

# **Remediation Plan**

# DATE: 03/2009

TETRA TECH, INC.

6121 Indian School Rd. NE Suite 200 Albuquerque, NM 87110  $T \in U \in V \in D^{(505) 237-8440}$ 

2009 APR 1 PM 1 15

March 31, 2009

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

> RE: ConocoPhillips Scott Drake #I Quarterly Groundwater Monitoring Report Bloomfield, New Mexico

Dear Mr. von Gonten:

Enclosed please find a copy of the above-referenced document as compiled by Tetra Tech, Inc., formerly Maxim Technologies, for this Farmington area site.

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 (1)

# QUARTERLY GROUNDWATER MONITORING 15 REPORT

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# CONOCOPHILLIPS SCOTT DRAKE #1 FARMINGTON, NEW MEXICO OCD # 3R-398

**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. 9690116.100

March 2009

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Ι.	Site	Location	Map
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# QUARTERLY GROUNDWATER MONITORING REPORT CONOCOPHILLIPS SCOTT DRAKE #I FARMINGTON, NEW MEXICO

### I.0 INTRODUCTION

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This report presents the results of the groundwater monitoring events conducted by Tetra Tech, Inc. (Tetra Tech) on October 22, 2008 and January 20, 2009, at the ConocoPhillips Scott Drake #1 site in Farmington, New Mexico (Site).

The Site is located in the northeast quarter of the southwest quarter of Section 2, Township 29 North, Range 13 West within the Scott Drake Ranch in the city of Farmington, New Mexico. The Site consists of a gas production well and associated equipment. The location and general features of the Site are shown on Figures 1 and 2, respectively.

### I.I Site History

The history of the Site is outlined on Table I and discussed in more detail in the following paragraphs.

The environmental investigation at the Site began as a result of a failure in a high level detection alarm in a 90 barrel horizontal underground storage tank (UST) on June 18, 2003. As a result of this failure, approximately 5 barrels (210 gallons) of condensate was discharged onto Site soils. An excavation began on June 19, 2003, the purpose of which was to remove hydrocarbon contaminated soils from the Site, to backfill the excavation with clean soils, and to remove the UST from the Site. During the course of the excavation, black, hydrocarbon stained soils were encountered at a depth of three (3) feet below ground surface (bgs) to a depth of ten (10) feet bgs. The New Mexico Oil Conservation Division (OCD) form C-141, Release Notification and Corrective Action, was filled out on the date of the incident by ConocoPhillips staff (Appendix A). An attachment to this report stated that that an historical spill occurred at the Site approximately 15 years prior to the June 2003 incident and that a large remediation project took place at the Site as a result of this prior spill; the bulk of the stained soils from three (3) to ten (10) feet bgs were thought to be from the historical spill. The excavation was completed on June 20, 2003, and was successful in removing approximately 150 cubic yards of hydrocarbon-impacted soils from the Site.

Three (3) piezometers were installed at the Site in July 2004 by Blagg Engineering of Bloomfield, New Mexico. The first piezometer (MW-I) was found to be dry at a depth of 13.3 feet bgs; cobbles prevented further drilling below this depth. Water was found at a depth of six (6) feet bgs and 7.2 feet bgs in piezometers MW-2 and MW-3, respectively, and no groundwater or soil samples were collected during the installation of the piezometers (Blagg Engineering, 2004).

In January 2005, Blagg Engineering began the installation of three (3) groundwater monitoring wells at the Site (MW-4, MW-5, and MW-6). Due to large cobbles and boulders discovered in the subsurface

during well installation, the project was postponed in order to bring a high pressure, down-hole hammer to the Site. All three groundwater monitoring wells were complete by March 9, 2005, following the subsequent damage and repair of this equipment. The first groundwater samples were collected on March 23, 2005, and groundwater analytical results from this date indicated that the two down-gradient monitoring wells (MW-4, MW-6) were not impacted by hydrocarbons, and only trace amounts of metals were detected at concentrations well below New Mexico Water Quality Control Commission (NMWQCC) groundwater standards for human health or domestic water supply. Groundwater monitoring well MW-5 was installed in the original source area of the hydrocarbon spill, and analytical results revealed the presence of ethylbenzene, naphthalenes and xylenes, but in concentrations below NMWQCC groundwater standards (Blagg Engineering, 2005). Blagg Engineering states that the groundwater direction at the Site is to the south, southwest, and mentions that the groundwater gradient is "substantial" at 0.18 feet/feet (ft/ft), with "normal" gradients in the area on the order of 0.01 to 0.05 ft/ft. The steep groundwater gradient at the Site is thought to be a result of a sandstone bench beneath the Site that contains a steep drop off (Blagg Engineering, 2005).

### 2.0 METHODOLOGY AND RESULTS

The following sections describe the groundwater monitoring methodology used at the Site and results of laboratory analysis of groundwater samples.

### 2.1 Groundwater Monitoring Methodology

### Groundwater Elevation Measurements

Prior to the start of groundwater sampling activities, the depth to water within groundwater monitoring wells MW-4, MW-5, and MW-6 were gauged using an interface probe, and the results were recorded on groundwater sampling field forms (Appendix B). The probe was decontaminated with an Alconox solution and de-ionized water before each monitoring well was gauged. Depth to water in groundwater monitoring well MW-5 was recorded on October 24, 2008 at a depth of 11.43 feet below the top of the casing (TOC) in this well. Depths to water in monitoring wells MW-4, MW-5, and MW-6 were recorded from the TOCs on January 20, 2009 at 20.37, 12.33, and 23.85 feet, respectively.

Table 2 presents the monitor well specifications and groundwater level data. The January 2009 groundwater elevation contour map indicates that groundwater at the Site flows along a steep gradient to the southwest (Figure 3). See Section 1.1 for a brief synopsis of the 2005 Blagg Engineering report wherein the steepness of the groundwater gradient at the Site is discussed.

### Groundwater Sampling

Groundwater monitoring well MW-5 was sampled on October 24, 2008 and groundwater monitoring wells MW-4, MW-5, and MW-6 were sampled on January 20, 2009 as a continuation of quarterly monitoring at the Site. Three well volumes were purged from each monitoring well before sampling was performed. A 1.5-inch submersible GeoSquirt pump was used to purge the well and to collect the groundwater sample. The purge water generated during the event was disposed of in the on-site waste water tank (Figure 2). The groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain-of-custody documentation to Southern Petroleum Laboratory located in Houston, Texas. The sample obtained from MW-5 in October 2008 was analyzed for diesel range organics (DRO) and gasoline range organics (GRO) by Environmental Protection Agency (EPA) method 8015B; major ions by EPA method 300.0; total metals by EPA methods 7470A, 6010B, and 6020A; nitrate as nitrogen by EPA method 353.2; semi-volatile organic compounds (SVOCs) by EPA method 8270C; and volatile organic compounds (VOCs) by EPA method 8260B. During the January 2009 sampling event, groundwater monitoring wells MW-4, MW-5, and MW-6 were analyzed for the presence of benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8260B.

### 2.2 Groundwater Sampling Analytical Results

Results from the October 2008 groundwater sampling event at MW-5 revealed a lack of evidence of hydrocarbon impacts. SVOC analysis of groundwater collected from MW-5 did not show results above the respective method detection limits (MDLs) for 69 analytes, and BTEX results were also below MDLs for these constituents. Major ions and total metals concentrations were detected in trace amounts or were below MDLs for all analyses conducted with the exception of iron, which was detected at a concentration of 2.1 milligrams per liter (mg/l). The NMWQCC domestic water supply groundwater standard for iron is 1.0 mg/l.

During the January 2009 groundwater sampling event, BTEX analysis was performed on samples collected from MW-4, MW-5 and MW-6. BTEX was not detected above the MDLs for any of these constituents.

Laboratory analytical data are summarized on Table 3, the field groundwater sampling forms are presented in Appendix B, and the laboratory analytical reports from the October 2008 and the January 2009 groundwater monitoring events are presented in Appendix C. A geologic cross section has also been prepared using data obtained from the boring logs created during the installation of MW-4, MW-5, and MW-6 (Figure 4).

### 3.0 CONCLUSIONS

Tetra Tech will continue quarterly groundwater sampling at the Site. Due to the exceedence of the NMWQCC groundwater quality standard for iron in MW-5, this constituent will be added to the BTEX analysis that is currently the basis of the groundwater monitoring program at the Site. The next

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groundwater sampling event is scheduled for April 2009. Please contact Kelly Blanchard at 505-237-8440 or kelly.blanchard@tetratech.com if you have any questions or require additional information.

### 4.0 **REFERENCES**

Blagg Engineering, Inc. (2004). ConocoPhillips - Scott No. 1 – Letter Report on Piezometer Installation, (K) Sec 2 – T29N-R13W, San Juan County, New Mexico. Prepared for ConocoPhillips Threadneedle Office, Houston, TX. Report Dated March 29. 7 pp.

Blagg Engineering, Inc. (2005). Groundwater Quality Investigation, ConocoPhillips Scott No. 1, (K) Sec 2 – T29N-R13W, San Juan County, New Mexico. Prepared for ConocoPhillips Threadneedle Office, Houston, TX. Report Dated April 19. 55 pp.

# FIGURES

I. Site Location Map

2. Site Layout Map

3. Groundwater Elevation Contour Map

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4. Site Geologic Cross Section









# TABLES

I. Site History Timeline

2. Groundwater Elevation Summary (March 2005 - January 2009)

3. Laboratory Analytical Data Summary (March 2005 – January 2009)

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Scott Drake No. 1 Table 1 - Site History Timeline

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Date/Time Period	Event/Action	Description/Comments
June 18, 2003	5 barrel (BBL) condensate spill discovered	Spill is the result of a high level detection alarm failure in a 90 BBL horizontal underground storage tank (UST). The New Mexico Oil Conservation Division (OCD) and the site landowners Alan and Gail McCulloch (daughter of Jimmy Drake) are notified regarding the spill.
June 19, 2003	Excavation begins at the site	An excavation begins and goes to 10 feet below ground surface (bgs) where water is encountered. Black soils present from 3 to 10 feet bgs; a large remediation project took place at the site 15 years prior to the 2003 spill, and the majority of the stained soils are thought to be from the prior event.
June 20, 2003	UST removed, excavation completed	UST removed and taken for leak testing. Approximately 150 cubic yards of soil removed from an excavation measuring 20 ft x 20 ft x 10 ft deep.
March 29, 2004	Letter report sent to ConocoPhillips by Blagg Engineering of Bloomfield, NM	Report documents installation of three piezometers at the site. Piezometers installed within the fenced area of the site, and extended from 8 to 13 feet bgs. Below this depth, cobbles were encountered that prevented further boring advancement. Depth to water in MW-1 was not found at a total depth of 13.3 feet bgs, MW-2 depth to water was measured at 6.0 feet bgs, and depth to water in MW-1 was more than the prevented that be that be that a data, the general groundwater flow direction was stated to be to the southwest.
September 28, 2004	OCD letter sent to Mr. Neal Goates of ConocoPhillips in Houston, TX	OCD requires ConocoPhilips to install a groundwater monitoring well "downgradient and directly adjacent to the excavated area of the spill". OCD directs ConocoPhillips to sample this well no less than 24 hours after the well is developed, and to submit groundwater samples for benzene, toluene, ethylbenzene, and zylenes (BTEX); polycyclic aromatic hydrocarbons (PAH), total dissolved solids (TDS); and New Mexico Water Quality Control Commission (NMWQCC) metals and major cations and anions using EPA approved methods. OCD requests an opportunity to split samples with ConocoPhillips. OCD requires ConocoPhillips to submit a comprehensive report to OCD by December 28, 2004.
April 19, 2005	Groundwater Quality Investigation report submitted to ConocoPhillips by Blagg Engineering	Groundwater monitoring wells MW-4, MW-5, and MW-6 installed at the site; groundwater is found at depths ranging between 12 and 20 feet bgs. The monitoring wells were all developed and subsequently sampled for OCD required parameters. Analytical test results from downgradient monitoring wells MW-4 and MW-6 indicate an absence of hydrocarbon impacts and trace amounts of metals well below NMWCQCC drinking water standards. MW-5 was installed in the original source area of the release, and analytical results reveal the presence of ethylbenzene, naphthalenes, and xylenes; however concentrations of these analytes were all below NMWQCC drinking water standards. The groundwater gradient was determined to be 0.18 ft/ft in a south/southwest direction. Blagg Engineering recommends a minimum of one additional sampling event to confirm water quality. results.

Tetra Tech

Scott Drake No. 1 Table 1 - Site History Timeline

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Date/Time Period	Event/Action	Description/Comments
April 19, 2005	Groundwater Quality Investigation report submitted to ConocoPhillips by Blagg Engineering	Report notes that the groundwater gradient is substantial at 0.18 ft/ft, with normal gradients in the San Juan Basin ranging from 0.01 to 0.05 ft/ft. Blagg Engineering states that although none of the borings penetrated the cobble layer beneath the site, regional stratigraphy indicates that a sandstone bench may be found beneath the site. Blagg states that this bench may contain a steep drop off that is dictating the steep site gradient. In addition, an irrigation season in the area of the site runs from April 15 to October 15, which can be expected to cause the water table to rise during this time. The time frame for sampling at the site is therefore recommended for late summer, after seasonal irrigation of area crops "has time to affect local groundwater flow".
October 24, 2008	Groundwater sampling of MW-5	Tetra Tech, Inc. (Tetra Tech) samples MW-5 for semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), metals, and major ions. Iron is found at a concentration of 2.1 mg/L, in excess of the NMWQCC drinking water standard of 1.0 mg/L. The remaining analytes are either substantially below NMWQCC drinking water standards or are not found above their respective method detection imits.
January 20, 2009	Groundwater sampling of MW-4, MW-5, MW-6	Tetra Tech samples site wells for BTEX. None of the groundwater samples are found to contain any BTEX constituent above the 5 microgram per liter ( $\mu g/L$ ) method detection limit.

