on-site produced water tank (**Figure 2**). 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. Samples were analyzed for the presence of BTEX by Environmental Protection Agency (EPA) Method 8260, dissolved iron and manganese by EPA Method 6010, and sulfate by EPA method 300.0. CRA groundwater sampling field forms are included as **Appendix A**.

### **2.3 GROUNDWATER MONITORING ANALYTICAL RESULTS**

Groundwater samples collected from Monitor Wells MW-2 and MW-3 did not exceed New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standards for any target constituents. Groundwater collected from Monitor Wells MW-1 and MW-4 exceeded the NMWQCC standards for the following constituents:

### September 2011

- **Benzene** - The NMWQCC standard for benzene is 0.010 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from MW-1 was 2.440 mg/L. The groundwater sample collected from MW-4, the downgradient well, contained a concentration of benzene at 0.0392 µg/L.
- **Xylenes** - The NMWQCC standard for total xylenes is 0.620 mg/L. The concentration of xylenes found in the groundwater sample collected from MW-1 was 3.650 mg/L.
- **Dissolved Iron** - The NMWQCC standard for dissolved iron is 1 milligram per liter (mg/L). The concentrations of dissolved iron found in the groundwater samples collected from MW-1 and MW-4 were 25.2 mg/L and 2.55 mg/L, respectively.
- **Dissolved Manganese** - The NMWQCC standard for dissolved manganese is 0.2 mg/L. The concentration of dissolved manganese found in the groundwater sample collected from MW-1 was 1.02 mg/L. The groundwater sample collected from MW-4 contained a concentration of 4.1 mg/L.

### December 2011

- **Benzene** - The NMWQCC standard for benzene is 0.010 milligrams per liter (mg/L). The concentration of benzene found in the groundwater sample collected from MW-1 was 2.310 mg/L. The groundwater sample collected from MW-4, the downgradient well, contained a concentration of benzene at 0.101 mg/L.
- **Xylenes** - The NMWQCC standard for total xylenes is 0.620 mg/L. The concentration of xylenes found in the groundwater sample collected from MW-1 was 3.930 mg/L.
- **Dissolved Iron** - The NMWQCC standard for dissolved iron is 1 milligram per liter (mg/L). The concentrations of dissolved iron found in the groundwater samples collected from MW-1 and MW-4 were 25.4 mg/L and 2.62 mg/L, respectively.
- **Dissolved Manganese** - The NMWQCC standard for dissolved manganese is 0.2 mg/L. The concentration of dissolved manganese found in the groundwater sample collected from MW-1 was 0.945 mg/L. The groundwater sample collected from MW-4 contained a concentration of 4.58 mg/L.

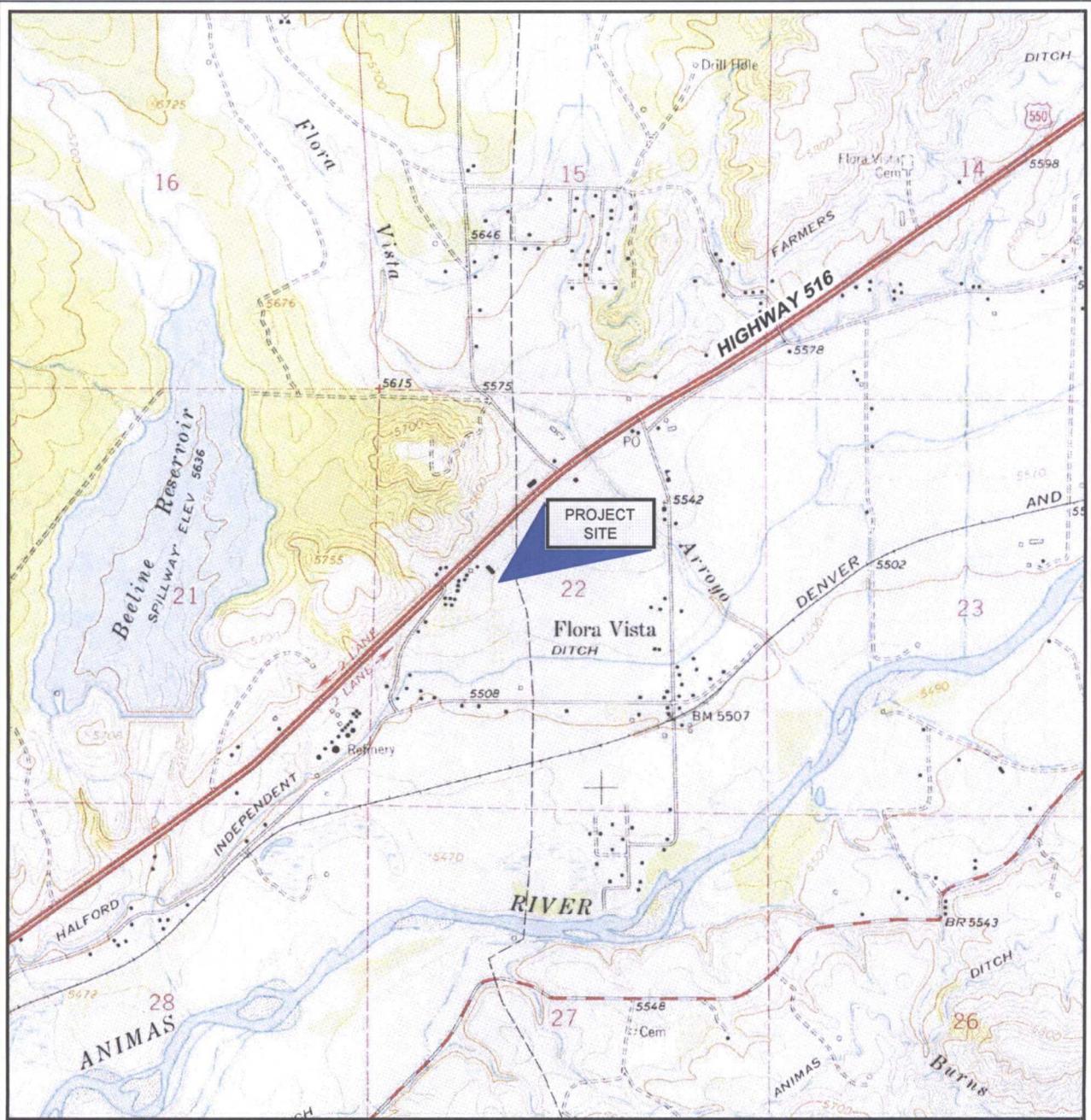
A summary of the historical groundwater laboratory analytical results is presented in **Table 3**. The September and December 2011 laboratory analytical reports are included in **Appendix B**.

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater samples collected from MW-1 and MW-4 and have consistently exceeded NMWQCC groundwater quality standards for benzene and dissolved manganese from October 2008 through December 2011 and have intermittently exceeded the NMWQCC groundwater quality standard for dissolved iron. Groundwater samples from MW-1 have also historically exceeded NMWQCC groundwater quality standard for xylenes. BTEX constituent concentrations exhibit a decreasing trend over time in MW-1 and MW-4. Based on the historical groundwater quality data, groundwater samples collected from MW-2 and MW-3 have never exceeded NMWQCC groundwater quality standards for BTEX constituents.

CRA recommends the continuation of quarterly sampling of MW-1, MW-2, MW-3, and MW-4 in order to monitor ongoing natural attenuation at the Site. Since sulfate has never been detected in Site monitor wells above the NMWQCC standard, CRA recommends discontinuing sampling for this groundwater quality parameter during quarterly monitoring. The next sampling event will take place in March 2011. CRA will collect samples for BTEX, dissolved iron, and dissolved manganese.

FIGURES



SOURCE: USGS 7.5 MINUTE QUADS  
 "FLORA VISTA, NEW MEXICO"

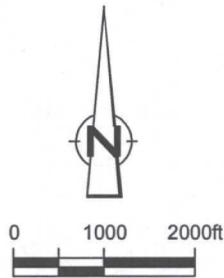


Figure 1  
 SITE VICINITY MAP  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO  
 ConocoPhillips Company





ConocoPhillips high resolution aerial imagery 2008.

Figure 2

**SITE PLAN**  
**FLORA VISTA NO. 1 NATURAL GAS WELL SITE**  
**SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO**  
*ConocoPhillips Company*



Flora Vista No. 1 - Cross-Section A-A'

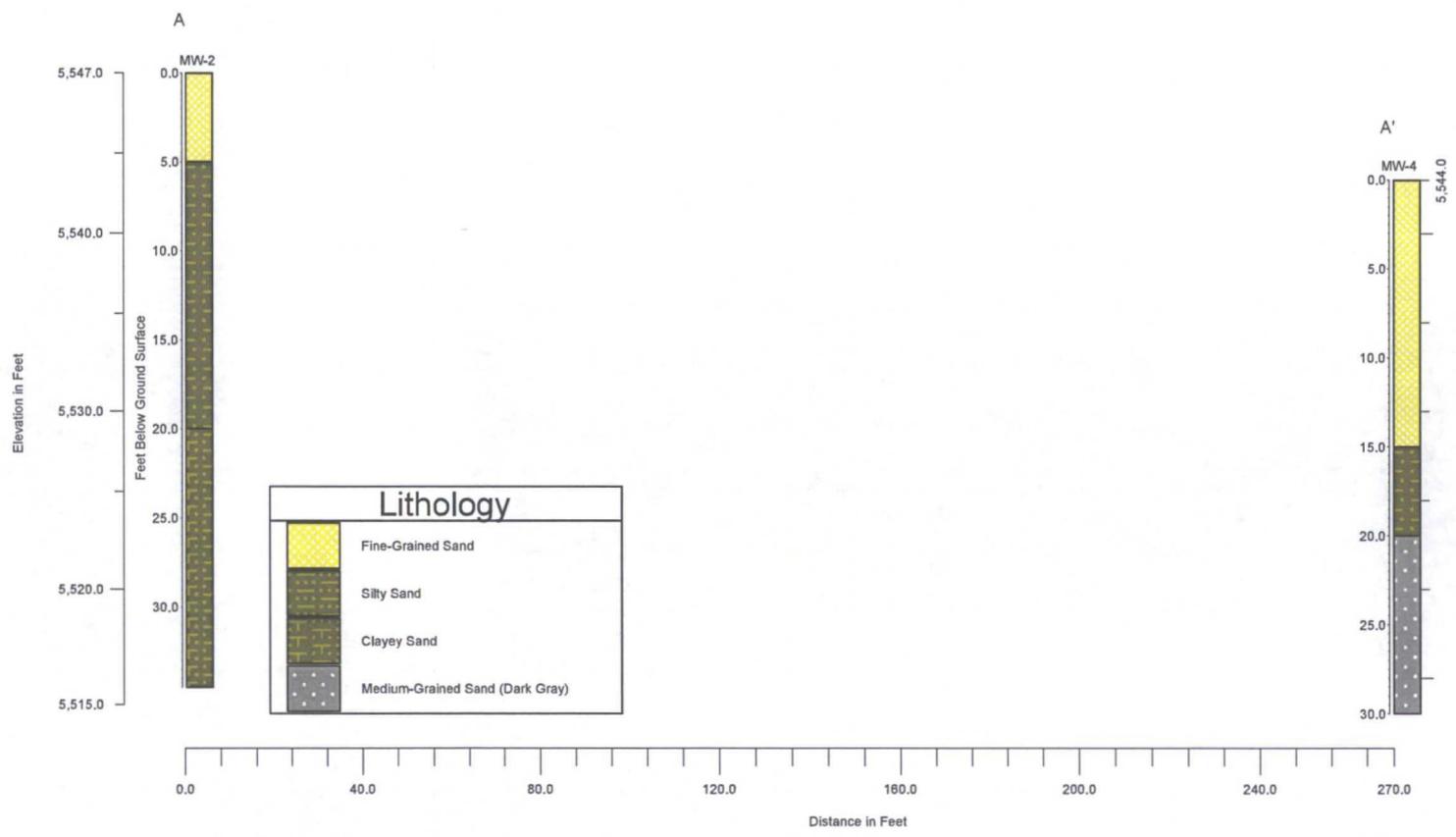


Figure 3

GEOLOGICAL CROSS SECTION  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO  
*ConocoPhillips Company*





