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MARCH 2011 QUARTERLY GWMR

06/03/2011



6121 Indian School Rd. NE Suite 200 Albuquerque, NM 87110 (505) 237-8440

TETRA TECH, INC.

June 3, 2011

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

> RE: (1 and 2) ConocoPhillips Company, Nell Hall No. 1, San Juan County, New Mexico -September 2010 and March 2011 Semi-Annual Groundwater Monitoring Reports

(3) ConocoPhillips Company Randleman No. I Site, San Juan County, New Mexico -September 2010 Quarterly Groundwater Monitoring Report

(4) ConocoPhillips Company, San Juan 27-5 No. 34A, Rio Arriba County, New Mexico -March 2011 Quarterly Groundwater Monitoring Report

(5) ConocoPhillips Company, Sategna No. 2E, San Juan County, New Mexico - March 2011Quarterly Groundwater Monitoring Report

(6) ConocoPhillips Company, Shepherd & Kelsey No. 1E, San Juan County, New Mexico -March²011 Quarterly Groundwater Monitoring Report

(7 and 8) ConocoPhillips Company Wilmuth No. 1 Site, San Juan County, New Mexico -December 2010 and March 2011 Quarterly Groundwater Monitoring Reports

Dear Mr. von Gonten:

Enclosed please find a copy of the above-referenced documents as compiled by Tetra Tech, Inc., for these San Juan Basin sites.

Please do not hesitate to contact me at (505) 237-8440 if you have any questions or require additional information.

Sincerely,

Kelly E. Blanchard

Kelly E. Blanchard Project Manager/Geologist

Enclosures (8)

Cc: Brandon Powell, New Mexico Oil Conservation Division (Aztec, NM Office) Terry Lauck, ConocoPhillips Company Risk Management and Remediation (electronic only) Chris Jaquez, Landowner (Nell Hall No. 1 only)

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MARCH 2011 GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS COMPANY WILMUTH NO. I NATURAL GAS PRODUCTION SITE SAN JUAN COUNTY, NEW MEXICO

OCD Order # <u>TBD</u>. API # 30-045-10370

Prepared for:

ConocoPhillips

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

Prepared by:



TETRATECH, INC.

6121 Indian School Rd. NE, Suite 200 Albuquerque, NM 87110 Tetra Tech Project No. 114-690153

May 2011

March 2011 Quarterly Groundwater Monitoring Report ConocoPhillips Company, Wilmuth No. 1, San Juan County, New Mexico

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MARCH 2011 GROUNDWATER MONITORING REPORT WILMUTH NO. I, SAN JUAN COUNTY, NEW MEXICO

I.0 INTRODUCTION

This report discusses the groundwater monitoring event conducted by Tetra Tech, Inc. (Tetra Tech) on March 16, 2011 at the ConocoPhillips Company (ConocoPhillips) Wilmuth No. 1 site located north of Aztec, New Mexico (Site). This report also presents the analytical results of the quarterly groundwater monitoring event.

The Site is located on private land leased to ConocoPhillips and is situated in Section 26, Township 31N, Range 11W, of San Juan County, New Mexico (Figure 1). A Site detail map is included as Figure 2.

I.I Site Background

The Wilmuth No. I natural gas production well was spudded in 1958 by El Paso Natural Gas Company. Meridian Oil, Inc., a subsidiary of Burlington Resources, Inc. (Burlington), took over operation of the well on November 1, 1986. ConocoPhillips acquired Burlington on March 31, 2006.

A release of approximately 22 barrels (bbls) of produced water occurred within the bermed area around the produced water tank on May 17, 2001. Twenty bbls were later recovered. A release of condensate occurred on December 17, 2002 from a corrosion hole in the condensate tank. Burlington excavated a total of 85 cubic yards of impacted soil and disposed of it at JFJ landfarm, located in Aztec, NM.

ConocoPhillips personnel notified the New Mexico Oil Conservation Division (NMOCD) in December 2009 of groundwater seeping into two separate areas that were undergoing excavation to remove stained soil discovered during line tie-in procedures. Four groundwater monitoring wells were subsequently installed under the supervision of Tetra Tech in April, 2010. A generalized geologic cross section was produced using boring logs from monitoring well installation at the Site. The cross section is presented as **Figure 3**.

Tetra Tech began quarterly sampling immediately following development of the wells by collecting a baseline round of groundwater samples on April 8, 2010. The most recent sampling event took place on March 16, 2011, and represents the fifth round of quarterly sampling conducted by Tetra Tech at the Site. The historical timeline is also presented in **Table 1**.

2.0 MONITORING SUMMARY, SAMPLING METHODOLOGY, AND ANALYTICAL RESULTS

2.1 Monitoring Summary

A groundwater quality monitoring event was conducted on March 16, 2011 at the Wilmuth No. 1 site. Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2, MW-3 and MW-4, depth to

groundwater in each well was determined. The casings for Site monitoring wells were surveyed on April 8, 2010 using an arbitrary reference-elevation of 100 feet above mean sea level (amsl). The data obtained from the Site survey and groundwater elevations collected during the March 2011 sampling event were used to create a groundwater elevation contour map for the Site (**Figure 4**). Using these data, it was determined that the groundwater flow direction at the Site is to the southwest. Numerical groundwater elevation information from March 2011 is also included in **Table 2**.

2.2 Groundwater Sampling Methodology

During the March 2011 groundwater monitoring event, Site monitor wells were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyethylene, dedicated bailer. While bailing each well, groundwater parameter data such as temperature, pH, conductivity, total dissolved solids (TDS), oxidation-reduction potential (ORP) and dissolved oxygen (DO) were collected using a YSI 556 multi-parameter sonde and results were recorded on a Tetra Tech Water Sampling Field Form (**Appendix A**). Groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain-of-custody documentation. Analysis of all groundwater samples collected during the March 2011 event was performed by Southern Petroleum Laboratory (SPL) of Houston, Texas.

Samples collected during the March 2011 sampling event were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX) by EPA Method 8260B; sulfate by EPA Method 300.0; and dissolved manganese by EPA Method 6010B. This list of constituents was determined based on the analytical results from the groundwater baseline and initial Site groundwater concerns. Results of the March 2011 groundwater monitoring event are summarized in **Table 3** and discussed in more detail in the following section.

2.3 Groundwater Sampling Analytical Results

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

Dissolved Manganese

The groundwater quality standard for dissolved manganese is 0.2 micrograms per liter (mg/L). Groundwater collected from all Site monitoring wells was found to be above the standard for dissolved manganese during March 2011. Manganese concentrations were 2.36 mg/L, 1.57 mg/L, 1.57 mg/L, and 2.18 mg/L for wells MW-1, MW-2, MW-3, and MW-4, respectively.

• Total Dissolved Solids

• The groundwater quality standard for Total Dissolved Solids (TDS) is 1,000 mg/L. Groundwater collected from Monitor Well MW-1was found to contain TDS at a concentration of 1,200 mg/L during the March 2011 quarterly sampling event. All other Site monitor wells contained concentrations of TDS below the NMWQCC standard.

No other analyzed constituents, including BTEX, were found above NMWQCC groundwater quality standards in Site monitor wells during the March 2011 monitoring event.

The corresponding laboratory analytical report for the March 2011 groundwater sampling event, including a quality control summary, is included in **Appendix B**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech conducted the fifth round of quarterly groundwater monitoring at the Wilmuth No. I site on March 16, 2011. The groundwater monitoring wells will continue to be sampled on a quarterly monitoring schedule, and the next groundwater monitoring event at the Site is scheduled for June 2011. The groundwater flow direction at the Site was determined to be to the southwest as of March 2011. Tetra Tech will continue to monitor the groundwater flow direction at the Site and will note any changes should they occur.

