UNOCAL # 5028 BLANNE



DATE: September 6, 2006 1187#8

GROUNDWATER MONITORING REPORT

Site No.: 255028 Address:	247 D Street, Blaine, Washington
ConocoPhillips Site Manager:	Jim Trotter
Consultant / Contact Person:	SECOR International Inc. / Marc Sauze
Primary Agency/Regulatory ID No.:	Washington State Department of Ecology / Site ID No. 84/2
SECOR Project No:	<u>01CP.01344.04</u>
•	

WORK PERFORMED THIS QUARTER(S) [2nd - 2006]:

- On June 27, 2006 SECOR personnel monitored six (MW-1 through MW-4,MW-7, and MW-8) and purged and sampled five (MW-2A through MW-4, MW-7, and MW-8) of the existing network of eight groundwater monitoring wells (MW-1 through MW-8). Depth to water was recorded in MW-1 but no sample was collected because the well has not historically contained detectable concentrations of petroleum hydrocarbons and halogenated volatile organic compounds (HVOCs). MW-5 was not monitored because it could not be located and has not been monitored since August 12, 1999. MW-6 was not monitored because it could not be located due to an overgrowth of vegetation in the surrounding area.
- Groundwater samples were collected using a peristaltic pump, with dedicated polyethylene tubing in the well casing and a new section of silicon tubing in the pump head. Complete groundwater monitoring, purging, and sampling procedures are provided in Attachment B.
- Samples were submitted to Lancaster Laboratories for analysis of gasoline range hydrocarbon (TPH-g) per Ecology Method NWTPH-Gx, diesel (TPH-d) and motor-oil (TPH-o) range hydrocarbons per Ecology Method NWTPH-Dx modified with an acid/silica gel cleanup; benzene, toluene, ethylbenzene, and total xylenes (BTEX), per United States Environmental Protection Agency (USEPA) Method 8021 and volatile organic compounds (VOCs) per USEPA Method 5035/8260B. The laboratory report is presented in Attachment A.

WORK PROPOSED FOR NEXT QUARTER [3rd - 2006]:

 Measure depth to water of seven (MW-1 through MW-4 and MW-6 through MW-8) and purge and sample six (MW-2A, MW-3, MW-4 and MW-6 through MW-8) groundwater monitoring wells. Submit groundwater samples for analysis for NWTPH-Gx, NWTPH-Dx, BTEX, Methyl tert-butyl ether (MTBE) and VOCs.

DATA SUMMARY THIS QUARTER:

Frequency of Sampling Events: Depth to Groundwater:

Groundwater Gradient:

Maximum TPH-G Concentrations: Maximum TPH-D Concentrations: Maximum TPH-O Concentrations: Maximum Benzene Concentration:

Maximum TCE Concentration: Maximum 1,2-DCA Concentration: Maximum Vinyl Chloride Concentration: <u>Measurable</u> Free Product Detected:

(3/06,6/06,9/06,12/06) Quarterly (Measured Feet Below 3.1 ft (MW-3) to 4.65 ft (MW-8) Top of Well Casing) (Inferred Flow Direction) Southwest (Approximate Magnitude) 0.06 feet per foot. (ppb / well ID) None Detected None Detected None Detected 0.5 µg/L (MW-7) 190 µg/L (MW-7) 230 µg/L (MW-7) (MW-7) 18 µg/L (Yes - ID well(s)/No) No

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DEPT OF ECOLOGY

Free Product Recovered This Quarter:	None	(Gallons)
Cumulative Free Product Recovered to Date:	None	(Gallons)
Water Wells or	No Water Wells Identified	(Туре)
Surface Waters w/in 2,000 ft:	Semiahmoo Bay	
Radius and Respective Direction From Site:	1,000 ft, West	(Distance & Direction)
Current Remedial Action:	NA	(SVE/AS/P&T/NA etc.)
Permits for Discharge:	None	(NPDES, POTW, etc.)

DISCUSSION:

- The inferred groundwater direction at the site is to the southwest. MW-7 was not used in flow determinations because the elevation appears to be anomalously low.
- The groundwater samples were received by Lancaster Laboratories on June 28, 2006. Based on a review of the laboratory reports, it appears that the submitted water samples were analyzed within the specified holding times and that Lancaster followed their appropriate quality assurance/quality control (QA/QC) procedures during analysis.
- Gasoline range hydrocarbons (TPH-g) were not detected at concentrations greater than the laboratory reporting limits (RLs) in any of the groundwater samples collected this quarter.
- Diesel range hydrocarbons (TPH-d) were not detected at concentrations greater than the RLs in any of the groundwater samples collected this quarter.
- Heavy-oil-range hydrocarbons (TPH-o) were not detected at concentrations greater than the RLs in any of the groundwater samples collected this quarter.
- Methyl Tertiary-Butyl Ether (MTBE) was detected at a concentration greater than the Model Toxics Control Act Method A cleanup levels for groundwater (MTCA A) in the groundwater sample collected from MW-8 at 13 micrograms per liter (μg/L). MTBE was detected at concentrations greater than the RLs but less than MTCA A in the groundwater samples collected from MW-3 and MW-7 at 1.3 μg/L and 4.0 μg/L, respectively.
- Benzene was detected at concentrations greater than the RLs but less than MTCA A in the groundwater sample collected from MW-7 at 0.5 µg/L. Benzene was not detected at concentrations greater than the RLs in any other groundwater samples collected this quarter.
- Toluene was not detected at concentrations greater than the RLs in any of the groundwater samples collected this guarter.
- Ethylbenzene was not detected at concentrations greater than the RLs in any of the groundwater samples collected this guarter.
- Total xylenes were not detected at concentrations greater than the RLs in any of the groundwater samples collected this quarter.
- Trichloroethene (TCE) was detected at concentrations greater than MTCA A in the groundwater sample collected from MW-7 at 190 μg/L. TCE was detected at concentrations greater than the RLs but less than MTCA A in the groundwater sample collected from MW-8 at 2 μg/L. TCE was not detected at concentrations greater than the RLs in any other groundwater samples collected this quarter.
- Cis-1,2-Dichloroethene (1,2-DCE) was detected at concentrations greater than the RLs in the groundwater samples collected from MW-4, MW-7, and MW-8 at 15 µg/L, 230 µg/L, and 11 µg/L, respectively. No cleanup level is currently established for 1,2-DCE under MTCA A. 1,2-DCE was not detected at concentrations greater than the RLS in any other groundwater samples collected this quarter

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 Vinyl Chloride (VC) was detected at concentrations greater than MTCA A in the groundwater samples collected from MW-7 and MW-8 at 18 μg/L and 1 μg/L, respectively. VC was not detected at concentrations greater than the RLS in any other groundwater samples collected this quarter.

ATTACHMENTS:

Figure 1: Site Location Map

Figure 2: Site Plan with Groundwater Elevations (6/27/06)

Figure 3: Site Plan with Analytical Results (9/15/06 - 6/27/06)

Table 1: Summary of Groundwater Elevations and Sample Analytical Results

Attachment A: Laboratory Analytical Report and Chain-of-Custody Record

Attachment B: SECOR Monitoring Well Gauging, Purging and Sampling Procedures; Groundwater Monitoring Field Data Records

Prepared By:

Ure

Meredith Redmon Project Scientist Reviewed By:

Marc Sauze, P.E. Senior Project Engineer

cc: Washington State Department of Ecology, Northwest Regional Office Meuchadim of Washington LP, Property Owner

MR/MS

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		• •		·			•••••	TABLE 1	• • • • • • •			· ··· · .·. · ···	:				• •••:
			· · · ·		SUMMARY	OF GROUN	DWATER EL	EVATIONS A	ND SAMPLE	ANALYTICA	L RESULTS	, · ·		• •		•	
			•		·		ConccoPh	dilips Facility	No. 255028	·		•		• •		•	•
			· .			·. 		247 D Stree		•							
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· ·				••• • • • • • •				· 2 · 5				· · ·		·			<u> </u>
Well Name					70110	77110		Ţ	-	Y	TOF	1 2-DCE	CA	1.1-DCA	1.2-DCA	vc	мтве
TOC Elevation	Sample Date	DIW	GW EIEV.	IPHG	IPH-U	IPTEU			L								ا ـــــــــــا
L		_								T		· - · · · · · · · · · · · · · · · · · ·		1		_	LJ
MW1 ·	09/16/05	6.22	84.20									<u> </u>					<u> </u>
100.42	12/14/05	3.47	98.95												_	_	
	3/7/09	2.85	97.57				<u> </u>					<u> </u>	_		_		-
	0/27/08	3.98	96.48				·										
MW2	Destroyed	· · · · · ·										L		<u> </u>			└── ──
98.49									· .			L	· · · ·	L	L	L	L]
									-0 5					1 21	<1	<1	- 1
MW2A	09/15/05	4.76	94.41	<48	<160	<200	<0.5	<0.5	<0.5	<1.5		<0.8			<1	- 21	0.4
99.17	12/14/05	2.61	98.56	<48	<75	<95	<0.2	<u></u>	40.2	<0.0		<0.8		<0.8	<1	<1	. <0.3
	03/07/08	2.68	96.49	<48	<76	<93	<u> </u>	<0.2 <0.2	<0.2	<0.6	<1	<0.8	<1	<0.8	<1	<1	<0.3
	06/27/08	3.5	85.67		<u> </u>	~0 7											
A4\4/3	09/15/05	5.87	B2.70	<48	<75	<94	0.7	<0.6	<0.5	<1.5	<1	<0.8	<1	<1	<1	<1	<u> </u>
98.57	12/14/05	3.61	94.98	<48	<78	<95	0.3	40.2	<0.2	<0.8	<1	<0.8	<1	<1		<1	8.2
	03/07/08	2,97	95.60	<48	<75	<94	<0.2	<0.2	<0.2	<0.8		<0.8	<1	<0.8	<u> </u>	<u> </u>	8.5
	06/27/08	3.1	95.47	<48	<75	<u><84</u>	<0.2	<0.2	<0.2	<0.6		8	< 1		<u></u>	ાવા	
			1				10.0	<0 E	<0.5	<15	<u>e1</u>	30	<1	िर्स	ব	3	<u> </u>
MW4	09/15/05	6.67	92.66	<48	<15	<84	<0.5	<0.0	<0.5	<0.6		14	<1	<1	<1	<1	<0.3
99.53	12/14/05	3.56	85.97	<40	<75	201	<u> <0,2</u> <0.2	<0.2	<0.2	<0.6	<1	14	<1	<1	<1	<1	<0.3
	03/01/06	3.00	05.87	<40 <48	<75	<94	<0.2	<0.2	<0.2	<0.8	<1	15	<1	<1	<1	<u><1</u>	<0.3
	1 <u></u>	<u>. 9.7</u>	1 00.00														- <u>1</u> 1
MW5		I									·		ļ				╋┯┯┯┥
	08/12/99	Unable to	Locate Sinc	e 8/12/99	————									<u> </u>			├ ──── {
	<u> </u>			L	1		I			I					.I		
		r	1 21 21		-74		-0E	<u> 705</u>	<0.5	<15	4	<0.8	ব	<1	<1	<1	
MW8	09/15/05	6.50	91.34	<48 60	4<br <75	200	<0.2	1.6	0.5	<0.6	<1	<0.8	<1	<1	<1	<1	<5.0
97.84	12/14/05	<u>3.60</u>	03.89	< <u>69</u>	<75	<94	<0.2	<0.2	<0.2	<0.6	<1	<0.8	<1	<1	<1	<u><1</u>	6.9
	06/27/08	Unable fo	locale		<u> </u>												
	00.0100	10					·					1 460	1	1 21	1 1	1 14	-
MW7	9/15/2005	4.82	90.55	<48	<75	<94	2.6	<0.5	<0.5	<1.5	230	400	1	+ :	1 4	- 27	
95.37	.12/14/05	2.60	92.77	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	2			- CO B	<1	4	<0.3
	03/07/06	2.83	82.54	<4 <u>B</u>	<75	<84	<0,2	<0.2	<u><0.2</u>	<0.0	190	230	1 4	2	<1	18	4.0
	08/27/08	3.40	91.97	<48	<75	< <u>83</u>	0.5		<u> </u>	-0.0			·		·····		
	nnucion	6 22	02.92	-18	<75	<94	0.6	<0.5	<0.5	<1.5	12	72	<1	<1	<1	9	
MVV8	42/14/05	3.82	94.03	<48	<75	<84	<1.0	<0.2	<0.2	<0.8	5	32	<1	<1	<1	4	40'
89:00	03/07/08	3.86	95.19	<48	<75	<94	0.4	<0.2	<0.2	⊲0.6	3	19	<1	<0.8	1 1	1 3	20
	08/27/06	4.65	94.40	<48	<78	<95	<0.2	<0.2	<0.2	<0.6	2	1 11	<1		<u> <1</u>	1 1	13
										1	1	1.07.022	1 114 -	-		1 0 2	- 20.
MTCA Method A:	Meanup Level ···	• :		1000/800	500		: 5		1 700	1000	. 8		<u>· NA "</u>			1 0.2	<u></u>