Tetra Tech

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Scott Drake No. 1 Table 2 - Groundwater Elevation Summary (March 2005 - January 2009)

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	1/20/2009					
	3/23/2005					
MW-2	10/24/2008	Damaged	10.00	5.00 - 10.00	Well damaged	N/A
	1/20/2009					
	3/23/2005					
MW-3	10/24/2008	98.76	9.92	4.92 - 9.92	Dry to TD	N/A
	1/20/2009					
	3/23/2005				20.25	75.54
MW-4	10/24/2008	95.79	25.00	15.00 - 24.00	No data	No data
	1/20/2009				20.37	75.42
	3/23/2005				13.18	88.59
MW-5	10/24/2008	101.77	15.33	5.83 - 14.83	11.43	90.34
	1/20/2009				12.33	89.44
	3/23/2005				21.89	74.95
9-MM	10/24/2008	96.84	25.5	14.50 - 23.5	No data	No data
	1/20/2009				23.85	72.99
*Casing ele	evations are ba	sed on a 100	) foot relative	surface elevatic	on of the gas well head	

flange (Blagg Engineering, 2005). BMP = Below measuring point TOC = Top of Casing

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Explanation MCAWW - "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983, subsequent revisions included MW - Monitoring Well NE - Not established by NMWQCC WQCC - New Mexico Water Quality Control Commission NGCC - New Mexico Water C

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# APPENDIX A FORM C-141

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Release Notific:	atioi	1 and Co	orrective A	ction				
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Name of Company ConocoPhillips Company Address 5525 Hwy 64 Earmington NM 874	01	Contact Telephone	No 832-3	oates 79-6427				<u> </u>
Facility Name Scott #1		Facility Ty	pe Gas w	rell	·	API #30	-045-1309	4
Surface Owner Fee Mineral Ov	wner	Fee	······································		Lease M	No. Fee		
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Unit Letter Section Township Range, Feet from the	North/	South Line	Feet from the	East/W	/est Line	County		
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Type of Release		Volume of	f Release		Volume I	Recovered		
Condensate		Date and 1	Hour of Occurrent		Date and	How of Dis	ne	
Underground tank overflowed due to detection system fa	ailure		6/18/2003		6	5/18/2003	<u>– 1130 hr</u>	
Was Immediate Notice Given? X Yes No Not Red	quired	If YES, To Alan & C Denny F	o Whom? Gail McCulloc Foust - OCD -	h 6/1	8/03 @ 1	1330 hr –	via phone via email	
By Whom?	· · · ·	Date and I	Hour	0,1072	<u>. w w </u>		THE GILLAN	
Monica D. Rodahl		1		14000	02 400	0.1		
Was a Wetersonwas Reschod?		IFVES V	alumo Impeding	18/20		iu nr		
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# **APPENDIX B**

## **GROUNDWATER SAMPLING FIELD FORMS**

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Project No.			. <u></u>				
Site Location	Aztec, NM		·····				
Site/Well No. X	WWXX MW-5	Coded/ Replicate No	)		Date	10.2	4-08
Weather S	inny, cold	Time Sampli Began	ng q:0	0	Time Sar Complete	npling ed	9:15
	1 -	EVAC		ATA			
Description of M	leasuring Point (MP)						
Height of MP Ab	oove/Below Land Surfa	ice		MP Elevation		·····	
Total Sounded [	Depth of Well Below M	P	0	Water-Level El	evation		
-leid	Depth to Water Belo	w мр_ <u>  , 4</u> 2	3_	Diameter of Ca Gallons Pumpe	sing d/Bailed	<u> </u>	2"
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inc.	Project No. Cal Scott Dva ko. 1	of C
	Site Location Far Mington Ave. /30th (Drake Romeh	
	Site/Well No. MW-4 Coded/ Replicate No. Date	. 20.09
	Weather Sunn(, CO) (50°) Time Sampling 1320 Time Sampling Completed	1350
	EVACUATION DATA	
	Description of Measuring Pt (MP) TC	
	Height of MP Above/Below Land Surface MP Elevation	
19	Total Sounded Depth of Well Below MP <u>24.66</u> Water-Level Elevation	
Land Control of Contro	Held Depth to Water Below MP_20.37 Diameter of Casing 2 inch.	/ 4 inch
- Ber	Wet Water Column in Well A 3   Prior to Sampling	1
	Gallons per Foot Sampling Pump Infake	NIA
	Gallons in Well (feet below land surface)	14
	Purging Equipment	
	SAMPLING DATA/FIELD PARAMETERS	% ORP Other
- 4	1340 15·31 7.05 .860 .685 138 137	7 57.9
5	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u>c</u> <u>-2.9</u>
_1	1246 12 1.02 1856 1000 1.11 000	5
	Sampling Equipment Low Flow Pump / Disposable Bailer	
	Constituents Sampled Container Description P	reservative
	3 VORD/BTEX 3 GASS VORS	
and the second		
Marsh .	Remarks Dlack Sealiment, NO ODJON, NO Sheen	
E.	Well Casing Volumes	
1. B. S.	Gal./ft. $1 \frac{1}{4}$ " = 0.077 $2$ " = 0.16 $3$ " = 0.37 $4$ " = $1 \frac{1}{2}$ " = 0.10 $2 \frac{1}{2}$ " = 0.24 $3$ " $\frac{1}{2}$ = 0.50 $6$ " =	0.65 1.46
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	Project No. Col Scott Drake	2 of <u>3</u>
	Site/Well No. <u>MW- 6</u> Coded/ Coded/	Date 0.20.09
	Weather <u>Sunny</u> Cool Began 13	50 Time Sampling Completed 405
	Description of Measuring Pt (MP)	
	Height of MP Above/Below Land Surface	MP Elevation
and the second	Total Sounded Depth of Well Below MP      Held    Depth to Water Below MP	Water-Level Elevation
	Wet Water Column in Well 21,77 Gallons per Foot	Prior to Sampling - 99 gallons
	Gallons in Well <u>.33</u> Purging Equipment <u>T6 C</u>	Sampling Pump Intake (feet below land surface)
	SAMPLING DATA/FIEL Time Temperature pH Conductivity 400 15.22 7.06 .724	D PARAMETERS        TDS      DO      DO%      ORP      Other        .572      3.0      30, ]      - 155, %
25	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u>.583 1,55 14,9 - 68</u> <u>.582 .88 2.8 - 206.0</u> <u>.583 .64 6,4 -241.3</u>
C) CU//or	Sampling Equipment Low Flow Pump / Disposable Bail	
No. of Street,	<u>3 OAS BTEX</u> <u>Glass</u>	VOAs <u>HCL</u>
No.	Sulfar Sulfar adar	
	Remarks <u>Was black; then clear</u> . Sampling Personnel CM KR	Very fast recharge, no to
<b>通いが</b>	Well Casing	Volumes Dailed
	Gal./ft. $1 \frac{1}{2}^{"} = 0.077$ $2" = 0.16$ $1 \frac{1}{2}" = 0.10$ $2 \frac{1}{2}" = 0.24$	3'' = 0.37 $4'' = 0.653'' \frac{1}{2} = 0.50 6'' = 1.46$

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	WATER SAMPLING FIELD FORM
	Project No. CUP Scott Drake, 30th Street (Drake Ranch) 3 of 3
たったのである	Site/Well No. <u>MW-5</u> Coded/ Replicate No. <u>Duplicate</u> , Date <u>1.20.09</u> Time Sampling <u>11.00</u> Time Sampling <u>11.00</u>
	Weather SUMAY (00) Began /9(0 Completed 1720
and the second	Description of Measuring Pt (MP)    Image: Comparison of MP Above/Below Land Surface      Height of MP Above/Below Land Surface    MP Elevation
1	Total Sounded Depth of Well Below MP    16.5    Water-Level Elevation      Held    Depth to Water Below MP    12:33    Diameter of Casing    2 inch/14 inch
1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	Wet Water Column in Well Gallons per Foot U
	Gallons in Well Sampling Pump Intake (feet below land surface)
	SAMPLING DATA/FIELD PARAMETERS Time Temperature pH Conductivity TDS DO DO% ORP Other 10/20 12.20 7.49 6641 562 2.10 765 1.009
Real	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	Sampling Equipment Low Flow Pump / Pisposable Bailer
	<u>Constituents Sampled</u> BTEX <u>3 Voas Hol</u> <u>14 Cl</u>
	Remarks Weathored Hydrocarban odor, has nongez plack material in Sampling Personnel _CM, KB
Sec. 14	Well Casing Volumes        Gal /ft      11/4" = 0.077      2" = 0.016      3" = 0.027      4" = 0.65
	$1\frac{1}{2} = 0.10 \qquad 2\frac{1}{2} = 0.24 \qquad 3^{\circ}\frac{1}{2} = 0.50 \qquad 6^{\circ} = 1.46$
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# APPENDIX C

# LABORATORY ANALYTICAL REPORTS

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

### Conoco Phillips

Certificate of Analysis Number: <u>08101614</u>								
Report To:	Project Name:	COP Scott Drake No 1						
Tetra Tech, Inc.	<u>Site:</u>	San Juan City, NM						
Kelly Blanchard	Site Address:							
6121 Indian School Road, N.E.								
Suite 200 Albuquerque	PO Number:	4510447839						
NM	State:	New Mexico						
87110-	State Cert. No.:							
ph: (505) 237-8440 fax:	Date Reported:	2/12/2009						

# This Report Contains A Total Of 34 Pages

# Excluding This Page, Chain Of Custody

And

Any Attachments

2/12/2009 Date

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



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

### Case Narrative for: Conoco Phillips

Certificate of Analysis Number:	
08101614	

Report To:	Project Name:	COP Scott Drake No 1
Tetra Tech, Inc.	<u>Site:</u>	San Juan City, NM
Kelly Blanchard	Site Address:	
6121 Indian School Road, N.E.		
Suite 200	PO Number:	4510447830
Albuquerque	PO Number.	4510447859
NM	State:	New Mexico
87110-	State Cert. No .:	
ph: (505) 237-8440 fax:	Date Reported:	2/12/2009
	1	

Per your request on February 12, 2009, this report was revised to change the sample ID from "MW-3" to "MW-5".

All samples received outside the 48-hour hold time for Nitrate and Orthophosphate analysis. Per historical records, SPL, Inc continued with analysis.

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.

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.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 84920 for the Diesel Range Organics analysis by Method 8015B. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID:84949 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

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.

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08101614 Page 1

2/12/2009

Erica Cardenas Project Manager

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



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

### **Conoco Phillips**

	<u>08101614</u>							
<u>Report To:</u>	Tetra Tech, Inc. Kelly Blanchard 6121 Indian School Roa Suite 200 Albuquerque	ad, N.E.	<u>F</u> S S	Project Name: Site: Site Address:	COP Scott Drake No 1 San Juan City, NM			
	NM 87110- ph: (505) 237-8440	fax: (505) 881-3283	E S S	20 Number: State: State Cert. No.:	4510447839 New Mexico			
<u> Fax То:</u>			<u>[</u>	Date Reported:	2/12/2009			

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	08101614-01	Water	10/24/2008 9:15:00 AM	10/28/2008 9:30:00 AM		

E.a. Cardinas

Erica Cardenas Project Manager

> Richard R. Reed Laboratory Director

Ted Yen Quality Assurance Officer 2/12/2009

Date

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### HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

(713) 660-0901

Client Sample ID:MW	V-5		Collect	ed: 1	0/24/2008	/24/2008 9:15 SPL Sample ID: 081016		1614-01		
			Site:	San	Juan Cit	y, NM				
Analyses/Method	Result	QUAL	Rep.L	.imit	D	il. Facto	or Date Analy	/zed	Analyst	Seq. #
DIESEL RANGE OR	GANICS				MCL	S	SW8015B	Ur	nits: mg/L	
Diesel Range Organics	(C10-C28) 0.3		,	0.1		1	11/07/08	8:47	NW	4757265
Surr: n-Pentacosane	63.8		% 20	-150		1	11/07/08	8:47	NW	4757265
Prep Method	Prep Date	Prep Initials	S Prep Fac	tor						
SW3510C	10/29/2008 18:43	N_M	1.00							
GASOLINE RANGE	ORGANICS				MCL	S	SW8015B	U	nits: mg/L	
Gasoline Range Organ	ics 1.3			0.1		1	11/04/08	2:28	WLV	474974
Surr: 1,4-Difluorober	izene 130		% 60	-155		1	11/04/08	2:28	WLV	4749741
Surr: 4-Bromofluorot	penzene 125		% 50	-158		1	11/04/08	2:28	WLV	4749741
ION CHROMATOGR	APHY				MCL		E300.0	U	nits: mg/L	
Chloride	15.6			2		4	11/10/08 2	21:21	TW	4766031
Fluoride	ND			2		4	11/10/08 2	21:21	TW	4766031
Ortho-phosphate (As P	) ND			5		10	11/20/08	7:04	TW	4780774
Sulfate	163			50		100	11/11/08 1	5:16	TW	4766448
MERCURY, TOTAL					MCL	S	SW7470A	U	nits: mg/L	
Mercury	ND		0.0	0002		1	11/06/08 1	4:19	F_S	4755690
Prep Method	Prep Date	Prep Initials	s Prep Fac	tor						
SW7470A	11/06/2008 13:18	F_S	1.00							
METALS BY METHO	D 6010B, TOTAL				MCL	S	SW6010B	U	nits: mg/L	
Calcium	136			0.1		1	10/31/08 1	3:44	S_C	4745446
Iron	2.05			0.02		1	10/31/08 1	3:44	s_c	4745446
Magnesium	30.2			0.1		1	10/31/08 1	3:44	s_c	4745446
Manganese	0.118		0	.005		1	10/31/08 1	3:44	S_C	4745446
Sodium	33			0.5		1	10/31/08 1	3:44	S_C	4745446
Prep Method	Prep Date	Prep Initials	s Prep Fac	tor						
SW3010A	10/30/2008 15:30	BDG	1.00							
METALS BY METHO	D 6020A, TOTAL				MCL	S	SW6020A	U	nits: mg/L	
Arsenic	ND		0	.005	,	1	10/31/08 1	17:06	AL_H	4746383
Barium	0.0654		0	.005		1	10/31/08 1	7:06	AL_H	4746383
Cadmium	ND		0	.005		1	10/31/08 1	7:06	AL_H	4746383
Chromium	ND		0	.005		1	10/31/08 1	7:06	AL_H	4746383
Lead	ND		0	.005		1	10/31/08 1	7:06	AL_H	4746383
Selenium	ND		0	.005		1	10/31/08 1	7:06	AL_H	4746383
Selenium			-							

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- B/V 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

					}	H 888	DUSTON LA BO INTERCH HOUSTON (713) 66	<b>BORATC</b> IANGE D , TX 7705	DRY RIVE 4	
Client Sample ID:MV	V-5			Collected:	10/24/2008	9:15	SPL San	nple ID:	0810	1614-01
				Site: Sa	an Juan City	, NM				
Analyses/Method		Result	QUAL	Rep.Limit	Di	. Factor	Date Anal	yzed A	nalyst	Seq. #
Prep Method	Prep Date		Prep Initials	Prep Factor						
SW 3010A	10/30/2008 15:30	)	BDG	1.00						
NITRATE NITROGEN	I (AS N), TOTAL				MCL		E353.2	Units	s: mg/L	·
Nitrogen, Nitrate (As N)		1.18		0.5		1	11/03/08	15:17 T	N	4757605

Qualifiers:

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ND/U - Not Detected at the Reporting Limit

 $\ensuremath{\mathsf{B/V}}\xspace$  - 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