In order to move toward NMOCD remediation project closure, Tetra Tech will continue to monitor for BTEX, chloride, sulfate, TDS and dissolved manganese. Tetra Tech recommends the continuation of quarterly groundwater monitoring until these constituents are all below NMWQCC standards, appear stable or reach regional background levels. Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

FIGURES

Site Location Map
 Site Detail Map
 Generalized Geologic Cross Section
 Groundwater Elevation Contour Map – March 2011









TABLES

Site History Timeline
 Groundwater Elevation Data Summary (April 2010 – March 2011)
 Groundwater Laboratory Analytical Results Summary (April 2010 – March 2011)

Table 1. ConocoPhil	lips Company, Wilmu	th No. 1 - Site History Timeline
Date/Time Period	Event/Action	Description/Comments
July 24, 1958 to August 11, 1958	Production Well Completion	Well spudded and completed by El Paso Natural Gas Company.
November 1, 1986	Change of Operator	Operator changed from EI Paso Natural Gas Company to Meridian Oil Inc. (a subsidiary of Burlington Resources, Inc.)
May 17, 2001	Release	Due to a broken dump arm, 22 barrels (bbls) of produced water was released within the bermed area around the produced water tank. 20 bbls were reported to be recovered.
December 17, 2002	Release	A corrosion hole in the bottom of a steel pit tank that collected fluids from the separator and condensate tank drain allowed an unknown volume of produced water and condensate to leak onto the ground. All fluids were contained inside the tank berm. Impacted gravel and soils were excavated and disposed of at JFJ Landfarm. Excavation dimensions were approximately 30 feet by 25 feet by 3 feet for a total 85 cubic vards.
May 21, 2004	Workover Pit Proposal Approved	A lined workover pit was approved by Denny Faust of the NMOCD as detailed in Burlington Resources general pit construction plan dated April 26, 2004 which was also approved by the NMOCD.
March 31, 2006	Change of Operator	ConocoPhillips Company completed acquisition of Burlington Resources.
December 22 and 23, 2009	Potential for Groundwater Impacts Discovered	ConocoPhilips company notified Brandon Powell and Kelly Roberts of the OCD about groundwater seeping into two excavated areas on Stie where discolored soils had been found during line lie-in procedures. The type, volume and origin of the initial release was unknown. Groundwater samples were collected from the two areas and analyzed by Envirotech Inc. of Farmington, NM for benzene, toluene, eithylbenzene and total xylenes (BTEX), total petroleum hydrocarbons (TPH) and chloride. Analytical results indicate that BTEX and TPH are below NMWQCC groundwater standards, however, chloride was present at a concentration above the standard of 250 mg/L in the area of the excavation and a concentration of 950 mg/L in an trench associated with line tie-in procedures. Soil samples were collected from the same trench groundwater samples were collected from the same trench groundwater standards from the same trench groundwater standard of 250 mg/L with a procedures. Soil samples were collected from the same trench groundwater samples were collected from where discolored soil were below NMOCD procedures. Soil samples were collected from the same trench groundwater samples were collected from where discolored soil action levels.
January 7, 2010	NMOCD Correspondence	C-141 Release Notification and Corrective Action form was submitted to the NMOCD by ConocoPhilips.
April 5, 2010 through April 7, 2010	Groundwater Groundwater Monitoring Well Installation and Baseline Soil Sampling	Tetra Tech supervised the installation of 4 groundwater Monitoring Weills; MW-1, MW-2, MW-3 and MW-4, by Enviro-Drill Inc. of Abuquerque, NM. Each well was installed with 25 feet of screen. MW-1, MW-2 and MW-3 were all set at 30 feet below ground surface. M 4 was set at 35 feet below ground surface. A confining layer of gray sillstone was found at depth in each of the four boring locations. Soil samples were collected from all four soil borings and analyzed for major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, disert range organics, and gasoline range organics. Analytical results for all soil samples were below NMOCD recommended soil action tevels.
April 8, 2010	Baseline Groundwater Sampling	Tetra Tech conducted the initial groundwater sampling from Site Monitoring Wells, MW-1, MW-2, MW-3 and MW-4. A baseline suite was completed including major ions, NMWQCC dissolved metals, SVOCs, VOCs including BTEX, diesel range organics. and gasoline range organics. All four Site monitoring wells were below NMWQCC standards for BTEX constituents. All four wells were above the standard for dissolved manganese. MW-1, MW-2 and MW-4 were above the standard for total dissolved solids (TDS), MW-1 and MW-4 were also above the standard for sulfate.
June 9, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all site monitoring wells and analyzed for BTEX, dissound manganese, chioride, suifate, and TDS. All four site monitoring wells were below NMWQCC standards for BTEX constituents. Samples collected from all four site wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
September 20, 2010	Quarterly Groundwater Monitoring Event	Quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitoring wells and analyzed for IETX, dissound manganese, chindre, suifate, and TDS. All four Site monitoring wells were below NMWQCC standards for BTEX constituents. Samples collected from all four site wells were above the standard for dissolved manganese. Samples collected from MW-1 and MW-4 were above the standard for TDS.
December 16, 2010	Quarterly Groundwater Monitoring Event	Forth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Stle monitoring wells and analyzed for ETEX, discoved manaparese, suitable, and TDS. All four Stle monitoring wells were below NMWOCC standards for BTEX constituents. Samples collected from all four Stle wells were above the standard for dissolved manganese. Samples collected from MW-1, MW-2 and MW-4 were above the standard for TDS.
March 16, 2011	Quarterly Groundwater Monitoring Event	Fifth quarterly groundwater sampling was conducted by Tetra Tech. Samples were collected from all Site monitoring wells and analyzed to IETX; dissoved manganese, chinche, suffate, and TDS. All four Site monitoring wells were below NMWQCC standards for chloride, suffate and BTEX constituents. Samples cuelced from all four Site wells were above the standard for dissolved manganese. The sample collected from MW-1 was above the standard for TDS.

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I collected from MW-1 was above the MMCCD = New Mexico Oil Conservation Division To MMCCC = New Mexico Oil Conservation Division mg/Mg - dry = milligrams per Nilogram, analyzed after residual water removed from the soil µg/kg - dry = micrograms per Nilogram

Tetra Tech, Inc.

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	onocornilips	CUIIDAIIY, WI		GIOUIIUWALEI EIEVALI	UII Data Summary	
Mell ID	Total Depth (ft bgs)	Screen Interval (ft)	*Elevation (ft)	Date Measured	Depth to Groundwater (ft below TOC)	Relative Groundwater Elevation
				4/8/2010	5.21	90.59
				6/9/2010	1.94	93.86
MW-1	30.00	4.5 - 29.5	95.8	9/20/2010	1.51	94.29
				12/16/2010	3.31	92.49
				3/16/2011	4.98	90.82
				4/8/2010	6.48	89.32
				6/9/2010	3.68	92.12
MW-2	30.00	4.5 - 29.5	95.8	9/20/2010	3.28	92.52
				12/16/2010	4.83	90.97
				3/16/2011	6.31	89.49
			·	4/8/2010	6.37	89.95
				6/9/2010	3.39	92.93
MW-3	30.00	4.5 - 29.5	96.32	9/20/2010	3.02	93.30
				12/16/2010	4.65	91.67
				3/16/2011	6.20	90.12
			•	4/8/2010	9.68	89.02 ⁽¹⁾
		-		6/9/2010	4.41	94.29
MW-4	35.00	9.5 - 34.5	98.7	9/20/2010	3.78	94.92
				12/16/2010	5.70	93.00
				3/16/2011	. 7.44	91.26

TOC = Top of casing ft = Feet

bgs = Below ground surface * = Elevation relative to an arbitrary reference elevation of 100 feet (1) = Anomalous data point

Tetra Tech, Inc.

5/31/2011

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Table 3. ConocoPhil	lips Company,	Wilmuth No. 1 - Ground	water Laboratory Analy	ytical Results Summary				•	
Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Dissolved Manganese (mg/L)
	4/8/2010	< 1.0	< 1.0	< 1.0	< 1.0	143	879	1780	3.03
	6/9/2010	< 1.0	< 1.0	< 1.0	< 1.0	26.9	375	1190	1.08
MW-1	9/20/2010	< 1.0	< 1.0	< 1.0	< 1.0	30.0	425	1020	0.933
	12/16/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	381	1010	0.896
	3/16/2011	< 1.0	< 1.0	< 1.0	< 1.0	26.0	499	1200	2.36
	4/8/2010	< 1.0	1.1	< 1.0	L	NA	NA	NA	NA
	6/9/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA
Duplicate	9/20/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA
	12/16/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA
	3/16/2011	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA
	4/8/2010	< 1.0	< 1.0	< 1.0	< 1.0	27.7	533	1120	2.48
	6/9/2010	< 1.0	< 1.0	< 1.0	< 1.0	19.8	337	1070	1.66
MW-2	9/20/2010	< 1.0	< 1.0	< 1.0	< 1.0	20.4	304	1130	0.822
	12/16/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	281	1410	1.37
	3/16/2011	< 1.0	< 1.0	< 1.0	< 1.0	20.1	280	858	1.57
	4/8/2010	< 1.0	< 1.0	< 1.0	< 1.0	19.2	259	930	1.38
	6/9/2010	< 1.0	< 1.0	< 1.0	< 1.0	18.5	241	269	1.43
MW-3	9/20/2010	< 1.0	< 1.0	< 1.0	< 1.0	20.3	271	830	0.736
	12/16/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	265	1200	1.33
	3/16/2011	< 1.0	< 1.0	< 1.0	< 1.0	18.1	263	896	1.57
	4/8/2010	< 1.0	< 1.0	< 1.0	< 1.0	40	918	1900	3.94
	6/9/2010	< 1.0	< 1.0	< 1.0	< 1.0	29.6	542	1380	3.44
MW-4	9/20/2010	< 1.0	< 1.0	< 1.0	< 1.0	22.4	445	1160	2.59
	12/16/2010	< 1.0	< 1.0	< 1.0	< 1.0	NA	464	1350	2.85
	3/16/2011	< 1.0	< 1.0	< 1.0	< 1.0	20.6	385	026	2.18
NMWQCC Ground	vater Quality Is	10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	250 (mg/L)	600 (mg/L)	1000 (mg/L)	0.2 (mg/L)

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Notes:MW = monitoring wellMW = monitoring wellMWVQCC = New Mexico Water Quality Control CommissionConstituents in BOLD are in excess of NMVQCC groundwater quality standardsµg/L = micrograms per liter (parts per billion)mg/L = milligrams per liter (parts per million)< 1.0 = Below laboratory detection limit of 1.0 µg/L</td>MA = not analyzed

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Tetra Tech, Inc.