Figure 4

SEPTEMBER 2011 GROUNDWATER POTENTIOMETRIC SURFACE MAP  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO



ConocoPhillips Company



Figure 5

SEPTEMBER 2011 BENZENE CONCENTRATION MAP  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO

*ConocoPhillips Company*





**LEGEND**



Monitor Well Location



Natural Gas Wellhead



Domestic Well Location

(72.43)

Groundwater Elevation, Ft

— **72.0** —

Groundwater Elevation Contour, Ft



Groundwater Flow Direction

**Figure 6**

**DECEMBER 2011 GROUNDWATER POTENTIOMETRIC SURFACE MAP  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO**



*ConocoPhillips Company*



Figure 7

DECEMBER 2011 BENZENE CONCENTRATION MAP  
 FLORA VISTA NO. 1 NATURAL GAS WELL SITE  
 SECTION 22, T30N-R12W, SAN JUAN COUNTY, NEW MEXICO

*ConocoPhillips Company*



TABLES

TABLE 1

**SITE HISTORY TIMELINE  
NOVEMBER 1995 - DECEMBER 2011  
CONOCOPHILLIPS COMPANY  
FLORA VISTA NO. 1  
SAN JUAN COUNTY, NM**

<i>Date/Time Period</i>	<i>Event/Action</i>	<i>Description/Comments</i>
November 28, 1995	Pit Closure Activities	Philip Environmental excavated and removed approximately 850 cubic yards of soil from the area where the Flora Vista No. 1 dehydrator pit was located. Excavation activities were stopped in the north and west directions due to the positions of the compressor and meter run equipment.
July and August 1996	Submittal of Pit Closure	El Paso Field Services submits Pit Closure Reports to the New Mexico Oil Conservation Division outlining the excavation and closure of the dehydrator pit at the site.
January 24, 1997	Pit Closure Approval	El Paso Field Services receives approval of pit closure from the New Mexico Oil Conservation Division.
June and July 2003	Initial Site Assessment	Historical petroleum contaminated soil discovered during a production facility resetting activity. Environmental investigation began with the excavation of approximately 4,986 cubic yards of impacted soil and 4,446 cubic yards of clean soil. Groundwater was encountered at approximately 25 feet below the ground surface. The impacted soil was taken to a commercial landfill facility located on Crouch Mesa in Farmington, New Mexico. Approximately 80 bbls of potassium permanganate was sprayed on the soils to breakdown any minor amounts of residual petroleum contaminants. The excavation area was backfilled with clean soil.
September 2, 2003	Groundwater Monitor Well Installation	One ground water Monitor Well, MW-1, was installed slightly down-gradient from the center of the soil excavation by Envirotech. Total depth of well is 26 feet.
September of 2003 through December 13, 2006	Quarterly Groundwater Monitoring	Quarterly groundwater monitoring of MW-1 for analysis of BTEX constituents. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 31, 2006	Site Transfer	ConocoPhillips Company completes acquisition of Burlington Resources.
March 2007 through January 2008	Consultant Change and Groundwater Monitoring	After the acquisition of Burlington Resources by ConocoPhillips, consulting responsibilities were transferred from Lode Star LLC of Farmington, NM to Tetra Tech of Albuquerque, NM. Tetra Tech began sampling the Flora Vista site quarterly in March of 2007. Four consecutive quarters of groundwater sampling were conducted at the Flora Vista site. Groundwater was sampled from MW-1 and was analyzed for BTEX constituents during all sampling events. MW-1 remained above standards for benzene, ethylbenzene, and total xylenes.
March 28, 2008	Reporting	Annual report for 2007 is submitted to the Oil Conservation Division of NM Energy, Minerals, and Resources Department (OCD).
April 1, 2008	Additional Monitoring Requested by OCD	Oil Conservation Division of NM Energy, Minerals, and Resources Dept. indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten.
July 23, 2008	Groundwater Monitoring	Groundwater monitoring of MW-1. One sample and a duplicate were collected. Benzene and Xylenes are above NMWQCC standards.

<i>Date/Time Period</i>	<i>Event/Action</i>	<i>Description/Comments</i>
August 12 and 13, 2008	Groundwater Monitor Well Installation and Groundwater Monitoring	Three additional groundwater Monitor Wells, MW-2, MW-3 and MW-4 were installed by WDC and overseen by Tetra Tech. MW-2 was installed upgradient of MW-1. Both MW-3 and MW-4 were installed downgradient of MW-1. Soil samples were collected from just above the groundwater interface for each boring location and sent to Southern Petroleum Laboratory for a baseline soil analysis. All wells were developed by purging approximately 80 gallons of fluid using a surge block and hand bailer/purge pump.
October 21, 2008	Groundwater Monitoring	Third quarter 2008 groundwater monitoring was completed and was the first quarter of sampling to include all four monitor wells on site. A baseline suite was completed including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. There were 3 constituents that returned results above NMWQCC limits, Benzene (MW-1 and MW-4), Total Xylenes (MW-1), and Sulfate (MW-1).
January 28, 2009	Groundwater Monitoring	Tetra Tech conducted fourth quarter 2008 groundwater monitoring at the site for BTEX constituents in all four monitor wells. Benzene (MW-1 and MW-4), Ethylbenzene (MW-1) and Xylenes (MW-1) were above NMWQCC standards.
March 1, 2009	Initiate Annual Sampling	The Flora Vista No. 1 site is put on an annual monitoring schedule. The next sampling event was scheduled for September 2009.
September 30, 2009	Groundwater Monitoring	Tetra Tech conducted 2009 annual groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.
December 16, 2009	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a domestic well located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
May 14, 2010	Initiate Quarterly Sampling	The Flora Vista No. 1 site is put on a semi-annual monitoring schedule. Private domestic irrigation well sampling is also to be included in semi-annual sampling events.
June 10, 2010	Private Irrigation Well Sampling	Tetra Tech collected a groundwater sample from a second private down-gradient domestic well to be sampled for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards.
June 10 and 11, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1) and manganese (MW-1 and MW-4) were above NMWQCC standards.
September 27, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.
December 14, 2010	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron and manganese (MW-1 and MW-4) were above NMWQCC standards.
March 17, 2011	Groundwater Monitoring	Tetra Tech conducted groundwater monitoring at the site for BTEX constituents, dissolved iron, dissolved manganese, and sulfate. Groundwater collected from MW-1 exceeded the NMWQCC standards for benzene, xylenes, dissolved iron and dissolved manganese. Groundwater collected from MW-4 exceeded the NMWQCC standards from benzene and dissolved manganese. Tetra Tech also collected a groundwater sample from a domestic well (DW-2) located to the south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
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.

<i>Date/Time Period</i>	<i>Event/Action</i>	<i>Description/Comments</i>
June 24, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards. CRA also collected a groundwater sample from Domestic Well DW-1 located south of the site to be analyzed for BTEX. All constituents were found to be below laboratory detection limits and NMWQCC standards in the domestic well sample.
September 29, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.
December 14, 2011	Groundwater Monitoring	CRA conducted groundwater monitoring at the site for BTEX constituents, dissolved iron and manganese, and sulfate. Benzene (MW-1 and MW-4), xylenes (MW-1), dissolved iron (MW-1 and MW-4) and dissolved manganese (MW-1 and MW-4) were above NMWQCC standards.

TABLE 2  
 MONITOR WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS  
 JUNE 2003 - DECEMBER 2011  
 CONOCOPHILLIPS COMPANY  
 FLORA VISTA NO. 1  
 SAN JUAN COUNTY, NM

Well ID	Total Depth (ft below TOC)	Elevation*	Screen Interval (ft bgs)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Water Level
MW-1	26.02	94.38	11.02 - 26.02	6/20/2003	NM	NM
				9/23/2003	17.03	77.35
				12/16/2003	20.11	74.27
				3/16/2004	23.69	70.69
				6/21/2004	19.92	74.46
				9/30/2004	16.82	77.56
				12/13/2004	20.40	73.98
				3/22/2005	24.32	70.06
				6/22/2005	NM	NM
				10/24/2005	NM	NM
				12/13/2005	21.24	73.14
				3/22/2006	24.75	69.63
				6/22/2006	20.48	73.90
				10/20/2006	19.13	75.25
				12/13/2006	21.24	73.14
				11/9/2007	19.71	74.67
				1/15/2008	NM	NM
				3/19/2008	24.35	70.03
				7/23/2008	19.89	74.49
				10/21/2008	19.48	74.90
				1/28/2009	23.96	70.42
				9/30/2009	18.16	76.22
				6/10/2010	21.64	72.74
9/27/2010	19.31	75.07				
12/14/2010	21.41	72.97				
3/17/2011	24.95	69.43				
6/24/2011	22.55	71.83				
9/29/2011	18.37	76.01				
12/14/2011	20.63	73.75				
MW-2	31.35	97.1	12.35 - 27.35	10/21/2008	20.71	76.39
				1/28/2009	22.75	74.35
				9/30/2009	18.83	78.27
				6/11/2010	22.09	75.01
				9/27/2010	20.12	76.98
				12/14/2010	NM	NM
				3/17/2011	NM	NM
				6/24/2011	22.50	74.60
				9/29/2011	18.95	75.43
12/14/2011	21.79	75.31				

<i>Well ID</i>	<i>Total Depth (ft below TOC)</i>	<i>Elevation*</i>	<i>Screen Interval (ft bgs)</i>	<i>Date Measured</i>	<i>Depth to Groundwater (ft below TOC)</i>	<i>Relative Water Level</i>
MW-3	30.87	92.9	11.87 - 26.87	10/21/2008	17.92	74.98
				1/28/2009	21.53	71.37
				9/30/2009	16.43	76.47
				6/10/2010	19.71	73.19
				9/27/2010	17.81	75.09
				12/14/2010	19.61	73.29
				3/17/2011	23.32	69.58
				6/24/2011	20.55	72.35
				9/29/2011	16.84	77.54
12/14/2011	19.13	73.77				
MW-4	30.42	93.6	11.42 - 26.42	10/21/2008	18.06	75.54
				1/28/2009	24.55	69.05
				9/30/2009	17.89	75.71
				6/10/2010	21.02	72.58
				9/27/2010	18.93	74.67
				12/14/2010	21.04	72.56
				3/17/2011	24.58	69.02
				6/24/2011	21.80	71.80
				9/29/2011	17.94	76.44
12/14/2011	20.28	73.32				