EXPLANATION:

All concentrations are in ug/L (opb).

TOC = Top of casing. Wellhead elevations were taken from prior consultant's reports. DTW = Depth to water in feet below top of casing GW Elex, = Groundwater elevation report casing GW Elex, = Groundwater elevation relative to ko of casing elevations TPHG = Total Petroleum Hydrocarbons as Gasoline by Ecology Method NWTPH-Gx TPH-D and TPH-D = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-Dx B = Benzene; T = Toluene; E = Ethylbenzene; X = Tolal Xylenes

1,2-DCE = Cls-1,2-Dichloroethene; CA = Chloroethane; 1,1-DCA = 1,1-Dichloroethane; 1,2-DCA = 1,2-Dichloroethane; VC = Viny Chloride; TCE=Trichloroethene; MTBE=Melhyl Tert-Butyl Elhor 1,2-DCE, CA, 1,1-DCA, 1,2-DCA, TCE, Chloroethane and VC by EPA 8010B (modified) or EPA 8260B; refer to lab reports BTEX = A nominal compounds by EPA Method 8020, EPA 80218 or 82608; refer to official laboratory reports * TCE not reported prior to 6/8/05. Data may be available in previous reports.

< = Less than the stated laboratory reporting limit NM = Not Measured; NA = Not Applicable;

ND = Not Detected above the laboratory reporting limit; - = Not Analyzed or Sampled

Bolded values equal to execced MTCA Method A Cleanup Levels. Concentration levels stated by MTCA Method A for TPI+G are 1000 up/L when no

benzene is present and 800 µg/L when benzene is present.

Data collected before 12/12/03 are taken from prior consultants (1) 1.1-dichloroethene and trasn-1.2-dichloroethene both detected in this sample at a concentrations of 3 up/L

ATTACHMENT A LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY RECORD



2425 New Holland Piles, PO Box 12425, Lancaster, PA 17605-2425 *717-656-2300 Fax:717-656-2681* www.lancasteriabs.com

ANALYTICAL RESULTS

Prepared for:

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

Prepared by:

Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 995267. Samples arrived at the laboratory on Wednesday, June 28, 2006. The PO# for this group is 4506583817 and the release number is TROTTER.

Client Description MW4 Grab Water Sample MW8 Grab Water Sample MW3 Grab Water Sample MW7 Grab Water Sample MW2A Grab Water Sample Trip Blank Water Sample

1 COPY TO ELECTRONIC COPY TO SECOR International SECOR International

Lancaster Labs Number 4803084 4803085 4803086 4803086 4803087 4803088 4803088

Attn: Meredith Redmon Attn: Matt Davis



Analysis Report

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Questions? Contact your Client Services Representative Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Pala CL

Robin C. Runkle Senior Specialist



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Lancaster Laboratories Sample No. WW 4803084

MW4 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2005 10:16 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW4BL

				As Received		
C N T			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
02211	TPH by NWTPH-Dx(water) w/SiGe	1				
02095	Diesel Range Organics	n.a.	N.D.	75.	ug/l	1.
02096	Heavy Range Organics	n.a.	N.D.	94.	ug/l	1
08214	BTEX, MTBE (8021)			•		
	Denzono	71-43-2	N.D.	0.2	ug/l	1
00776		108-88-3	N.D.	0.2	ug/l	1
00777	Toluene	100-41-4	N.D.	0.2	ug/l	1
00778	Ethylbenzene	1330-20-7	N.D.	0.6	ug/l	l
00779	Total Xylenes	1634-04-4	ת א	0.3	ug/l	1
00780	Methyl tert-Butyl Ether	1034-04'4	a previously ope	ned vial with		
	The GC Volatile analysis was headspace.	perrormed riom	u previousi, ep-			
08274	TPH by NWTPH-Gx waters					
01648	TPH by NWTPH-Gx waters	n.a.	N.D.	4B.	ug/l	1
05382	Volatiles by 8260 Pull Scan					
05395	Chloromethane	74-87-3	N.D.	1.	' ug/1	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05365	Promomethane	74-83-9	N.D.	1.	ug/l	1
05307	Chloroothane	75-00-3	N.D.	1.	ug/l	1
05388	Chiprochane maishleacfluoromethane	75-69-4	N.D.	2.	ug/l	1
05389		75-35-4	N.D.	0.8	ug/l	1.
05390	1,1-Dichioroechene	75-09-2	N.D.	2.	ug/l	1
02331	Methylene Chiolitice	156-60-5	N.D.	0.B	ug/l	l
05392		75-34-3	N.D.	1.	ug/1	1
05393	1,1-Dichioroellane	156-59-2	15.	0.8	ug/l	1
05395	cis-1,2-Dichiordechene	67-66-3	N.D.	D'. 8	ug/l	, 1
05396	Chlorotorm	71-55-6	N D.	0.8	ug/l	1
05398	1,1,1-Trichioroethane	71-33-5	N.D	1.	ug/l	l
05399	Carbon Tetrachloride	107-06-3	N D	1.	ug/l	1
05402	1,2-Dichloroethane	107-00-2	N.D.	1.	ug/l	1
05403	Trichloroethene	79-01-0	14.D. N D	1.	uq/l	l
05404	1,2-Dichloropropane	78-87-5	N.D.		uq/1	l
05406	Bromodichloromethane	75-27-4	м.D.	. <u>.</u> .	ug/1	1
0540B	1,1,2-Trichloroethane	79-00-5	M.D.	0.0 0 B	ug/1	ı
05409	Tetrachloroethene	127-18-4	N.D.	V.0	~ <u>~</u> ~	÷



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Page 2 of 2

4803084 Lancaster Laboratories Sample No. WW

MW4 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 10:16 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

Account Number: 11817

MW4BL

W4BL				As Received		
CAT No.	Analysis Name	CAS Number	As Received Result	Method Detection Limit	Units	Dilution Fáctor
05611	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1.
DE413	Chlorobenzene	-108-90-7	N.D.	0.8	ug/l	1
05419	Browoform	75-25-2	N.D.	1.	ug/l	1
05419	1 1 2 2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05421	1, 2, 2, 2-16L1000000000	541-73-1	N,D.	1.	ug/l	1
05432	1, 3-Dichiorobenzene	106-46-7	N.D.	1.	ug/l	1
05433	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	Volatiles 8260 full scan cont					
06306	trans-1 3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	l
06300	cia-1 3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	ug/l	l

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

		Laboratory	Chro	nicle Analysis		Dilution
CAT	Deside Mana	Mathod	Trial#	Date and Time	Analyst	Factor
No. 02211	Analysis Name TPH by NWTPH-Dx(water)	ECY 97-602 NWTPH-DX	1	06/29/2006 19:31	Matthew B Barton	1
00014	W/SiGel	modified SW-846 B021B	1	06/30/2006 11:12	Steven A Skiles	l
08214	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx	1	06/29/2006 14:16	Steven A Skiles	1
05382	Volatiles by 8260 Full	modified SW-846 8260B	l	06/29/2006 19:51	Jason M Long	1
08202	Scan Volatiles 8260 full scan	SW-846 8260B	l	06/29/2006 19:51	Jason M Long	1
01146	CONT Water Pren	SW-846 5030B	l	06/29/2006 14:16	Steven A Skiles	1
01140	CO/NO VOL Water Prep	SW-846 5030B	l	06/29/2006 19:51	Jason M Long	1
01163	Extraction - DRO Water Special	ECY 97-602 NWTPH-DX 06/97	1	06/29/2006 08:30	Mariam G Attalla	1 ·



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Lancaster Laboratories Sample No. WW 4803085

MW8 Grab Water SampleSite# 1344 (255028)247 D St-Blaine, WACollected:06/27/2006 10:47by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW8BL