> 08101614 Page 4 2/12/2009 5:37:44 PM



### HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

(713) 660-0901

Client Sample ID:MW-5

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Collected: 10/24/2008 9:15

SPL Sample ID: 08101614-01

		Site: San	Juan City, NM			
Analyses/Method	Result QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS E	BY METHOD 8270C		MCL SV	V8270C Ur	nits: ug/L	
1,2,4-Trichlorobenzene	ND	5	1	11/06/08 15:57	GY	4755803
1,2-Dichlorobenzene	ND	5	1	11/06/08 15:57	GY	4755803
1,2-Diphenylhydrazine	ND	10	1	11/06/08 15:57	GY	4755803
1,3-Dichlorobenzene	ND	5	1	11/06/08 15:57	GY	4755803
1,4-Dichlorobenzene	ND	5	1	11/06/08 15:57	GY	4755803
2,4,5-Trichlorophenol	ND	10	1	11/06/08 15:57	GY	4755803
2,4,6-Trichlorophenol	ND	5	1	11/06/08 15:57	GY	4755803
2,4-Dichlorophenol	ND	5	1	11/06/08 15:57	GY	4755803
2,4-Dimethylphenol	ND	5	1	11/06/08 15:57	GY	4755803
2,4-Dinitrophenol	ND	25	1	11/06/08 15:57	GY	4755803
2,4-Dinitrotoluene	ND	5	1	11/06/08 15:57	GY	4755803
2,6-Dinitrotoluene	ND	5	1	11/06/08 15:57	GY	4755803
2-Chloronaphthalene	ND	5	1 .	11/06/08 15:57	GY	4755803
2-Chlorophenol	ND	5	· 1	11/06/08 15:57	GY	4755803
2-Methylnaphthalene	ND	5	1	11/06/08 15:57	GY	4755803
2-Nitroaniline	ND	25	1	11/06/08 15:57	GY	4755803
2-Nitrophenol	ND <sup>*</sup>	5	1	11/06/08 15:57	GY	4755803
3,3'-Dichlorobenzidine	ND	10	1	11/06/08 15:57	GY	4755803
3-Nitroaniline	ND	25	1	11/06/08 15:57	GY	4755803
4,6-Dinitro-2-methylphenol	ND	25	1	11/06/08 15:57	GY	4755803
4-Bromophenyl phenyl ether	ND	5	1	11/06/08 15:57	GY	4755803
4-Chloro-3-methylphenol	ND	5	1	11/06/08 15:57	GY	4755803
4-Chloroaniline	ND	5	1	11/06/08 15:57	GY	4755803
4-Chlorophenyl phenyl ether	ND	5	1	11/06/08 15:57	GY	4755803
4-Nitroaniline	ND	25	1	11/06/08 15:57	GY	4755803
4-Nitrophenol	ND	25	1	11/06/08 15:57	GY	4755803
Acenaphthene	ND	5	1	11/06/08 15:57	GY	4755803
Acenaphthylene	ND	5	1	11/06/08 15:57	GY	4755803
Aniline	ND	5	1	11/06/08 15:57	GY	4755803
Anthracene	ND	5	1	11/06/08 15:57	GY	4755803
Benz(a)anthracene	ND	.5	1	11/06/08 15:57	GY	4755803
Benzo(a)pyrene	ND	5	1	11/06/08 15:57	GY	4755803
Benzo(b)fluoranthene	ND	5	1	11/06/08 15:57	GY	4755803
Benzo(g,h,i)perylene	ND	5	1	11/06/08 15:57	GY	4755803
Benzo(k)fluoranthene	ND	5	1	11/06/08 15:57	GY	4755803
Benzoic acid	ND	25	1	11/06/08 15:57	GY	4755803
Benzyl alcohol	ND	5	1	11/06/08 15:57	GY	4755803
Bis(2-chloroethoxy)methane	ND	5	1	11/06/08 15:57	GY	4755803
Bis(2-chloroethyl)ether	ND .	5	1	11/06/08 15:57	GY	4755803

Qualifiers:

ND/U - Not Detected at the Reporting Limit

 $\ensuremath{\mathsf{B/V}}\xspace$  - 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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### HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

(713) 660-0901

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Collected: 10/24/2008 9:15

SPL Sample ID: 08101614-01

		Sit	e: Sa	n Juan City, NM			
analyses/Method	Result	QUAL R	ep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Bis(2-chloroisopropyl)ether	ND		5	1	11/06/08 15:57	GY	4755803
Bis(2-ethylhexyl)phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Butyl benzyl phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Carbazole	ND		5	1	11/06/08 15:57	GY	4755803
Chrysene	ND		5	1	11/06/08 15:57	GY	4755803
Dibenz(a,h)anthracene	ND		5	1	11/06/08 15:57	GY ·	4755803
Dibenzofuran	ND		5	1	11/06/08 15:57	GY	4755803
Diethyl phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Dimethyl phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Di-n-butyl phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Di-n-octyl phthalate	ND		5	1	11/06/08 15:57	GY	4755803
Fluoranthene	ND		5	1	11/06/08 15:57	GY	4755803
Fluorene	ND		5	1	11/06/08 15:57	GY	4755803
Hexachlorobenzene	ND		5	1	11/06/08 15:57	GY	4755803
Hexachlorobutadiene	ND		5	1	11/06/08 15:57	GY	4755803
Hexachlorocyclopentadiene	ND		5	1	11/06/08 15:57	GY	4755803
Hexachloroethane	ND		5	1	11/06/08 15:57	GY	4755803
Indeno(1,2,3-cd)pyrene	ND		5	. 1	11/06/08 15:57	GY	4755803
Isophorone	ND		5	1	11/06/08 15:57	GY	4755803
Naphthalene	ND		5	1	11/06/08 15:57	GY	4755803
Nitrobenzene	ND		5	1	11/06/08 15:57	GY	4755803
N-Nitrosodi-n-propylamine	ND		5	1	11/06/08 15:57	GY	4755803
N-Nitrosodiphenylamine	ND		5	1	11/06/08 15:57	GY	4755803
Pentachlorophenol	ND		25	1	11/06/08 15:57	GY	4755803
Phenanthrene	ND		5	1	11/06/08 15:57	GY	4755803
Phenol	ND		5	1	11/06/08 15:57	GY	4755803
Pyrene	ND		5	1	11/06/08 15:57	GY	4755803
Pyridine	ND		5	1	11/06/08 15:57	GY	4755803
2-Methylphenol	ND		5	1	11/06/08 15:57	GY	4755803
3 & 4-Methylphenol	ND		5	1	11/06/08 15:57	GY	4755803
Surr: 2,4,6-Tribromophenol	82.7	%	10-123	1	11/06/08 15:57	GY	4755803
Surr: 2-Fluorobiphenyl	66.0	%	23-116	1	11/06/08 15:57	GY	4755803
Surr: 2-Fluorophenol	34.7	%	16-110	1	11/06/08 15:57	GY	4755803
Surr: Nitrobenzene-d5	64.0	%	21-114	1	11/06/08 15:57	GY	4755803
Surr: Phenol-d5	24.0	%	10-110	1	11/06/08 15:57	GY	4755803
Surr: Terphenyl-d14	72.0	%	22-141	1	11/06/08 15:57	GY	4755803
Surr: 2-Fluorophenol Surr: Nitrobenzene-d5 Surr: Phenol-d5 Surr: Terphenyl-d14	34.7 64.0 24.0 72.0	% % %	23-110 16-110 21-114 10-110 22-141	1 1 1 1 1	11/06/08 11/06/08 11/06/08 11/06/08	15:57 15:57 15:57 15:57	15:57 GY 15:57 GY 15:57 GY 15:57 GY 15:57 GY

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	10/30/2008 16:53	LLL	1.00

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- B/V 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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### HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

(713) 660-0901

Client Sample ID:MW-5

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Collected: 10/24/2008 9:15

SPL Sample ID: 08101614-01

		Site: San	Juan City, NM		
Analyses/Method	Result QUAL	Rep.Limit	Dil. Factor	Date Analyzed Analys	t Seq. #
VOLATILE ORGANICS BY MI	ETHOD 8260B		MCL SV	V8260B Units: ug/I	
1,1,1,2-Tetrachloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1,1-Trichloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1,2,2-Tetrachloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1,2-Trichloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1-Dichloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1-Dichloroethene	ND	5	1	11/01/08 20:48 LU_L	4749656
1,1-Dichloropropene	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2,3-Trichlorobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2,3-Trichloropropane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2,4-Trichlorobenzene	ND	5	`1	11/01/08 20:48 LU_L	4749656
1,2,4-Trimethylbenzene	9	5	1	11/01/08 20:48 LU_L	4749656
1,2-Dibromo-3-chloropropane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2-Dibromoethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2-Dichlorobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2-Dichloroethane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,2-Dichloropropane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,3,5-Trimethylbenzene	9	5	1	11/01/08 20:48 LU_L	4749656
1,3-Dichlorobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656
1,3-Dichloropropane	ND	5	1	11/01/08 20:48 LU_L	4749656
1,4-Dichlorobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656
2,2-Dichloropropane	ND	5	1	11/01/08 20:48 LU_L	4749656
2-Butanone	ND	20	1	11/01/08 20:48 LU_L	4749656
2-Chloroethyl vinyl ether	ND	10	1	11/01/08 20:48 LU_L	4749656
2-Chlorotoluene	ND	5	1	11/01/08 20:48 LU_L	4749656
2-Hexanone	ND	10	1	11/01/08 20:48 LU_L	4749656
4-Chlorotoluene	ND	5	1	11/01/08 20:48 LU_L	4749656
4-Isopropyltoluene	ND	5	1	11/01/08 20:48 LU_L	4749656
4-Methyl-2-pentanone	ND	10	1	11/01/08 20:48 LU_L	4749656
Acetone	ND	100	1	11/01/08 20:48 LU_L	4749656
Acrylonitrile	ND	50	1	11/01/08 20:48 LU_L	4749656
Benzene	ND	5	1 .	11/01/08 20:48 LU_L	4749656
Bromobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656
Bromochloromethane	ND	5	1	11/01/08 20:48 LU_L	4749656
Bromodichloromethane	ND	5	1	11/01/08 20:48 LU_L	4749656
Bromoform	ND	5	1	11/01/08 20:48 LU_L	4749656
Bromomethane	ND	10	1	11/01/08 20:48 LU_L	4749656
Carbon disulfide	ND	5	1	11/01/08 20:48 LU_L	4749656
Carbon tetrachloride	ND	5	1	11/01/08 20:48 LU_L	4749656
Chlorobenzene	ND	5	1	11/01/08 20:48 LU_L	4749656

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B/V - 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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### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE

HOUSTON, TX 77054

(713) 660-0901

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Collected: 10/24/2008 9:15

SPL Sample ID: 08101614-01

		QUAL	Site:	San Ju	uan City, NM		Analyst	Seq. #
Analyses/Method	Result		Rep	Limit	Dil. Factor	Date Analyzed		
Chloroethane	ND			10	1	11/01/08 20:48	LU_L	4749656
Chloroform	ND			5	1	11/01/08 20:48	LU_L	4749656
Chloromethane	ND			10	1	11/01/08 20:48	LU_L	4749656
Dibromochloromethane	ND			5	1	11/01/08 20:48	LU_L	4749656
Dibromomethane	ND			5	1	11/01/08 20:48	LU_L	4749656
Dichlorodifluoromethane	ND	-		10	1	11/01/08 20:48	LU_L	4749656
Ethylbenzene	ND			5	1	11/01/08 20:48	LU_L	4749656
Hexachlorobutadiene	ND			5	1	11/01/08 20:48	LU_L	4749656
Isopropylbenzene	5			5	1	11/01/08 20:48	LU_L	4749656
Methyl tert-butyl ether	ND			5	1	11/01/08 20:48	LU_L	4749656
Methylene chloride	ND			5	1	11/01/08 20:48	LU_L	4749656
Naphthalene	ND		-	5	1	11/01/08 20:48	LU_L	4749656
n-Butylbenzene	ND			5	1	11/01/08 20:48	LU_L	4749656
n-Propylbenzene	7			5	1	11/01/08 20:48	LU_L	4749656
sec-Butylbenzene	ND			5	1	11/01/08 20:48	LU_L	4749656
Styrene	ND			5	1	11/01/08 20:48	LU_L	4749656
tert-Butylbenzene	ND			5	1	11/01/08 20:48	LU_L	4749656
Tetrachloroethene	ND			5	1	11/01/08 20:48	LU_L	4749656
Toluene	ND			5	1	11/01/08 20:48	LU_L	4749656
Trichloroethene	ND	_		5	1	11/01/08 20:48	LU_L	4749656
Trichlorofluoromethane	ND			5	1	11/01/08 20:48	LU_L	4749656
Vinyl acetate	ND			10	1	11/01/08 20:48	LU_L	4749656
Vinyl chloride	ND			10	1	11/01/08 20:48	LU_L	4749656
cis-1,2-Dichloroethene	ND			5	1	11/01/08 20:48		4749656
cis-1,3-Dichloropropene	ND		_	5	1	11/01/08 20:48	LU_L	4749656
m,p-Xylene	ND			5	1	11/01/08 20:48	LU_L	4749656
o-Xylene	ND	-		5	1	11/01/08 20:48	LU_L	4749656
trans-1,2-Dichloroethene	ND			5	1	11/01/08 20:48	LU_L	4749656
trans-1,3-Dichloropropene	ND			5	1	11/01/08 20:48	LU_L	4749656
1,2-Dichloroethene (total)	ND			5	1	11/01/08 20:48	LU_L	4749656
Xylenes,Total	ND			5	1	11/01/08 20:48	LUL	4749656
Surr: 1,2-Dichloroethane-d4	106		% 6	2-130	1	11/01/08 20:48		4749656
Surr: 4-Bromofluorobenzene	102		% 7	0-130	1	11/01/08 20:48		4749656
Surr: Toluene-d8	104		% 7	4-122	1	11/01/08 20:48	LU_L	4749656

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- $\ensuremath{\mathsf{B/V}}\xspace$  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

# Quality Control Documentation

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

#### **Quality Control Report**

# **Conoco Phillips**

**COP Scott Drake No 1** 

Analysis: Method:	Diesel Range Organ SW8015B	ics			WorkOrder: Lab Batch ID:	08101614 84920
<u> </u>	Met	hod Blank		Samples in Analytic	cal Batch:	
RunID: HP_Z_(	081106A-4757246	Units:	mg/L	Lab Sample ID	Client Sar	nple ID
Analysis Date:	11/06/2008 14:26	Analyst:	NW	08101614-01C	MW-5	
Preparation Date:	10/29/2008 18:43	Prep By:	N M Method: SW3510C			

Analyte	Result	Rep Limit
Diesel Range Organics (C10-C28)	ND	0.10
Surr: n-Pentacosane	57.8	20-150