APPENDIX A

March 2011 Quarterly Groundwater Sampling Field Forms

TETRATECH, INC.	WATER	RSAMPLING	FIELD FOR	M		
Project Name Wilmuth No. 1			Page	1	of	4
ect No.					•	
Site Location Aztec, NM						
Site/Well No. <u>MW-1</u>	Coded/ Replicate No.	630	Date	3.1011		
Weather MANY, Wot	Time Sampling Began		Time Samplir Completed	ŋg	1625	>
Too	EVACUA	TION DATA				
Description of Measuring Point (MP_Top o	of Casing		<u></u>			
Height of MP Above/Below Land Surface		MP Elevation		•		95.8
Total Sounded Depth of Well Below MP	25,44	Water-Level E	levation	-		
Held Depth to Water Below N	498 H	Diameter of C	asino > 2"			
Wet Water Column in W	ell 20,46	Gallons Pump Prior to Sampl	ed/Bailed	<u>ا</u> ر)	
Gallons per Fo	oot 0.16					
Gallons in W	ell 3.274	Sampling Pun (feet below lar	np Intake Setting nd surface)			
Purging Equipment Purge pumpy Bai	$\chi_3 = 9$.82	/ <u></u>			
· • • • • • • • • • • • • • • • • • • •					· .	· · ·
Time Temperature (°C)	DH Conductivity (uS/	$\frac{\text{rield PARAMete}}{\text{rm}^3}$		DO %		Volume (gal)
1616 1440	7.58 1053	0.925	17.02	840	-75.2	9.6
1618 11.19	7.42 908	208	12 4.R	37.7	-Inda	4.5
620 .00	7.35 959	0.849	3.17	28.6	-45.1	10.0
Sampling Equipment <u>Purge</u>	Pump/Bailer			<u> </u>		
Constituents Sampled	Container Descri	ption	. I.	Pres	ervative	
125, Sultate	_3/02. Mas	stic.	<u> </u>	<u> </u>		
Dissolved Mn	POZ Pla	stic	Nov	yL		
BIEN	(3) 40 mL	. VOAS	<u>[]C</u>	Le		
Remarks Had is brown	12 siltu no.	odar or	sheen a	obser	red	
Sampling Personnel Christine Mathew	s. Cassie Brown				<u></u>	
	<u></u>					1
,	Well Casi	ng Volumes				
Gal./ft. $1 \frac{14}{12} = 0.07$ $1 \frac{12}{2} = 0.10$	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	3" = 3" ½ =	= 0.37 = 0.50	4" = 0.65 6" = 1.46		
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TETRA TECH, INC.	WATE	R SAMPLING	FIELD FORM		
Project Name Wilmuth No. 1			Page	2 of	4
,act No.	······································				
Site Location Aztec, NM					
Site/Well No. MW-2	Coded/ Replicate No.		Date 3.10.1	1	
Alian 1	Time Sampling	55	Time Sampling	\$35	
Weather Winy, Wor	Began				
	EVACU.	ATION DATA			
Description of Measuring Point (MI 10			<u> </u>		
Height of MP Above/Below Land Surf	ace	MP Elevation		· · · · · · · · · · · · · · · · · · ·	95.8
I otal Sounded Depth of Well Below N	np <u>(02.1</u>	Water-Level El	evation		
Held Depth to Water Below	MP <u>(0.01</u>	Diameter of Ca Gallons Pumpe	sing <u>2</u> " d/Bailed	26	
Wet Water Column in W		Prior to Sampli		D	
Gallons per F	oot 0.16	Sampling Pump	o Intake		•
	(12,37)	(feet below land	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
Purging Equipment Purge pump	7 Bailer				•••• • <u>•</u> •
Time Temperature (°C)	DH Conductivity (uS/			% ORP (m\/)	Volume (gal.)
1528 12.79	7.10 850	0.720	1.51 14	.3 25	11.5
1536 12.05	7.14 863	0.750	1.52 14	2 29.0	;2.0
1531 11.69	7.15 872	0.760	1,58, 14	1.6 30.6	12.5
					<u></u>
Sampling Equipment Pu	Irge Pumo/Bailer	· ·		II	
Constituents Sampled	Container Descri	ption		Preservative	
TOS culfate	3202. Plast	rC.	Non	L	
Dissolved MMn	1.602.0/95	nc	Nona	2	
BTEX	(3) 40 mi	VIRS	HI		
Remarks H20 is br	own w/ sitt.	no odo	ror che	en obser	red
Sampling Personnel Christine Ma	thews, Cassie Brown		·.	<u></u>	
	Well Car	sing Volumes	<u></u>	·	
Gal./ft. 1 ¼" = 0.0)77 2" = 0.16	3" =	0.37 4" =	0.65	
1 ½" = 0.1	$10 2 \frac{1}{2} = 0.24$	3" ½ =	0.50 6" =	1.46	
		· · · · · · · · · · · · · · · · · · ·			
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TETRATECH,	NC.		WA	ATER	SAMPLING	G FIELD FO	RM		·
Project Name Wilm	uth No. 1					Page	e3	of	4
s ect No.	, 				<u> </u>				t
Site Location Azteo	, NM								
Site/Well No. <u>MW-3</u>	3 .	Coded/ Replicate	No.			Date	3.16	l[
Weather	my, hot	Time San Began	npling	15 K	5	Time Samplin Completed	۱g	1545)
•	700		EV	ACUATI	ON DATA		·		
Description of Measu	ring Point (MP) <u>Top</u>	of Casing							
Height of MP Above/	Below Land Surface				MP Elevation		· · · · · · · -		96.32
,Total Sounded Depth	of Well Below MP	32.6	68		Water-Level E	Elevation			
Held Depth	n to Water Below MF	<u>ie.2</u>	0		Diameter of C	asing <u>2"</u>			<u> </u>
Wet W	Vater Column in We	<u> 26.</u>	88		Prior to Samp	ling		•	
	Gallons per Foo		0.16	·	Sameling Dun	nn Intoko Sottina			
	Gallons in We	<u>4.22</u>	X3=		(feet below la	nd surface)			
Purging Equipment	Purge pump// Ba	ailer	(12.6)					· · ·	
·			SAMPLING I	DATA/FI			· 	·	·
Time Tem	iperature (°C)	pH	Conductivity	(µS/cm ³)	TDS (g/L)	DO (mg/L)		ORP (mV)	Volume (gal.)
	11.00 1	1.00	162		0.66	2 2 2 2 7	210	40.3	1.20
1544	1.83	7.20	760	5	0.66	1 1 95	18.0	40.8	25
			<u> </u>						
Sampling Equipment	Purç	ge Pump/Ba	ailer				•		
Constituents S	ampled		Container D	escriptio	<u>n</u>		Pres	ervative	· .
Sultate;	IDS	3	202 F	<u>)jas</u>	trc_		None		
_ <u>Dissolveo</u>	<u>i</u> mn		002	Plas	HC_		More	<u>, </u>	
-DIRX		-(5) 40	ML	VOHS	ff			
Remarks	20 is b	nxun	È si	Hy,	no oc	lar ar	- she	en obs	iened.
Sampling Personnel	Christine Mather	ws, Cassie	Brown						
Г			We	II Casing	g Volumes		· · ·	· · · · · · · · · · · · · · · · · · ·	
Gal./	ft. 1¼" = 0.077	7	2" = 0.16	j.	3"	= 0.37	4" = 0.65		
	1 ½" = 0.10		2 ½" = 0.24	L.	3" 1⁄2	= 0.50	6" = 1.46		
							· · ·		•