	•			As Received		
	·		As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
00005	Diesel Pange Organics	n.a.	N.D.	76.	ug/l	· 1
02095	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08214	BTEX, MTBE (8021)					
	Research	71-43-2	N.D.	0.2	ug/l	1
00776	Belizene	108-88-3	N.D.	0.2	ug/1	1
00777	Toluene	100-41-4	N.D.	0.2	ug/l	1
00778	Strylbenzene	1330-20-7	N.D.	0.6	ug/l	1
00779	Total Xylenes	1634-04-4	13.	0.3	ug/l	1
00780	Methyl tert-Butyl Scher	1024.01.4			_	
08274	TPH by NWTPH-Gx waters					
01648	TPH by NWTPH-Gx waters	n.a.	N.D.	48.	ug/l	1
05382	Volatiles by 8260 Full Scan					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	l
05386	Vinvl Chloride	75-01-4	1.	1.	. ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	l
05390	1.1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05390	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
055551	trans-1.2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05392	1 1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05355	cis-1 2-Dichloroethene	156-59-2	11.	0.8	ug/l	1
05355	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05390	1 1 1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05390	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05402	1 2-Dichloroethane	107-06-2	N.D.	1.	ug/l	l
05402	Trichlorosthene	79-01-6	2.	1.	ug/l	1
05403	1 2-Dichloropropage	78-87-5	N.D.	1.	ug/l	1
05409	Promodichloropropune	75-27-4	N.D.	1.	ug/l	1
05400	1 1 2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05400	Tetrechloroethere	127-18-4	N.D.	0.8	ug/l	1
05409	. Di promoch l oromet hane	124-48-1	N.D.	1.	ug/l	1.
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1



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4803085 Lancaster Laboratories Sample No. WW

MW8 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 10:47 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006

Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW8BL				As Received		
(1)			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
05/19	Bromoform	75-25-2	N.D.	.1.	ug/l	l
05421	1 1 2 2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1 ·
03421	1,1,2,2 icclacherere	54.1-73-1	N.D.	1.	ug/l	1
05432	1,3-Dichiorobenzene	105-46-7	N.D.	1.	ug/l	3
05433 05435	1,2-Dichlorobenzene	95-50-1	N.D.	1	ug/l	1
08202	Volatiles 8260 full scan cont	4 ⁴				
06306	trans-1.3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	l
06207	cis-1 3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	ug/l	1

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

	`	Laboratory	Chro	nicle		
CAT	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Pactor
02211	TPH by NWTPH-Dx (water)	ECY 97-602 NWTPH-Dx	l	06/29/2006 19:50	Matthew E Barton	1
	W/SIGEI	SW-846 8021B	1	06/30/2006 09:14	Steven A Skiles	1
08214	BIEA, MIBE (8021)	THEY BE COS NOT DH-GY	. 1	06/29/2006 14:49	Steven A Skiles	1
08274 05382	TPH by NWTPH-GX waters Volatiles by 8260 Full	modified SW-846 8260B	1	06/29/2006 21:28	Jason M Long	l
08202	Scan Volatiles 8260 full scan	SW-846 8260B	1	06/29/2006 21:28	Jason M Long	l
	cont	SW-846 5030B	1	06/29/2006 14:49	Steven A Skiles	1.
01146	GC VOA WATEL PIEP		1	06/29/2006 21:28	Jason M Long	· 1
01163 02135	GC/MS VOA water Prep Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	06/29/2006 0B:30	Mariam G Attalla	1



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Lancaster Laboratories Sample No. WW 4803086

MW3 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 11:17 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW3BL

	•			As Received		
CIN 5			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D	75. '	ug/1 ·	ı
02096	Heavy Range Organics	n.a.	N.D.	94.	ug/l	1
08214	BTEX, MTBE (8021)					
000866	Bonzono	71-43-2	N.D.	0.2	ug/l	1
00778		108-88-3	N.D.	0.2	ug/l	1
00777	Toruene	100-41-4	N.D.	0.2	ug/l	l
00778		1330-20-7	N.D.	0.6	ug/l	. 1
00779	Norbyl tort-Butyl Ether	1634-04-4	1.3	0.3	ug/l	1
00780	Methyl tert-Butyl Buner	1001 01 0		•		
08274	TPH by NWTPH-Gx waters					
01648	TPH by NWTPH-Gx waters	n.a.	N.D.	48.	ug/l	1
05382	Volatiles by 8260 Full Scan					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinvl Chloride	75-01-4	N.D.	1.	ug/l	1
05397	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1.
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	. 1
05505	1 1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05350	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1.2-Dichlorosthene	156-60-5	N.D.	0.8	ug/1	1
05393	1.1-Dichloroethane	75-34-3	N.D.	1.	ug/l	l
05395	cia-1.2-Dichlorpethene	156-59-2	N.D.	0.8	ug/l	1
05395	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05350	1 1 -Trich)oroethane	71-55-6	N.D.	0,8	ug/l	l
05550	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05402	1 2-Dichloroethane	107-06-2	N.D.	1.	ug/l	. 1
05402	Trichloroethene	79-01-6	N.D.	1	ug/l	1
02403	1 2-Dichloropropane	78-B7-5	N.D.	1.	ug/l	1
05404	Promodichloromethane	75-27-4	N.D.	1.	ug/l	1
05400	1 1 2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05400	Tatrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05409	Dibromoch] oromethane	124-48-1	N.D.	1.	ug/l	1
05411	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	l
03413	CHITOTODCHIDCHC	2				



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Lancaster Laboratories Sample No. WW 4803086

MW3 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 11:17 by TP

Submitted: 05/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW3BL				As Received		
C 3 77			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
	Breneform	75-25-2	N.D.	1.	ug/l	1.
05419	Promotoru	79-34-5	N.D.	1.	ug/l	1
05421	1,1,2,2-Tetrachioroethane	FA1 77 1	ND	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1	1107/1	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/1	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	2971	-
08202	Volatiles 8260 full scan cont					
		10061-02-6	N.D.	1.	ug/l	1
06306	Crans-1, 3-Dichioropropene	10061-01-5	ת א	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10081-01-2	N.D.		ug/1	1
08203	Freon 113	76-13-1	1	2.		

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

		Laboratory	Chro	nicie			Dilution
CAT No.	Analysis Name	Method ECV 97-502 NWTPH-Dx	Trial# 1	Analysis Date and Tin 06/29/2006 20	ne 0:10	Analyst Matthew E Barton	Pactor 1
02211 08214 08274	TPH by NWTFH-DX(Water) w/SiGel BTEX, MTBE (8021) TPH by NWTFH-Gx waters	modified SW-846 8021B ECY 97-602 NWTPH-Gx	1 1	06/30/2006 09 06/29/2006 10	9:43 6:52	Steven A Skiles Steven A Skiles	1 1
05382	Volatiles by 8260 Full	modified 9W-845 8260B	1	06/29/2006 2:	1:52	Jason M Long	1
08202	Scan Volatiles 8260 full scan	SW-846 8260B	1	06/29/2006 2:	1:52	Jason M Long	1
01146 01163 02135	cont GC VOA Water Prep GC/MS VOA Water Prep Extraction - DRO Water Special	5W-846 5030B SW-846 5030B ECY 97-602 NWTFH-Dx 06/97	1 1 . 1	06/29/2006 10 06/29/2006 23 06/29/2006 05	6:52 1:52 8:30	Steven A Skiles Jason M Long Mariam G Attalla	1 1 1



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Lancaster Laboratories Sample No. WW 4803087

MW7 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 11:46 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips. 1230 West Washington Street Suite 212 Tempe AZ 85281

MW7BL

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	·		•			
			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Unite	Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02005	Dionel Parge Organics	n.a.	N.D.	75.	ug/l	1
02095	Heavy Range Organics	n.a.	N.D.	93.	ug/l	l
08214	BTEX, MTBE (8021)	•				
	-	71-43-7	0.5	0.2	ug/l	1 .
00776	Benzene	108-88-3	N.D.	0.2	ug/l	l
00777	Toluene	100-41-4	N.D.	0.2	ug/l	1
00778	RENVIDENZENE	1730-20-7	N.D.	0.6	ug/l	1
00779 00780	Methyl tert-Butyl Ether	1634-04-4	4.0 .	0.3	' ug/l	ı
08274	TPH by NWTPH-Gx waters					
01648	TPH by NWTPH-Gx waters	n.a.	N.D.	48.	ug/l	l
05382	Volatiles by 8260 Full Scan	·				
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinvl Chloride	75-01-4	18.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	· 1.	ug/l	1
05389	Trichloroflupromethane	75-69-4	N.D.	2.	ug/l	1.
05300	1 1-Dichloroethene	75-35-4	2.	0°. B	ug/l	1
05350	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05391	trans-1 2-Dichloroethene	156-60-5	2.	0.8	ug/l	1
05392	1.1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1.2-Dichlorpethene	156-59-2	230.	8.	ug/l	10
05305	Chloroform	67-66-3	N.D.	0.B	ug/l	1
05390	1 1 1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05390	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05355	1 2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05402	Trichlorpethene	79-01-6	190.	1.	ug/l	<u> </u>
05405	1 2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05404	Browodichloromethane	75-27-4	N.D.	1.	ug/l	1
05400	1 1 2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05408	Tetrachlorgethene	127-18-4	N.D.	0.8	ug/l	1
05409	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	l
05411	Chlorobenzene	108-90-7	N.D.	0.B	ug/l	1
02413						

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Analysis Report

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Lancaster Laboratories Sample No. WW 4803087

MW7 Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 11:46 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006

Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

MW	7BL	
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W7BL				As Received		
CAT No.	Analysis Name	CAS Number	As Received Result	Method Detection Limit	Unite	Dilution Factor
05419 05421 05432 05433 05435	Bromoform 1,1,2,2-Tetrachloroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene	75-25-2 79-34-5 541-73-1 106-46-7 95-30-1	N.D. N.D. N.D. N.D. N.D.	1. · 1. 1. 1.	ug/1 ug/1 ug/1 ug/1 ug/1	1 1 1 1
08202	Volatiles 8260 full scan cont					
06306 D6307 08203	trans-1,3-Dichloropropene cis-1,3-Dichloropropene Freon 113	10061-02-6 10061-01-5 76-13-1	N.D. N.D. N.D.	1. 1. 2.	ug/l ug/l ug/l	1 1 1