Laboratory	Control Sample/Laboratory	Control Sample Duplicate (LCS/LCSD)

RunID:
Analysis Date:
Preparation Da

HP\_Z\_081106A-4757247 Units: 11/06/2008 14:48 ion Date: 10/29/2008 18:43

mg/L NW Analyst: N\_M Method: SW3510C Prep By:

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics (C10-C28)	2.00	1.90	94.9	2.00	2.07	104	8.8	20	21	130
Surr: n-Pentacosane	0.0500	0.0443	88.6	0.0500	0.0478	95.6	7.6	30	20	150

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

B/V - Analyte detected in the associated Method Blank

E - Estimated Value exceeds calibration curve

D - Recovery Unreportable due to Dilution J - Estimated value between MDL and PQL

\* - Recovery Outside Advisable QC Limits

MI - Matrix Interference

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

# Conoco Phillips

### COP Scott Drake No 1

Analysis: Method:	Gasoline Range Org SW8015B	ne Range Organics 15B			WorkOrder:         08101614           Lab Batch ID:         R255843			
Method Blank		cal Batch:	······································					
RunID: HP_P_0	81103A-4749727	Units:	mg/L	Lab Sample ID	Client San	nple ID		
Analysis Date:	11/03/2008 17:55	Analyst:	WLV	08101614-01B	 MW-5			
Preparation Date:	11/03/2008 17:55	Prep By:	Method: SW5030B					

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.10
Surr: 1,4-Difluorobenzene	90.8	60-155
Surr: 4-Bromofluorobenzene	103.7	50-158
Surr: 4-Bromofluorobenzene	103.7	50

### Laboratory Control Sample (LCS)

Runid:
Analysis Date:
Preparation Da

 Date:
 11/03/2008 22:40

 n Date:
 11/03/2008 22:40

Units: mg/L Analyst: WLV Prep By: M

: WLV /: Method: SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	1.05	105	42	136
Surr: 1,4-Difluorobenzene	0.100	0.0943	94.3	60	155
Surr: 4-Bromofluorobenzene	0.100	0.106	106	50	158

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

Sample Spiked:	08101530-02		
RunID:	HP_P_081103A-4749733	Units:	mg/L
Analysis Date:	11/03/2008 21:15	Analyst:	WLV

HP\_P\_081103A-4749736

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	1.07	1	1.17	10.2 *	1	1.17	10.6 *	0.359	36	22	174
Surr: 1,4-Difluorobenzene	ND	0.1	0.0993	99.3	0.1	0.104	104	4.82	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.112	112	0.1	0.112	112	0.268	30	50	158

Qualifiers:

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ND/U - Not Detected at the Reporting Limit

B/V - 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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Quality Control Report

#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE

HOUSTON, TX 77054 (713) 660-0901

					Con	oco Ph	illips							
Analysis: Method:	Metal SW60	s by Method ( 10B	6010B, Total		COPS	Scott Dral	(e No 1		Work Lab E	Order: Batch ID:	081 849	101614 958		
		Me	thod Blank				Samp	les in Analyt	ical Batch	:				
RuniD: TJ.	A_081031A-474	15434	Units:	mg/L			Lab S	Sample ID		Client S	Sample II	ר		
Analysis Date	e: 10/31	/2008 12:49	Analvst	: SC			08101	1614-01F		MW-5		2		
Preparation E	Date: 10/30	/2008 15:30	Prep By	: BDG	Method: SV	V3010A								
		Analyte		Result	Rep Limit	Ð								
	Calcium			N	0.1									
	Iron Magnesium				0.02	2								
	Manganese			N	0.005	5								
	Sodium			N	D  0.5	5								
					abaratan.	Control S	ample (L	<u></u>	<u></u>	<u>_</u>				
				<u> </u>	aboratory	Control a		<u>(3)</u>						
		Runi	D: nin Deter	TJA_081	031A-47454	35 Un	its: m aluanti C	ig/L						
		Analy	sis Date:	10/31/20	008 12:54	An Dr/	alyst: S	DC Mothod:	SW/2010A					
		гера	aralion Date.	10/30/20	00 15.50	FIG	эр бу. б	DG Method.	311 30 10A					
			Anal	vte		Spike	Result	Percent	Lower	Upper	1			
			7 4164	yıc		Added	Result	Recovery	Limit	Limit				
		Calcium				1.000	1.149	114.9	80	120	•			
		Iron				1.000	1.125	112.5	80	120				
		Magnes	ium			1.000	1.122	112.2	80	120				
		Mangan	ese			1.000	1.121	112.1	80	120				
		Sodium				1.000	1.008	100.8	80	120				
			Post Dige	stion Spil	ke (PDS) / 1	Post Dige	stion Spi	ke Duplicate	(PDSD)					
Sample Snik	od: 0810/	1602.02												
Sample Opike RunID <sup>,</sup>	TJA 0	81031A-474544	0 Units	ma/l										
Analysis Date	e: 10/31	/2008 13:17	Analvst	: SC										
		2000 .0	, and yet	• •_•										
	Analyte		Sample	PDS	PDS	PDS	% PDS	D PDSD	PDSD	1%	RPD	RPD	Low	High
			Result	Spike	Result	Recov	ery   Spik	e Result	Recov	/ery		Limit	Limit	Limit
				Added										
			0.542	1	1.56	53 10	2.1	1 1.4	66 9	2.47	6.375	20	75	12
ron														
ron			Matri	ix Spike (	MS) / Matr	ix Spike [	Duplicate	(MSD)		_				
ron			Matri	ix Spike (I	MS) / Matr	ix Spike [	Duplicate	(MSD)						
ron			Matri	ix Spike (I	MS) / Matr	ix Spike [	Duplicate	( <u>MSD)</u>						
			Matr	ix Spike (	MS) / Matr	ix Spike [	Duplicate	(MSD)						
Qualifiers:	ND/L	J - Not Detecte	Matri	ix Spike (I	MS) / Matr	ix Spike [	Duplicate	(MSD) reference		tion				
Qualifiers:	ND/L B/V -	J - Not Detecte Analyte detect	Matri d at the Repo	ix Spike ( rting Limit ociated Me	MS) / Matr	<u>ix Spike [</u> Ml - D -	- Matrix Inf Recovery	(MSD) rerference Unreportable	due to Dilu	tion				
Qualifiers:	ND/L B/V - J - E: F - F	J - Not Detecte Analyte detect stimated value	Matri d at the Repo ted in the asso between MDL	ix Spike ( rting Limit pociated Me and PQL	MS) / Matr	<u>ix Spike [</u> Мі - D - * - F	Matrix Inf Recovery Recovery	(MSD) erference Unreportable Dutside Advisa	due to Dilu able QC Lir	tion nits				
Qualifiers:	ND/L B/V - J - E: E - E N/C -	J - Not Detecte Analyte detect stimated value stimated Value	Matri d at the Repo ted in the asso between MDL e exceeds calil d - Sample co	ix Spike ( rting Limit poliated Me and PQL bration cur	MS) / Matr	<u>ix Spike Г</u> МІ - D - * - F	• Matrix Inf Recovery Recovery C	(MSD) erference Unreportable Dutside Advise	due to Dilu able QC Lin	tion nits ntrol limite	s do not a	inoly		
Qualifiers:	ND/L B/V - J - E: E - E N/C - TNT(	J - Not Detecte Analyte detect stimated value stimated Value Not Calculate C - Too numero	Matri d at the Repo ted in the asso between MDL exceeds calii d - Sample co bus to count	ix Spike ( rting Limit poliated Me and PQL bration cur incentratio	MS) / Matr ethod Blank rve n is greater	ix Spike [ MI - D - * - F	Matrix Inf Recovery Recovery C	(MSD) erference Unreportable Dutside Advisa nount of spike	due to Dilu able QC Lin added. Co	tion mits ntrol limits	s do not a	ipply.	101614	Page



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**Quality Control Report** 

#### **Conoco Phillips**

COP Scott Drake No 1

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

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Analysis: Method:	Metals by M SW6010B	ethod 6010B, Total		. ·				WorkOrder Lab Batch	: 081 ID: 849	01614 58		
		Sample Spiked: RunID: Analysis Date: Preparation Date:	081016 TJA_08 10/31/2 10/30/2	602-02 31031A-474543 2008 13:03 2008 15:30	7 Units: Analys Prep E	mg st: S_( 3y: BD	/L C G Method: S\	W3010A				
	Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium		406.3	1	403.5	N/C	1	447.5	N/C	N/C	20	75	125

0.5418 1.504 96.23 1 2.372 183.0 \* 44.78 \* 1 1 Magnesium 45.32 1 46.01 N/C 48.67 N/C N/C Manganese 1.428 1 2.398 96.93 1 2.557 112.8 6.415 81.33 81.57 N/C 1 83.01 N/C N/C 1

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

B/V - 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

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

#### **Conoco Phillips** COP Scott Drake No 1

Analysis: Method:	Metals by Method 602 SW6020A	20A, Total			WorkOrder: Lab Batch ID:	08101614 84958-I
	Metho	od Blank		Samples in Analytic	cal Batch:	
RunID: ICPMS2_	081031A-4745588	Units:	mg/L	Lab Sample ID	Client Sam	<u>ple ID</u>
Analysis Date:	10/31/2008 14:46	Analyst:	AL_H	08101614-01F	MW-5	
Preparation Date:	10/30/2008 15:30	Prep By:	BDG Method: SW3010A			

Analyte	Result	Rep Limit
Arsenic	ND	0.005
Barium	ND	0.005
Cadmium	ND	0.005
Chromium	ND	0.005
Lead	ND	0.005
Selenium	ND	0.005
Silver	ND	0.005

#### Laboratory Control Sample (LCS)

RunID:
Analysis Date:
Preparation Date:

10/31/2008 15:06 10/30/2008 15:30

ICPMS2\_081031A-4745595 Units: mg/l₋ Analyst: AL\_H Prep By: BDG Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic	0.1000	0.09881	98.81	80	120
Barium	0.1000	0.09559	95.59	80	120
Cadmium	0.1000	0.1016	101.6	80	120
Chromium	0.1000	0.09065	90.65	80	120
Lead	0.1000	0.08910	89.10	80	120
Selenium	0.1000	0.1006	100.6	80	120
Silver	0.1000	0.1157	115.7	80	120

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

Sample Spiked:	08101602-02		
RunID:	ICPMS2_081031A-4745597	Units:	mg/L
Analysis Date:	10/31/2008 15:12	Analyst:	AL_H
Preparation Date:	10/30/2008 15:30	Prep By:	BDG Method: SW3010A

	Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Arsenic		ND	0.1	0.1013	97.62	0.1	0.1022	98.52	0.8845	20	75	125
Qualifiers:	ND/U - Not Detected	d at the Reporti	ng Limit		MI - Mat	rix Interfe	rence					

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

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** 

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

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	Metals by Meth SW6020A	od 6020A, Total						WorkOrder Lab Batch	: 081 ID: 849	01614 58-l		
		Matrix	Spike (N	AS) / Matrix S	Spike Dupli	cate (MS	SD)					
	Analyte	Sample Spiked: RunID: Analysis Date: Preparation Date:	081010 ICPMS2 10/31/2 10/30/2 MS	502-02 2_081031A-474 2008 15:12 2008 15:30 MS	15597 Units: Analys Prep I MS %	mg st: AL <u></u> 3y: BD	/L _H G Method: S\ 	W3010A MSD %	RPD	RPD	Low	High
	, and yes	Result	Spike Added	Result	Recovery	Spike Added	Result	Recovery		Limit	Limit	Limit
Barium		0.05154	0.1	0.1599	108.4	0.1	0.1574	105.9	1.576	20	75	125
Cadmium		ND	0.1	0.09856	98.56	0.1	0.09554	95.54	3.112	20	75	125
Chromium		ND	0.1	0.09150	91.50	0.1	0.09256	92.56	1.152	20	75	125
Lead		ND	0.1	0.09164	91.64	0.1	0.09132	91.32	0.3498	20	75	125
Selenium		ND	0.1	0.09221	92.21	0.1	0.09133	91.33	0.9589	20	75	125
Silver		ND	0.1	0.1145	114.5	0.1	0.1127	112.7	1.585	20	75	125

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

B/V - 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

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

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	Mercury, Total SW7470A								Work Lab E	Order: Batch ID:	081 : 851	01614 78		
,	Met	hod Blank				Samp	oles in	Analytic	al Batch	1:				
RunID: HGLC_0 Analysis Date: Preparation Date:	81106A-4755670 11/06/2008 13:32 11/06/2008 13:18	Units: Analyst: Prep By:	mg/L F_S F_S Me	ethod: SW	7470A	<u>Lab \$</u> 08101	<u>Sampl</u> 1614-0	<u>e ID</u> )1F		<u>Client</u> MW-5	Sample IC	2		
Merc	Analyte		Result ND	Rep Limit 0.0002										
			Lab	oratory C	ontrol Sa	mple (L	<u>CS)</u>							
	RunID Analys Prepa	: iis Date: ration Date:	HGLC_081 11/06/200 11/06/200	106A-47556 8 13:35 8 13:18	871 Unit Ana Preț	s: n yst: F oBy: F	ng/L _S _S N	lethod: S\	N7470A					
		Analyte	e		Spike Added	Result	Per Rec	cent I overy	Lower Limit	Upper Limit	]			
	Mercury			0	.002000 0	.001983		99.15	80	12	ō			
	Sam Run Anal Prep	ple Spiked: ID: ysis Date: paration Date:	0810173 HGLC_08 11/06/20 11/06/20	34-09 81106A-475 008 13:39 008 13:18	5673 Ur Ar Pr	iits: alyst: ep By:	mg/L F_S F_S	Method:	SW7470	A				
Ą	nalyte	Sample Result	MS Spike Added	MS Result	MS % Recove	mS ery Spi Ado	iD ke led	MSD Result	MSI Reco	0 % overy	RPD	RPD Limit	Low Limit	Hig Lin
Vercury		ND	0.002	0.00188	5 94	.26 0.	002	0.00184	13	92.14	2.266	20	75	1
Qualifiers:	ND/U - Not Detected	at the Reporting	ng Limit		MI -	Matrix In	terfere	nce						

\* - Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL E - Estimated Value exceeds calibration curve

ceeds 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

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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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10/30/2008 16:53

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Preparation Date:

#### **Quality Control Report**

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

#### **Conoco Phillips** COP Scott Drake No 1

Analysis: Method:	Semivolatile Organic SW8270C	s by Method	8270C		WorkOrder: Lab Batch ID:	08101614 84949	
	Meth	od Blank		Samples in Analytic	al Batch:		
RunID: H_08	1106B-4755273	Units:	ug/L	Lab Sample ID	Client San	nple ID	
Analysis Date	11/06/2008 10:56	Analyst:	GY	08101614-01D	MW-5		

Prep By: LLL Method: SW3510C

Analyte	Result	Rep Limit
1,2,4-Trichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Diphenylhydrazine	ND	10
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	5.0
2,4-Dichlorophenol	ND	5.0
2,4-Dimethylphenol	ND	5.0
2,4-Dinitrophenol	ND	25
2,4-Dinitrotoluene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Chlorophenol	ND	5.0
2-Methylnaphthalene	ND	5.0
2-Nitroaniline	ND	25
2-Nitrophenol	ND	5.0
3.3 - Dichlorobenzidine	ND	10
3-Nitroaniline	ND	25
4.6-Dinitro-2-methylphenol	ND	25
4-Bromophenyl phenyl ether	ND	5.0
4-Chloro-3-methylphenol	ND	5.0
4-Chloroaniline	ND	5.0
4-Chlorophenyl phenyl ether	ND	5.0
4-Nitroaniline	ND	25
4-Nitrophenol	ND	25
Acenaphthene	ND	5.0
Acenaphthylene	ND	5.0
Aniline	ND	5.0
Anthracene	ND	5.0
Benz(a)anthracene	ND	5.0
Benzo(a)pyrene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzoic acid	ND	25
Benzyl alcohol	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Butyl benzyl phthalate	ND	5.0
Carbazole	ND	5.0
Chrysene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Dibenzofuran	ND	5.0

Qualifiers:

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ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

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.