TETRA	TECH, INC.	W	ATER SAMPLIN	G FIELD FOR	RM		
Project Name	Wilmuth No. 1			Page	ə4	of	4
ject No.		· ·					
Site Location	Aztec, NM						
Site/Well No.	MW - 4	Coded/ Replicate No.		Date	3:16.	11	
Weather	Sunny, hot,	Time Sampling Began	600	Time Samplir Completed	ng	1635)
	-700	E	VACUATION DATA		. •		
Description of	Measuring Point (MP	Top of Casing					
Height of MP A	Above/Below Land Su	rface	MP Elevatio	on			98.7
Total Sounded	Depth of Well Below	MP 32.44	Water-Leve	Elevation			
Heid	Depth to Water Below	NMP 7,44	Diameter of	Casing <u>2"</u>			
Wet	Water Column in	Well 25	Gallons Pur Prior to San	nped/Bailed	12	2.25	
	- Gallons per	Foot # 0.16		· · · ·			
	Gallons in	Well 4x3=(12)	Sampling P (feet below	ump Intake Setting land surface)			
Purging Equip	ment <u>Purge pum</u>	p//Bailer				S 10	
	•	SAMPLING	DATA/FIELD PARAME	TERS		• •	
Time	Temperature (°C)	pH Conductivit	y (µS/cm ³) TDS (g/l	_) DO (mg/L)	DO %	ORP (mV)	Volume (gal.)
1626	2,2	1.37 100	3 0.86	4 3.60	33.6	4.0	1.0
1628	11.77	1.32 103	35 0.90	0 4.10	38.	11.3	11.5
1630	1.84	7.31 10-	27 0.8	11 3.92	36.5	15.5	12.0
			·		<u> </u>	· .	
Sampling Equi	pment	Purge Pump/Bailer	·	·			
<u>Constitu</u> S N C N	ents Sampled	Container	Description		Prese	rvative	• •
Juitat	T, TUJ	32 62 0	laste	NOY	<u>e</u>	· · · · · · · · · · · · · · · · · · ·	
1.220	Nea Win	1602	plastic	<u></u> <u>No</u> `	ne	······	
<u></u>	EX	(37 40-	-02 VOAS	<u> </u>			
Remarks	H20 is	brown & s	itte, no c	odar ar e	sheer	obse	ried.
Sampling Pers	onnel Christine M	athews, Cassie Brown	2 f				
		······	ell Casino Volumes				•
	Gal./ft. 1 ¼" = 0).077 2" = 0. ⁻	16 3"	= 0.37	4" = 0.65		
	1 ½" = 0).10 2 ½" = 0.2	24 3" ½	= 0.50	6" = 1.46		

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Marc

APPENDIX B

March 2011 Quarterly Groundwater Laboratory Analytical Report

.



Conoco Phillips

Certifi	cate of A	nalysis Number:	
	<u>110</u>	<u>30462</u>	
<u>Report To:</u>		Project Name:	Wilmuth No. 1
Tetra Tech, Inc.		<u>Site:</u>	Aztec, NM
Kelly Blanchard		Site Address:	
6121 Indian School Road, N.E.	,		
Suite 200			
Albuquerque	'	PO Number:	
NM		State:	New Mexico
87110-		State Cert. No.:	
ph (505) 237-8440 fax: (505) 881-3283		Date Reported:	3/28/2011

This Report Contains A Total Of 18 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

3/28/2011

Date

Test results meet all requirements of NELAC, unless specified in the narrative. Version 2.1 - Modified February 11, 2011



Case Narrative for: Conoco Phillips

Certificate of Analysis Number: 11030462 **Report To:** Wilmuth No. 1 **Project Name:** Aztec, NM Site: Tetra Tech, Inc. Kelly Blanchard Site Address: 6121 Indian School Road, N.E. Suite 200 PO Number: Albuquerque State: New Mexico NM 87110-State Cert. No .: ph (505) 237-8440 fax: (505) 881-3283 **Date Reported:** 3/28/2011

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II: ANALYSES AND EXCEPTIONS:

Per the Conoco Phillips TSM Revision 0, a copy of the internal chain of custody is to be included in final data package. However, due to LIMS limitations, this cannot be provided at this time.

III. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or by

& Cardenas

11030462 Page 1

3/28/2011

Date

Erica Cardenas Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.



Case Narrative for: Conoco Phillips

Certificate of Analysis Number:							
	<u>11030462</u>						
his designee, as verified by the following signature.							

a Cardinas

11030462 Page 2 3/28/2011

Erica Cardenas Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative. Version 2.1 - Modified February 11, 2011 Date



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SPL ENVIRONMENTAL 8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

Conoco Phillips

Contificate	~~ A	nalvaia	Numbe	
Certificate	OT A	naivsis	NUMD	ег:

11030462

<u>Report To:</u>	Tetra Tech, Inc. Kelly Blanchard 6121 Indian School Road, N.E. Suite 200 Albuquerque	Project Name: Wilmuth No. 1 <u>Site:</u> Aztec, NM <u>Site Address:</u>
<u>Fax To:</u>	NM 87110- ph (505) 237-8440 fax: (505) 881-3283	<u>PO Number:</u> <u>State:</u> New Mexico <u>State Cert. No.:</u> <u>Date Reported:</u> 3/28/2011

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	11030462-01	Water	03/16/2011 16:25	3/18/2011 9:06:00 AM	302849	
MW-2	11030462-02	Water	03/16/2011 15:35	3/18/2011 9:06:00 AM	302849	
MW-3	11030462-03	Water	03/16/2011 15:45	3/18/2011 9:06:00 AM	302849	
MW-4	11030462-04	Water	03/16/2011 16:35	3/18/2011 9:06:00 AM	302849	
MW-4	11030462-04	Water	03/16/2011 16:35	3/18/2011 9:06:00 AM	302851	· ·
Duplicate	11030462-05	Water	03/16/2011 16:30	3/18/2011 9:06:00 AM	302851	
Trip Blank	11030462-06	Water	03/16/2011 21:30	3/18/2011 9:06:00 AM	302851	

& Cardenas 8 લ

3/28/2011

Date

Erica Cardenas Project Manager

> Kesavalu M. Bagawandoss Ph.D., J.D. Laboratory Director

> > Ted Yen Quality Assurance Officer

Version 2.1 - Modified February 11, 2011

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ACCUTEST.

LABORATORIES

SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

44000400.04

(713) 660-0901

Client Sample ID MVV-1	· · · · · · · · · · · · · · · · · · ·			lected: U	3/16/201	1 16:25		mpie	D: 1103	0462-01
			Sit	e: Azte	ec, NM		·			
Analyses/Method	Result	QUAL	Re	ep.Limit	[Dil. Factor	Date Ana	alyzed	Analyst	Seq. #
ION CHROMATOGRAP	HY				MCL		E300.0	Ur	nits: mg/L	
Chloride	26			1		2	03/19/11	13:40	ESK	5747466
Sulfate	499			25		50	03/19/11	16:54	ESK	5747478
METALS BY METHOD	5010B, DISSOLVED				MCL	S	W6010B	Ur	nits: mg/L	
Manganese	2.36			0.005		1	03/25/11	18:32	EG	5752212
Prep Method F SW3005A C	Prep Date 03/18/2011 10:15	Prep Initials	s Prep 1.00	Factor						
TOTAL DISSOLVED SO	LIDS				MCL	SI	12540 C	Ur	hits: mg/L	
Total Dissolved Solids (Residue,Filterable)	1200			10		. 1	.03/22/11	11:30	MM1	5749754
VOLATILE ORGANICS	BY METHOD 8260B	3			MCL	S	W8260B	Ur	nits: ug/L	
Benzene	ND		-	1		1	03/21/11	16:41	JC	5748368
Ethylbenzene	ND			1		1	03/21/11	16:41	JC	5748368
Toluene	ND			1		1	03/21/11	16:41	JC	5748368
m,p-Xylene	ND		_	2		. 1	03/21/11	16:41	JC	5748368
o-Xylene	ND			1		1	03/21/11	16:41	JC	5748368
Xylenes,Total	ND			1		1	03/21/11	16:41	JC	5748368
Surr: 1,2-Dichloroethane	-d4 86.8		%	70-130		1.	03/21/11	16:41	JC	5748368
Surr: 4-Bromofluorobenz	ene 93.6		%	74-125		1.	03/21/11	16:41	JC	5748368
Surr: Toluene-d8	97.2	•	%	82-118		1	03/21/11	16:41	JC	5748368

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte Detected In The Associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

Client Sample ID MW	/-2		Collect	t ed: 03	3/16/2011	15:35	SPL Sa	mple i	I D: 1103	0462-02
			Site:	Azte	c, NM		-		-	
Analyses/Method	Resul	t QUAL	Rep.L	imit	Di	I. Factor	Date Ana	lyzed	Analyst	Seq. #
ION CHROMATOGRA	NPHY				MCL		E300.0	Ur	its: mg/L	
Chloride	20.1			1		-2	03/19/11	13:56	ESK	5747467
Sulfate	280			25		50	03/19/11	17:42	ESK	5747481
METALS BY METHO	D 6010B, DISSOLVE	D			MCL	SV	V6010B	Ur	its: mg/L	
Manganese	1.57		0.	.005		1	03/25/11	18:39	EG	5752213
Prep Method	Prep Date	Prep Initials	Prep Fac	tor						
SW3005A	03/18/2011 10:15	M_W	1.00							•
TOTAL DISSOLVED	SOLIDS				MCL	SN	12540 C	Ur	its: mg/L	
Total Dissolved Solids (Residue,Filterable)	858			10		1	03/22/11	11:30	MM1	5749756
VOLATILE ORGANIC	S BY METHOD 8260	В			MCL	SV	N8260B	Ur	its: ug/L	
Benzene	ND	· .	· · · · ·	1		1	03/21/11	18:07	JC	5748371
Ethylbenzene	ND			1		1	03/21/11	18:07	JC	5748371
Toluene	ND			1		1	03/21/11	18:07	JC	5748371
m,p-Xylene	ND			2		1 ·	03/21/11	18:07	JC	5748371
o-Xylene	ND			1		1	03/21/11	18:07	JC	5748371
Xylenes,Total	ND			1		1	03/21/11	18:07	JC	5748371
Surr: 1,2-Dichloroetha	anè-d4 81.1		% 70-	-130		1	03/21/11	18:07	JC	5748371
Surr: 4-Bromofluorobe	enzene 91.8		% 74-	-125		1	03/21/11	18:07	JC	5748371
Surr: Toluene-d8	95.9		% 82-	118		1	03/21/11	18:07	JC	5748371