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

		Laboratory	Chro	nicle Analysis		Dilution
CAT No. 02211	Analysis Name TPH by NWTPH-Dx(water)	Method ECY 97-602 NWTPH-Dx	Trial# 1	Date and Time 06/29/2006 20:29	Analyst Matthew E Barton	Factor
08214 08274	w/SiGel BTEX, MTBE (8021) TPH by NWTPH-Gx waters	modified SW-846 8021B ECY 97-602 NWTPH-Gx	1 1	06/30/2006 10:13 06/29/2006 17:27	Steven A Skiles Steven A Skiles	1 1
05382	Volatiles by B260 Full	modified SW-846 8260B	l	06/29/2006 22:16	Jason M Long	1
05382	Scan Volatiles by 8260 Full	SW-846 8260B	l	06/29/2006 23:26	Jason M Long	10
08202	Scan Volatiles 8260 full scan	SW-846 8260B	1	06/29/2006 22:16	Jason M Long	1
01146 01163 01163 02135	cont GC VOA Water Prep GC/MS VOA Water Prep GC/MS VOA Water Prep Extraction - DRO Water Special	SW-846 5030B SW-846 5030B SW-846 5030B SW-846 5030B ECY 97-602 NWTPH-DX 06/97	1 1 2 1	06/29/2006 17:27 06/29/2006 22:16 06/29/2006 23:26 06/29/2006 08:30	Steven A Skiles Jason M Long Jason M Long Mariam G Attalla	1 1 10 1



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Lancaster Laboratories Sample No. WW 4803088

MW2A Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 12:30 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

M2ABL

				As Received		
			As Received	Method		Dilution
CAT No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	75.	ug/l	1
02095	Heavy Range Organics	n.a.	N.D.	94.	ug/l	1
08214	BTEX, MTBE (8021)					•
	Banana	71-43-2	N.D.	0.2	ug/l	1
00776	Benzene	108-88-3	N.D.	0.2	ug/l	l
00777		100-41-4	N.D.	0.2	ug/l	1
00778		1330-20-7	N.D.	0.6	ug/1	l
00779	Methyl tert-Butyl Ether	1634-04-4	N.D.	0.3	ug/l	ı.
08274	TFH by NWTPH-Gx waters					
0164B	TPH by NWTPH-Gx waters	n.a.	N.D.	48.	ug/l	l
05382	Volatiles by 8260 Full Scan					
05385	Chlorometbane	74-87-3	N.D.	1.	ug/l	1
05386	Vinvl Chloride	75-01-4	N.D.	1.	_ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/1	l
05389	Trichlorofluoromethane	75-69-4	N.D.	· 2.	ug/l	1
05300	1.1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	l
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1.2-Dichlorcethene	156-60-5	N.D.	0.8	ug/l	1
05393	1.1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1.2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	. 1
05396	Chloroform	67-66-3	N.D.	0.8	ug/1	1
05398	1.1.1-Trichloroethane	71-55-6	N.D.	0.B	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05402	1.2-Dichloroethane	107-06-2	N.D.	1.	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	l
05405	1.2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05405	Bromodichloromethane	75-27-4	N.D.	1.	ug/1	1.
05408	1.1.2-Trichloroethane	79-00-5	N.D.	О.В	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	О.В	ug/l	1
05431	Dibromochloromethane	124-46-1	N.D.	1.	ug/1	1
05413	Chlorobenzene	108-90-7	N.D.	0.B	ug/l	1



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Lancaster Laboratories Sample No. WW 4803088

MW2A Grab Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected:06/27/2006 12:30 by TP

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

M2ABL	,			As Received		
C 3 T			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
05439	Bronoform	75-25-2	N.D.	1	ug/l	1
05423)) 2 2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05421	1,1,2,2 Inchangene	541-73-1	N.D.	1.	ug/l	1
05432	1 A-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	Volatiles 8260 full scan cont					
06306	trans-1.3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	ı ·
06307	cis-1.3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	ug/l	1

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

		Laboratory	Chro	nicle		
CAT		· •		Analysis		Dilution
Ne	Amelygia Name	Method	Trial#	Date and Time	Analyst	Factor
02211	TPH by NWTPH-Dx (water)	BCY 97-602 NWTPH-Dx	l	06/29/2006 20:48	Matthew E Barton	1
	w/SiGel	modified	h	06/30/2006 10:43	Steven A Skiles	1
08214	BTEX, MTBE (8021)	BM-640 BUZIB	-	00/00/2000 17.50	Storen & Skiles	. 1
08274	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-GX modified	1	06/29/2006 17:59	SLEVEN A GAILES	
05382	Volatiles by 8260 Full	SW-846 8260B	1	06/29/2006 22:39	Jason M Long	1
08202	Scan Volatiles 8260 full scan	SW-846 8260B	l	06/29/2006 22:39	Jason M Long	1
07745	cont CC VON Water Pren	SW-846 5030B	1	06/29/2006 17:59	Steven A Skiles	1
OTT40	GC VOA MACEI IICP	TH BAC EDODD	٦	06/29/2006 22:39	Jason M Long	1
01163	GC/MS VOA water Prep	SW-040 3030D			Memium C Attalla	7
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	06/29/2006 08:30	Marian G Accara	÷



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Lancaster Laboratories Sample No. WW 4803089

Trip Blank Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected: n.a.

TB4BL

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

	. •			As Received		
		•	As Received	Method		Dilution
CAT No.	Analysis Name	CAS Number	Result	Detection Limit	Onits	Factor
08214	BTEX, MTBE (8021)					
	Democra	71-43-2	N.D.	0.2	ug/l	1
00776	Benzene	108-88-3	N.D.	0.2	ug/l	1
00777	Tornene	100-41-4	N.D.	0.2	ug/l	. 1
00778	Ethylbenzene	1330-20-7	N.D.	0.6	ug/l	1
00779	Total Aylenes	1634-04-4	N.D.	0.3	ug/l	1
00780	Methyl tert-Butyl Biner	1034 03 5				-
08274	TPH by NWTPH-Gx waters					
01648	TPH by NWTPH-Gx waters	n.a.	N.D.	48.	ug/1	1.
05382	Volatiles by 8260 Full Scan	•				
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	l
05305	Vinvl Chloride	75-01-4	N.D.	1.	ug/l	1
05307	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05389	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05300	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05303	1 1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05390	1,1-pichioroccace	75-09-2	N.D.	2.	ug/l	1
05391	Mechylene Chicklorgethere	156-60-5	N.D.	0.8	ug/1	1
05392	1 1-Dichloroethane	75-34-3	N.D.	1.	uġ/l	1
05393	ris-1 2-Dichloroethene	156-59-2	N.D.	0.8	. ug/l	1
05395	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05396	1 1 1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05390	Corbon Tetrachloride	56-23-5	N.D.	1.	ug/l	. 1
05402	1 3-Dichloroethane	107-06-2	N.D.	1.	ug/l	l
05402	Trichloroethere	79-01-6	N.D.	1.	ug/l	1
05403	1 2-Dichloropropage	78-87-5	N.D.	1.	ug/l	1
05404	2,2-Dichici opiopuse	75-27-4	N.D.	1.	ug/l	1
05406	Bromourchiorosthane	79-00-5	N.D.	0.B	ug/1	1
05408	I, I, 2-IIICHIOIDECHANC	127-18-4	N.D.	0.B	ug/l	1
05409	Tetrachioromethane	124-48-1	N.D.	1.	ug/l	1
05411	Dibromochioiomechane Chierebengene	108-90-7	N.D.	0.8	ug/1	1
05413	Bronoform	75-25-2	N.D.	1.	ug/l	1
05419	1 7 3 S-Metrachjowostpane Bromororu	79-34-5	N.D.	1.	ug/l	1
05421	1,1,2,2-ietiachioioschane	541-73-1	N.D.	1.	ug/l	1
05432	1 V Diepjeropensene	106-46-7	N.D.	1	ug/l	1
05433	1 9 Dichloropensene	95-50-1	N.D.	1.	ug/l	1
05435	T's-Dicutoropensenc					



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Lancaster Laboratories Sample No. WW 4803089

Trip Blank Water Sample Site# 1344 (255028) 247 D St-Blaine, WA Collected: n.a.

Submitted: 06/28/2006 09:35 Reported: 07/14/2006 at 15:42 Discard: 08/14/2006 Account Number: 11817

ConocoPhillips 1230 West Washington Street Suite 212 Tempe AZ 85281

TB4BL			As Received			
CAT No.	Analysis Name	CAS Number	As Received Result	Method Detection Limit	Units "	Dilution Factor
08202	Volatiles 8260 full scan cont					
06306 06307 08203	trans-1,3-Dichloropropene cis-1,3-Dichloropropene Freon 113	10061-02-6 10061-01-5 76-13-1	N.D. N.D. N.D.	1. 1. 2.	ug/1 ug/1 ug/1	1 1 1

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

				Analysis		Dilucion
CAT		Wathod	Trial#	Date and Time	Analyst	Factor
No.	Analysis Name	SW-RAC BO21B	1	05/30/2005 08:44	Steven A Skiles	1
08214 08274	BTEX, MIBE (8021) TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx	ī	06/29/2006 13:43	Steven A Skiles	1
05382	Volatiles by 8260 Full	modified SW-846 8260B	l	06/29/2006 23:02	Jason M Long	1
08202	Scan Volatiles 8260 full scan	SW-846 8260B	1	06/29/2006 23:02	Jason M Long	1
01146 01163	cont GC VOA Water Prep GC/MS VOA Water Prep	SW-846 5030B SW-846 5030B	1 1	06/29/2006 13:43 06/29/2006 23:02	Steven A Skiles Jason M Long	1