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**Quality Control Report** 

# **Conoco Phillins**

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

	COP Scott Drake N	o <sup>1</sup>	
Analysis:	Semivolatile Organics by Method 8270C	WorkOrder:	08101614
Method:	SW8270C	Lab Batch ID:	84949
<b></b>	Mothod Blank	······································	

		<u>14</u>	letiloù	Dialik		
RunID:	H_081106	3-4755273		Units:	ug/L	
Analysis (	Date:	11/06/2008 10:56		Analyst:	GY	
Preparatio	on Date:	10/30/2008 16:53		Prep By:	LLL	Method: SW3510C

Analyte	Result	Rep Limit
Diethyl phthalate	ND	5.0
Dimethyl phthalate	ND	5.0
Di-n-butyl phthalate	ND	5.0
Di-n-octyl phthalate	ND	5.0
Fluoranthene	ND	5.0
Fluorene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
Hexachloroethane	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Isophorone	ND	5.0
Naphthalene	ND	5.0
Nitrobenzene	ND	5.0
N-Nitrosodi-n-propylamine	ND	5.0
N-Nitrosodiphenylamine	ND	5.0
Pentachlorophenol	ND	25
Phenanthrene	ND	5.0
Phenol	ND	5.0
Pyrene	ND	5.0
Pyridine	ND	5.0
2-Methylphenol	ND	5.0
3 & 4-Methylphenol	ND	5.0
Surr: 2,4,6-Tribromophenol	76.0	10-123
Surr: 2-Fluorobiphenyl	82.0	23-116
Surr: 2-Fluorophenol	78.7	16-110
Surr: Nitrobenzene-d5	76.0	21-114
Surr: Phenol-d5	85.3	10-110
Surr: Terphenyl-d14	80.0	22-141

#### Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

H\_081106B-4755274

11/06/2008 11:26

10/30/2008 16:53

RunID: Analysis Date:

Preparation Date:

ug/L Units: GY Analyst:

Prep By: LLL Method: SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2,4-Trichlorobenzene	25.0	19.0	76.0	. 25.0	20.0	80.0	5.1	39	21	120
1,2-Dichlorobenzene	25.0	20.0	80.0	25.0	20.0	80.0	0.0	50	20	150

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

B/V - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

MI - Matrix Interference

\* - Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL 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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#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

### Conoco Phillips

COP Scott Drake No 1

Analysis: Method:	Semivolatile Orgar SW8270C	nics by Me	thod 8270	C	,			WorkOrder: Lab Batch IE	( ): i	0810161 84949	14
	Labora	tory Conti	rol Sample	/Laboratory	Control Sa	mple Duplica	ate (LCS/LC	<u>SD)</u>			
	RunID: Analysis Da Preparation	H ate: 1 Date: 1	_081106B-4 1/06/2008 0/30/2008	\$755274 11:26 16:53	Units: Analyst: Prep By:	ug/L GY LLL Method	: SW3510C				
	Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Diphenylhy	drazine	25.0	18.0	72.0	25.0	19.0	76.0	5.4	50	10	25
1,3-Dichlorober	nzene	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	20	150
1,4-Dichlorober	nzene	25.0	20.0	80.0	25.0	20.0	80.0	0.0	45	20	150
2,4,5-Trichlorop	ohenol	25.0	20.0	80.0	25.0	23.0	92.0	14.0	50	30	150
2,4,6-Trichlorop	ohenol	25.0	20.0	80.0	25.0	22.0	88.0	9.5	50	30	150
2,4-Dichlorophe	enol	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	30	150
2,4-Dimethylph	enol	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	32	14(
2,4-Dinitrophen	ol	25.0	14.0	56.0	25.0	15.0	60.0	6.9	50	10	160
2.4-Dinitrotolue	ne	25.0	22.0	88.0	25.0	24.0	96.0	8.7	50	30	150

1,4-Dicitiorobenzene	20.0	20.0	00.0	25.0	20.0	00.0	0.0	45	20	150
2,4,5-Trichlorophenol	25.0	20.0	80.0	25.0	23.0	92.0	14.0	50	30	150
2,4,6-Trichlorophenol	25.0	20.0	80.0	25.0	22.0	88.0	9.5	50	30	150
2,4-Dichlorophenol	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	30	150
2,4-Dimethylphenol	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	32	140
2,4-Dinitrophenol	25.0	14.0	56.0	25.0	15.0	60.0	6.9	50	10	160
2,4-Dinitrotoluene	25.0	22.0	88.0	25.0	24.0	96.0	8.7	50	30	150
2,6-Dinitrotoluene	25.0	20.0	80.0	25.0	23.0	92.0	14.0	50	30	150
2-Chloronaphthalene	25.0	22.0	88.0	25.0	24.0	96.0	8.7	50	30	150
2-Chlorophenol	25.0	21.0	84.0	25.0	22.0	88.0	4.7	40	23	134
2-Methylnaphthalene	25.0	22.0	88.0	25.0	23.0	92.0	4.4	50	20	170
2-Nitroaniline	25.0	22.0	88.0	25.0	24.0	96.0	8.7	50	20	160
2-Nitrophenol	25.0	19.0	76.0	25.0	22.0	88.0	14.6	50	29	182
3,3'-Dichlorobenzidine	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	30	200
3-Nitroaniline	25.0	19.0	76.0	25.0	22.0	88.0	14.6	50	20	160
4,6-Dinitro-2-methylphenol	25.0	17.0	68.0	25.0	18.0	72.0	5.7	50	10	160
4-Bromophenyl phenyl ether	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	30	150
4-Chloro-3-methylphenol	25.0	20.0	80.0	25.0	22.0	88.0	9.5	42	25	160
4-Chloroaniline	25.0	21.0	84.0	25.0	23.0	92.0	9.1	50	20	160
4-Chlorophenyl phenyl ether	25.0	23.0	92.0	25.0	24.0	96.0	4.3	50	25	158
4-Nitroaniline	25.0	20.0	80.0	25.0	24.0	96.0	18.2	50	20	160
4-Nitrophenol	25.0	18.0	72.0	25.0	20.0	80.0	10.5	50	10	132
Acenaphthene	25.0	21.0	84.0	25.0	22.0	88.0	4.7	31	30	150
Acenaphthylene	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	33	250
Aniline	50.0	41.0	82.0	50.0	44.0	88.0	7.1	50	10	135
Anthracene	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	27	133
Benz(a)anthracene	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	33	143
Benzo(a)pyrene	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	17	163
Benzo(b)fluoranthene	25.0	20.0	80.0	25.0	22.0	88.0	9.5	50	24	159
Benzo(g,h,i)perylene	25.0	22.0	88.0	25.0	23.0	92.0	4.4	50	30	160
Benzo(k)fluoranthene	25.0	23.0	92.0	25.0	22.0	88.0	44	50	11	162

Qualifiers: ND/U - Not [

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ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

 $\ensuremath{\mathsf{B/V}}\xspace$  - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution
\* - Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL 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

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#### Conoco Phillips

COP Scott Drake No 1

Analysis: Semivolatile Organics by Method 8270C WorkOrder: 08101614 Method: SW8270C Lab Batch ID: 84949 Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) RunID: H\_081106B-4755274 Units: ug/L 11/06/2008 11:26 GY Analysis Date: Analyst: Preparation Date: 10/30/2008 16:53 Prep By: LLL Method: SW3510C LCS LCSD RPD RPD Analyte LCS LCS LCSD LCSD Lower Upper Spike Result Percent Spike Result Percent Limit Limit Limit Added Recovery Added Recovery Benzoic acid 25.0 40.0 160 25.0 40.0 160 0.0 50 10 400 . 00 0 40.0 --------00.0 00.0 ----400

Benzyl alconol	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	30	160
Bis(2-chloroethoxy)methane	25.0	33.0	132	25.0	36.0	144	8.7	50	33	184
Bis(2-chloroethyl)ether	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	12	158
Bis(2-chloroisopropyl)ether	25.0	23.0	92.0	25.0	24.0	96.0	4.3	50	20	160
Bis(2-ethylhexyl)phthalate	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	10	158
Butyl benzyl phthalate	25.0	22.0	88.0	25.0	23.0	92.0	4.4	50	30	160
Carbazole	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	30	150
Chrysene	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	17	168
Dibenz(a,h)anthracene	25.0	22.0	88.0	25.0	22.0	88.0	0.0	50	30	160
Dibenzofuran	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	30	150
Diethyl phthalate	25.0	21.0	84.0	25.0	23.0	92.0	9.1	50	30	160
Dimethyl phthalate	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	30	160
Di-n-butyl phthalate	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	30	160
Di-n-octyl phthalate	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	20	150
Fluoranthene	25.0	21.0	84.0	25.0	22.0	88.0	4.7	50	26	137
Fluorene	25.0	21.0	84.0	25.0	23.0	92.0	9.1	50	30	150
Hexachlorobenzene	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	20	150
Hexachlorobutadiene	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	20	140
Hexachlorocyclopentadiene	25.0	17.0	68.0	25.0	18.0	72.0	5.7	50	10	150
Hexachloroethane	25.0	19.0	76.0	25.0	20.0	80.0	5.1	50	14	120
Indeno(1,2,3-cd)pyrene	25.0	23.0	92.0	25.0	24.0	96.0	4.3	50	30	160
Isophorone	25.0	22.0	88.0	25.0	24.0	96.0	8.7	50	21	196
Naphthalene	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	21	133
Nitrobenzene	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	20	160
N-Nitrosodi-n-propylamine	25.0	22.0	88.0	25.0	23.0	92.0	4.4	38	30	160
N-Nitrosodiphenylamine	50.0	51.0	102	50.0	52.0	104	1.9	50	30	150
Pentachlorophenol	25.0	14.0	56.0	25.0	15.0	60.0	6.9	50	14	176
Phenanthrene	25.0	20.0	80.0	25.0	21.0	84.0	4.9	50	10	140
Phenol	25.0	21.0	84.0	25.0	23.0	92.0	9.1	42	40	132
Pyrene	25.0	22.0	88.0	25.0	22.0	88.0	0.0	38	30	150
Pyridine	50.0	35.0	70.0	50.0	34.0	68.0	2.9	50	10	150

Qualifiers:

2-Methylphenol

a e

ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

23.0

D - Recovery Unreportable due to Dilution

92.0

9.1

50

30

160

B/V - Analyte detected in the associated Method Blank

25.0

21.0

J - Estimated value between MDL and PQL \* - Recovery Outside Advisable QC Limits

84.0

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.

25.0

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

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Surr: 2-Fluorophenol

Surr: Terphenyl-d14

Surr: Phenol-d5

Surr: Nitrobenzene-d5

**Quality Control Report** 

75.0

50.0

75.0

50.0

62.0

40.0

65.0

42.0

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

### **Conoco Phillips**

COP Scott Drake No 1

Analysis: Method:	Semivolatile Or SW8270C	ganics by Me	thod 8270	C			V L	VorkOrder: .ab Batch ID	);	0810161 84949	4
	Lab	oratory Cont	rol Sample	e/Laboratory	Control Sa	mple Duplica	te (LCS/LCS	<u>D)</u>			
	RunID: Analysis Prepara	H Date: 1 tion Date: 1	1_081106B-4 1/06/2008 0/30/2008	1755274 11:26 16:53	Units: Analyst: Prep By:	ug/L GY LLL Method:	: SW3510C				
	Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
3 & 4-Methylph	nenol	25.0	19.0	76.0	25.0	21.0	84.0	10.0	50	10	160
Surr: 2,4,6-T	Fribromophenol	75.0	64.0	85.3	75.0	70.0	93.3	9.0	30	10	123
Surr: 2-Fluor	robiphenyl	50.0	42.0	84.0	50.0	41.0	82.0	2.4	30	23	116

82.7

80.0

86.7

84.0

75.0

50.0

75.0

50.0

65.0

42.0

69.0

42.0

86.7

84.0

92.0

84.0

4.7

4.9

6.0

0.0

30

30

30

30

16

21

10

22

110

114

110

141

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

B/V - 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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11/01/2008 12:40

**Quality Control Report** 

Prep By:

# Conoco Phillips

COP Scott Drake No 1

Analysis: Method:	Volatile Organics by SW8260B	Method 8260	)B		WorkOrder: Lab Batch ID:	08101614 R255859	
· · · · · · · · · · · · · · · · · · ·	Meth	nod Blank		Samples in Analytica	I Batch:		
RunID: L_081	101C-4749652	Units:	ug/L	Lab Sample ID	Client San	nple ID	
Analysis Date:	11/01/2008 12:40	Analyst:	LU_L	08101614-01A	MW-5		

Method:

Analyte	Result	Rep Limit
1,1,1,2-Tetrachioroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloropropene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
1,3-Dichlorobenzene	NĐ	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	.5.0
2,2-Dichloropropane	ND	5.0
2-Butanone	ND	20
2-Chloroethyl vinyl ether	ND	10
2-Chlorotoluene	ND	5.0
2-Hexanone	ND	10
4-Chlorotoluene	ND	5.0
4-Isopropyltoluene	ND	5.0
4-Methyl-2-pentanone	ND	10
Acetone	ND	100
Acrylonitrile	ND	50
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	5.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon disulfide	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	<u>ND</u>	10
Chloroform	<u>ND</u>	5.0
Chloromethane	ND	10
Dibromochloromethane	ND	5.0
Dibromomethane	ND	5.0
Dichlorodifluoromethane	<u>ND</u>	10
Ethylbenzene	ND	5.0