Qualifiers: N

ND/U - Not Detected at the Reporting Limit

B - Analyte Detected In The Associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

> 11030462 Page 5 3/28/2011 3:37:57 PM

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SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

L	Α	в	0	R	A	т	Ο	R	I	Ε.	3

Client	Sample	ID MW-3	5

Collected: 03/16/2011 15:45 SPL Sample ID:

le ID: 11030462-03

			Site	o: Azto	c NM				·	
Analyses/Method	Result	QUAL	Re	p.Limit	D	il. Factor	Date Ana	lyzed	Analyst	Seq. #
ION CHROMATOGRAP	PHY .				MCL		E300.0	Ur	nits: mg/L	
Chloride	18.1			1		2	03/19/11	14:12	ESK	5747468
Sulfate	263			25		50	03/19/11	17:58	ESK	5747482
METALS BY METHOD	6010B, DISSOLVED)		<u> </u>	MCL	SI	W6010B	Ur	hits: mg/L	
Manganese	1.57			0.005		1	03/25/11	18:45	EG	5752214
Prep Method SW3005A	Prep Date 03/18/2011 10:15	Prep Initials M_W	<u>Prep</u>	Factor						,
TOTAL DISSOLVED SC	DLIDS				MCL	SM	12540 C	Ur	hits: mg/L	
Total Dissolved Solids (Residue,Filterable)	896			10		1	03/22/11	11:30	MM1	5749757
VOLATILE ORGANICS	BY METHOD 8260E	3		· · · ·	MCL	SI	W8260B	Ur	nits: ug/L	
Benzene	. ND			1		1	03/21/11	18:37	JC	5748372
Ethylbenzene	ND	:		1		1 -	03/21/11	18:37	JC	5748372
Toluene	ND			1		1	03/21/11	18:37	JC	5748372
m,p-Xylene	· ND			2		1	03/21/11	18:37	JC	5748372
o-Xylene	ND			1		1	03/21/11	18:37	JC	5748372
Xylenes,Total	ND			1		1	03/21/11	18:37	JC	5748372
Surr: 1,2-Dichloroethane	. d4 83.3		%	70-130		1	03/21/11	18:37	JC	5748372
Surr: 4-Bromofluoroben:	zene 94.5		%	74-125		1	03/21/11	18:37	JC	5748372
Surr: Toluene-d8	99.4		%	82-118		1	03/21/11	18:37	JC	5748372

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte Detected In The Associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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ACCUTEST

SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

LABORATORIES

Client Sample ID MV	V-4		Col	lected: 03	3/16/201	1 16:35	SPL Sa	mple	ID: 1103	30462-04
			Sit	e: Azte	ec, NM					
Analyses/Method	Result	QUAL	Re	ep.Limit		Dil. Facto	r Date Ana	alyzed	Analyst	Seq. #
ION CHROMATOGR	APHY				MCL	-	E300.0	U	nits: mg/L	,
Chloride	20.6			1		2	03/19/11	15:01	ESK	5747471
Sulfate	385			25		50	03/19/11	18:14	ESK	5747483
METALS BY METHO	D 6010B, DISSOLVED)			MCL	S	W6010B	U	nits: mg/L	,
Manganese	2.18			0.005		1	03/25/11	18:51	EG	5752215
Prep Method	Prep Date	Prep Initials	Prep	Factor						
SW3005A	03/18/2011 10:15	M_W	1.00							
TOTAL DISSOLVED	SOLIDS				MCL	S	M2540 C	U	nits: mg/L	· ·
Total Dissolved Solids (Residue, Filterable)	970			10		1	03/22/11	11:30	MM1	5749758
VOLATILE ORGANIC	CS BY METHOD 8260	3			MCL	S	W8260B	U	nits: úa/L	
Benzene	ND			· 1		1	03/21/11	19:06	JC	5748373
Ethylbenzene	ND			1		1	03/21/11	19:06	JC	5748373
Toluene	ND			1		1	03/21/11	19:06	JC	5748373
m,p-Xylene	· ND			2		1	03/21/11	19:06	JC	5748373
o-Xylene	ND			1		1	03/21/11	19:06	JC	5748373
Xylenes,Total	ND			1		1	03/21/11	19:06	JC	5748373
Surr: 1,2-Dichloroeth	ane-d4 107		%	70-130		1	03/21/11	19:06	JC	5748373
Surr: 4-Bromofluorob	enzene 93.6		%	74-125		1	03/21/11	19:06	JC	5748373

%

82-118

Qualifiers: ND/U - Not Detected at the Reporting Limit

Surr: Toluene-d8

B - Analyte Detected In The Associated Method Blank

102

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
 D - Surrogate Recovery Unreportable due to Dilution
 MI - Matrix Interference

03/21/11 19:06 JC

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5748373



SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

LABORATORIES

Client Sample ID Duplicate

Collected: 03/16/2011 16:30

SPL Sample ID: 11030462-05

i		Site	: Azte	c, NM				
Analyses/Method	Result C	QUAL Rep	o.Limit	Dil. Facto	or Date Anal	yzed	Analyst	Seq. #
VOLATILE ORGANICS BY MET	HOD 8260B			MCL S	SW8260B	Unit	s: ug/L	
Benzene	ND		1	1	03/21/11 1	9:34	JC	5748374
Ethylbenzene	ND		1	1	03/21/11 1	9:34	JC	5748374
Toluene	ND		1	1	03/21/11 1	9:34	JC	5748374
m,p-Xylene	ND		2	1	03/21/11	9:34	JC	5748374
o-Xylene	ND		1	. 1	03/21/11 1	9:34	JC	5748374
Xylenes,Total	. ND		1	1	03/21/11 1	9:34	JC	5748374
Surr: 1,2-Dichloroethane-d4	74.8	%	70-130	1	03/21/11	9:34	JC	5748374
Surr: 4-Bromofluorobenzene	94.3	%	74-125	1	03/21/11 1	9:34	JC	5748374
Surr: Toluene-d8	100	%	32-118	1	03/21/11 1	9:34	JC	5748374

Qualifiers: ND/U - Not Detected at the Reporting Limit

- B Analyte Detected In The Associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated value between MDL and PQL
- E Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
 D - Surrogate Recovery Unreportable due to Dilution
 MI - Matrix Interference

(

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SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

Client Sample ID Trip Blank

Collected: 03/16/2011 21:30

SPL Sample ID: 11030462-06

		S	ite: Azte	ec, NM					
Analyses/Method	Result	QUAL I	Rep.Limit	·	Dil. Factor	Date Anal	yzed	Analyst	Seq. #
VOLATILE ORGANICS BY MET	HOD 8260B			MCL	SV	V8260B	Un	its: ug/L	
Benzene	ND		1		1	03/21/11 2	20:04	JC	5748375
Ethylbenzene	ND		. <u>1</u>		1	03/21/11 2	20:04	JC	5748375
Toluene	ND		1		1	03/21/11 2	20:04	JC	5748375
m,p-Xylene	ND		2		1	03/21/11 2	20:04	JC	5748375
o-Xylene	ND		1		1 ·	03/21/11 2	20:04	JC	5748375
Xylenes,Total	. ND		1		1	03/21/11 2	20:04	JC	5748375
Surr: 1,2-Dichloroethane-d4	87.1	. %	70-130		1	03/21/11 2	20:04	JC	5748375
Surr: 4-Bromofluorobenzene	95.8	%	74-125		1	03/21/11 2	20:04	JC	5748375
Surr: Toluene-d8	99.2	%	82-118		1	03/21/11 2	20:04	JC	5748375

Qualifiers: ND

J

ND/U - Not Detected at the Reporting Limit

B - Analyte Detected In The Associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
 D - Surrogate Recovery Unreportable due to Dilution
 MI - Matrix Interference

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Quality Control Documentation