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Quality Control Summary

Group Number: 995267

Client Name: ConocoPhillips Reported: 07/14/06 at 03:42 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysie Name	Blank Result	Blank <u>MDL</u>	Report <u>Dnits</u>	LCS <u>%REC</u>	LCSD <u>%REC</u>	LCS/LCSD <u>Limits</u>	RPD	RPD Max
Batch number: 061790024A	Sample	number(s):	4803089-48	03080	80	51-113	2	20
Diesel Range Organics	N.D.	0.080	mg/1	81	80		-	
Heavy Range Organics	N.D.	0.10	mg/l					
Ratch number, 061802073	Sample	number(s):	4803084-48	03089			_	20
TPH by NWTPH-Gx waters	N.D.	48.	ug/1	82	87	70-130	5	30
Patch number: 061812152	Sample	number(s):	4803084-48	03089				
Battin humber. Vorbinish	N.D.	0.2	ug/l	90	90	86-119	0	30
Benzene	ND	0.2	uq/1	94	94	82-119	0	30
Toluene	N D	0.2	ug/1	95	96	81-119	1	.30
Ethyldenzene	N.D.	0.6	ug/1	98	98	82-120	1	30
Total Aylenes	N.D.	0.3	$\frac{-g}{1}$	93	94	82-124	1	30
Methyl tert-Butyl Ether	N.D.	0.5	ug/ 1					
Batch number: W061B02AA	Sample	number(s):	4803084-4	303089		=6-134		
Chloromethane	N.D.	1.	ug/1	63		60 100		
Vinvl Chloride	N.D.	1.	ug/l	73		02-125		
Bromomethane	N.D.	1.	ug/l	81		4/-14J		
Chloroethane	N.D.	1.	ug/l	75		57-125		
Trichlorofluoromethane	N.D.	2.	ug/l	108		67-136		
1 1-Dichloroethene	N.D.	0.8	ug/l	99		79-130		
Methylong Chloride	N.D.	2.	ug/1	95		85-120		
Methyrene chiorrethere	N.D.	Q. B	ug/1	98		B3-117		
trans-1,2-Dichiordechene	ND	1.	uq/1	89		83-127		
1,1-Dichioroechane	N D	0.8	ug/1	98		84-117		
cis-1,2-Dichioroethene	N D	0.8	$u\alpha/1$	100		86-124		
Chloroioim	N D	0.8	$\frac{ug}{1}$	107		B3-127		
1,1,1-Trichloroethane	N.D.	1	ug/1	109		77-130		
Carbon Tetrachioride	N.D.	1	ug/1	102		77-132		
1,2-Dichloroethane	N.D.	· · ·	109/1	99		87-117		
Trichloroethene	N.D.	1.	ug/1	90		80-117		
1,2-Dichloropropane	N.D.	1.	ug/1	07		83-121		
Bromodichloromethane	N.D.	1.	ug/1	97		86-113		
1,1,2-Trichlorcethane	N.D.	0.8	ug/1	33		74-125		
Tetrachloroethene	N.D.	0.8	Ug/1	105		78-119		
Dibromochloromethane	N.D.	1.	ug/1	101		95-115		
Chlorobenzene	N.D.	Q.B	ug/1	95		60-110		
Bromoform	N.D.	1.	ug/l	101		82 338		
1.1.2.2-Tetrachloroethane	N.D.	1.	ug/l	84		72-117		
1.3-Dichlorobenzene	N.D.	1.	ug/l	94		81-114		
1.4-Dichlorobenzene	N.D.	1.	ug/l	96		84-116		
1 2-Dichlorobenzene	N.D.	1.	ug/l	96		81-112		
trans-1 3-Dichloropropene	N.D.	1.	ug/l	86		79-114		
ciel 3-Dichloropropene	N.D.	1.	ug/1	90		78-114		
Freen 113	N.D.	2.	ug/l	106	•	64-134	•	

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.



DDP

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DUP

Dup RPD

Quality Control Summary

Group Number: 995267

BKG

Client Name: ConocoPhillips Reported: 07/14/06 at 03:42 PM

Sample Matrix Quality Control

RPD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate MC /MCD

	M3	1.50	Timito	חספ	MAX	Conc	Conc	RPD	Max
Anglysis Name	<u>SREC</u>	TREC	Limits	<u>AF P</u>	A COLUMN	<u>- mar</u>			
	0	number /	-) · 4803084	-480308	9 UNSPI	(: 4803084			
Batch number: 06180A07A	Sampre	numer /	67-154		-		· · ·		
TPH by NWTPH-Gx waters	108		03-794						
	6 1		-) - 4903084	-480308	9 UNSPI	C: P803838			
Batch number: 06181A15A	Sample	nummer (2/: 4005003	100000					
Benzene	101		70-131						•
Toluene	104		78-129			•			
Ethylbenzene	105		75-155						
Total Xylenes	108		84-131						
Methyl tert-Butyl Ether	101		70-134						
-			-1. 4903094	-480305	A TINSP	K: 4803084			
Batch number: W061802AA	Sampre	number (5/: 4803004 ED-148	3	30				
Chloromethane	71	69	57-142	ñ	30				
Vinyl Chloride	85	84	C7-142	ĭ	30				
Bromomethane	86 .	87	52-141	5	30				
Chloroethane	79	79	63-142	2	30				
Trichlorofluoromethane	127	124	75-163	2	30				
1,1-Dichloroethene	115	115	87-145	0	30				
Methylene Chloride	98	96	79-133	2	20				
trans-1,2-Dichloroethene	109	108	B2-133	0	30				
1.1-Dichloroethane	96	96	85-135	0	30				
cis-1.2-Dichloroethene	119	108	83-126	6	30				
Chloroform	106	105	82-131	0	30				
1.1.1-Trichloroethane	119	118	81-142	1	30				
Carbon Tetrachloride	124	124	79-155	0	30				
1.2-Dichloroethane	105	104	70-143	1	30				
Trichloroethene	114	114	83-136	0	30				
1.2-Dichloropropane	90	90	83-129	0	30				
Browodichloromethane	104	103	80-129	1	30				
1 1 2-Trichloroethane	96	98	77-125	1	30				
Tetrachloroethere	115	113	78-133	2	30				
Dibromochloromethane	103	105	82-119	2	30				
Chlorobenzene	102	103	83-120	0	30				
Exemptor	104	105	64-119	2	30				
BIOMOLOLM BIOMOLOLM	68	87	69-128	1	30			•	
1,1,2,2° recracing occurrence	101	100	79-123	2.	30				
1, 3-Dichiorobenzene	106	102	81-122	. 4	30				
1,4-Dichiotopensene	104	102	B2-117	1	30			•	
1, Z-Dichioropenzene	92	92	77-123	0	30			•	
LIANS-1, 3-DICHTOTOPIOPENE	96	93	80-126	3	30				
CIR-1, 3-Dichtoropropene	128	128	74-129	1	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH by NWTPH-Dx(water) w/SiGel Batch number: 061790024A Orthoterphenyl

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.



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Quality Control Summary

Group Number: 995267

Client Name: ConocoPhillips Reported: 07/14/06 at 03:42 PM

Surrogate Quality Control

4803084	97			
4003085	97			
4803085	81			
4903086	92 91			
4803087	92			
4803088	93			
Blank	91 .			
LCS	111			
LCSD	115			
				· · · · · · · · · · · · · · · · · · ·
Limits:	50-150			
	THE MUTCH WELCH			
Analysis N	ame: TPH Dy NWIFH-GA WALEI.	1		
Batch numb	er: 06180AU/A			
	Trifluorotoluene-F			
4803084	87			
4803085	89			
4803086	87			
4803087	91			
4803088	88 .			
4803089	84			
Plank	86			
ICS	RR			
1000	88			
LCSD	04			
MB	74			
Timite	63-135		· ·	
1) I III I C I I I	•••			
Amplycic N	ame BTEX, MTBE (8021)			
AUGTADTO N				
Batch numb	mifluerotoluere-D			
Batch nume	Trifluorotoluene-P			
Batch numb	Trifluorotoluene-P			<u></u>
4803084	Trifluorotoluene-P			
4803084 4803085	Trifluorotoluene-P			
4803084 4803085 4803085	Trifluorotoluene-P 104 104 104			
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4803084 4803085 4803085 4803086 4803086 4803088 4803088 4803089 812016	Trifluorotoluene-P 104 104 104 104 106 105 104 104			
4803084 4803085 4803085 4803086 4803088 4803088 4803088 4803089 Blank	Trifluorotoluene-P 104 104 104 105 104 104 105 104 104 104			
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4803084 4803085 4803086 4803086 4803087 4803088 4803089 Blank LCS LCSD	Prifluorotoluene-P 104 104 104 104 106 105 104 104 104 102 103 07			
4803084 4803085 4803085 4803086 4803088 4803088 4803089 Blank LCS LCSD MS	Trifluorotoluene-P 104 104 104 105 104 104 105 104 104 102 103 103			
4803084 4803085 4803085 4803086 4803086 4803089 Blank LCS LCSD MS	Prifluorotoluene-P 104 104 104 104 105 104 104 105 104 102 103 103 69-129			
Batch nume 4803084 4803085 4803086 4803086 4803088 4803088 4803089 Blank LCS LCSD MS Limits:	Trifluorotoluene-P 104 104 104 104 106 105 104 104 102 103 103 69-129			
Batch nume 4803084 4803085 4803086 4803087 4803088 4803088 4803089 Blank LCS LCSD MS Limits:	Prifluorotoluene-P 104 104 104 105 104 105 104 102 103 103 69-129 Name: EPA SW846/8260 (water			
Batch number 4803084 4803085 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number	Prifluorotoluene-P 104 104 104 105 105 104 104 105 104 104 102 103 103 69-129 Wame: EPA SW846/8260 (water per: W661802AA	.)		
Batch number 4803084 4803085 4803086 4803086 4803088 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number	Prifluorotoluene-P 104 104 104 104 105 104 105 104 102 103 103 69-129 Name: EPA SW846/8260 (water per: W061802AA Dibromofluoromethane) 1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
Batch number 4803084 4803085 4803086 4803087 4803088 4803088 4803089 Blank LCS LCS LCS Limits: Analysis 1 Batch number	Prifluorotoluene-P 104 104 104 105 104 105 104 102 103 69-129 Name: EPA SW846/8260 (water per: W061802AA Dibromofluoromethane) 1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
Batch number 4803084 4803085 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number	Trifluorotoluene-P 104 104 104 105 105 104 104 105 103 69-129 Name: EPA SW846/8260 (water ber: W661802AA Dibromofluoromethane) 1,2-Dichloroethane-d4 96	Toluene-d8 90	4-Bromofluorobenzene
Batch number 4803084 4803085 4803086 4803086 4803088 4803088 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084	<pre>ter: 06181A15A Trifluorotoluene-P 104 104 104 106 105 104 104 102 103 69-129 Name: EPA SW846/8260 (water per: W061802AA Dibromofluoromethane 105 104</pre>) 1,2-Dichloroethane-d4 96 95	Toluene-d8 90 90	4-Bromofluorobenzene 90 89
Batch nume 4803084 4803085 4803086 4803086 4803089 Blank LCS LCS LCSD MS Limits: Analysis 1 Batch num 4803084 4803085	P: 06181A15A Trifluorotoluene-P 104 104 104 105 105 104 102 103 69-129 Name: EPA SW846/8260 (water ber: W061802AA Dibromofluoromethane 105 104 105) 1,2-Dichloroethane-d4 96 95 95	Toluene-d8 90 90 90	4-Bromofluorobenzene 90 89 89
Batch number 4803084 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084 4803084	Prifluorotoluene-P 104 104 104 104 105 103 103 69-129 Name: EPA SW846/8260 (water Der: W061802AA Dibromofluoromethane 105 104 105) 1,2-Dichloroethane-d4 96 95 96 97	Toluene-d8 90 90 90 90	4-Bromofluorobenzene 90 89 89 89
Batch number 4803084 4803085 4803086 4803086 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084 4803085 4803086 4803086	Prifluorotoluene-P 104 104 104 104 105 104 105 104 102 103 69-129 Name: EPA SW846/8260 (water per: W061802AA Dibromofluoromethane 105 104 105 105) 1,2-Dichloroethane-d4 96 95 96 97	Toluene-d8 90 90 90 90 90 89	4-Bromofluorobenzene 90 89 89 89 89 89
Batch number 4803084 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084 4803085 4803085 4803085 4803085 4803085 4803085 4803085 4803085 4803085 4803085 4803085 4803085	Prifluorotoluene-P 104 104 104 105 104 105 103 69-129 Name: EPA SW846/8260 (water ber: W61802AA Dibromofluoromethane 105 104 105 105 105 106) 1,2-Dichloroethane-d4 96 95 96 97 95	Toluene-d8 90 90 90 90 90 89	4-Bromofluorobenzene 90 89 89 89 89 89 89 89 89 88
Batch number 4803084 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084 4803084 4803086 4803086 4803089	Prifluorotoluene-P 104 104 104 104 105 104 102 103 69-129 Name: EPA SW846/8260 (water ber: W061802AA Dibromofluoromethane 105 104 105 105 105 106 107) 1,2-Dichloroethane-d4 96 95 96 97 95 95	Toluene-d8 90 90 90 90 89 89	4-Bromofluorobenzene 90 89 89 89 89 89 89 89 89 89
Batch number 4803084 4803085 4803086 4803087 4803089 Blank LCS LCSD MS Limits: Analysis 1 Batch number 4803084 4803085 4803086 4803087 4803088 4803088 9803089 Blank	Prifluorotoluene-P 104 104 104 104 105 104 105 104 102 103 69-129 Name: EPA SW846/8260 (water per: W061802AA Dibromofluoromethane 105 104 105 105 106 107 105) 1,2-Dichloroethane-d4 96 95 96 97 95 95 95 95	Toluene-d8 90 90 90 90 90 90 89 89 89	4-Bromofluorobenzene 90 89 89 89 89 89 89 89 89 89 89 89 89 89
Batch nume 4803084 4803085 4803086 4803087 4803089 Blank LCS LCS MS Limits: Analysis 1 Batch num 4803084 4803085 4803085 4803086 4803087 4803088 4803089 Blank LCS	Prifluorotoluene-P 104 104 104 104 105 103 69-129 Name: EPA SW846/8260 (water ber: W661802AA Dibromofluoromethane 105 104 105 106 107 105 106) 1,2-Dichloroethane-d4 96 95 96 97 95 95 96 98	Toluene-d8 90 90 90 90 90 89 89 89 89 89 89	4-Bromofluorobenzene 90 89 89 89 89 89 89 89 89 89 89 89 89 89