**Notes:**

1. \*Casing elevations are based on an arbitrary 100 ft relative surface elevation set at the gas well head
2. ft = Feet
3. TOC = Top of casing
4. bgs = below ground surface
5. NM = Not measured

**TABLE 3**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY**  
**JUNE 2003 - DECEMBER 2011**  
**CONOCOPHILLIPS COMPANY**  
**FLORA VISTA NO. 1**  
**SAN JUAN COUNTY, NM**

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (total) (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
MW-1	MW-1	6/20/2003	(orig)	1.7	0.49	0.3	5.09	--	--	--
	MW-1	9/23/2003	(orig)	7.5	0.66	0.02	9.22	--	--	--
	MW-1	12/16/2003	(orig)	7.93	1.18	0.01	0.864	--	--	--
	MW-1	3/16/2004	(orig)	6.86	1.16	ND	8.47	--	--	--
	MW-1	6/21/2004	(orig)	4.14	0.43	ND	3.12	--	--	--
	MW-1	9/30/2004	(orig)	9.08	1.41	0.03	9.98	--	--	--
	MW-1	12/13/2004	(orig)	8.52	1.34	ND	9.39	--	--	--
	MW-1	3/22/2005	(orig)	4.55	0.85	ND	5.95	--	--	--
	MW-1	6/22/2005	(orig)	--	--	0.02188	--	--	--	--
	MW-1	10/24/2005	(orig)	6.39	1.01	ND	7.416	--	--	--
	MW-1	12/13/2005	(orig)	6.17	1.01	ND	7.57	--	--	--
	MW-1	3/22/2006	(orig)	3.58	0.77	ND	5.84	--	--	--
	MW-1	6/22/2006	(orig)	3.1	0.5	ND	3.5	--	--	--
	MW-1	10/20/2006	(orig)	6.6	1.22	0.01	8.91	--	--	--
	MW-1	12/13/2006	(orig)	4.23	1.09	0.01	8.13	--	--	--
	MW-1	3/27/2007	(orig)	2.37	0.504	0.007	3.749	--	--	--
	MW-1	6/25/2007	(orig)	2.87	0.51	0.14	3.89	--	--	--
	MW-1	11/9/2007	(orig)	5.6	0.91	< 0.0007	6.8	--	--	--
	MW-1	1/15/2008	(orig)	4.2	0.89	< 0.0007	5.7	--	--	--
	MW-1	3/19/2008	(orig)	2.7	0.59	< 0.005	4.7	--	--	--
	MW-1	7/23/2008	(orig)	2	0.38	< 0.005	1.4	--	--	--
	MW-1	10/21/2008	(orig)	4.5	0.63	< 0.005	5.3	--	--	--
	MW-1	1/28/2009	(orig)	4	0.88	< 0.005	8.7	--	--	--
	MW-1	9/30/2009	(orig)	4.2	0.53	0.0016	5.1	11.7	2.08	1.09
	MW-1	6/10/2010	(orig)	1.7	0.33	0.0012	0.99	27	0.126	1.28
	MW-1	9/27/2010	(orig)	3.2	0.53	0.002	4.2016	1.8	7.73	1.19
MW-1	12/14/2010	(orig)	3.2	0.62	0.0012	5.3016	1.03	4.13	0.888	
MW-1	3/17/2011	(orig)	1.7	0.48	0.0037	4.3092	2.27	1.11	1.07	
	GW-74926-062411-PG-01	6/24/2011	(orig)	2.10	0.494	0.0025	2.03	18.4	< 0.1	0.894
	GW-74926-062411-PG-02	6/24/2011	(Duplicate)	1.97	0.458	0.0026	1.94	--	--	--
	GW-074926-092911-CM-009	9/29/2011	(orig)	2.44	0.519	< 0.005	3.65	< 1.0	25.2	1.02
	GW-074926-121411-CB-MW-1	12/14/2011	(orig)	2.31	0.508	0.0055	3.93	13.2	25.4	0.945

Well ID	Sample ID	Date	Sample Type	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (total) (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
MW-2	MW-2	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	115	--	--
	MW-2	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND	ND
	MW-2	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	123	0.0223	< 0.005
	MW-2	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	156	< 0.02	< 0.005
	MW-2	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	179	< 0.02	< 0.005
	GW-74926-062411-PG-05	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	176	0.191	< 0.015
	GW-074926-092911-CM-006	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	151	< 0.05	< 0.005
	GW-074926-121411-CB-MW-2	12/14/2011	(orig)	0.00031 J	0.0002 J	< 0.001	0.0022 J	135	0.0133 J	0.0022 J
MW-3	MW-3	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	93	--	--
	MW-3	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND	ND
	MW-3	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	144	0.0543	< 0.005
	MW-3	6/10/2010	(orig)	< 0.0005	< 0.001	< 0.001	< 0.001	122	0.0425	< 0.005
	MW-3	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	170	< 0.02	< 0.005
	MW-3	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	142	< 0.02	< 0.005
	MW-3	3/17/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	119	< 0.02	< 0.005
	GW-74926-062411-PG-03	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	127	0.189	< 0.015
	GW-074926-092911-CM-007	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	160	< 0.05	0.0063
GW-074926-121411-CB-MW-3	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	136	0.0288 J	0.0207	
MW-4	MW-4	10/21/2008	(orig)	<b>0.039</b>	0.031	< 0.0005	0.18	90.1	--	--
	MW-4	1/28/2009	(orig)	<b>0.66</b>	0.064	< 0.0005	0.583	ND	ND	ND
	MW-4	9/30/2009	(orig)	<b>0.34</b>	0.054	< 0.0005	0.572	48.9	0.148	<b>4.48</b>
	MW-4	6/10/2010	(orig)	<b>0.14</b>	0.027	< 0.001	0.252	53.3	0.0566	<b>4.65</b>
	MW-4	9/27/2010	(orig)	<b>0.033</b>	0.041	< 0.001	0.274	92.5	<b>1.22</b>	<b>4.34</b>
	MW-4	12/14/2010	(orig)	<b>0.13</b>	0.093	< 0.001	<b>0.899</b>	67.5	<b>1.75</b>	<b>4.69</b>
	MW-4	3/17/2011	(orig)	<b>0.017</b>	0.018	< 0.001	0.1966	83	0.0852	<b>4.46</b>
	GW-74926-062411-PG-04	6/24/2011	(orig)	<b>0.0296</b>	0.0371	< 0.0010	0.472	130	<b>1.5</b>	<b>4.9</b>
	GW-074926-092911-CM-008	9/29/2011	(orig)	<b>0.0392</b>	0.0039	< 0.001	0.0536	96.1	<b>2.55</b>	<b>4.1</b>
	GW-074926-092911-CM-010	9/29/2011	(Duplicate)	<b>0.043</b>	0.0035	< 0.001	0.0483	--	--	--
	GW-074926-121411-CB-MW-4	12/14/2011	(orig)	<b>0.101</b>	0.0443	< 0.001	0.378	81.2	<b>2.62</b>	<b>4.58</b>
GW-074926-121411-CB-DUP	12/14/2011	(Duplicate)	<b>0.104</b>	0.0437	0.0042 J	0.372	--	--	--	
NMWQCC Groundwater Quality Standards				<b>0.01</b>	<b>0.75</b>	<b>0.75</b>	<b>0.62</b>	<b>600</b>	<b>1</b>	<b>0.2</b>

**Notes:**

- MW = monitoring well
- NMWQCC = New Mexico Water Quality Control Commission
- Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
- mg/L = milligrams per liter (parts per million)
- < 1.0 = Below laboratory detection limit of 1.0 mg/L
- ND = not detected
- = not analyzed
- J = Estimated value between Method Detection Limit and Reporting Limit

APPENDIX A

SEPTEMBER AND DECEMBER 2011  
QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

## WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Floa Vista No. 1 JOB# 074926  
 SAMPLE ID: GW-074926-092911-CM-009 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY) 9.29.11 SAMPLE DATE (MM DD YY) 9.29.11 SAMPLE TIME (24 HOUR) 1310 WATER VOL. IN CASING (GALLONS) 1.245 ACTUAL VOL. PURGED (GALLONS) 3.75

### PURGING AND SAMPLING EQUIPMENT

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

PURGING DEVICE	<u>G</u>	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X = _____
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	<u>G</u>	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X = _____
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	<u>E</u>	A - TEFLON	D - PVC		X = _____
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	<u>E</u>	C - POLYPROPYLENE	X - OTHER		X = _____
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	<u>C</u>	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION	X = _____
		B - TYGON	E - POLYETHYLENE	TEFLON/POLYPROPYLENE	PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	<u>C</u>	C - ROPE	F - SILICONE	X - OTHER	X = _____
					SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45  A  B  C

A - IN-LINE DISPOSABLE      B - PRESSURE      C - VACUUM

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>18.37</u>	(feet)	WELL ELEVATION	<u>94.38</u>	(feet)
WELL DEPTH	<u>26.15</u>	(feet)	GROUNDWATER ELEVATION	<u>76.01</u>	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>17.03</u> (°C)	<u>6.77</u> (std)	<u>0.864</u> (g/L)	<u>1127</u> (µS/cm)	<u>-60.5</u> (mV)	<u>3.25</u> (gal)
<u>16.68</u> (°C)	<u>6.81</u> (std)	<u>0.841</u> (g/L)	<u>1087</u> (µS/cm)	<u>-63.7</u> (mV)	<u>3.5</u> (gal)
<u>16.35</u> (°C)	<u>6.81</u> (std)	<u>0.825</u> (g/L)	<u>1059</u> (µS/cm)	<u>-56.6</u> (mV)	<u>3.75</u> (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: hydrocarbon COLOR: light gray/brown SHEEN  Y  N Slight sheen  
 WEATHER CONDITIONS: TEMPERATURE ~85° WINDY  Y  N PRECIPITATION  Y  N (IF Y TYPE) \_\_\_\_\_  
 SPECIFIC COMMENTS: \_\_\_\_\_

$7.78' \times 0.16 = 1.245 \times 3 = 3.73$

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS  
 DATE 9.29.11 PRINT Jason Pass SIGNATURE [Signature]

# WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Flora Vista No. 1      JOB# 074926  
 SAMPLE ID: GW-074926-092911-CM-006      WELL# MW-2

PURGE DATE (MM DD YY) 9.29.11      WELL PURGING INFORMATION  
 SAMPLE DATE (MM DD YY) 9.29.11      SAMPLE TIME (24 HOUR) 1145      WATER VOL. IN CASING (GALLONS) 2.018      ACTUAL VOL. PURGED (GALLONS) 6.25