Version 2.1 - Modified February 11, 2011

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Quality Control Report

Conoco Phillips

Wilmuth No. 1

Analysis: Method:	Metals by SW6010B	Method	6010B, Dissol	ved						Worl Lab	kOrder: Batch ID	11)): 10	030462 5539		
• • • • • • • • • • • • • • • • • • •		Me	thod Blank				Sa	mples	in Analy	tical Batc	h:				
RunID: ICP2 Analysis Date: Preparation Da	2_110325A-575220 03/25/201 ate: 03/18/201	1. 1 17:25 1 10:15	Units: Analyst: Prep By:	mg/L EG M_	Method S	W3005A	<u>La</u> . 11(11(11)	<u>b Sam</u> 030462 030462 030462	ple ID 2-01B 2-02B 2-03B		<u>Client</u> MW-1 MW-2 MW-3	Sample II	2		
	Manganese	Analyte		Result N	Rep Limi	it . 5	11	030462	2-04B		MW-4				
· · · ·				Ŀ	aboratory	Control	Sample	(LCS)		-					
	• • • •	Runlī Analy Prepa	D: sis Date: aration Date:	ICP2_11 03/25/2 03/18/2	0325A-5752 011 17:31 011 10:15	202 Ui Ai Pi	nits: nalyst: rep By:	mg/L EG M_	Method	SW 3005A	x				
	•		Analy	te		Spike Added	Resu	lt P Re	ercent ecovery	Lower Limit	Upper Limit				
	•	Mangan	ese			0.1000	0.10	50	105.0	80	12	0			
	· .	San Rur Ana Prej	nple Spiked: ID: Ilysis Date: paration Date:	11030 ICP2_ 03/25/ 03/18/)446-02 110325A-57 /2011 17:4: /2011 10:1	52204 3 5	Units: Analyst: Prep By	mg/ EG : M_	/L Methoo	SW3008	5A				
	Analyte .		Sample Result	MS Spike Added	MS Result	MS Reco	% I wery S	VISD Spike Added	MSD Result	MSI Rec	D % overy	RPD	RPD Limit	Low Limit	High Limit
Manganese	•		1.211	0.1	1.3	54	N/C	0.1	1.	308	N/C	N/C	20	75	125
Qualifiers:	ND/U - Not Dete B - Analyte Dete J - Estimated Va	ected at th ected in Th alue Betwe	e Reporting Lir ne Associated een MDL And F	nit Method E PQL	Blank	.	MI - Mat D - Reco	rix Inte overy L very O	rference Inreportat	le due to I	Dilution C Limits				
	E - Estimated V N/C - Not Calcu TNTC - Too nu	alue excee lated - Sa merous to	eds calibration mple concentra count	curve ation is g	reater than	4 times th	e amou	nt of sp	oike addeo	I. Control I	imits do i	not apply.	11	030462	2 Page 1 ⁻

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Conoco Phillips

Wilmuth No. 1

Analysis Method:	:	Volatile Organics by SW8260B	Method 826	60B		·		WorkOrde Lab Batch	er: ID:	11030462 R317340	
		Meth	od Blank	. •	•	Sa	amples in Ana	lytical Batch:		. •	
RunID:	Q_11	0321A-5748366	Units:	ug/L		La	ab Sample ID	Clie	ent Sam	ple ID	
Analysis	Date:	03/21/2011 16:12	Analyst:	JC		11	1030462-01C	MW	/-1		
,						11	1030462-02C	MW	-2		
						11	1030462-03C	MW	/-3		•
	_		r			11	1030462-04C	MW	-4 .		
		Analyte		Result	Rep Limit	11	1030462-050	Dur	licate		
	Be	enzene		ND	1.0	11	1000402-000		Disale		
	Et	hylbenzene		ND	1.0	31	1030462-060	i rip	Blank		
	T	pluene		ND	1.0						
	m	,p-Xylene		ND	2.0						
	<u>o-</u>	Xylene		ND	1.0						
	X	/lenes,Total		ND	1.0				·		
		Surr: 1,2-Dichloroethane-d4		103.3	70-130						
		Surr: 4-Bromofluorobenzene		91.3	74-125						
	. L_	Surr: Toluene-d8		99.8	82-118						
							•				
		······		La	boratory Co	ntrol Sample	e (LCS)				
		RunID:		Q_110321	A-5748365	Units:	ug/L				
		Analysi	s Date:	03/21/20	11 15:43	Analyst:	JC				
							•				I

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	17.2	86.1	74	123
Ethylbenzene	20.0	20.9	105	72	127
Toluene	20.0	21.2	106	74	126
m,p-Xylene	40.0	42.2	105	71	129
o-Xylene	20.0	. 20.7	103	74	130
Xylenes, Total	60.0	62.9	105	71	130
Surr: 1,2-Dichloroethane-d4	50.0	38.6	77.2	70	130
Surr: 4-Bromofluorobenzene	50.0	47	94.1	74	125
Surr: Toluene-d8	50.0	48	96.1	82	118

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers: ND/U - Not Detected at the Reporting Limit

- B Analyte Detected In The Associated Method Blank
 - J Estimated Value Between MDL And PQL

- MI Matrix Interference
- D Recovery Unreportable due to Dilution
- * Recovery Outside Advisable QC Limits
- E Estimated Value exceeds calibration curve
- N/C Not Calculated Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
- TNTC Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SPL ENVIRONMENTAL

8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

Quality Control Report

Conoco Phillips

Wilmuth No. 1

Analysis:	Volatile Org	anics by Method 82	60B			WorkOrder:	11030462	
Method:	SW8260B					Lab Batch ID:	R317340	
	. •	Sample Spiked:	11030462-01					
		RunID:	Q_110321A-5748369	Units:	ug/L			
		Analysis Date:	03/21/2011 17:10	Analyst:	JC			

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	19.4	97.0	20	18.7	93.4	3.77	22	70	124
Ethylbenzene	ND	20	21.4	107	20	21.6	108	0.795	20	76	122
Toluene	ND	20	21.8	109	20	21.0	105	3.57	24	80	117
m,p-Xylene	ND	40	43.4	108	40	43.9	110	1.13	20	69	127
o-Xylene	ND	20	21.1	105	20	21.0	105	0.247	20	84	114
Xylenes,Total	ND	60	64.5	107	60	64.9	108	0.682	20	69	127
Surr: 1,2-Dichloroethane-d4	ND	50	43	86.0	50	36.7	73.5	15.7	30	70	130
Surr: 4-Bromofluorobenzene	ND	50	46.4	92.8	50	47.6	95.2	2.57	30	74	125
Surr: Toluene-d8	ND	50	48.5	96.9	50	49.3	98.5	1.64	30	82	118

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte Detected In The Associated Method Blank