**Qualifiers:** 

Preparation Date:

ND/U - Not Detected at the Reporting Limit

B/V - 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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HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901



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

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	Volatile Orga SW8260B	nics by Method 826	0B	WorkOrder: Lab Batch ID:	08101614 R255859	
		Method Blank				
RunID:	L_081101C-4749652	Units:	ua/L			

Analysis Date:	11/01/2008 12:40	Analyst:	LU_L	
Preparation Date:	11/01/2008 12:40	Prep By:	Ν	lethod:
		·		
	Analyte		Result	Rep Limi
Hexa	chlorobutadiene		ND	5.0
Isopre	opylbenzene		ND	5.0
Methy	/I tert-butyl ether		ND	5.(
Methy	lene chloride		ND	5.0
Naph	thalene		ND	5.0
n-But	ylbenzene		ND	5.0
n-Pro	pylbenzene		ND	5.0
sec-E	Butylbenzene		ND	5.0
Styre	ne		ND	5.0
tert-B	utylbenzene		ND	5.0
Tetra	chloroethene		ND	5.0
Tolue	ne		ND	5.0
Trich	oroethene		ND	5.0
Trich	orofluoromethane		ND	5.0
Vinyl	acetate		ND	10

Vinyl chloride

m,p-Xylene

Xylenes, Total

o-Xylene

15

cis-1,2-Dichloroethene

cis-1,3-Dichloropropene

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

1,2-Dichloroethene (total)

Surr: Toluene-d8

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

#### Laboratory Control Sample (LCS)

RunID:	L_081101C-4749651	Units:	ug/L.
Analysis Date:	11/01/2008 12:13	Analyst:	LU_L
Preparation Date:	11/01/2008 12:13	Prep By:	Method:

ND

ND

ND

ND

ND

ND

ND

ND

ND

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100.0

104.0

10

5.0

5.0

5.0 5.0

5.0

5.0

5.0

5.0

62-130

70-130

74-122

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1,2-Tetrachloroethane	20.0	20.0	100	71	136
1,1,1-Trichloroethane	20.0	19.0	95.0	66	132
1,1,2,2-Tetrachloroethane	20.0	24.0	120	55	139
1,1,2-Trichloroethane	20.0	24.0	120	70	130
1.1-Dichloroethane	20.0	23.0	115	67	131

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

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

MI - Matrix Interference

Method Blank 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**

#### HOUSTON LABORATORY

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

#### **Conoco Phillips** COP Scott Drake No 1

Analysis: Method:	Volatile Organics by Metho SW8260B	od 8260B				08101614 R255859	
	· · · · · · · · · · · · · · · · · · ·	Laboratory Co	ntrol Sampl	e (LCS <u>)</u>			
	RunID:	L_081101C-4749651	Units:	ug/L.			

Analysis Date: Preparation Date:

11/01/2008 12:13 11/01/2008 12:13

Analyst: LU L Method: Prep By:

Analyte	Analyte Spike Resul Added		Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	20.0	21.0	105	71	146
1,1-Dichloropropene	20.0	22.0	110	59	138
1,2,3-Trichlorobenzene	20.0	21.0	105	37	155
1,2,3-Trichloropropane	20.0	24.0	120	70	145
1,2,4-Trichlorobenzene	20.0	22.0	110	39	133
1,2,4-Trimethylbenzene	20.0	21.0	105	53	147
1,2-Dibromo-3-chloropropane	20.0	24.0	120	43	137
1,2-Dibromoethane	20.0	22.0	110	63	126
1,2-Dichlorobenzene	20.0	22.0	110	70	130
1,2-Dichloroethane	20.0	21.0	105	64	150
1,2-Dichloropropane	20.0	23.0	115	76	124
1,3,5-Trimethylbenzene	20.0	21.0	105	57	146
1,3-Dichlorobenzene	20.0	22.0	. 110	72	134
1,3-Dichloropropane	20.0	23.0	115	78	130
1,4-Dichlorobenzene	20.0	22.0	110	70	130
2,2-Dichloropropane	20.0	17.0	85.0	45	156
2-Butanone	120	220	183	20	235
2-Chloroethyl vinyl ether	20.0	19.0	95.0	13	179
2-Chlorotoluene	20.0	21.0	105	64	122
2-Hexanone	20.0	29.0	145	34	182
4-Chlorotoluene	20.0	22.0	110	64	142
4-Isopropyltoluene	20.0	22.0	110	60	134
4-Methyl-2-pentanone	20.0	22.0	110	11	145
Acetone	200	490	245	13	386
Acrylonitrile	100	130	130	43	194
Benzene	20.0	22.0	110	76	126
Bromobenzene	20.0	22.0	110	70	130
Bromochloromethane	20.0	23.0	115	63	131
Bromodichloromethane	20.0	22.0	110	77	138
Bromoform	20.0	17.0	85.0	55	129
Bromomethane	20.0	21.0	105	58	148
Carbon disulfide	20.0	18.0	90.0	46	146
Carbon tetrachloride	20.0	17.0	85.0	66	137
Chlorobenzene	20.0	22.0	110	67	136

Qualifiers:

B/V - Analyte detected in the associated Method Blank

MI - Matrix Interference

D - Recovery Unreportable due to Dilution J - Estimated value between MDL and PQL

\* - Recovery Outside Advisable QC Limits

E - Estimated Value exceeds calibration curve

ND/U - Not Detected at the Reporting Limit

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

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#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE

HOUSTON, TX 77054 (713) 660-0901

# **Conoco Phillips**

**COP Scott Drake No 1** 

Prep By:

Method:

Analysis: Method:	Volatile Organics by Method 8 SW8260B	260B			WorkOrder: Lab Batch ID:	08101614 R255859
		Laboratory Co	ntrol Sample	e (LCS)	<u> </u>	
	RunID:	L_081101C-4749651	Units:	ug/L		
	Analysis Date:	11/01/2008 12:13	Analyst:	LU_L		

Analy	/te	Spike
reparation Date:	11/01/2008 12:13	
nalysis Date:	11/01/2008 12:13	

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloroethane	20.0	22.0	110	50	137
Chloroform	20.0	23.0	115	70	135
Chloromethane	20.0	19.0	95.0	51	140
Dibromochloromethane	20.0	19.0	95.0	69	127
Dibromomethane	20.0	22.0	110	74	130
Dichlorodifluoromethane	20.0	19.0	95.0	32	. 161
Ethylbenzene	20.0	22.0	110	67	122
Hexachlorobutadiene	20.0	22.0	110	43	144
Isopropylbenzene	20.0	19.0	95.0	60	135
Methyl tert-butyl ether	40.0	41.0	102	48	160
Methylene chloride	20.0	22.0	110	52	143
Naphthalene	20.0	21.0	105	24	150
n-Butylbenzene	20.0	22.0	110	50	140
n-Propylbenzene	20.0	21.0	105	62	137
sec-Butylbenzene	20.0	22.0	110	66	126
Styrene	20.0	21.0	105	60	139
tert-Butylbenzene	20.0	21.0	105	67	140
Tetrachloroethene	20.0	21.0	105	26	200
Toluene	20.0	22.0	110	70	131
Trichloroethene	20.0	21.0	105	64	137
Trichlorofluoromethane	20.0	21.0	105	46	167
Vinyl acetate	20.0	24.0	120	10	193
Vinyl chloride	20.0	26.0	130	31	147
cis-1,2-Dichloroethene	20.0	23.0	. 115	70	142
cis-1,3-Dichloropropene	20.0	21.0	105	61	134
m,p-Xylene	40.0	47.0	118	72	150
o-Xylene	20.0	22.0	110	78	141
trans-1,2-Dichloroethene	20.0	23.0	115	67	141
trans-1,3-Dichloropropene	20.0	19.0	95.0	56	136
1,2-Dichloroethene (total)	40	46	120	73	139
Xylenes,Total	60	69	120	72	150
Surr: 1,2-Dichloroethane-d4	50.0	52	104	62	130
Surr: 4-Bromofluorobenzene	50.0	51	102	70	130
Surr: Toluene-d8	50.0	52	104	74	122

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

B/V - Analyte detected in the associated Method Blank

MI - Matrix Interference

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

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#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE

HOUSTON, TX 77054 (713) 660-0901

# **Conoco Phillips**

COP Scott Drake No 1

Analysis:	Volatile Organics by Method 8260B
Method:	SW8260B

WorkOrder: Lab Batch ID: 08101614 R255859

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

Sample Spiked: RunID: Analysis Date:

L\_081101C-4749654 11/01/2008 14:56

08101352-02

Units: ug/L Analyst: LU\_L

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1,2-Tetrachloroethane	ND	20	19.0	95.0	20	18.0	90.0	5.41	20	35	175
1,1,1-Trichloroethane	ND	20	16.0	80.0	20	16.0	80.0	0	20	35	175
1,1,2,2-Tetrachloroethane	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	35	175
1,1,2-Trichloroethane	ND	20	21.0	105	20	21.0	105	0	20	35	175
1,1-Dichloroethane	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
1,1-Dichloroethene	ND	20	18.0	90.0	20	20.0	100	10.5	22	61	145
1,1-Dichloropropene	ND	20	18.0	90.0	20	20.0	100	10.5	20	35	175
1,2,3-Trichlorobenzene	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	27	187
1,2,3-Trichloropropane	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
1,2,4-Trichlorobenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	34	150
1,2,4-Trimethylbenzene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
1,2-Dibromo-3-chloropropane	ND	20	19.0	95.0	20	19.0	95.0	0	20	15	175
1,2-Dibromoethane	ND	20	20.0	100	20	20.0	100	0	20	35	175
1,2-Dichlorobenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
1,2-Dichloroethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
1,2-Dichloropropane	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
1,3,5-Trimethylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
1,3-Dichlorobenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
1,3-Dichloropropane	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
1,4-Dichlorobenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
2,2-Dichloropropane	ND	20	13.0	65.0	20	14.0	70.0	7.41	20	35	175
2-Butanone	ND	20	32.0	160	20	32.0	160	0	20	10	230
2-Chloroethyl vinyl ether	ND	20	0	0*	20	0	0*	0	20	10	250
2-Chlorotoluene	ND	20	19.0	95.0	20	19.0	95.0	0	20	31	175
2-Hexanone	ND	20	15.0	75.0	20	18.0	90.0	18.2	20	10	250
4-Chlorotoluene	ND	20	19.0	95.0	20	20.0	100	5.13	20	31	175
4-Isopropyltoluene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
4-Methyl-2-pentanone	ND	20	16.0	80.0	20	18.0	90.0	11.8	20	10	175
Acetone	ND	100	99.0	99.0	100	110	110	10.5	20	10	400
Acrylonitrile	ND	200	190	95.0	200	210	105	10.0	20	15	250

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

1

MI - Matrix Interference B/V - 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

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**

Analysis Date:

# **Conoco Phillips**

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

COP Scott Drake No 1

Analysis: Volatile Organics by Method 8260B WorkOrder: 08101614 Method: SW8260B Lab Batch ID: R255859 Matrix Spike (MS) / Matrix Spike Duplicate (MSD) 08101352-02 Sample Spiked: RunID: L\_081101C-4749654 Units: ug/L

11/01/2008 14:56 Analyst:

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	19.0	95.0	20	20.0	100	5.13	22	76	127
Bromobenzene	ND	20	20.0	100	20	20.0	100	0	20	35	175
Bromochloromethane	ND	20	21.0	105	20	22.0	110	4.65	20	35	175
Bromodichloromethane	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
Bromoform	ND	20	16.0	80.0	20	16.0	80.0	. 0	20	35	175
Bromomethane	ND	20	19.0	. 95.0	20	20.0	100	5.13	20	35	175
Carbon disulfide	ND	20	16.0	80.0	20	18.0	90.0	11.8	20	30	225
Carbon tetrachloride	ND	20	16.0	80.0	20	16.0	80.0	0	20	35	175
Chlorobenzene	ND	20	20.0	100	20	19.0	95.0	5.13	21	70	130
Chloroethane	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
Chloroform	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
Chloromethane	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	35	175
Dibromochloromethane	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Dibromomethane	ND	20	20.0	. 100	20	20.0	100	0	20	35	175
Dichlorodifluoromethane	ND	20	13.0	65.0	20	15.0	75.0	14.3	20	35	175
Ethylbenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
Hexachlorobutadiene	ND	20	18.0	90.0	20	18.0	90.0	0	20	43	144
Isopropylbenzene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
Methyl tert-butyl ether	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	35	175
Methylene chloride	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
Naphthalene	ND	20	17.0	85.0	20	18.0	90.0	5.71	20	20	210
n-Butylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
n-Propylbenzene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
sec-Butylbenzene	ND	20	18.0	90.0	20	19.0	95.0	5.41	20	35	175
Styrene	ND	20	19.0	95.0	20	19.0	95.0	0	20	35	175
tert-Butylbenzene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
Tetrachloroethene	ND	20	20.0	100	20	18.0	90.0	10.5	20	30	250
Toluene	ND	20	21.0	105	20	21.0	105	0	24	70	131
Trichloroethene	ND	20	20.0	100	20	19.0	95.0	5.13	21	60	140
Trichlorofluoromethane	ND	20	17.0	85.0	20	16.0	80.0	6.06	20	17	250
Vinyl acetate	ND	20	17.0	85.0	20	19.0	95.0	11.1	20	10	250
Vinyl chloride	ND	20	24.0	120	20	25.0	125	4.08	20	35	175

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

MI - Matrix Interference B/V - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

\* - Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL 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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# Conoco Phillips

COP Scott Drake No 1

 Analysis:
 Volatile Organics by Method 8260B
 WorkOrder:
 08101614

 Method:
 SW8260B
 Matrix Spike (MS) / Matrix Spike Duplicate (MSD)
 R255859

Sample Spiked: RunID: Analysis Date:

L\_081101C-4749654 11/01/2008 14:56 Units: ug/L Analyst: LU\_L HOUSTON LABORATORY 8880 INTERCHANGE DRIVE

> HOUSTON, TX 77054 (713) 660-0901

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
cis-1,2-Dichloroethene	ND	20	20.0	100	20	21.0	105	4.88	20	35	175
cis-1,3-Dichloropropene	ND	20	18.0	90.0	20	18.0	90.0	0	20	35	175
m,p-Xylene	ND	40	40.0	100	40	39.0	97.5	2.53	20	35	175
o-Xylene	ND	20	20.0	100	20	19.0	95.0	5.13	20	35	175
trans-1,2-Dichloroethene	ND	20	19.0	95.0	20	20.0	100	5.13	20	35	175
trans-1,3-Dichloropropene	ND	20	16.0	80.0	20	17.0	85.0	6.06	20	35	. 175
1,2-Dichloroethene (total)	ND	40	39	98	40	41	100	5.0	20	35	175
Xylenes,Total	ND	60	60	100	60	58	97	3.4	20	35	175
Surr: 1,2-Dichloroethane-d4	ND	50	50	100	50	52.0	104	3.92	30	62	130
Surr: 4-Bromofluorobenzene	ND	50	52	104	50	51.0	102	1.94	30	70	130
Surr: Toluene-d8	ND	50	53	106	50	52.0	104	1.90	30	74	122