### PURGING AND SAMPLING EQUIPMENT

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

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

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>18.95</u>	(feet)	WELL ELEVATION	<u>97.10</u>	(feet)
WELL DEPTH	<u>31.56</u>	(feet)	GROUNDWATER ELEVATION	<u>75.43</u>	(feet)
TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>15.05</u> (°C)	<u>7.11</u> (std)	<u>0.522</u> (g/L)	<u>651</u> (µS/cm)	<u>149.7</u> (mV)	<u>5.25</u> (gal)
<u>15.00</u> (°C)	<u>7.01</u> (std)	<u>0.522</u> (g/L)	<u>650</u> (µS/cm)	<u>153.2</u> (mV)	<u>5.75</u> (gal)
<u>14.99</u> (°C)	<u>7.01</u> (std)	<u>0.522</u> (g/L)	<u>650</u> (µS/cm)	<u>153.4</u> (mV)	<u>6.25</u> (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: cloudy none      ODOR: none      COLOR: lt Brown      SHEEN  Y  N  
 WEATHER CONDITIONS: TEMPERATURE 85°      WINDY  Y  N      PRECIPITATION  Y  N (TYPE) \_\_\_\_\_  
 SPECIFIC COMMENTS: \_\_\_\_\_

$12.61' \times 0.16 = 2.018 \times 3 = 6.053$

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

DATE 9.29.11      PRINT Jason Pless      SIGNATURE

# WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Flora Vista No. 1 JOB# 074926  
 SAMPLE ID: GW-074926-092911-CM-007 WELL# MW-3

PURGE DATE (MM DD YY) 9.29.11 WELL PURGING INFORMATION  
 SAMPLE DATE (MM DD YY) 9.29.11 SAMPLE TIME (24 HOUR) 12:35 WATER VOL. IN CASING (GALLONS) 2.18 ACTUAL VOL. PURGED (GALLONS) 6.75

### PURGING AND SAMPLING EQUIPMENT

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

PURGING DEVICE	<input checked="" type="checkbox"/>	A - SUBMERSIBLE PUMP	<input type="checkbox"/>	D - GAS LIFT PUMP	<input type="checkbox"/>	G - BAILER	X=	
SAMPLING DEVICE	<input checked="" type="checkbox"/>	B - PERISTALTIC PUMP	<input type="checkbox"/>	E - PURGE PUMP	<input type="checkbox"/>	H - WATERA®	X=	PURGING DEVICE OTHER (SPECIFY)
		C - BLADDER PUMP	<input type="checkbox"/>	F - DIPPER BOTTLE	<input type="checkbox"/>	X - OTHER	X=	SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	<input checked="" type="checkbox"/>	A - TEFLON	<input type="checkbox"/>	D - PVC	<input type="checkbox"/>		X=	
SAMPLING MATERIAL	<input checked="" type="checkbox"/>	B - STAINLESS STEEL	<input type="checkbox"/>	E - POLYETHYLENE	<input type="checkbox"/>		X=	PURGING MATERIAL OTHER (SPECIFY)
		C - POLYPROPYLENE	<input type="checkbox"/>	X - OTHER	<input type="checkbox"/>		X=	SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	<input checked="" type="checkbox"/>	A - TEFLON	<input type="checkbox"/>	D - POLYPROPYLENE	<input type="checkbox"/>	G - COMBINATION	X=	
SAMPLING TUBING	<input checked="" type="checkbox"/>	B - TYGON	<input type="checkbox"/>	E - POLYETHYLENE	<input type="checkbox"/>	TEFLON/POLYPROPYLENE	X=	PURGE TUBING OTHER (SPECIFY)
		C - ROPE	<input type="checkbox"/>	F - SILICONE	<input type="checkbox"/>	X - OTHER	X=	SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45  A - IN-LINE DISPOSABLE    B - PRESSURE    C - VACUUM    0.45 micron for metals

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>16.84</u>	(feet)	WELL ELEVATION	<u>92.90</u>	(feet)
WELL DEPTH	<u>30.48</u>	(feet)	GROUNDWATER ELEVATION	<u>77.59</u>	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>15.00</u> (°C)	<u>7.21</u> (std)	<u>0.566</u> (g/L)	<u>706</u> (µS/cm)	<u>150.9</u> (mV)	<u>5.75</u> (gal)
<u>15.01</u> (°C)	<u>7.08</u> (std)	<u>0.568</u> (g/L)	<u>708</u> (µS/cm)	<u>156.8</u> (mV)	<u>6.25</u> (gal)
<u>15.00</u> (°C)	<u>7.10</u> (std)	<u>0.569</u> (g/L)	<u>709</u> (µS/cm)	<u>156.8</u> (mV)	<u>6.75</u> (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: cloudy    ODOR: none    COLOR: brown/orange    PRECIPITATION:  Y  N (IF Y TYPE) \_\_\_\_\_  
 WEATHER CONDITIONS: TEMPERATURE 85°    WINDY  Y  N \_\_\_\_\_  
 SPECIFIC COMMENTS: \_\_\_\_\_

$13.64' \times 0.16 = 2.18 \times 3 = 6.55$

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS  
 DATE 9.29.11    PRINT Jason Boss    SIGNATURE [Signature]

# WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Flora Vista No. 1 JOB# 074926  
 SAMPLE ID: GW-074926-092911-CM-003 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY) 9.29.11 SAMPLE DATE (MM DD YY) 9.29.11 SAMPLE TIME (24 HOUR) 1250  
 WATER VOL. IN CASING (GALLONS) 1.997 ACTUAL VOL. PURGED (GALLONS) 6.25

### PURGING AND SAMPLING EQUIPMENT

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

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

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>17.94</u>	(feet)	WELL ELEVATION	<u>93.60</u>	(feet)
WELL DEPTH	<u>30.42</u>	(feet)	GROUNDWATER ELEVATION	<u>76.44</u>	(feet)
TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>15.29</u> (°C)	<u>7.27</u> (std)	<u>0.5910</u> (g/L)	<u>747</u> (µS/cm)	<u>3.7</u> (mV)	<u>5.0</u> (gal)
<u>15.25</u> (°C)	<u>7.01</u> (std)	<u>0.5871</u> (g/L)	<u>748</u> (µS/cm)	<u>-44.1</u> (mV)	<u>5.5</u> (gal)
<u>15.15</u> (°C)	<u>6.97</u> (std)	<u>0.5910</u> (g/L)	<u>740</u> (µS/cm)	<u>-65.1</u> (mV)	<u>6.0</u> (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: hydrocarbon COLOR: black SHEEN  Y  N spotty  
 WEATHER CONDITIONS: TEMPERATURE 85° WINDY  Y  N PRECIPITATION  Y  N (TYPE) \_\_\_\_\_  
 SPECIFIC COMMENTS: \_\_\_\_\_

$12.48 \times 0.16 = 1.997 \times 3 = 5.99$   
 Duplicate GW-074926-092911-CM-010 collected @ BCO

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

DATE 9.29.11 PRINT Jason P. [Signature] SIGNATURE [Signature]

## WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Flora Vista JOB# 074926

SAMPLE ID: GW-074926-121411-CB-MW-1 WELL# MW-1

<u>12.14.11</u> PURGE DATE (MM DD YY)	<u>12.14.11</u> SAMPLE DATE (MM DD YY)	<u>1510</u> SAMPLE TIME (24 HOUR)	<u>0.88</u> WATER VOL. IN CASING (GALLONS)	<u>2.6</u> ACTUAL VOL. PURGED (GALLONS)
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### PURGING AND SAMPLING EQUIPMENT

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

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

### FIELD MEASUREMENTS

DEPTH TO WATER 20.63 (feet)      WELL ELEVATION 94.38 (feet)  
 WELL DEPTH 26.16 (feet)      GROUNDWATER ELEVATION 73.75 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>15.78</u> (°C)	<u>6.57</u> (std)	<u>0.765</u> (g/L)	<u>995</u> (µS/cm)	<u>-44.9</u> (mV)	<u>1.5</u> (gal)
<u>15.98</u> (°C)	<u>6.59</u> (std)	<u>0.790</u> (g/L)	<u>1005</u> (µS/cm)	<u>-74.3</u> (mV)	<u>2.0</u> (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: Black      ODOR: pos/hydrocarbon      COLOR: Black      SHEEN  Y  N slight  
 WEATHER CONDITIONS:      TEMPERATURE 35      WINDY Y/N yes      PRECIPITATION Y/N (IF Y TYPE) NO

SPECIFIC COMMENTS:  
0.88x3 = 2.65  
well bailed down very fast after ~ 2 volumes

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

12.14.11      Cobb Brown      Cobb Brown  
 DATE      PRINT      SIGNATURE

## WELL SAMPLING FIELD INFORMATION FORM

IE/PROJECT NAME: Flora Vista JOB# 074926  
 SAMPLE ID: GU-074926-121411-(B)-MW-2 WELL# MW-2

WELL PURGING INFORMATION

12-14-11 PURGE DATE (MM DD YY)    
 12-14-11 SAMPLE DATE (MM DD YY)    
 165 SAMPLE TIME (24 HOUR)    
 1.56 WATER VOL. IN CASING (GALLONS)    
 5.0 ACTUAL VOL. PURGED (GALLONS)

PURGING AND SAMPLING EQUIPMENT

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

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

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>21.79</u>	(feet)	WELL ELEVATION	<u>97.1</u>	(feet)
WELL DEPTH	<u>31.59</u>	(feet)	GROUNDWATER ELEVATION	<u>75.31</u>	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>14.33</u> (°C)	<u>7.12</u> (std)	<u>0.509</u> (g/L)	<u>620</u> (µS/cm)	<u>1.3</u> (mV)	<u>3.25</u> (gal)
<u>14.41</u> (°C)	<u>7.00</u> (std)	<u>0.509</u> (g/L)	<u>624</u> (µS/cm)	<u>5.8</u> (mV)	<u>3.75</u> (gal)
<u>14.46</u> (°C)	<u>6.98</u> (std)	<u>0.511</u> (g/L)	<u>629</u> (µS/cm)	<u>8.4</u> (mV)	<u>4.00</u> (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: clear     ODOR: None     COLOR: clear     SHEN Y/N: Y  
 WEATHER CONDITIONS:     TEMPERATURE 23.5°     WINDY Y/N: N     PRECIPITATION Y/N (IF Y TYPE): \_\_\_\_\_  
 SPECIFIC COMMENTS: \_\_\_\_\_

1.56 x 3 = 4.70

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS  
12-14-11 DATE     Casey Brown PRINT     Casey Brown SIGNATURE

# WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Flora Vista JOB# 074926  
 SAMPLE ID: GD-074926-121411-CB-MW3 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY) 12-14-11 SAMPLE DATE (MM DD YY) 12-14-11 SAMPLE TIME (24 HOUR) 1630 WATER VOL. IN CASING (GALLONS) 1.77 ACTUAL VOL. PURGED (GALLONS) 6