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.



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Quality Control Summary

Client Na	ame: ConocoPhillips		Group Number:	995267		
Reported	: 07/14/06 at 03:42	PM Surroga	ate Quality Cont:	rol		
MS MSD	104 103	99 98	92 92		96 96	
Limits:	80-116	77-113	80-113		78-113	

*- Outside of specification

The result for one or both determinations was less than five times the LOQ.
The background result was more than four times the spike added.

			Ċol	100	ĊO	Ph	illi	ps	Å	hc	aly	sis	s R	eql	les	t/C	h	ain of C	Cusi	lod	y
Lancaste Laborate	er Ories	041 Po# 45	08 06583	817	-		Acc	:t.#: Ana		81 B B B B	<u>]</u>	C	For L Group I	ancas ⁴ 9 9 al number der each	er Lab	oratori Lo`7 tainers li	es us Sam the	e only ple #: <u>480</u>] SCR#:	30	84- 90	-89
Site #:255028 Site Address:Blain ConocoPhillips PM: Core Work Order#: Consultant/Office:I Consultant Prj. Mgr: Consultant Prj. Mgr: SamplerAMMM4	me, WA ne, WA co in Thotte. Narc Sau 5 372-160 Parise.	mpany Cods: Total Lab Budg 120 Fax #: X	et			Matrix exapte NDES	Air D	H (RUNJALUIT X2	THIS H		11 N. 6. 51/100 100	The down of the X / Y	vation	Codes				Prese H = HCl, N = HNO3 S = H₂SO4	T = B = O =	Codes Thiosu NaOH Other	s Ilfate
Sample Identification MW4 A4 14/8		Date Collected	Time Collected /0116 //2147	Grab	lios	Wate		IG	ary r									Remarks			
$\frac{MW^3}{MW^7}$	· · · · · · · · · · · · · · · · · · ·	6/27 6/27 6/27	11'47 11:46 12:30						T												
Trip blank													_								
Turnaround Time Requ STD, TAT	ested in Business 5 day	Days (TAT) (ple 48 hour	ease circle):{	R	etino L'etino	Delicity uisked		یلی۔ محم		9 I. 	(5	Date 5-C Date	Time	Rec Rec	eived by	/: ∕: ∕:			Date Date	Time Time
24 hour Reporting Requirement	other		Diskatta	R	telino	uished	by:	<u> </u>	<	_	_		Date	Time	Rec	eived b	y: ·	7.27		Date Date	Time
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Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

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Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D. TNTC IU umhos/cm Cal Cal meq g ug ml m3	none detectedBMCToo Numerous To CountMFInternational UnitsCP Unmicromhos/cmN°degrees Celsius(diet) calories(diet) caloriesmilliequivalentsgram(s)rmicrogram(s)milliliter(s)cubic meter(s)fib >5 um/	کل its ۲ ال b. kg ng ا ul	Below Minimum Quantitation Level Most Probable Number cobalt-chloroplatinate units nephelometric turbidity units degrees Fahrenheit pound(s) kilogram(s) milligram(s) liter(s) microliter(s) fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>lim</u> be reliably determined using this specific test.	<u>it of q</u>	uantitation, the smallest amount of analyte which can
>	greater than	•	
ppm	parts per million – One ppm is equivalent to one mi For aqueous liquids, ppm is usually taken to be equivater has a weight very close to a kilogram. For gar gas per liter of gas.	lligran Jivaler ases (n per kilogram (mg/kg), or one gram per million grams. nt to milligrams per liter (mg/l), because one liter of or vapors, one ppm is equivalent to one microliter of
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjust concentration to approximate the value present in a	sted fo a simi	or moisture content. This increases the analyte weight lar sample without moisture.
U.S. EPA data	qualifiers:		
•	Organic Qualifiers		Inorganic Qualifiers
A B C D E J	TIC is a possible aldol-condensation product Analyte was also detected in the blank Pesticide result confirmed by GC/MS Compound quatitated on a diluted sample Concentration exceeds the calibration range of the instrument Estimated value Presumptive evidence of a compound (TICs only)	BENNS UW	Value is <crdl, but="" ≥idl<br="">Estimated due to interference Duplicate injection precision not met Spike amount not within control limits Method of standard additions (MSA) used for calculation Compound was not detected Post digestion spike out of control limits</crdl,>

- P Concentration difference between primary and confirmation columns >25%
- U Compound was not detected
- X.Y.Z Defined in case narrative

- * Duplicate analysis not within control limits
- Correlation coefficient for MSA < 0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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ATTACHMENT B SECOR MONITORING WELL GAUGING, PURGING AND SAMPLING PROCEDURES; GROUNDWATER MONITORING FIELD DATA RECORDS

SECOR MONITORING WELL GAUGING, PURGING AND SAMPLING PROCEDURES

Monitoring well purging and sampling was conducted based on USEPA approved (Puls and Barcelona, 1996) low-flow sampling techniques whenever possible.

Purging Procedures

- A. Using a decontaminated instrument (i.e., tape measure, continuity meter, or interface probe) measure the depth to groundwater in reference to the measuring point at the top of the casing. Measure the total depth of the well and diameter of the well casing to calculate the volume of water in the well casing.
- B. Based on previously obtained data, if a monitoring well is suspected of containing LPH concentrations, lower a transparent bailer into the well to evaluate the presence of a hydrocarbon sheen on the water table.
- C. Decontaminate the purge pump and/or PVC bailers by scrubbing in Alconox detergent solution, followed by a tap water rinse and then a de-ionized water rinse.
- D. Purge by low-flow pumping (less than 0.5 liters per minute) for approximately five minutes. Monitor the static water level in the well using a decontaminated instrument and adjust the pumping rate to maintain a minimal drawdown. If low-flow purging is not possible and bailing is used to purge the well, then a minimum of three well volumes will be removed. When purging 3 well volumes, parameters should be measured after each casing volume is removed. If the well goes dry, the procedure listed in step E2 (below) should be followed.
- E. Conduct field measurements (i.e., pH, specific conductivity, temperature, and oxidation-reduction potential) note clarity, color, turbidity, and odor of purge water, and measure depth to groundwater.
 - If the well has not been purged dry and drawdown is minimal, continue to pump and conduct field measurements (including depth to water) again every three to five minutes during purging.
 - a) If the first through third series of measurements vary by less than 10 percent, the well has been adequately purged. If bailers are used to purge the well, then the water level is allowed to recover to 80 percent of its static condition, or for two hours, whichever comes first prior to beginning the sampling procedure.
 - b) If the measurements vary by 10 percent or greater, repeat Step E1 above.
 - c) If a minimum of three parameters cannot be measured during purging and or drawdown cannot be controlled to minimal, remove three well volumes with a bailer prior to sampling.
 - 2. If the well has been purged dry, measure the water level and allow the well to recharge to 80 percent, or for two hours, whichever occurs first. Calculate the percent recovery, and begin the sampling procedure.

Sampling Procedures

- Use the pump and a clean, dedicated section of tubing to collect the groundwater sample from the screened interval of the water column. If the pump cannot be used, collect the water sample with a clean, dedicated polyethylene disposable bailer.
- Transfer the groundwater sample into the appropriate container(s). Where applicable, some containers are completely filled to achieve zero headspace. Label the samples according to location and date of collection.
- Enter the samples into Chain-of-Custody and preserve on ice until delivery to the analytical laboratory. Complete the Well Development or Purging/Sampling Log to be stored in the project file.

Reference:

Puls, R.W., and Barcelona M.J., 1996. EPA Ground Water Issue Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA/540/S-95/504.