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

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL E - Estimated Value exceeds calibration curve MI - Matrix Interference

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

#### **Conoco Phillips** D 8---c

COP Scott Drake No	1	
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Analysis: Method:	Nitrate Nitrogen (as N) E353.2	, Total			WorkOrder: Lab Batch ID:	08101614 R256285A
	Metho	d Blank		Samples in Analytic	al Batch:	
RunID: WET_08	1103ZD-4757587	Units:	mg/L	Lab Sample ID	Client San	nple ID
Analysis Date:	11/03/2008 15:17	Analyst:	тw	08101614-01E	MW-5	

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

#### Laboratory Control Sample (LCS)

Analyst:

mg/L

тw

RunID:	
Analysis	Date:


WET\_081103ZD-4757590 Units:

11/03/2008 15:17

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Uppe <b>r</b> Limit
Nitrogen, Nitrate (As N)	5.000	5.372	107.4	90	110

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

Sample Spiked: RunID: Analysis Date:

08101626-01 WET\_081103ZD-4757607 Units: mg/L 11/03/2008 15:17 Analyst: ΤW

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Lìmit	High Limit
Nitrogen, Nitrate (As N)	ND	5	4.471	89.43 *	5	4.920	98.39	9.548	20	90	110

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B/V - Analyte detected in the associated Method Blank

# MI - Matrix Interference

E - Estimated Value exceeds calibration curve

- D Recovery Unreportable due to Dilution
- \* Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

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

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	lon Chromatography E300.0				WorkOrder: Lab Batch ID:	08101614 R256813A
	Meth	od Blank		Samples in Analytical	Batch:	
RunID: IC1_08	1110B-4766069	Units:	mg/L	Lab Sample ID	Client San	nple ID
Analysis Date:	11/10/2008 16:35	Analyst:	тw	08101614-01E	MW-5	

Analyte	Result	Rep Limit
Chloride	ND	0.50
Fluoride	ND	0.50

#### Laboratory Control Sample (LCS)

RunID:	
Analysis	Date:

IC1_081110B-4766017
11/10/2008 16:51

Units:	mg/L
Analyst:	τw

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	10.00	9.409	94.09	85	115
Fluoride	10.00	10.03	100.3	85	115

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

Sample Spiked:	08101597-01		
RunID:	IC1_081110B-4766020	Units:	mg/L
Analysis Date:	11/10/2008 18:20	Analyst:	τw

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	18.90	40	58.79	99.73	40	56.56	94.14	3.874	20	80	120
Fluoride	ND	40	40.16	98.60	40	38.85	95.32	3.324	20	80	120

Qualifiers:

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ND/U - Not Detected at the Reporting Limit

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

B/V - Analyte detected in the associated Method Blank

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\* - Recovery Outside Advisable QC Limits

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Quality Control Report

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#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

# Conoco Phillips

Analysis: Method:	Ion Chromato E300.0	graphy					WorkOrder: Lab Batch I	: 08 D: R2	101614 56827		
1		Method Blank			Samples i	n Analytica	Batch:				
RunID: IC1	_081111A-4766432	Units:	mg/L		Lab Samp	le ID	Clien	it Sample I	D		
Analysis Date	e: 11/11/2008 10:	53 Analyst:	TW		08101614-	01E	MW-	5			
		T									
	Analy	te	Result Rep Li	imit							
l	Sulfate	I		<u>1.50</u>							
			Laborato	ry Control Sam	ole (LCS)						
	,	RunID:	IC1 081111A-476	6433 Units	ma/l						
		Analunia Datas	11/11/2008 11:1	0 Analus	h TW						
	,	Analysis Date:	11/11/2000 11.1	u Analys							
	,	Analysis Date:	11/11/2000 11.1	U Analys							
	,	Analysis Date:	11/11/2008 11.1	u Analys							
	,	Analysis Date: Analyt	e	Spike Re	esult Pe	ercent Lo	wer Uppe	r			
		Analysis Dale: Analyt	e	Spike Re Added	esult Pe Re	ercent Lo covery L	wer Uppe imit Limit	r t			
	Sul	Analysis Dale: Analyt fate	le	Spike Re Added 10.00	esult Pe Re 9.448	ercent Lo covery L 94.48	wer Uppe imit Limit 85 1	r t 15			
	Sul	Analysis Date: Analyt fate Matrix	e Spike (MS) / M	Spike Re Added 10.00	esult Pe Re 9.448	ercent Lo covery L 94.48	wer Uppe imit Limit 85 1	r t 15			
	Sul	Analysis Dale: Analyt fate <u>Matrix</u>	e Spike (MS) / M	Spike Re Added 10.00	esult Pe Re 9.448	orcent Lo covery Li 94.48	wer Uppe imit Limit 85 1	r 15			
	Sul	Analyt Analyt fate <u>Matrix</u> Sample Spiked: RunD:	e Spike (MS) / M: 08101597-01	Spike Re Added 10.00	esult Pe Re 9.448	ercent Lo covery L 94.48	wer Uppe imit Limit 85 1	r t 15			
	Sul	Analysis Date: Analyt fate <u>Matrix</u> Sample Spiked: RunID: Analysis Date:	ce Spike (MS) / Ma 08101597-01 IC1_081111A-41 11/11/2008 12	Spike Re Added 10.00 atrix Spike Dupl	sult Pe Re 9.448 icate (MSI : mg/L	94.48 0)	wer Uppe imit Limit 85 1	r t 15			
	Sul	Analysis Date: Analyt fate <u>Matrix</u> Sample Spiked: RunID: Analysis Date:	CSpike (MS) / Ma 08101597-01 IC1_081111A-4 11/11/2008 12	Spike Re Added 10.00 atrix Spike Dupl 766437 Units :16 Analy	esult Pe Re 9.448 icate (MSI : mg/L : mg/L vst: TW	orcent Lo covery Li 94.48	wer Uppe imit Limit 85 1	r 15			
		Analysis Date: Analyt fate <u>Matrix</u> Sample Spiked: RunID: Analysis Date:	Ee Spike (MS) / M: 08101597-01 IC1_081111A-4; 11/11/2008 12	Spike Re Added 10.00 atrix Spike Dupl 766437 Units :16 Analy	esult Pe Re 9.448 icate (MSI : mg/L st: TW	94.48 0)	wer Uppe imit Limit 85 1	r 15			
	Analyte	Analysis Date: Analyt fate Matrix Sample Spiked: RunID: Analysis Date: Sample Result	Spike (MS) / M:           08101597-01           IC1_081111A-41           11/11/2008 12           MS         MS           Spike         Reside	Spike Re Added 10.00 atrix Spike Dupl 766437 Units :16 Analy MS % Jtt Recovery	esult Pe Re 9.448 icate (MSI : mg/L : mg/L vst: TW	Prcent Lo covery L 94.48 0) 0) - MSD Result	wer Uppe imit Limit 85 1 MSD % Recovery	r 15 RPD	RPD Limit	Low Limit	Higt
	Analyte	Analysis Date: Analyt fate Matrix Sample Spiked: RunID: Analysis Date: Sample Result	Spike (MS) / M:           08101597-01           IC1_081111A-4:           11/11/2008 12           MS         MS           Spike         Resi           Added         Resi	Spike Re Added 10.00 atrix Spike Dupl 766437 Units :16 Analy But Recovery	esult Pe Re 9.448 icate (MSI : mg/L st: TW MSD Spike Added	MSD Result	wer Uppe imit Limit 85 1 MSD % Recovery	RPD	RPD Limit	Low Limit	Higt

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

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

nk D - Recovery Unreportable due to Dilution

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

#### **Quality Control Report**

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	lon Chromatography E300.0					Work Lab I	Order: Batch ID:	08101614 R257651A
	Metho	d Blank		Samp	les in Analy	tical Batch	ı:	
RunID: IC1_08	31119A-4780752	Units: mg/L		<u>Lab S</u>	ample ID		Client Sar	nple ID
Analysis Date:	11/19/2008 18:44	Analyst: TW		08101	614-01E		MW-5	
	Analyte	Result Rep	Limit					
Or	tho-phosphate (As P)	ND	0.50					
	· · · · · · · · · · · · · · · · · · ·	l ab and	Control I					
			ory Control	Sample (L	<u>csj</u>			
	RunID:	IC1_081119A-43	780753 Ui	nits: m	ıg/L_			
	Analysis	Date: 11/19/2008 19	:01 Ar	nalyst: T	W			
						,		
		Analyte	Spike	Result	Percent	Lower	Upper	
	Ortho-phos	phate (As P)	10.00	9.167	91.67	85	115	
		Matrix Spike (MS) / I	Matrix Spike	Duplicate (				
	Sample	Spiked: 08101597-01	ł					
	RunID:	IC1_081119A-	4780767	Units:	mg/L			
	Analysi	s Date: 11/20/2008 5	5:09	Analyst:	τw			
	Analysi	s Date: 11/20/2008 5	5:09	Analyst:	TW			

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Ortho-phosphate (As P)	ND	100	101.9	101.9	100	100.9	100.9	0.9614	20	80	120

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

B/V - Analyte detected in the associated Method Blank

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# Sample Receipt Checklist And Chain of Custody

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

#### Sample Receipt Checklist

Date and Time Received:	10/28/2008 9:30:00 AM		Carrier name:	Fedex-Priority
Temperature:	4.0°C		Chilled by:	Water Ice
1. Shipping container/c	ooler in good condition?	Yes 🗹	No 🗌	Not Present
2. Custody seals intact	on shippping container/cooler?	Yes 🗹	No 🗌	Not Present
3. Custody seals intact	on sample bottles?	Yes 🗌	Νο	Not Present
4. Chain of custody pre	sent?	Yes 🔽	No 🗌	
5. Chain of custody sig	ned when relinquished and received?	Yes 🗹	No 🗌	
6. Chain of custody agr	ees with sample labels?	Yes 🔽	No 🗔	
7. Samples in proper co	ontainer/bottle?	Yes 🗹	No 🗌	
8. Sample containers in	tact?	Yes 🗹	Νο	
g. Sufficient sample vol	ume for indicated test?	Yes 🗹	No 🗌	
0. All samples received 1.Received all Nitrate 10/24/08.	within holding time? es and Ortho-PO4 expired collected on	Yes	No 🗹	
1. Container/Temp Blan	k temperature in compliance?	Yes 🗹	Νο	
2. Water - VOA vials ha	ve zero headspace?	Yes 🗌	No 🗌 VO	A Vials Not Present
3. Water - Preservation	checked upon receipt (except VOA*)?	Yes 🗌	No	Not Applicable
*VOA Preservation C	hecked After Sample Analysis			
SPL Representat	ive: Elder, Allen	Contact Date	& Time: 10/29/2004 3	:00:00 PM
Client Name Contac	ted: Kelley Blanchard			
Non Conformance C Issues:	ontinue with Nitrate and Ortho-PO4 per histor	icals		· · ·
Client Instructions:	otified client via email of expirations and that w	will proceed per h	nistoricals	

No. of Concession, No. of Conces 1: 3/40ml Vials 2. 11 Glass 3. 11 Plastic 4. 11 Amber Glass 5. 802 Plastic 1: NONE 2. HNO3 3. HCL 4. H2504  $\frac{1}{2}$  (1) /( 62.  $\frac{1}{2}$  1) EDAUH 素が Intact? Y or NOC Temperature: 7.00 2 1121/0208-sloteM.toT **Requested Analysis** 0747/0108-0HailotaM.tol 語を X 30A5-0228 Intact? The second 200-AOC 080-5108 089-9108 SPL Workorder Number: X X-119-8978 R. B. Received by: Received Dy Chain of Custody Record Redevec ersniptnoù to  $\mathcal{U}\mathcal{U}$ Z Hardware B Preservative Type S 04 50 Ċ + adyl alftod 37 10 28/08 1030 50 ime. emplikely.blanchard@tetratech.c Date Time Comp Grab Water Soil Landrend [celly E. Banchend collected [sample Type] Matrix 0-27-08 umaround Time Requirements Remarks: Anions=FI,CI,N,PO4,SO4 Octa Ip Code: 87110 + sout Order # Preservative Types: 「「「「「」」 SI: 5 Ac . 21 16 249.15 10-2-10-15 11-24 915 51.949.15 **Bottle Types**: Address: 6121 Indian School Road, NE Ste. 2 stole: NM Cllent: Tetra Tech/ Conoco Phillips L'ARCA Altention: Kelly Blanchard/Tetra Tech **東北北部** sampled By: Kelling K 5 wday( Sampler 10 wday - Stondard ( the track Sample ID 24 44 hone:505-237-3440 City: Albuquerque Relingüshed by: roiect Normer Cellinguistied by SW SW 「「ない C- MU 5-MM 77N - 3 - MM .O. Number: ReInquis 24 1-10 ))나 2고 記録が

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

### **Conoco Phillips**

Certificate of Analysis Number: <u>09010851</u>							
Report To:	Project Name: COP Scott Drake No 1						
Tetra Tech, Inc.	Site: San Juan City, NM						
Kelly Blanchard	Site Address:						
6121 Indian School Road, N.E.							
Suite 200 · Albuquerqu <del>s</del>	PO Number:						
NM	State: New Mexico						
87110-	State Cert. No.:						
ph: (505) 237-8440 fax:	Date Reported: 2/2/2009						

# This Report Contains A Total Of 11 Pages

# Excluding This Page, Chain Of Custody

And

Any Attachments

2/2/2009

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

Date



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

### Case Narrative for: Conoco Phillips

Cartificate of Analysis Number

<u>09010851</u>									
Report To:	Project Name:	COP Scott Drake No 1							
Tetra Tech, Inc.	Site:	San Juan City, 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:	Date Reported:	2/2/2009							

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.

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 Method Blank (MB) are processed with the samples 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.