PURGING AND SAMPLING EQUIPMENT

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

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

### FIELD MEASUREMENTS

DEPTH TO WATER		<u>19.13</u>	(feet)	WELL ELEVATION		<u>92.90</u>	(feet)
WELL DEPTH		<u>30.23</u>	(feet)	GROUNDWATER ELEVATION		<u>73.77</u>	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<u>14.44</u> (°C)	<u>7.12</u> (std)	<u>0.493</u> (g/L)	<u>605</u> (µS/cm)	<u>19.3</u> (mV)	<u>5.0</u> (gal)
<u>14.67</u> (°C)	<u>7.06</u> (std)	<u>0.492</u> (g/L)	<u>608</u> (µS/cm)	<u>18.0</u> (mV)	<u>5.5</u> (gal)
<u>14.68</u> (°C)	<u>7.03</u> (std)	<u>0.486</u> (g/L)	<u>602</u> (µS/cm)	<u>18.9</u> (mV)	<u>6.0</u> (gal)

### FIELD COMMENTS

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

WEATHER CONDITIONS: TEMPERATURE ~35° WINDY Y/ N PRECIPITATION Y/ N (IF Y TYPE) \_\_\_\_\_

SPECIFIC COMMENTS:  
1.77X3 = 5.32

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

12-14-11 DATE CASPER BROWN PRINT CASPER BROWN SIGNATURE

## WELL SAMPLING FIELD INFORMATION FORM

TE/PROJECT NAME: Flora Vista JOB# 074920  
 SAMPLE ID: GW-074920-121411(B-MW)WELL# WELL# MW-4

WELL PURGING INFORMATION

12-14-11 PURGE DATE (MM DD YY)    
 12-14-11 SAMPLE DATE (MM DD YY)    
 8:25 SAMPLE TIME (24 HOUR)    
 1.61 WATER VOL. IN CASING (GALLONS)    
 5.0 ACTUAL VOL. PURGED (GALLONS)

### PURGING AND SAMPLING EQUIPMENT

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

PURGING DEVICE	<input checked="" type="checkbox"/>	A - SUBMERSIBLE PUMP	<input type="checkbox"/>	D - GAS LIFT PUMP	<input type="checkbox"/>	G - BAILER	<input type="checkbox"/>	X= _____
		B - PERISTALTIC PUMP	<input type="checkbox"/>	E - PURGE PUMP	<input type="checkbox"/>	H - WATERRA®	<input type="checkbox"/>	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	<input checked="" type="checkbox"/>	C - BLADDER PUMP	<input type="checkbox"/>	F - DIPPER BOTTLE	<input type="checkbox"/>	X - OTHER	<input type="checkbox"/>	X= _____
								SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	<input checked="" type="checkbox"/>	A - TEFLON	<input type="checkbox"/>	D - PVC	<input type="checkbox"/>		<input type="checkbox"/>	X= _____
		B - STAINLESS STEEL	<input type="checkbox"/>	E - POLYETHYLENE	<input type="checkbox"/>		<input type="checkbox"/>	PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	<input checked="" type="checkbox"/>	C - POLYPROPYLENE	<input type="checkbox"/>	X - OTHER	<input type="checkbox"/>		<input type="checkbox"/>	X= _____
								SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	<input type="checkbox"/>	A - TEFLON	<input type="checkbox"/>	D - POLYPROPYLENE	<input type="checkbox"/>	G - COMBINATION	<input type="checkbox"/>	X= _____
		B - TYGON	<input type="checkbox"/>	E - POLYETHYLENE	<input type="checkbox"/>	TEFLON/POLYPROPYLENE	<input type="checkbox"/>	PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	<input checked="" type="checkbox"/>	C - ROPE	<input type="checkbox"/>	F - SILICONE	<input type="checkbox"/>	X - OTHER	<input type="checkbox"/>	X= _____
								SAMPLING TUBING OTHER (SPECIFY)

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

### FIELD MEASUREMENTS

DEPTH TO WATER	<u>20.28</u>	(feet)	WELL ELEVATION	<u>93.60</u>	(feet)
WELL DEPTH	<u>30.38</u>	(feet)	GROUNDWATER ELEVATION	<u>73.32</u>	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
<input type="checkbox"/> (°C)	<input type="checkbox"/> (std)	<input type="checkbox"/> (g/L)	<input type="checkbox"/> (µS/cm)	<input type="checkbox"/> (mV)	<input type="checkbox"/> (gal)
<input type="checkbox"/> (°C)	<input type="checkbox"/> (std)	<input type="checkbox"/> (g/L)	<input type="checkbox"/> (µS/cm)	<input type="checkbox"/> (mV)	<input type="checkbox"/> (gal)
<input type="checkbox"/> (°C)	<input type="checkbox"/> (std)	<input type="checkbox"/> (g/L)	<input type="checkbox"/> (µS/cm)	<input type="checkbox"/> (mV)	<input type="checkbox"/> (gal)
<input type="checkbox"/> (°C)	<input type="checkbox"/> (std)	<input type="checkbox"/> (g/L)	<input type="checkbox"/> (µS/cm)	<input type="checkbox"/> (mV)	<input type="checkbox"/> (gal)
<input type="checkbox"/> (°C)	<input type="checkbox"/> (std)	<input type="checkbox"/> (g/L)	<input type="checkbox"/> (µS/cm)	<input type="checkbox"/> (mV)	<input type="checkbox"/> (gal)

### FIELD COMMENTS

SAMPLE APPEARANCE: black    
 ODOR: hydrocarbon    
 COLOR: black    
 SHEEN 0/N    
 CONTINUOUS continuous

WEATHER CONDITIONS:    
 TEMPERATURE ~35°    
 WINDY Y/0    
 PRECIPITATION Y/0 (IF Y TYPE) \_\_\_\_\_

SPECIFIC COMMENTS: No parameters taken due to sheen.

1.61 x 3 = 4.8

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

12-14-11 DATE    
Cassie Brown PRINT    
Cassie Brown SIGNATURE

dup @ 1530

APPENDIX B

SEPTEMBER AND DECEMBER 2011  
QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORTS



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

October 18, 2011

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

RE: Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

Dear Angela Bown:

Enclosed are the analytical results for sample(s) received by the laboratory on October 01, 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,

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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Lenexa, KS 66219  
(913)599-5665

### CERTIFICATIONS

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

#### 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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### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60107347001	GW-074926-092911-CM-006	Water	09/29/11 11:45	10/01/11 08:00
60107347002	GW-074926-092911-CM-007	Water	09/29/11 12:35	10/01/11 08:00
60107347003	GW-074926-092911-CM-008	Water	09/29/11 12:50	10/01/11 08:00
60107347004	GW-074926-092911-CM-009	Water	09/29/11 13:10	10/01/11 08:00
60107347005	GW-074926-092911-CM-010	Water	09/29/11 13:00	10/01/11 08:00
60107347006	TB-092911-001	Water	09/29/11 13:20	10/01/11 08:00

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60107347001	GW-074926-092911-CM-006	EPA 6010	JDH	2
		EPA 8260	HNS	9
		EPA 300.0	JPF	1
60107347002	GW-074926-092911-CM-007	EPA 6010	JDH	2
		EPA 8260	HNS	9
		EPA 300.0	JPF	1
60107347003	GW-074926-092911-CM-008	EPA 6010	JDH	2
		EPA 8260	PRG	9
		EPA 300.0	JPF	1
60107347004	GW-074926-092911-CM-009	EPA 6010	JDH	2
		EPA 8260	HNS	9
		EPA 300.0	JPF	1
60107347005	GW-074926-092911-CM-010	EPA 8260	HNS	9
60107347006	TB-092911-001	EPA 8260	HNS	9

### REPORT OF LABORATORY ANALYSIS

Page 4 of 23

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## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

---

**Method:** EPA 6010  
**Description:** 6010 MET ICP, Dissolved  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** October 18, 2011

**General Information:**

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

**Hold Time:**

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

**Sample Preparation:**

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

**Initial Calibrations (including MS Tune as applicable):**

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

**Continuing Calibration:**

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

**Method Blank:**

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

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

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

**Duplicate Sample:**

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

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS



## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

---

**Method:** EPA 8260  
**Description:** 8260 MSV UST, Water  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** October 18, 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.

QC Batch: MSV/40758

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- BLANK (Lab ID: 889125)
- Toluene-d8 (S)

QC Batch: MSV/40858

S0: Surrogate recovery outside laboratory control limits.

- GW-074926-092911-CM-008 (Lab ID: 60107347003)
- Toluene-d8 (S)

**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/40757

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

QC Batch: MSV/40758

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

QC Batch: MSV/40798

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

## REPORT OF LABORATORY ANALYSIS

Page 6 of 23

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Lenexa, KS 66219  
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## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

---

**Method:** EPA 8260  
**Description:** 8260 MSV UST, Water  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** October 18, 2011

**Duplicate Sample:**

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

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

Page 7 of 23

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## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

---

**Method:** EPA 300.0  
**Description:** 300.0 IC Anions 28 Days  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** October 18, 2011