SECOR					
BECOR	DAILYF	IELD LOG	•		•
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Client: ConocoPhillips	S Site No:	5028	Project No:	01CP	.05028:13
Scope of Work:xQuarte	r Monitoring/Sampling	· W/O #;			
Describe Daily Activities:					
Gauged monit Purged monit Sampled monit	oring wells. oring wells. oring wells.	Number of dru	ims left on site:	_ <u>_</u>	
Field Notes: 8:45 Set up Decon, PPl H+5	E; X Do no- HVC	t damp Hz)CS, bring 1	le 10 into 1 pucket u	varrel, V/Lid	contair
gior locate, 1005en + guuge	e walls			,	
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1147 Sample MW 3 1146 Sample MW 7-n	oeds new Lock (Cut of	lone nerth	nu 1 on	ly,no	Samplu
5:30 sample minor			- <u> </u>		
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· · · ·		· .			
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			:	1	
Arrived on Site: <u>8.45</u>	· ·		Departed	Site:	
Dependent and Proceedures: 3+Sta	ge (Alconox Wash, '	Tap Water Rinse, &	& Distilled Wa	ter Rinse)	
Daily Health and Safety Log Completed?:	yes	Utility Location	is Checked?: A	1/A	
Important Conversations: ND	·	· . ·		і.	
Important Changes In Scope of Work:	10				
Sumain 7	5-85 .	hcontractors On Site:	NO.		
SECOR Personnel On Site:	ammu Paris	l	· · · · · · · · · · · · · · · · · · ·	•	
Signed: Jann	J Parise			Date: 6	27506
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	GROUNDWA	S E ter samp	COR LING FIE	<u>LD DATA SI</u>	<u>HEET</u>	• · · ·	
SECOR PN:	مىسىمە مۇمىلىكى <u>م</u> ىرىمە بىۋلار،	,	DATE	: 6/27/2006	;	LL NO. <u>MW-</u>	<u>24</u>
FACILITY NAME:	255028			TEM	PERATURE;	<u>80 </u>	F or °C
FIELD PERSONNEL:	Tammy Paris	e		_ WEATHER:	Sunph	<u>ــــــــــــــــــــــــــــــــــــ</u>	
FIELD MEASUREMEN					0		,
A. Static Water Level (S	WL) below top of casing	y/piezometer:			-	<u>3,50</u> f	Γ. or IN.
B. Thickness of Free Pro	duct, if present:	<u>Inches</u>			-	F	F. or IN.
C. Total Depth of well (T	D) from top of casing/p	iezometer:			-	٦ F	TOTIN.
D. Height of Water Colu	mn in casing ($h = TD - \frac{1}{2}$	SWL): or foot of water	column for	common casing	- sizes:	*	
2" Diameter = 4" Diameter = 6" Diameter =	<u>3 Well Vols.</u> 0.5 gais/ft 2.0 gals/ft 4.4 gals/ft	<u>5 Well Vol</u> 0.82 gals/ft 3.25 gals/ft 7.35 gals/ft	<u>s.</u> : : :	x feet of water x feet of water x feet of water			PV (Gal) PV (Gal) PV (Gal)
PURGING METHOD:	LOW FLOW		DUR	ATION: START	12:18	END: 1	1-30
OBSERVATIONS: Time 1st Volume: 72727 2nd Volume: 72727 2nd Volume: 72727 3rd Volume: 72727 4th Volume: 72727 4th Volume: 72727 4th Volume: 72727 TOTAL VOLUME OF V PURGE WATER STOR SAMPLES COLLECT Sample Number(8) MW- 2-A COMMENTS:	Turbidity	Color Co	ORP 94 94 97 gallons ken offsite collection: ize/Number of V/AS/	<u>-7.74</u> <u>G.90</u> <u>6.87</u> <u>6.87</u> <u>6.87</u> <u>6.87</u> <u>6.87</u> <u>6.87</u> <u>6.90</u> <u>6.87</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.90</u> <u>6.87</u>	Temp 20.65 20.65 20.56 	<u>Conduct</u> <u>0.94</u> <u>0.90</u> <u>0.77</u> 7 	<u>3.4</u> <u>3.4</u> <u>3.38</u>
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Casing Capacities: 2-inch hole0.16 gal/lin fi 4-inch hole1.70 gal/lin fi 6.5-inch hole2.60 gal/lin fi 8-inch hole4.10 gal/lin fi	- - - -		Origi	<u>Recharge Cal</u> nal Water Colum Collec	<u>culation at Tim</u> m:x ct sample when I	e of Sample C Total Dept 0.80 =(Depth to Water <u>Less than or</u>	ollection: h of Well: measures equal to:
·	·	• • • • • • • • • • • • • • • • • • • •					'

	GROUNDWATER SA	MPLING FIELD DATA SH	<u>EET</u> ···
SECOR PN:		DATE: <u>6/27/2006</u>	WELL NO. <u>MW-</u> 3
FACILITY NAME:	255028	TEMP	BRATURE: <u>~75</u> •F or ℃
FIELD PERSONNEL:	Tammy Parise	WEATHER:	Sunny ,
FIELD MEASUREME	NTS:		
A. Static Water Level (S	WL) below top of casing/piezomet	er:	<u>3,/0</u> FT. or IN.
B. Thickness of Free Pro	oduct, if present: Inches	· ·	FT. or IN.
C. Total Depth of well (TD) from top of casing/piczometer.	: · · ·	FT. or IN,
D. Height of Water Colu	umn in casing ($h = TD - SWL$):		F1. of 1N.
E. Useful approximate	Purge Volumes (PV) per foot of v 3 Well Vols 5 Wel	water column for common casing s	izes:
2" Diameter =	0.5 gals/ft 0.82 g	als/ft x feet of water_	PV (Gal)
4" Diameter =	2.0 gals/ft 3.25 g	als/ft x iect of water_	= PV(Gal)
6" Diameter =	4.4 gais/it 7.55 g		hint - Kild
PURGING METHOD: _	LOW FLOW	DURATION: START:	[1105 END: 1.1]
OBSERVATIONS:	m 1 114	∩PD nH	Temp Conduct SWI.
1st Volume: $\frac{11me}{11/10}$	$-\frac{101751011}{C}$	57 687	17.74 0.352 3.80
2nd Volume: 11:13		66 6.80	18.61 0,343 3.85
2nd Volumes 11:16		73 6.64	19.56 0.30 3.90
Ath Volume			
A001. VORINES:		······································	
TOTAL VOLUME OF PURGE WATER STOR	WATER PURGED FROM WELL: ED/DISPOSED OF WHERE/HOW	.25 gallons V: Taken offsite	
SAMPLES COLLECT	ED: Depth to Water at time of sa	ample collection: <u>3,90</u>	
Sample Number(s)	Time	Size/Number of Container(s)	Preservative
Sample Hamou (3)	11:17	6 VOAS / Jamber	HCL
IYL YV			
		an a	
<u>COMMENTS:</u>			
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		······································	
· .			-letter at Time of Sample Collection.
Casing Capacities:	i	Recharge Calc	mation at time of Sample Conection:
4-inch hole0.65 gal/lin f	÷ L		Total Depth of Well:
6.5-inch nole1.70 gal/lin	ft.	Original Water Column	sample when Depth to Water measures
8-mch hole	£		Less than or equal to:
		- ·	
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	255028			TEM	PERATURE: _	70	°F or °C
HUD PERSONNEL:	Tammy 1	Parise		WEATHER: _	Summay		
TET D MEASTREMEN	IT'S:		•		.J		
Diator I aval (S)	WI) below top of a	asing/niezomater:				3.7.0	FT. or IN
_ Static Water Level (5 Thickness of Free Pro-	duct if present:	Inches					_FT. or IN
Total Depth of well (I	D) from top of casi	ng/piezometer:					_ FT. or IN
Height of Water Colu	mn in casing ($h = T$	D - SWL):				·	_ FT. or DN
. Useful approximate]	Purge Volumes (P)) per foot of wate	er column for	common casing	sizes:		
19 Diamotor -	<u>3 Well Vols.</u>	<u>5 Well Vo</u> 0.82 gals/	<u>015.</u> ft	x feet of water	=		PV (Gal
4" Diameter =	2.0 gals/ft	3.25 gals/	ft	x feet of water	=		PV (Ga
6" Diameter =	4.4 gals/ft	7.35 gals/	ft	x feet of water	·		P v (Ga
URGING METHOD:	LOWFL	ow	DUR	ATION: STARI	10:04	END;	10:16
BSERVATIONS:					Tomo	Conduc	+ জ্যা
Time	<u>Turbidity</u>	<u>Color</u>	ORP 「みり	6,5%	7.61	1.548	E Ind
st volume: $\frac{1}{12}$		· 1	136	6.59	18.04	0.535	- 4.56
and Volume: $\frac{10.11}{10.110}$		Ţ	142	6.32	19-10	0,509	4,5
Ird Volume: <u>10-17</u>		·	-f-				
				·			
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th Volume: Addl. Volumes: FOTAL VOLUME OF V PURGE WATER STOR	WATER PURGED I	TROM WELL: 25 WHERE/HOW: T	gallons	9			- ·
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th Volume: Addl. Volumes: FOTAL VOLUME OF V PURGE WATER STOR SAMPLES COLLECT. Sample Number(s) <u>MW-</u> <u>COMMENTS:</u> Casing Capacities: 2-inch hole0.16 gal/in fi 4-inch hole10 gal/in fi 8-inch hole	VATER PURGED F ED/DISPOSED OF ED: Depth to Wa Time ///	FROM WELL: 25 WHERE/HOW: T ter at time of samp	gallons aken offsite le collection: Size/Number of 	4,56 of Container(s) <u>1amber</u> <u>Recharge Cal</u> nal Water Colum Coller	Preservati HCL	ve <u>me of Sampl</u> Total D x 0.80 = _ Depth to W Less than	e Collection
th Volume:Addl. Volumes:Addl. Volumes: POTAL VOLUME OF V PURGE WATER STOR SAMPLES COLLECT Sample Number(s) <u>MW</u> <u>COMMENTS:</u> Casing Capacities: 2-inch hole0.16 gal/in fi 4-inch hole0.16 gal/in fi 6.5-inch hole170 gal/in fi 8-inch hole	WATER PURGED I ED/DISPOSED OF ED: Depth to Wa Time ///	TROM WELL: 25 WHERE/HOW: T ter at time of samp	gallons aken offsite le collection: Size/Number of 	4,56 of Container(s) <u>1 amber</u> <u>1 amber</u> <u>Recharge Cal</u> nal Water Colum Collect	Preservati <u>HCL</u> <u>enlation at Tim</u> n: ct sample when	ve <u>me of Sampl</u> Total D x 0.80 = _ h Depth to W <u>Leps than</u>	e Collection e Collection pepth of We (ater measure n or equal
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	<u>GROUID TREALD</u>			· · · · · · · · · · · · · · · · · · ·	
SECOR PN:	An and a second of the second se	DAT	IE: <u>6/27/2006</u>	۸ ملیا£W <u>→ → N</u> ۲7 Ø	
FACILITY NAME:	255028	,	TEMPI	RATURE: ///	ov "For"C
FIELD PERSONNEL:	Tammy Parise		WEATHER:	String	. <u> </u>
FIELD MEASUREMEN	VTS:	2.			TA .
A. Static Water Level (S	WL) below top of casing/piezom	eter:		34	FT. of IN.
B. Thickness of Free Pro	duct, if present: Inch	es			FT. or LN. FT. or DN
C. Total Depth of well (3	D) from top of casing/piezomete	er:			FT. or DN.
D. Height of Water Colu B. Height of Water Colu	mn m casing $(n = 1D - SWL)$: Purge Volumes (PV) per foot of	Fwater column fo	r common casing si	zes: .	
E. Useim approximate.	<u>3 Well Vols.</u> <u>5.W</u>	ell Vols.	. Seat of meator	. =	PV (Gel)
2" Diameter =	0.5 gals/ft 0.82	gals/It gals/ft	x feet of water_	= =	PV (Gal)
6" Diameter = :	4.4 gals/ft 7.35	gals/ft	x feet of water	=	PV (Gal)
PURGING METHOD:	LOW FLOW	DU	RATION: START:_	11:34	END://:46
OBSERVATIONS:		OPP	щ	Temp C	onduct. SWL
1 tr Volume: 1/ 29	<u>Turbidity</u> <u>Color</u>	<u> </u>	6.85	19.82 1	18 348
2nd Maluma 11:42		27	6.99	19.90 1	1.18 3.40
2rd Volume: 11-45		35	7.15	20,02 1	<u>18 3.40</u>
Ath Volume:					
Add Volumes:				·	
PURGE WATER STOR	ED/DISPOSED OF WHERE/HC	W: Taken offsite_	3,40		
SAMPLES COLLECT		Size/Ahumbar	of Container(s)	Preservative	
Sample Number(s)			1 a sacher	HEL	
MW	11:90	6 VAIN	AMPIDEC		
COMMENTS:					
	·		·	<u> </u>	
			- Decharge Calci	lation at Time of S	Sample Collection:
Casing Capacities: 2-inch hole0.16 gal/im fi	L		Meenat ge Caret	<u>инцон во на оста</u>	otal Danth of Wells
4-inch hole0.65 gal/lin fi		Orig	vinal Water Column	:x 0.8	$0 = \underline{-()}$
6.5-inch hole1.70 gal/hn f	L.		Collect	sample when Depth	to Water measures
10-inch hole4.10 gal/lin t	Ē. ·		•.	Les	is than of Equal to.
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	CROTINDWA	SE TER SAMP	COR LING FIEI	D DATA SP	EET		
	GROUND 1122		DATE:	6/27/2006	w	ELL NO. <u>M</u>	FT- 8
SECOR PN:	255028			TEMI	ERATURE:	70	_'F or °C
	Tammy Paris	se ·		WEATHER: _	Sim	naj	
THE DIAL STREET	TTS.		•			0	
CHELD MISASURICIVILA		-his-motor				4.65	FT. or IN
A. Static Water Level (S	WL) below top of casing	Jpiezometer:					FT. or IN
B. Thickness of Free Pro	auct, if present						FT. or IN
C. Total Depth of Well (1	.D) from top of casing/p	Nezometer.				<u>n</u> .	FT. or IN
D. Height of Water Colu	$\frac{1}{100} \text{ m casing } (1 - 10^{\circ})$	s yy Ly. ar foot of wate	column for G	ommon casing	sizes:		
E. Useful approximate	3 Well Vols.	<u>5 Well Vol</u>	is.				
2" Diameter =	0.5 gals/ft	0.82 gals/f	t	x feet of water	Ē		_PV (Gal PV (Gal
4" Diameter =	2.0 gals/ft	3.25 gals/f	t •	x feet of water			PV (Gal
6" Diameter =	4.4 gais/11	. 1.55 gais/1	L		10120		Inily
PURGING METHOD:	LOW FLOW	· ·	DURA	TION: START	<u> </u>	END:	V . 7 /
OBSERVATIONS:				TT	Tomp	Conduct	SWI
Time	<u>Turbidity</u> .	<u>Color</u>	ORP -4-	1 6.82	18,54	0.53	4.80
1st Volume: $\frac{10.40}{14.40}$		<u> </u>	-35	6.82	18.95	0.516	4.80
2nd Volume: 10:42		- -	-10	1 72	10 12	1.511	4.8
Brd Volume: 10:46				2019	10/10-	<u>v v 011</u>	<u>[····</u>]
4th Volume:	<u> </u>						
Add Volumes:		:					
SAMPLES COLLECT Sample Number(s) MW- &	ED: Depth to Water a Time 	t time of sampl	e collection:	4.81 Container(s) Aggiber	Preservativ HC	ле С	
				·	. <u> </u>		
COMMENTS:							
·					<u></u>		
	· · · · · · · · · · · · · · · · · · ·						
	······		· .	· ·			
Casing Capacities		•		<u>Recharge Cal</u>	culation at Tir	ne of Sample	e Collectio
2-inch hole0.16 gal/lin fi	1					Total D	epth of We
4-inch hole0.65 gal/lin fi	<u>.</u>		Origin	al Water Colum	n:	x 0.80 = _	-(
0.3-mch hole1.70 gal/m 1 S-inch hole2.60 gal/in fi	L L		0	Collec	t sample when	Depth to Wa	ter measu
10-inch hole4.10 gal/in f	ìt.				•	Less than	or equal
· ·					,		
		•					
						. ·	
	•		•				