A Carder

09010851 Page 1 2/2/2009

Erica Cardenas Project Manager

A Carter

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

Date



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

# **Conoco Phillips**

<u> </u>	Certifica	te of Analysis Number:						
<u>09010851</u>								
Report To:	Tetra Tech, Inc. Kelly Blanchard	<u>Project Na</u> Site:	ame: COP Scott Drake No 1 San Juan City, NM					
1	6121 Indian School Road, N.E. Suite 200 Albuquerque	<u>Site Addre</u>	955: 					
	NM 87110- ph: (505) 237-8440 fax: (505) 881-3283	<u>PO Numbe</u> State:	<u>er:</u> New Mexico					
Fax To:		<u>State Cert</u> Date Repo	<u>k. No.:</u> o <u>rted:</u> 2/2/2009					

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-4	09010851-01	Water	1/20/2009 1:50:00 PM	1/22/2009 10:00:00 AM		
MW-5	09010851-02	Water	1/20/2009 2:25:00 PM	1/22/2009 10:00:00 AM	-,	
MW-6	09010851-03	Water	1/20/2009 2:05:00 PM	1/22/2009 10:00:00 AM		
Duplicate	09010851-04	Water	1/20/2009 2:30:00 PM	1/22/2009 10:00:00 AM		

h Cardenas

Erica Cardenas Project Manager 2/2/2009 Date

Richard R. Reed Laboratory Director

Ted Yen Quality Assurance Officer

> 09010851 Page 2 2/2/2009 1:47:28 PM



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

Client Sample ID MW-4

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Collected: 01/20/2009 13:50

SPL Sample ID: 09010851-01

·			Si	te: San	Juan Cit	y, NM				
Analyses/Method	Result	QUAL	R	ep.Limit	D	il. Factor	Date Anal	lyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METH	HOD 8260B				MCL	SV	V8260B	Un	its: ug/L	
Benzene	ND			5		1	01/23/09	18:37	LT	4875826
Ethylbenzene	ND			5		1	01/23/09	18:37	LT	4875826
Toluene	ND			5		1	01/23/09	18:37	LT	4875826
m,p-Xylene	ND			5		1	01/23/09	18:37	LT	4875826
o-Xylene	ND			5		1	01/23/09	18:37	LT	4875826
Xylenes, Total	ND			5		1	01/23/09	18:37	LT	4875826
Surr: 1,2-Dichloroethane-d4	94.0		%	62-130		1	01/23/09	18:37	LT	4875826
Surr: 4-Bromofluorobenzene	94.0		%	70-130		1	01/23/09	18:37	LT	4875826
Surr: Toluene-d8	98.0		%	74-122		1	01/23/09	18:37	LT	4875826

Qualifiers:

- ND/U Not Detected at the Reporting Limit
  - B/V 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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#### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

Client Sample ID MW-5

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Collected: 01/20/2009 14:25

SPL Sample ID: 09010851-02

			Si	te: San	Juan Ci	ity, NM				
Analyses/Method	Result	QUAL		ep.Limit	Dil. Factor		Date Analyzed		Analyst	Seq. #
VOLATILE ORGANICS BY METH	OD 8260B		-		MCL	SV	V8260B	Un	its: ug/L	
Benzene	ND			5		1	01/23/09	19:05	LT	4875827
Ethylbenzene	ND			5		1	01/23/09	19:05	LT	4875827
Toluene	ND			5		1	01/23/09	19:05	LT	4875827
m,p-Xylene	ND			5		1	01/23/09	19:05	LT	4875827
o-Xylene	ND		•	5		1	01/23/09	19:05	LT .	4875827
Xylenes,Total	ND			5		1	01/23/09	19:05	LT	4875827
Surr: 1,2-Dichloroethane-d4	98.0		%	62-130		1	01/23/09	19:05	LT	4875827
Surr: 4-Bromofluorobenzene	102		%	70-130		1	01/23/09	19:05	LT	4875827
Surr: Toluene-d8	98.0		%	74-122		1	01/23/09	19:05	LT	4875827

Qualifiers:

- ND/U Not Detected at the Reporting Limit
  - B/V 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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### HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TX 77054

(713) 660-0901

Client Sample ID MW-6

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Collected: 01/20/2009 14:05 S

SPL Sample ID: 09010851-03

			Sit	e: San	Juan City	, NM				
Analyses/Method	Result	QUAL	R	ep.Limit	Dil	. Factor	Date Ana	lyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METH	IOD 8260B				MCL	SI	N8260B	Ųn	its: ug/L	
Benzene	NÐ			5	-	1	01/23/09	19:33	LT	4875828
Ethylbenzene	ND			5		1	01/23/09	19:33	LT	4875828
Toluene	ND			5		1	01/23/09	19:33	LT	4875828
m,p-Xylene	ND			5		1	01/23/09	19:33	LT	4875828
o-Xylene	ND			5		1	01/23/09	19:33	LT	4875828
Xylenes,Total	ND			5		1	01/23/09	19:33	LT	4875828
Surr: 1,2-Dichloroethane-d4	100		%	62-130		1	01/23/09	19:33	LT	4875828
Surr: 4-Bromofluorobenzene	96.0		%	70-130		1	01/23/09	19:33	LT	4875828
Surr: Toluene-d8	100		%	74-122		1	01/23/09	19:33	LT	4875828

Qualifiers:

- ND/U Not Detected at the Reporting Limit
  - B/V 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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Client Sample ID Duplicate

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

Collected: 01/20/2009 14:30

09010851-04 SPL Sample ID:

-			Site	o: San	Juan Ci	ty, NM				
Analyses/Method	Result	QUAL	Rep.Limit		C	Dil. Factor		Date Analyzed		Seq. #
VOLATILE ORGANICS BY METH	IOD 8260B				MCL	S	SW8260B Ur		its: ug/L	
Benzene	ND			5		1	01/23/09	15:49	LT	4875822
Ethylbenzene	ND			5		1	01/23/09	15:49	LT	4875822
Toluene	ND			5		1	01/23/09	15:49	LT	4875822
m,p-Xylene	6			5		1	01/23/09	15:49	LT	4875822
o-Xylene	ND			5		1	01/23/09	15:49	LT	4875822
Xylenes,Total	6			5		1	01/23/09	15:49	LT	4875822
Surr: 1,2-Dichloroethane-d4	94.0		%	62-130		1	01/23/09	15:49	LT	4875822
Surr: 4-Bromofluorobenzene	102		%	70-130		1	01/23/09	15:49	LT	4875822
Surr: Toluene-d8	96.0		%	74-122		1	01/23/09	15:49	LT	4875822

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- B/V 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

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#### **Quality Control Report**

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

# **Conoco Phillips**

			•	
COP	Scott	Drake	No 1	

Analysis: Volatile Organics by Method 820		60B					Work	Order:	09010851			
Method:	lod: SW8250B								Batch ID:	R263421		
		Metho	od Blank				Samp	les in Analy	tical Batc	cal Batch:		
RunID: N	_090123	D-4875820	Units:	ug/L			Lab Sample ID			Client San	nple ID	
Analysis Da	ate:	01/23/2009 12:07	Analyst:	LT			09010851-01A			MW-4		
Preparation	Preparation Date: 01/23/2009 12:07 Prep By		M	ethod		09010851-02A			MW-5			
							09010	0851-03A		MW-6		
	1	Analyte		Regult	Ren Limi	i <b>+</b> ]	09010	)851-04A		Duplicate		
	Benzer			ND	5.0							
	Ethylbe	enzene		ND	5.0	ם						
	Toluen	ie		<u>ND</u>		0						
	m,p-Xyler	ne		ND	<u> </u>	0						
	Xylene	s,Total		ND	5.	0						
	Surr	1,2-Dichloroethane-d4		102.0	62-13	0						
	Surr	: 4-Bromofluorobenzene		94.0	70-13							
				Lat	ooratory	Control S	ample (L	<u>CS)</u>				
		RunID:		Lab N_0901231	D-487581	<u>Control S</u> 9 Un	ample (L	<u>CS)</u> g/L				
<u></u>		RunID: Analysis	s Date:	Lab N_0901231 01/23/200	D-4875819	Control S 9 Un An	<mark>ample (L</mark> iits: u alyst: L	<u>CS)</u> g/L T				
		RunID: Analysis Prepara	s Date: tion Date:	Lab N_0901230 01/23/200 01/23/200	D-4875819 D-4875819 D9 11:27 D9 11:27	Control S 9 Un An Pre	ample (L iits: u alyst: L ep By:	<u>CS)</u> g/L T Method				
		RunID: Analysis Prepara	s Date: tion Date: Analy	Lab N_0901231 01/23/200 01/23/200 te	D-4875819 D-4875819 D9 11:27 D9 11:27	Control S Un An Pro Spike Added	ample (L iits: u alyst: L ep By: Result	<u>CS)</u> g/L T Method Percent Recovery	Lower Limit	Upper Limit		
		RunID: Analysis Prepara Benzene	s Date: tion Date: Analy	Lab N_090123/ 01/23/200 01/23/200 te	D-4875811 D-4875811 D9 11:27 D9 11:27	Control S D Un An Pro Spike Added 20.0	ample (L iits: u alyst: L ep By: Result 20.0	<u>CS)</u> g/L T Method Percent Recovery 100	Lower Limit 76	Upper Limit 126		
		RunID: Analysis Prepara Benzene Ethylbenze	s Date: tion Date: Analy ene	Lab N_0901230 01/23/200 01/23/200 te	Dotatory D-4875819 D9 11:27 D9 11:27	Control S D Un An Pro Spike Added 20.0 20.0	ample (L alyst: L ep By: Result 20.0 20.0	CS) g/L T Method Percent Recovery 100 100	Lower Limit 76 67	Upper Limit 126 122		
		RunID: Analysis Prepara Benzene Ethylbenze Toluene	s Date: tion Date: Analy ene	Lat N_0901230 01/23/200 01/23/200 te	Dotatory D-4875811 D9 11:27 D9 11:27	Control S Un An Pro Spike Added 20.0 20.0 20.0	anple (L alyst: L ep By: Result 20.0 20.0 21.0	CS) g/L T Method Percent Recovery 100 100 105	Lower Limit 76 67 70	Upper Limit 126 122 131		
		RunID: Analysis Prepara Benzene Ethylbenz Toluene m,p-Xylen	s Date: tion Date: Analy ene	Lat N_0901230 01/23/200 01/23/200 te	Doratory D-4875810 D9 11:27 D9 11:27	Control S P Un An Pro Spike Added 20.0 20.0 20.0 40.0	Bample (L. iits: u alyst: L' ep By: Result 20.0 20.0 21.0 39.0	CS) g/L T Method Percent Recovery 100 100 105 97.5	Lower Limit 76 67 70 72	Upper Limit 126 122 131 150		
		RunID: Analysis Prepara Benzene Ethylbenz Toluene m,p-Xylen o-Xylene	s Date: tion Date: Analy ene	Lab N_090123/ 01/23/200 01/23/200 te	Doratory D-4875810 D9 11:27 D9 11:27	Control S Un An Pre Spike Added 20.0 20.0 20.0 40.0 20.0	Cample (L iits: u alyst: L ep By: Result 20.0 20.0 21.0 39.0 20.0	<u>CS}</u> g/L T Method Percent Recovery 100 100 105 97.5 100	Lower Limit 76 67 70 72 78	Upper Limit 126 122 131 150 141		
	-	RunID: Analysis Prepara Benzene Ethylbenze Toluene m,p-Xylen o-Xylene Xylenes,T	s Date: tion Date; Analy ene e	Lab N_090123/ 01/23/200 01/23/200 te	Doratory D-4875811 D9 11:27 D9 11:27	Control S 9 Un An Pro Spike Added 20.0 20.0 20.0 40.0 20.0 60	Cample (L. its: u alyst: L' ep By: Result 20.0 20.0 21.0 39.0 20.0 59	<u>CS}</u> g/L T Method Percent Recovery 100 105 97.5 100 98	Lower Limit 76 67 70 72 78 72 72	Upper Limit 126 122 131 150 141 150		
		RunID: Analysis Prepara Benzene Ethylbenz Toluene m,p-Xylen o-Xylenes,T Surr: 1,	s Date: tion Date: Analy ene e otal 2-Dichloroel	Lab N_090123/ 01/23/200 01/23/200 te	Dotatory D-4875811 D9 11:27 D9 11:27	Control S 9 Un An Pro Spike Added 20.0 20.0 20.0 20.0 40.0 20.0 60 50.0	ample (L. iits: u alyst: L' ep By: Result 20.0 20.0 21.0 39.0 20.0 59 49	<u>CS)</u> g/L T Method Percent Recovery 100 105 97.5 100 98 98.0	Lower Limit 76 67 70 72 78 72 62	Upper Limit 126 122 131 150 141 150 130		
		RunID: Analysis Prepara Benzene Ethylbenze Toluene m,p-Xylen o-Xylenes,Tr Surr: 1, Surr: 1,	s Date: tion Date: Analy ene e otal 2-Dichloroel Bromofluoro	Lab N_090123/ 01/23/200 01/23/200 te	Dotatory D-4875811 D9 11:27 D9 11:27	Control S P Un An Pre Spike Added 20.0 20.0 20.0 20.0 20.0 60 50.0 50.0	ample (L iits: u alyst: L ep By: Result 20.0 20.0 21.0 39.0 20.0 59 49 50	CS) g/L T Method Percent Recovery 100 105 97.5 100 98 98.0 100	Lower Limit 76 67 70 72 78 72 62 70	Upper Limit 126 122 131 150 141 150 130 130		

Sample Spiked: RunID: Analysis Date:

09010851-04 N\_090123D-4875824 01/23/2009 16:17

Unlts: ug/L Analyst: LT

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

B/V - Analyte detected in the associated Method Blank

MI - Matrix Interference

D - Recovery Unreportable due to Dilution

\* - Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL 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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#### **Quality Control Report**

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

#### Conoco Phillips COP Scott Drake No 1

Analysis: Method:	nalysis: Volatile Organics by Method 8260B ethod: SW8260B							WorkOrder Lab Batch	": 090 1D: R21	09010851 R263421		
	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	18.0	90.0	20	18.0	90.0	0	22	76	127
Ethylbenzene		ND	20	21.0	90.0	20	20.0	85.0	4.88	20	35	175
Toluene	· · ·	ND	20	19.0	95.0	20	19.0	95.0	0	24	70	131
m,p-Xylene		6.00	40	42.0	90.0	40	41.0	87.5	2.41	20	35	175
o-Xylene		ND	20	17.0	85.0	20	17.0	85.0	0	20	35	175
Xylenes, Total		6.0	60	59	88	60	58	87	1.7	20	35	175
Surr: 1,2-Dic	hloroethane-d4	ND	50	46	92.0	50	49.0	98.0	6.32	30	62	130
Surr: 4-Brom	ofluorobenzene	ND	50	51	102	50	51.0	102	0	30	70	130
Surr: Toluene	∋-d8	ND	50	47	94.0	50	48.0	96.0	2.11	30	74	122

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

MI - Matrix Interference

B/V - Analyte detected in the associated Method Blank J - Estimated value between MDL and PQL

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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Sample Receipt Checklist And Chain of Custody

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

## Sample Receipt Checklist

	No	Water Ice Not Present Not Present Not Present	
	No      No      No      No      No      No	Not Present Not Present Not Present	
	No    No    No    No    No    No	Not Present	
	No 🗌 No 🗌 No 🗍 No 🗍 No 🗌	Not Present	
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