**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.

**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.

## REPORT OF LABORATORY ANALYSIS



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: **GW-074926-092911-CM-006** Lab ID: **60107347001** Collected: 09/29/11 11:45 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	6.0	1	10/03/11 13:37	10/04/11 18:09	7439-89-6	
Manganese, Dissolved	ND	ug/L	5.0	0.90	1	10/03/11 13:37	10/04/11 18:09	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	0.040	1		10/12/11 02:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		10/12/11 02:45	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		10/12/11 02:45	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		10/12/11 02:45	1330-20-7	
Dibromofluoromethane (S)	93 %		86-112		1		10/12/11 02:45	1868-53-7	
Toluene-d8 (S)	100 %		90-110		1		10/12/11 02:45	2037-26-5	
4-Bromofluorobenzene (S)	99 %		87-113		1		10/12/11 02:45	460-00-4	
1,2-Dichloroethane-d4 (S)	96 %		82-119		1		10/12/11 02:45	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/12/11 02:45		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	151	mg/L	10.0	1.6	10		10/16/11 11:23	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: **GW-074926-092911-CM-007** Lab ID: **60107347002** Collected: 09/29/11 12:35 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	ND	ug/L	50.0	6.0	1	10/03/11 13:37	10/04/11 18:12	7439-89-6	
Manganese, Dissolved	6.3	ug/L	5.0	0.90	1	10/03/11 13:37	10/04/11 18:12	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	0.040	1		10/12/11 03:01	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		10/12/11 03:01	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		10/12/11 03:01	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		10/12/11 03:01	1330-20-7	
Dibromofluoromethane (S)	96	%	86-112		1		10/12/11 03:01	1868-53-7	
Toluene-d8 (S)	102	%	90-110		1		10/12/11 03:01	2037-26-5	
4-Bromofluorobenzene (S)	103	%	87-113		1		10/12/11 03:01	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	82-119		1		10/12/11 03:01	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/12/11 03:01		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	160	mg/L	10.0	1.6	10		10/16/11 11:38	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: **GW-074926-092911-CM-008** Lab ID: **60107347003** Collected: 09/29/11 12:50 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	2550	ug/L	50.0	6.0	1	10/03/11 13:37	10/04/11 18:14	7439-89-6	
Manganese, Dissolved	4100	ug/L	5.0	0.90	1	10/03/11 13:37	10/04/11 18:14	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	39.2	ug/L	1.0	0.050	1		10/13/11 17:07	71-43-2	
Ethylbenzene	3.9	ug/L	1.0	0.080	1		10/13/11 17:07	100-41-4	
Toluene	ND	ug/L	1.0	0.070	1		10/13/11 17:07	108-88-3	
Xylene (Total)	53.6	ug/L	3.0	0.18	1		10/13/11 17:07	1330-20-7	
Dibromofluoromethane (S)	95	%	86-112		1		10/13/11 17:07	1868-53-7	
Toluene-d8 (S)	113	%	90-110		1		10/13/11 17:07	2037-26-5	S0
4-Bromofluorobenzene (S)	107	%	87-113		1		10/13/11 17:07	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	82-119		1		10/13/11 17:07	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/13/11 17:07		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	96.1	mg/L	10.0	1.6	10		10/16/11 12:09	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: **GW-074926-092911-CM-009** Lab ID: **60107347004** Collected: 09/29/11 13:10 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	<b>25200</b>	ug/L	50.0	6.0	1	10/03/11 13:37	10/04/11 18:16	7439-89-6	
Manganese, Dissolved	<b>1020</b>	ug/L	5.0	0.90	1	10/03/11 13:37	10/04/11 18:16	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	<b>2440</b>	ug/L	50.0	2.0	50		10/12/11 05:12	71-43-2	
Ethylbenzene	<b>519</b>	ug/L	5.0	0.50	5		10/10/11 12:32	100-41-4	
Toluene	ND	ug/L	5.0	0.50	5		10/10/11 12:32	108-88-3	
Xylene (Total)	<b>3650</b>	ug/L	150	15.0	50		10/12/11 05:12	1330-20-7	
Dibromofluoromethane (S)	104	%	86-112		5		10/10/11 12:32	1868-53-7	
Toluene-d8 (S)	101	%	90-110		5		10/10/11 12:32	2037-26-5	
4-Bromofluorobenzene (S)	94	%	87-113		5		10/10/11 12:32	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	82-119		5		10/10/11 12:32	17060-07-0	
Preservation pH	<b>1.0</b>		1.0	0.10	5		10/10/11 12:32		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	ND	mg/L	1.0	0.16	1		10/16/11 18:00	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: **GW-074926-092911-CM-010** Lab ID: **60107347005** Collected: 09/29/11 13:00 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	<b>43.0</b>	ug/L	1.0	0.040	1		10/10/11 12:48	71-43-2	
Ethylbenzene	<b>3.5</b>	ug/L	1.0	0.10	1		10/10/11 12:48	100-41-4	
Toluene	<b>ND</b>	ug/L	1.0	0.10	1		10/10/11 12:48	108-88-3	
Xylene (Total)	<b>48.3</b>	ug/L	3.0	0.30	1		10/10/11 12:48	1330-20-7	
Dibromofluoromethane (S)	<b>102</b>	%	86-112		1		10/10/11 12:48	1868-53-7	
Toluene-d8 (S)	<b>110</b>	%	90-110		1		10/10/11 12:48	2037-26-5	
4-Bromofluorobenzene (S)	<b>97</b>	%	87-113		1		10/10/11 12:48	460-00-4	
1,2-Dichloroethane-d4 (S)	<b>97</b>	%	82-119		1		10/10/11 12:48	17060-07-0	
Preservation pH	<b>1.0</b>		1.0	0.10	1		10/10/11 12:48		



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Sample: TB-092911-001 Lab ID: 60107347006 Collected: 09/29/11 13:20 Received: 10/01/11 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8260 MSV UST, Water</b>									
Analytical Method: EPA 8260									
Benzene	ND	ug/L	1.0	0.040	1		10/10/11 13:04	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		10/10/11 13:04	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		10/10/11 13:04	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		10/10/11 13:04	1330-20-7	
Dibromofluoromethane (S)	100 %		86-112		1		10/10/11 13:04	1868-53-7	
Toluene-d8 (S)	98 %		90-110		1		10/10/11 13:04	2037-26-5	
4-Bromofluorobenzene (S)	106 %		87-113		1		10/10/11 13:04	460-00-4	
1,2-Dichloroethane-d4 (S)	99 %		82-119		1		10/10/11 13:04	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		10/10/11 13:04		



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: MPRP/15527 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

METHOD BLANK: 885402 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	10/04/11 17:44	
Manganese, Dissolved	ug/L	ND	5.0	10/04/11 17:44	

LABORATORY CONTROL SAMPLE: 885403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	9680	97	80-120	
Manganese, Dissolved	ug/L	1000	980	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 885404 885405

Parameter	Units	885404		885405		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		60107298001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result					
Iron, Dissolved	ug/L	532	10000	10000	10200	97	96	75-125	1	20
Manganese, Dissolved	ug/L	1820	1000	1000	2830	101	100	75-125	1	20



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: MSV/40757 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60107347001, 60107347002

METHOD BLANK: 889123 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/11/11 21:19	
Ethylbenzene	ug/L	ND	1.0	10/11/11 21:19	
Toluene	ug/L	ND	1.0	10/11/11 21:19	
Xylene (Total)	ug/L	ND	3.0	10/11/11 21:19	
1,2-Dichloroethane-d4 (S)	%	94	82-119	10/11/11 21:19	
4-Bromofluorobenzene (S)	%	97	87-113	10/11/11 21:19	
Dibromofluoromethane (S)	%	96	86-112	10/11/11 21:19	
Toluene-d8 (S)	%	101	90-110	10/11/11 21:19	

LABORATORY CONTROL SAMPLE: 889124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.5	87	82-117	
Ethylbenzene	ug/L	20	16.9	85	79-121	
Toluene	ug/L	20	17.6	88	80-120	
Xylene (Total)	ug/L	60	51.7	86	79-120	
1,2-Dichloroethane-d4 (S)	%			98	82-119	
4-Bromofluorobenzene (S)	%			104	87-113	
Dibromofluoromethane (S)	%			99	86-112	
Toluene-d8 (S)	%			102	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: MSV/40758 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60107347004, 60107347005, 60107347006

METHOD BLANK: 889125 Matrix: Water  
 Associated Lab Samples: 60107347004, 60107347005, 60107347006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/10/11 10:29	
Ethylbenzene	ug/L	ND	1.0	10/10/11 10:29	
Toluene	ug/L	ND	1.0	10/10/11 10:29	
Xylene (Total)	ug/L	ND	3.0	10/10/11 10:29	
1,2-Dichloroethane-d4 (S)	%	99	82-119	10/10/11 10:29	
4-Bromofluorobenzene (S)	%	103	87-113	10/10/11 10:29	
Dibromofluoromethane (S)	%	101	86-112	10/10/11 10:29	
Toluene-d8 (S)	%	112	90-110	10/10/11 10:29	S3

LABORATORY CONTROL SAMPLE: 889126

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.5	88	82-117	
Ethylbenzene	ug/L	20	18.2	91	79-121	
Toluene	ug/L	20	18.2	91	80-120	
Xylene (Total)	ug/L	60	52.7	88	79-120	
1,2-Dichloroethane-d4 (S)	%			100	82-119	
4-Bromofluorobenzene (S)	%			105	87-113	
Dibromofluoromethane (S)	%			101	86-112	
Toluene-d8 (S)	%			100	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: MSV/40798 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60107347004

METHOD BLANK: 889730 Matrix: Water  
 Associated Lab Samples: 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	10.0	10/12/11 04:23	
Xylene (Total)	ug/L	ND	30.0	10/12/11 04:23	
1,2-Dichloroethane-d4 (S)	%	93	82-119	10/12/11 04:23	
4-Bromofluorobenzene (S)	%	102	87-113	10/12/11 04:23	
Dibromofluoromethane (S)	%	96	86-112	10/12/11 04:23	
Toluene-d8 (S)	%	103	90-110	10/12/11 04:23	

LABORATORY CONTROL SAMPLE: 889731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.4	92	82-117	
Xylene (Total)	ug/L	60	52.0	87	79-120	
1,2-Dichloroethane-d4 (S)	%			95	82-119	
4-Bromofluorobenzene (S)	%			95	87-113	
Dibromofluoromethane (S)	%			95	86-112	
Toluene-d8 (S)	%			98	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: MSV/40858 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60107347003

METHOD BLANK: 890817 Matrix: Water  
 Associated Lab Samples: 60107347003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/13/11 16:39	
Ethylbenzene	ug/L	ND	1.0	10/13/11 16:39	
Toluene	ug/L	ND	1.0	10/13/11 16:39	
Xylene (Total)	ug/L	ND	3.0	10/13/11 16:39	
1,2-Dichloroethane-d4 (S)	%	97	82-119	10/13/11 16:39	
4-Bromofluorobenzene (S)	%	96	87-113	10/13/11 16:39	
Dibromofluoromethane (S)	%	94	86-112	10/13/11 16:39	
Toluene-d8 (S)	%	108	90-110	10/13/11 16:39	

LABORATORY CONTROL SAMPLE: 890818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.7	93	82-117	
Ethylbenzene	ug/L	20	21.7	108	79-121	
Toluene	ug/L	20	21.2	106	80-120	
Xylene (Total)	ug/L	60	63.7	106	79-120	
1,2-Dichloroethane-d4 (S)	%			96	82-119	
4-Bromofluorobenzene (S)	%			99	87-113	
Dibromofluoromethane (S)	%			97	86-112	
Toluene-d8 (S)	%			108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 890819 890820

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		60107626002 Result	Spike Conc.	Spike Conc.	Conc.							
Benzene	ug/L	ND	20	20	20	17.8	18.0	89	90	58-139	1	21
Ethylbenzene	ug/L	ND	20	20	20	21.5	21.1	108	106	56-138	2	19
Toluene	ug/L	ND	20	20	20	21.1	20.8	106	104	59-140	2	19
Xylene (Total)	ug/L	ND	60	60	60	62.8	62.8	105	105	52-146	0	19
1,2-Dichloroethane-d4 (S)	%							93	96	82-119		
4-Bromofluorobenzene (S)	%							98	95	87-113		
Dibromofluoromethane (S)	%							94	96	86-112		
Toluene-d8 (S)	%							109	105	90-110		
Preservation pH		1.0				1.0	1.0				0	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

QC Batch: WETA/17924 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

METHOD BLANK: 891580 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/14/11 16:32	

METHOD BLANK: 892363 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/15/11 14:00	

METHOD BLANK: 892836 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/16/11 08:35	

METHOD BLANK: 893264 Matrix: Water  
 Associated Lab Samples: 60107347001, 60107347002, 60107347003, 60107347004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/17/11 14:24	

LABORATORY CONTROL SAMPLE: 891581

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

LABORATORY CONTROL SAMPLE: 892837

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



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

LABORATORY CONTROL SAMPLE: 893265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 891582 891583

Parameter	Units	60107157001		60107347002		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Result	Spike Conc.	Result	Result	% Rec	% Rec			
Sulfate	mg/L	26000	50000	50000	72000	72400	92	93	61-119	1	10	

MATRIX SPIKE SAMPLE: 891584

Parameter	Units	60107347002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	160	50	214	108	61-119	



## QUALIFIERS

Project: FLORA VISTA NO. 1  
Pace Project No.: 60107347

### 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/40757

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

Batch: MSV/40758

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

Batch: MSV/40798

[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.

S3 Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.