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TROOP PNI			DA	TS: <u>6/27/2006</u>	W	ELL NO. M	<u>v- /</u>
	255028			TEMPI	RATURE: _	70	_°F or °C
FACILITI NAME.	Tammy P	arise		WEATHER:	Sunne	4	
FIELD FERSONNEL.					Ű		
FIELD MEASUREME						3.96	FT. or IN.
A. Static Water Level (S	SWL) below top of ca	sing/piezometer					FT. or DN.
B. Thickness of Free Pr	Omici, il presenti	menes			:		FT. or IN.
C. Total Depth of Well ((11) in the top of cash the state of the TI	SMT):					FT. or IN.
B Useful approximate	Purge Volumes (PV) per foot of w	ater column f	or common casing si	zes:		
	3 Well Vols.	<u>5 Well</u>	Vols.	r foot of water	-		PV (Gal)
2" Diameter =	0.5 gais/ft	0.52 ga	15/IL 19/ft	x feet of water	=	·	PV (Gal)
6" Diameter =	4.4 gals/ft	-7.35 ga	ls/ft	x feet of water	=		_PV (Gal)
BURGING METHOD:	·LOWFL		D	JRATION: START:_		BND:	·
I DROMO MELLODI							
OBSERVATIONS:	Turbidity	Color	ORP	Hq	Temp.	Conduct	<u>SWL</u>
1st Volume:					· · · · · · · · · · · · · · · · · · ·	. 	
2nd Volume:			<u> </u>		<u> </u>		
3rd Volume:				<u> </u>			
4th Volume:		·					
Addl. Volumes:				<u></u>		<u> </u>	
PURGE WATER STOP	RED/DISPOSED OF	WHERE/HOW: er at time of sar	: Taken offsite nple collection		· · · · · · · · · · · · · · · · · · ·	<u></u>	
Sample Number(s)	Time		Size/Numb	r of Container(s)	Preservati	ve	
2000-1-1-1-1-(-)			6 VOAS	lamber	•	, 	·
	· ·						
	· · · · · · · · · · · · · · · · · · ·						
COMMENTS:				:			· ·
B	war only						·
· · ·			-, innes				
Como Conscities	• •			Recharge Calcu	lation at Ti	me of Sample	Collection:
2-inch hole0.16 gal/lin	ft. Š			•	·	Total D	pth of Well:
4-inch hole0.65 gal/im 6 5. inch hole 1.70 gal/im	11.	·· .:	Or	iginal Water Column		x 0.80 =	-()
8-inch hole2.60 gal/lin	fi.		.	Collect	sample when	Depth to Wa	ter measures
10-inch hole 4.10 gal/lin	1 f .		·			<u></u>	<u>or oquini tu</u> .
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<i>.</i> .	-	·					
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Lancaste Laborato	er pries p	041 0# 45	08 0 658 3	381-	7		Acc	ct. #:	lyse	s R	equ	ester	Fo. Grou List d box	r Lai p # . total i unde	ncaste number reach a	r Labo of cont inalysis	ainers	ries u _San In the	se ol nple :	nly #: SCR#:	20	00	90	
Site #: 25502.4 Site Address: <u>Blair</u> ConocoPhillips PM: <u></u> Core Work Order#: <u></u> Consultant/Office: <u>Jl</u> Consultant Prj. Mgr: <u>M</u> Consultant Phone #: <u>425</u> Sampler <u>MMM111</u> Sample Identification <u>MW4</u> <u>MW3</u> <u>MW3</u> <u>MW7</u> <u>MW2A</u> <u>111P blank</u>		hpany Code: Total Lab Budge 2 C Data Collected 6/27 6/27 6/27 6/27 6/27 6/27	et Time Collected 11:1:16 11:17 11:17 11:46 12:30	Grab	Composite	Matr		- (realized in the last	TO T	$\frac{1}{2} = \frac{1}{2} = \frac{1}$	8260 FUILSCAN	A CONTRACTOR CONTRACTOR								P H = H(N = H) S = H ₂	Presen Cl NO3 2SO4	vativ. T = B = 0 =	e Code4 = Thiosu = NaOH = Other	; fate
	ested in Business	Davs (TAT) (pl	ase circle)		Rejir							6	<u>9</u> =1	ار ^و	Time	Rece	alved	by:				-	Date	Time
STD. TAT	5 day other	48 hour	_		Relir	(iquishi	ad by:	<u> </u>	لحر	<u>4</u> ~~	<u> </u>		Dat	E E	<u>//2</u> Time	7 Roce	sivad	by:					Date	Timə
Reporting Regulrement	ts (please circle)				Reli	ıqulsh	ad by:	:					Dat	e	Time	Rec	elved	by:					Date	Time
NJ Reduced	NY ASP Cat. A	Raw Data	Diskette		Reli	nquish	ed by	:					Dat	te	Time	Rec	eived	by:					Date	Time
NY ASP Cat. B	Full Туре I	Other			Relli UPS	nquish	ed by	Comr FedE:	nerci x	al Ci	arrier	: _Othe	 er			Te	mperi	ature l	Upon	n Recelp	н			_ C°

ConocoPhillips Analysis Request/Chain of Custody

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