J - Estimated Value Between MDL And PQL

E - Estimated Value exceeds calibration curve

MI - Matrix Interference

D - Recovery Unreportable due to Dilution

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

Conoco Phillips

					•		0. 1									
Analysis: Method:	lon Chro E300.0	matograph	у							Work Lab I	<order Batch I</order 	: ID:	1103 R31	30462 7283		
······································		Me	hod Blank				Sam	oles in Ana	alytica	I Batch	h:					
RunID: IC	1_110319A-5747460)	Units:	mg/L			Lah S	Sample ID			Clier	nt Sami	nie ID			
nalvsis Dat	e: 03/19/201	1 10:31	Analyst:	ESK			11030	0462-01A			MW-	1		•		
·	00/10/201	1 10.01	7 uldiyot.	Lon			1103	0462-02A			MW-	2				
•							1103	0462-03A			MW-	3				
	r				1	-	1103	0462-04A			MW-	4				
		Analyte		Result	Rep Lim	it										
	Sulfate				0.5											
	· ·					-										
				· Li	aboratory	Control S	Sample (L	<u>CS)</u>								
•		RunID): [`]	IC1_1103	319A-57474	61 Ur	nits: n	na/L								•
·		Analys	sis Date:	03/19/20	011 10:47	Ar	nalyst: E	SK								
								•								
			Analvt	te		Spike	Result	Percent	Lc	wer	Uppe	r				
						Added		Recovery	/ L	imit	Limit	t				
	·	Chloride				10.00	9 841	98.4	11	90	1	10				•
		[Onlondo				10.00	0.011									
	. •	Sulfate				10.00	10.02	100	.2	90	1	10				
		Sulfate	Matrix	<u>Spike (N</u>	MS) / Matr 462-01	10.00	10.02	100 (MSD)	.2	90	1	10				
		Sulfate Sulfate Run Ana	<u>Matrix</u> ple Spiked: ID: ysis Date:	5 Spike (N 110304 IC1_111 03/19/2	<u>MS) / Matr</u> 462-01 0319A-5743 2011 17:10	10.00 10.00	Jnits: Analyst:	100 (MSD) mg/L ESK	.2	90	1	10				
	Analvte	Sulfate Sam Run Ana	<u>Matrix</u> ple Spiked: ID: ysis Date: Samole	110304 110304 IC1_111 03/19/2	MS) / Matr 462-01 0319A-574 2011 17:10 MS	10.00 10.00	Jnits: Analyst:	100 (<u>MSD)</u> mg/L ESK	.2	90	1	10			low	Hiah
	Analyte	Sulfate Sam Run Ana	<u>Matrix</u> ple Spiked: ID: ysis Date: Sample Result	Spike (N 110304 IC1_111 03/19/2 MS Spike	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result	10.00 10.00 ix Spike I 7479 (0 // MS Reco	Jnits: Analyst: % MS very Spi	100 (MSD) mg/L ESK D MS ke Res	SD sult	90 MSE Recc	D %	10 RPI	D	RPD	Low	High Limit
	Analyte	Sulfate Sam Run Ana	<u>Matrix</u> iple Spiked: ID: ysis Date: Sample Result	Spike (N 110304 IC1_111 03/19/2 MS Spike Added	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result	10.00 10.00 ix Spike I 7479 (0 / MS Reco	Jnits: Analyst: % MS very Spi Add	100 (MSD) mg/L ESK D MS ke Res led	SD sult	90 MSE Recc	D %	10 RPI	D	RPD Limit	² Low Limit	High Limit
ulfate	Analyte	Sulfate	<u>Matrix</u> ple Spiked: ID: ysis Date: Sample Result 499.3	Spike (N 110304 IC1_110 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79:	10.00 10.00 ix Spike I 7479 (0 / MS Reco 2.3	Jnits: Analyst: % MS Very Spi Adc	100 (MSD) mg/L ESK ESK led 250	.2 5D sult 780.0	90 MSE Recc	0 % overy 112.3	10 RPI	D .565	RPD Limit	Low Limit	High Limit 120
ulfate	Analyte	Sulfate	<u>Matrix</u> ple Spiked: ID: lysis Date: Sample Result 499.3	Spike (N 110304 IC1_11 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-574: 2011 17:10 MS Result 79:	10.00 10.00 ix Spike I 7479 (0 / MS Reco 2.3	10.02 Duplicate Jnits: Analyst: % MS very Spii Adc 117.2	100 (MSD) mg/L ESK ESK Res led 250	.2 5D sult 780.0	90 MSE Recc	0 % overy 112.3	10 RPI	D .565	RPD Limit 15	Low Limit 80	High Limit 120
ulfate	Analyte	Sulfate	<u>Matrix</u> ple Spiked: ID: ysis Date: Sample Result 499.3	Spike (N 110304 IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79:	10.00 10.00 ix Spike I 7479 (0 / MS Reco 2.3	10.02 Duplicate Jnits: Analyst: % MS Spi Adc 117.2	100 (MSD) mg/L ESK led 250	SD sult 780.0	90 MSI Recc	2 % overy 112.3	10 RPI	D .565	RPD Limit 15	Low Limit 80	High Limit 120
ulfate	Analyte	Sulfate	<u>Matrix</u> iple Spiked: ID: ysis Date: Sample Result 499.3	Spike (N 11030- IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result 795	10.00 10.00	10.02 Duplicate Jnits: Analyst: Very Spi Adc 117.2	100 (MSD) mg/L ESK ESK led 250	.2 SD sult 780.0	90 MSE Recc	0 % overy 112.3	10 RPI	D .565	RPD Limit 15	Low Limit 80	High Limit 120
ulfate	Analyte	Sulfate	<u>Matrix</u> ple Spiked: ID: ysis Date: Sample Result 499.3	Spike (N 11030- IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79:	10.00 10.00 ix Spike I 7479 (0 / MS Reco 2.3 /	10.02 Duplicate Jnits: Analyst: % MS very Spid Add 117.2	100 (MSD) mg/L ESK ESK led 250	.2 5D sult 780.0	90 MSE Reco	2 % overy 112.3	10 RPI	D .565	RPD Limit	Low Limit	High Limit 120
ulfate	Analyte	Sulfate	<u>Matrix</u> ple Spiked: ID: lysis Date: Sample Result 499.3	Spike (N 110304 IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79	10.00 10.00 ix Spike I 7479 (0 / Reco 2.3	10.02 Duplicate Jnits: Analyst: % MS Spi Adc 117.2	100 (MSD) mg/L ESK Res led 250	3D sult 780.0	90 MSE Recc	0 % overy 112.3	10 RPI	D .565	RPD Limit 15	Low Limit	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det	Sulfate Sulfate Run Anal	<u>Matrix</u> ple Spiked: ID: ysis Date: Sample Result 499.3	Spike (N 11030- IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result 793	10.00 10.00 ix Spike I 7479 (0 / Reco 2.3	10.02 Duplicate Jnits: Analyst: % MS Very Adc 117.2 MI - Matrix	100 (MSD) mg/L ESK led 250	SD sult 780.0	90 MSE Recc	2 % overy 112.3	10 RPI	D .565	RPD Limit 15	Low Limit 80	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det B - Analyte Det	Sulfate Sulfate Run Anal	Matrix Iple Spiked: ID: ysis Date: Sample Result 499.3 e Reporting Lin e Associated N	Spike (N 11030- IC1_111 03/19/2 MS Spike Added 250	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result 793	10.00 10.00	10.02 Duplicate Jnits: Analyst: % MS yery Spi Add 117.2	Interference Interference Interference	.2 SD sult 780.0	90 MSE Recc	0 % overy 112.3 Dilution	10 RPI	D .565	RPD Limit 15	Low Limit 80	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det B - Analyte Det J - Estimated V	Sam Run Anal	Matrix Iple Spiked: ID: ID: Iysis Date: Sample Result 499.3 499.3	Spike (N 11030- IC1_111 03/19/2 MS Spike Added 250 nit Method B PQL Curve	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result 793	10.00 10.00	10.02 Duplicate Jnits: Analyst: % MS Spid Add 117.2 MI - Matrix O - Recover * - Recover	100 (MSD) mg/L ESK led 250 Interference ery Unrepor ry Outside /	3D Sult 780.0	90 MSE Reco	0 % overy 112.3 Dilution Limits	10 RPI	D .565	RPD Limit 15	Low Limit	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det B - Analyte Det J - Estimated V E - Estimated V	Sulfate Sulfate Run Anal ected at the ected in Th alue Betwee /alue excee	Matrix Iple Spiked: ID: ID: Iysis Date: Sample Result 499.3 e Reporting Lin e Associated N en MDL And F ds calibration of note concentra	Spike (M 110304 IC1_110 03/19/2 MS Spike Added 250 nit Method B PQL curve ation is growthing	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79: lank	10.00 10.00 ix Spike I 7479 (0 / MS Reco 2.3 / I I I I	10.02 Duplicate Jnits: Analyst: % MS yery Spii Add 117.2	100 (MSD) mg/L ESK ESK led 250 Interference ry Unrepor ry Outside A	3D Solit 780.0 re table d Advisa	90 MSE Reco	0 % overy 112.3 Dilution Limits	RPI	D .565	RPD Limit 15	Low Limit	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det B - Analyte Det J - Estimated V E - Estimated V N/C - Not Calco	Sam Run Anal ected at the ected in Th alue Betwe /alue excee Jated - Sar	Matrix ple Spiked: ID: ysis Date: Sample Result 499.3 e Reporting Lin e Associated M en MDL And F ds calibration of nple concentra	Spike (N 110304 IC1_111 03/19/2 MS Spike Added 250 nit Method B PQL curve ation is grave	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79: lank eater than	10.00 10.00 ix Spike I 7479 to 7479 to 7470	10.02 Duplicate Jnits: Analyst: % MS Very Spi Add 117.2 MI - Matrix O - Recover ' - Recover e amount of	100 (MSD) mg/L ESK ESK Res led 250 Interference ery Unrepor ry Outside /	3D sult 780.0 re table d Advisa ded. Co	90 MSE Reco lue to D ble QC ontrol li	0 % overy 112.3 Dilution Limits mits do	10 RPI	D .565 ply.	RPD Limit 15	Low Limit 80	High Limit 120
ulfate Qualifiers:	Analyte ND/U - Not Det B - Analyte Det J - Estimated V E - Estimated V N/C - Not Calct TNTC - Too nu presented on the C	Sam Run Anal ected at the ected in Th alue Betwe /alue excee ulated - Sar merous to C Summa	Matrix Iple Spiked: ID: ID: Iysis Date: Sample Result 499.3 e Reporting Lin e Associated I en MDL And F ds calibration o nple concentra count y Report have	Spike (N 11030- IC1_110 03/19/2 MS Spike Added 250 nit Method B 2QL curve ation is group	MS) / Matr 462-01 0319A-5743 2011 17:10 MS Result 793 lank lank eater than	10.00 10.00 ix Spike I 7479 (7479 (747)	10.02 Duplicate Jnits: Analyst: % MS very Spil Add 117.2 MI - Matrix O - Recover * - Recover e amount of cent recover	100 (MSD) mg/L ESK ESK led 250 Interference ery Unrepor ry Outside / of spike add	2 SD Sult 780.0	90 MSE Reco	0 % overy 112.3 Dilution Limits	RPI	D	RPD Limit 15	Low Limit 80 030462 28/2011	High Limit 120 Page 1
Qualifiers:	Analyte ND/U - Not Det B - Analyte Det J - Estimated V E - Estimated V N/C - Not Calco TNTC - Too nu presented on the C by the SPL LIMS sy	Sam Run Anal ected at the ected in Th alue Betwee /alue excees Jated - Sam merous to C Summan /stem are d	Matrix ple Spiked: ID: ysis Date: Sample Result 499.3 e Reporting Lin e Associated N en MDL And F ds calibration of nple concentration count y Report have erived from QC	Spike (N 110304 IC1_110 03/19/2 MS Spike Added 250 nit Method B 250 nit Method B PQL curve ation is gru	MS) / Matr 462-01 0319A-574 2011 17:10 MS Result 79: lank lank eater than inded. RPI ior to the a	10.00 10.00 ix Spike I 7479 (7479 (747)	10.02 Duplicate Jnits: Analyst: % MS yery Spid Add 117.2	100 (MSD) mg/L ESK ESK Res led 250 Interference ery Unrepor ry Outside / of spike add	.2 SD sult 780.0 table d Advisa ded. Co	90 MSE Reco lue to D ble QC ontrol li	0 % overy 112.3 Dilution Limits	10 RPI	D .565 ply.	RPD Limit 15	Low Limit 80 030462 28/2011	High Limit 120 Page 14 3:38:01 PM