**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: FLORA VISTA NO. 1  
 Pace Project No.: 60107347

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60107347001	GW-074926-092911-CM-006	EPA 3010	MPRP/15527	EPA 6010	ICP/13478
60107347002	GW-074926-092911-CM-007	EPA 3010	MPRP/15527	EPA 6010	ICP/13478
60107347003	GW-074926-092911-CM-008	EPA 3010	MPRP/15527	EPA 6010	ICP/13478
60107347004	GW-074926-092911-CM-009	EPA 3010	MPRP/15527	EPA 6010	ICP/13478
60107347001	GW-074926-092911-CM-006	EPA 8260	MSV/40757		
60107347002	GW-074926-092911-CM-007	EPA 8260	MSV/40757		
60107347003	GW-074926-092911-CM-008	EPA 8260	MSV/40858		
60107347004	GW-074926-092911-CM-009	EPA 8260	MSV/40758		
60107347004	GW-074926-092911-CM-009	EPA 8260	MSV/40798		
60107347005	GW-074926-092911-CM-010	EPA 8260	MSV/40758		
60107347006	TB-092911-001	EPA 8260	MSV/40758		
60107347001	GW-074926-092911-CM-006	EPA 300.0	WETA/17924		
60107347002	GW-074926-092911-CM-007	EPA 300.0	WETA/17924		
60107347003	GW-074926-092911-CM-008	EPA 300.0	WETA/17924		
60107347004	GW-074926-092911-CM-009	EPA 300.0	WETA/17924		





Sample Condition Upon Receipt

Client Name: CRA Project # 0007347

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] Other
Tracking #: 616803375942 Pace Shipping Label Used?: [X] Yes [ ] No
Custody Seal on Cooler/Box Present: [X] Yes [ ] No Seals intact: [X] Yes [ ] No

Optional
Proj. Due Date: 10/13/11
Proj. Name:

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [ ] Other
Thermometer Used: T-191 / T-194 Type of Ice: Wet Blue None [ ] Samples on ice, cooling process has begun

Cooler Temperature: 1.6
Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 10/11/11

Table with 17 rows of inspection items and checkboxes. Items include Chain of Custody, Short Hold Time analyses, Rush Turn Around Time, Sufficient volume, Containers intact, etc.

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

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: DKM Date: 10/13/11

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



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

January 04, 2012

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

RE: Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

Dear Christine Matthews:

Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 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,

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: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

#### 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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### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60112337001	GW-074926-121411-CB-MW-1	Water	12/14/11 15:10	12/16/11 09:00
60112337002	GW-074926-121411-CB-MW-2	Water	12/14/11 16:15	12/16/11 09:00
60112337003	GW-074926-121411-CB-MW-3	Water	12/14/11 16:30	12/16/11 09:00
60112337004	GW-074926-121411-CB-MW-4	Water	12/14/11 15:25	12/16/11 09:00
60112337005	GW-074926-121411-CB-DUP	Water	12/14/11 15:30	12/16/11 09:00
60112337006	TB-074926-121411-TB1	Water	12/15/11 09:00	12/16/11 09:00

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60112337001	GW-074926-121411-CB-MW-1	EPA 6010	JDH	2
		EPA 8260	PRG, RNS	9
		EPA 300.0	JML	1
60112337002	GW-074926-121411-CB-MW-2	EPA 6010	JDH	2
		EPA 8260	RNS	9
		EPA 300.0	JML	1
60112337003	GW-074926-121411-CB-MW-3	EPA 6010	JDH	2
		EPA 8260	RNS	9
		EPA 300.0	JML	1
60112337004	GW-074926-121411-CB-MW-4	EPA 6010	JDH	2
		EPA 8260	RNS	9
		EPA 300.0	JML	1
60112337005	GW-074926-121411-CB-DUP	EPA 8260	RNS	9
60112337006	TB-074926-121411-TB1	EPA 8260	RNS	9

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

---

**Method:** EPA 6010  
**Description:** 6010 MET ICP, Dissolved  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** January 04, 2012

**General Information:**

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

**Hold Time:**

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

**Sample Preparation:**

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

**Initial Calibrations (including MS Tune as applicable):**

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

**Continuing Calibration:**

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

**Method Blank:**

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

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

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

**Duplicate Sample:**

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

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS



## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

---

**Method:** EPA 8260  
**Description:** 8260 MSV UST, Water  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** January 04, 2012

**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.

QC Batch: MSV/42749

S0: Surrogate recovery outside laboratory control limits.

- GW-074926-121411-CB-MW-3 (Lab ID: 60112337003)
- 4-Bromofluorobenzene (S)

**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/42673

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

QC Batch: MSV/42739

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

QC Batch: MSV/42749

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:**

## REPORT OF LABORATORY ANALYSIS



### PROJECT NARRATIVE

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

---

**Method:** EPA 8260  
**Description:** 8260 MSV UST, Water  
**Client:** COP Conestoga-Rovers & Associates, Inc. NM  
**Date:** January 04, 2012

**Analyte Comments:**

QC Batch: MSV/42673

- B: Analyte was detected in the associated method blank.
  - GW-074926-121411-CB-MW-2 (Lab ID: 60112337002)
    - Ethylbenzene
  - GW-074926-121411-CB-MW-4 (Lab ID: 60112337004)
    - Ethylbenzene

QC Batch: MSV/42749

- P2: Re-extraction or re-analysis could not be performed due to insufficient sample amount.
  - GW-074926-121411-CB-MW-3 (Lab ID: 60112337003)
    - 4-Bromofluorobenzene (S)

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

---

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

**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.

## REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: **GW-074926-121411-CB-MW-1** Lab ID: **60112337001** Collected: 12/14/11 15:10 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	<b>25400</b>	ug/L	50.0	6.0	1	12/22/11 09:00	12/23/11 10:40	7439-89-6	
Manganese, Dissolved	<b>945</b>	ug/L	5.0	0.90	1	12/22/11 09:00	12/23/11 10:40	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	<b>2310</b>	ug/L	25.0	1.2	25		12/28/11 02:44	71-43-2	
Ethylbenzene	<b>508</b>	ug/L	5.0	0.50	5		12/22/11 14:19	100-41-4	
Toluene	<b>5.5</b>	ug/L	5.0	0.50	5		12/22/11 14:19	108-88-3	
Xylene (Total)	<b>3930</b>	ug/L	75.0	4.5	25		12/28/11 02:44	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	97 %		86-112		5		12/22/11 14:19	1868-53-7	
Toluene-d8 (S)	101 %		90-110		5		12/22/11 14:19	2037-26-5	
4-Bromofluorobenzene (S)	103 %		87-113		5		12/22/11 14:19	460-00-4	
1,2-Dichloroethane-d4 (S)	104 %		82-119		5		12/22/11 14:19	17060-07-0	
Preservation pH	<b>1.0</b>		1.0	0.10	5		12/22/11 14:19		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	<b>13.2</b>	mg/L	1.0	0.076	1		12/29/11 19:56	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: **GW-074926-121411-CB-MW-2** Lab ID: **60112337002** Collected: 12/14/11 16:15 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	<b>13.3J</b>	ug/L	50.0	6.0	1	12/22/11 09:00	12/23/11 10:42	7439-89-6	
Manganese, Dissolved	<b>2.2J</b>	ug/L	5.0	0.90	1	12/22/11 09:00	12/23/11 10:42	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	<b>0.31J</b>	ug/L	1.0	0.040	1		12/22/11 14:35	71-43-2	
Ethylbenzene	<b>0.20J</b>	ug/L	1.0	0.10	1		12/22/11 14:35	100-41-4	B
Toluene	ND	ug/L	1.0	0.10	1		12/22/11 14:35	108-88-3	
Xylene (Total)	<b>2.2J</b>	ug/L	3.0	0.30	1		12/22/11 14:35	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	100 %		86-112		1		12/22/11 14:35	1868-53-7	
Toluene-d8 (S)	104 %		90-110		1		12/22/11 14:35	2037-26-5	
4-Bromofluorobenzene (S)	94 %		87-113		1		12/22/11 14:35	460-00-4	
1,2-Dichloroethane-d4 (S)	108 %		82-119		1		12/22/11 14:35	17060-07-0	
Preservation pH	<b>1.0</b>		1.0	0.10	1		12/22/11 14:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	<b>135</b>	mg/L	20.0	1.5	20		12/29/11 03:25	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: **GW-074926-121411-CB-MW-3** Lab ID: **60112337003** Collected: 12/14/11 16:30 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	28.8J	ug/L	50.0	6.0	1	12/22/11 09:00	12/23/11 10:45	7439-89-6	
Manganese, Dissolved	20.7	ug/L	5.0	0.90	1	12/22/11 09:00	12/23/11 10:45	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	0.040	1		12/28/11 16:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		12/28/11 16:50	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		12/28/11 16:50	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		12/28/11 16:50	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	107 %		86-112		1		12/28/11 16:50	1868-53-7	
Toluene-d8 (S)	102 %		90-110		1		12/28/11 16:50	2037-26-5	
4-Bromofluorobenzene (S)	84 %		87-113		1		12/28/11 16:50	460-00-4	P2, S0
1,2-Dichloroethane-d4 (S)	116 %		82-119		1		12/28/11 16:50	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		12/28/11 16:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	136	mg/L	20.0	1.5	20		12/29/11 03:42	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: **GW-074926-121411-CB-MW-4** Lab ID: **60112337004** Collected: 12/14/11 15:25 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP, Dissolved</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Iron, Dissolved	2620	ug/L	50.0	6.0	1	12/22/11 09:00	12/23/11 10:47	7439-89-6	
Manganese, Dissolved	4580	ug/L	5.0	0.90	1	12/22/11 09:00	12/23/11 10:47	7439-96-5	
<b>8260 MSV UST, Water</b>		Analytical Method: EPA 8260							
Benzene	101	ug/L	1.0	0.040	1		12/22/11 15:08	71-43-2	
Ethylbenzene	44.3	ug/L	1.0	0.10	1		12/22/11 15:08	100-41-4	B
Toluene	ND	ug/L	1.0	0.10	1		12/22/11 15:08	108-88-3	
Xylene (Total)	378	ug/L	3.0	0.30	1		12/22/11 15:08	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	92 %		86-112		1		12/22/11 15:08	1868-53-7	
Toluene-d8 (S)	108 %		90-110		1		12/22/11 15:08	2037-26-5	
4-Bromofluorobenzene (S)	99 %		87-113		1		12/22/11 15:08	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		82-119		1		12/22/11 15:08	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		12/22/11 15:08		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Sulfate	81.2	mg/L	20.0	1.5	20		12/29/11 03:58	14808-79-8	



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: **GW-074926-121411-CB-DUP** Lab ID: **60112337005** Collected: 12/14/11 15:30 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV UST, Water</b>									
Analytical Method: EPA 8260									
Benzene	104	ug/L	5.0	0.20	5		12/22/11 15:24	71-43-2	
Ethylbenzene	43.7	ug/L	5.0	0.50	5		12/22/11 15:24	100-41-4	
Toluene	4.2J	ug/L	5.0	0.50	5		12/22/11 15:24	108-88-3	
Xylene (Total)	372	ug/L	15.0	1.5	5		12/22/11 15:24	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	101	%	86-112		5		12/22/11 15:24	1868-53-7	
Toluene-d8 (S)	105	%	90-110		5		12/22/11 15:24	2037-26-5	
4-Bromofluorobenzene (S)	104	%	87-113		5		12/22/11 15:24	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	82-119		5		12/22/11 15:24	17060-07-0	
Preservation pH	1.0		1.0	0.10	5		12/22/11 15:24		



**ANALYTICAL RESULTS**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

Sample: TB-074926-121411-TB1 Lab ID: 60112337006 Collected: 12/15/11 09:00 Received: 12/16/11 09:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8260 MSV UST, Water</b>									
Analytical Method: EPA 8260									
Benzene	0.060J	ug/L	1.0	0.040	1		12/22/11 15:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.10	1		12/22/11 15:41	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		12/22/11 15:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.30	1		12/22/11 15:41	1330-20-7	
<b>Surrogates</b>									
Dibromofluoromethane (S)	100	%	86-112		1		12/22/11 15:41	1868-53-7	
Toluene-d8 (S)	103	%	90-110		1		12/22/11 15:41	2037-26-5	
4-Bromofluorobenzene (S)	101	%	87-113		1		12/22/11 15:41	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	82-119		1		12/22/11 15:41	17060-07-0	
Preservation pH	1.0		1.0	0.10	1		12/22/11 15:41		



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

QC Batch: MPRP/16530 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved  
 Associated Lab Samples: 60112337001, 60112337002, 60112337003, 60112337004

METHOD BLANK: 930306 Matrix: Water  
 Associated Lab Samples: 60112337001, 60112337002, 60112337003, 60112337004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Dissolved	ug/L	ND	50.0	12/23/11 09:58	
Manganese, Dissolved	ug/L	ND	5.0	12/23/11 09:58	

LABORATORY CONTROL SAMPLE: 930307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L	10000	9770	98	80-120	
Manganese, Dissolved	ug/L	1000	992	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 930308 930309

Parameter	Units	60112207001		MSD		MS		MSD		% Rec Limits	Max		Qual
		Result	MS Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec	RPD		RPD		
Iron, Dissolved	ug/L	201	10000	10000	9880	9790	97	96	75-125	1	20		
Manganese, Dissolved	ug/L	278	1000	1000	1260	1240	98	97	75-125	1	20		



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

QC Batch: MSV/42673 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60112337001, 60112337002, 60112337004, 60112337005, 60112337006

METHOD BLANK: 930694 Matrix: Water  
 Associated Lab Samples: 60112337001, 60112337002, 60112337004, 60112337005, 60112337006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/22/11 10:46	
Ethylbenzene	ug/L	0.16J	1.0	12/22/11 10:46	
Toluene	ug/L	0.12J	1.0	12/22/11 10:46	
Xylene (Total)	ug/L	ND	3.0	12/22/11 10:46	
1,2-Dichloroethane-d4 (S)	%	102	82-119	12/22/11 10:46	
4-Bromofluorobenzene (S)	%	99	87-113	12/22/11 10:46	
Dibromofluoromethane (S)	%	99	86-112	12/22/11 10:46	
Toluene-d8 (S)	%	103	90-110	12/22/11 10:46	

LABORATORY CONTROL SAMPLE: 930695

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.9	90	82-117	
Ethylbenzene	ug/L	20	18.7	93	79-121	
Toluene	ug/L	20	18.5	93	80-120	
Xylene (Total)	ug/L	60	59.7	99	79-120	
1,2-Dichloroethane-d4 (S)	%			101	82-119	
4-Bromofluorobenzene (S)	%			92	87-113	
Dibromofluoromethane (S)	%			97	86-112	
Toluene-d8 (S)	%			98	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

QC Batch: MSV/42739 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60112337001

METHOD BLANK: 932245 Matrix: Water  
 Associated Lab Samples: 60112337001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/28/11 02:29	
Xylene (Total)	ug/L	ND	3.0	12/28/11 02:29	
1,2-Dichloroethane-d4 (S)	%	104	82-119	12/28/11 02:29	
4-Bromofluorobenzene (S)	%	102	87-113	12/28/11 02:29	
Dibromofluoromethane (S)	%	107	86-112	12/28/11 02:29	
Toluene-d8 (S)	%	98	90-110	12/28/11 02:29	

LABORATORY CONTROL SAMPLE: 932246

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.7	88	82-117	
Xylene (Total)	ug/L	60	52.0	87	79-120	
1,2-Dichloroethane-d4 (S)	%			104	82-119	
4-Bromofluorobenzene (S)	%			107	87-113	
Dibromofluoromethane (S)	%			106	86-112	
Toluene-d8 (S)	%			93	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

QC Batch: MSV/42749 Analysis Method: EPA 8260  
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER  
 Associated Lab Samples: 60112337003

METHOD BLANK: 932484 Matrix: Water  
 Associated Lab Samples: 60112337003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/28/11 16:34	
Ethylbenzene	ug/L	ND	1.0	12/28/11 16:34	
Toluene	ug/L	ND	1.0	12/28/11 16:34	
Xylene (Total)	ug/L	ND	3.0	12/28/11 16:34	
1,2-Dichloroethane-d4 (S)	%	116	82-119	12/28/11 16:34	
4-Bromofluorobenzene (S)	%	92	87-113	12/28/11 16:34	
Dibromofluoromethane (S)	%	106	86-112	12/28/11 16:34	
Toluene-d8 (S)	%	97	90-110	12/28/11 16:34	

LABORATORY CONTROL SAMPLE: 932485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.8	99	82-117	
Ethylbenzene	ug/L	20	18.8	94	79-121	
Toluene	ug/L	20	20.6	103	80-120	
Xylene (Total)	ug/L	60	58.8	98	79-120	
1,2-Dichloroethane-d4 (S)	%			114	82-119	
4-Bromofluorobenzene (S)	%			95	87-113	
Dibromofluoromethane (S)	%			107	86-112	
Toluene-d8 (S)	%			108	90-110	



**QUALITY CONTROL DATA**

Project: FLORA VISTA NO. 1 (074926)  
 Pace Project No.: 60112337

QC Batch: WETA/18800 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Associated Lab Samples: 60112337001, 60112337002, 60112337003, 60112337004

METHOD BLANK: 932563 Matrix: Water  
 Associated Lab Samples: 60112337001, 60112337002, 60112337003, 60112337004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	12/29/11 00:06	

LABORATORY CONTROL SAMPLE: 932564

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 932565 932566

Parameter	Units	60112253001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Sulfate	mg/L	95.8	50	50	144	146	97	100	61-119	1	10	

MATRIX SPIKE SAMPLE: 932567

Parameter	Units	60112362006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	186	100	289	104	61-119	



## QUALIFIERS

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

### 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/42673

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

Batch: MSV/42739

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

Batch: MSV/42749

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

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.

S0 Surrogate recovery outside laboratory control limits.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FLORA VISTA NO. 1 (074926)  
Pace Project No.: 60112337

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60112337001	GW-074926-121411-CB-MW-1	EPA 3010	MPRP/16530	EPA 6010	ICP/14221
60112337002	GW-074926-121411-CB-MW-2	EPA 3010	MPRP/16530	EPA 6010	ICP/14221
60112337003	GW-074926-121411-CB-MW-3	EPA 3010	MPRP/16530	EPA 6010	ICP/14221
60112337004	GW-074926-121411-CB-MW-4	EPA 3010	MPRP/16530	EPA 6010	ICP/14221
60112337001	GW-074926-121411-CB-MW-1	EPA 8260	MSV/42673		
60112337001	GW-074926-121411-CB-MW-1	EPA 8260	MSV/42739		
60112337002	GW-074926-121411-CB-MW-2	EPA 8260	MSV/42673		
60112337003	GW-074926-121411-CB-MW-3	EPA 8260	MSV/42749		
60112337004	GW-074926-121411-CB-MW-4	EPA 8260	MSV/42673		
60112337005	GW-074926-121411-CB-DUP	EPA 8260	MSV/42673		
60112337006	TB-074926-121411-TB1	EPA 8260	MSV/42673		
60112337001	GW-074926-121411-CB-MW-1	EPA 300.0	WETA/18800		
60112337002	GW-074926-121411-CB-MW-2	EPA 300.0	WETA/18800		
60112337003	GW-074926-121411-CB-MW-3	EPA 300.0	WETA/18800		
60112337004	GW-074926-121411-CB-MW-4	EPA 300.0	WETA/18800		

### CHAIN-OF-CUSTODY / Analytical Request Document

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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:		Page: / of /	
Company: CRA		Report To: Christine Mathews		Attention: ENFOS			
Address: 6121 Indian School Rd NE, Ste 200 Albuquerque, NM 87110		Copy To: Kelly Blanchard, Angela Bown		Company Name:		<b>REGULATORY AGENCY</b>	
Email To: cmathews@croworld.com		Purchase Order No.: 4515860224		Address:		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER <i>NMDCD</i>	
Phone: (505)884-0672   Fax: (505)884-4932		Project Name: Flora Vista No. 1		Pace Quote Reference: Alice Tracy		Site Location	
Requested Due Date/TAT: standard		Project Number: 074926		Pace Profile #: 5514, 5		STATE: NM	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	COLLECTED	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)		
						COMPOSITE START		COMPOSITE END/GRAB		Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Analysis Test ↓	8260 BTEX		6010 Dissolved Fe & Mn	300.0 Sulfate
						DATE	TIME	DATE	TIME													
1	<b>SAMPLE ID</b> (A-Z, 0-9 / .)	WT G	12.14.11 1510	5	X	X	X								X	X	X		<i>60112337</i> Pace Project No./ Lab I.D.  <i>BP2A BP3A<sup>1-5</sup> 3(B31H)</i>			
2	GW-074926-121411-CB-MW-1	WT G	12.14.11 1615	5	X	X	X								X	X	X					
3	GW-074926-121411-CB-MW-2	WT G	12.14.11 1630	5	X	X	X								X	X	X					
4	GW-074926-121411-CB-MW-3	WT G	12.14.11 1525	5	X	X	X								X	X	X					
5	GW-074926-121411-CB-MW-4	WT G	12.14.11 1530	3			X								X							
6	TB-074926-121411-TB1	WT	12.15.11 0900	3			X								X							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Need MDLs on report - J-flag <i>Metals container filtered in field</i>	<i>Jason Ploss / CRA</i>	12.15.11	0930	<i>[Signature]</i>	12/16/11	0900	2-1	Y	Y	Y

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	SIGNATURE of SAMPLER:				
	<i>Jason Ploss</i>				
DATE Signed (MM/DD/YY):					
		<i>12/15/11</i>			

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**Sample Condition Upon Receipt**

Client Name: COP CRA NM Project # 60112337

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other \_\_\_\_\_  
 Tracking #: 9986 081 3882 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 on ice, cooling process has begun

Optional  
 Proj. Due Date: 12/29/11  
 Proj. Name: \_\_\_\_\_

Cooler Temperature: 2.1  
 Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 12/16/11 by

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

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

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

Project Manager Review: ACE Date: 12/19/11

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