Quality Control Report

· Conoco Phillips

					Wi	lmuth N	o. 1								
Analysis: Method:	lon Chrom E300.0	atography	,		-					Wori Lab I	Order: Batch II	11 D: R:	030462 317283/	A .	
		Meth	od Blank				Sar	nples in	Analyti	cal Batcl					
RunID: IC1	_110319A-5747460		Units:	mg/L			Lab	Sample	e ID		Clien	t Sample i	D		
Analysis Date	e: 03/19/2011	10:31	Analyst:	ESK		,	110	30462-0)1A		MW-1				
						*	110	30462-0)2A		MW-2	2			•
			· `				110	30462-0	13A 14A		MW-4) · L			
	A	nalyte		Result	Rep Limit										
	Sulfate			NE	0.50										
				Li	aboratory (Control S	Sample	(LCS)		•					
		RunID:		IC1_1103	319A-574746	1 Ui	nits:	mg/L		•	•	• •			
		Analysi	s Date:	03/19/20	011 10:47 .	Ar	nalyst:	ESK							•
										*					
				te .		Snike	Result	Per	cent	Lower	Unper				
						Added	- Result	Rec	overy	Limit	Limit				
	•.	Chloride	•			10.00	9.84	1	98.41	90	1	10		,	
	;	Sulfate	•			10.00	10.0	2	100.2	90	1	10			•
		Samp	<u>Matrix</u> le Spiked:	<mark>: Spike (M</mark> 11030	<u>MS) / Matri</u> 462-03	<u>x Spike I</u>	Duplicat	e (MSD)	1						
		Runic): -i- Data:	IC1_11	0319A-57474	\$69	Units:	mg/L							
	· · ·	Analy	sis Date:	03/19/.	2011 14:28		Analyst:	ESK	•						
	Analyte		Sample Result	MS Spike Added	MS Result	MS Reco	% N wery S A	ISD pike dded	MSD Result	MSI Reco	D % overy	RPD	RPD Limit	Low Limit	High Limit
Chloride			18.06	10	28.0)7	100.1	10	28.	12	100.6	0.181	5 15	80	120
		· ·	•	L			I							۰	
			,												
Qualifiers:	ND/U - Not Dete	ected at the	Reporting Lir	nit		I	MI - Matr	ix Interfe	erence						
	B - Analyte Dete	cted In The	Associated	Method B	llank	I	D - Reco	very Uni	reportable	e due to E	Dilution				
	J - Estimated Va	lue Betwee	n MDL And F	PQL		•	* - Recov	ery Out	side Advi	sable QC	Limits				
	E - Estimated Va	aiue exceed	s calibration	curve ation is cr	eater than A	l times th	e amoun	t of enit	hahha a	Control	imite do	not apply			
	TNTC - Too nun	nerous to co	ount	adon is gi				n or spik		Johnoff		nor appiy.	11	030462	Page 15
QC results p calculated by	presented on the QC	C Summary stem are de	Report have	e been rou C data pri	inded. RPD ior to the ap	and perc	cent reco of roundi	overy valu	ues				3	/28/2011	3:38:02 PM
		•		Versior	n 2.1 - Modil	ied Febr	uary 11, :	2011							



Quality Control Report

Conoco Phillips

Wilmuth No. 1

Analysis: Method:	Total Dissolved So SM2540 C	lids				· v	/orkOrder: ab Batch ID): (110304 R31741	62 9
	Me	thod Blank			Samples in	Analytical B	atch:			
RunID: Wi	ET_110322K-5749750	Units:	mg/L		Lab Sample	e ID	Client	Sample	e iD	
Analysiş Date	e: 03/22/2011 11:30	Analyst:	MM1		11030462-0	1A	MW-1			
					11030462-0	2A .	- MW-2			
	•				11030462-0	3A	MW,-3			
	Analyte		Result Rep Limi	it	11030462-0	4A	MW-4			
	Total Dissolved Solids (Residu	e Filterable)			-					
	RuniD:	WET_1	10322K-5749752	Units:	mg/L		<u>51</u>		•	
	Analysis Da	ite: 03/22/2	2011 11:30	Analyst:	MM1				•	
	Analyte	LCS LC Spike Res Added	S LCS sult Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Total Dissolv	ed Solids (Residue, Filterabl	200.0 2	05.0 102.5	200.0	205.0	102.5	0.0	10	95	107
			Sa	ample Duplic	ate .	•				
	Ol	riginal Sample:	11030462-01							
	Ri	uniD:	WET 110322K-	5749754 U	nits: ma/l		,			

 RunID:
 WET_110322K-5749754
 Units:
 mg/L

 Analysis Date:
 03/22/2011 11:30
 Analyst:
 MM1

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Total Dissolved Solids (Residue, Filterabl	1200	1202	0	10

Qualifiers:	ND/U - Not Detected at the Reporting Limit	MI - Matrix Interference	·
	B - Analyte Detected In The Associated Method Blank	D - Recovery Unreportable due to Dilution	
	J - Estimated Value Between MDL And PQL	* - Recovery Outside Advisable QC Limits	
	E - Estimated Value exceeds calibration curve		
	N/C - Not Calculated - Sample concentration is greater than 4 times	the amount of spike added. Control limits do not apply.	
	TNTC - Too numerous to count		11030462 Page 16
QC results proceeding of the calculated by	esented on the QC Summary Report have been rounded. RPD and p the SPL LIMS system are derived from QC data prior to the application	ercent recovery values n of rounding rules.	3/28/2011 3:38:02 PM

Sample Receipt Checklist And Chain of Custody

Version 2.1 - Modified February 11, 2011

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Sample Receipt Checklist

Workorder: Date and Time Received: Temperature:	11030462 3/18/2011 9:06:00 AM 2.5/2.5°C		Received By: Carrier name: Chilled by:	NB Fedex-Standard Overnight Water Ice
1. Shipping container/co	poler in good condition?	Yes 🗹	No	Not Present
2. Custody seals intact	on shippping container/cooler?	Yes 🔽	No	Not Present
3. Custody seals intact of	on sample bottles?	Yes 🗌	Νο	Not Present
4. Chain of custody pres	sent?	Yes 🔽	No 🗌	
5. Chain of custody sigr	ned when relinquished and received?	Yes 🔽	No	
6. Chain of custody agre	ees with sample labels?	Yes 🗹	No	
7. Samples in proper co	ntainer/bottle?	Yes 🔽	No 🗍 👘	
8. Sample containers int	act?	Yes 🔽	Νο	
9 Sufficient sample volu	ume for indicated test?	Yes 🗹	Νο	
0. All samples received	within holding time?	Yes 🗹	No	•
1. Container/Temp Blan	k temperature in compliance?	Yes 🗹	No	
2. Water - VOA vials hav	e zero headspace?	Yes 🗹		Vials Not Present
3. Water - Preservation of	checked upon receipt (except VOA*)?	Yes	No	Not Applicable
*VOA Preservation Ch	necked After Sample Analysis			
SPL Representation Client Name Contactor	ve:	Contact Date	& Time:	· · · · · · · · · · · · · · · · · · ·
Non Conformance	· · · ·			
Client Instructions:	· · · · · · · · · · · · · · · · · · ·			

Chain of Custooly Record Chain of Custooly Record Chain of Custooly Record Chain of Custooly Record Chain of Custooly Record State K/H Zip Record Pin: Chain of Custooly Record State K/H Zip Record Custool Record Custool Record Custool Record Pin: Chain of Custooly Record State K/H Zip Record Custool	page of 2 Requested Analysis): PM re/iew (initial):				Appral MM
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