



TOSCO 6380

SECOR INTERNATIONAL INCORPORATED

www.secor.com

Bellingham  
LUST 471259

DATE: October 19, 2007

VCP NW1487

COPY

# ConocoPhillips

## GROUNDWATER MONITORING REPORT

Facility No.: 256380 Address: 200 South 36th Street, Bellingham, Washington  
 ConocoPhillips Site Manager: Michael Noll (RM&R 1571)  
 Consultant / Contact Person: SECOR International Inc. / Alice Larsen  
 Primary Agency/Regulatory ID No.: Washington State Department of Ecology / Site ID No. 8394  
 SECOR Project No: 01CP.01571.07

### WORK PERFORMED THIS QUARTER(S) [3<sup>rd</sup> - 2007]:

- On September 6, 2007, SECOR personnel monitored, purged, and sampled eight wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8) of the existing network of eight groundwater monitoring wells (MW-1 through MW-8).
- 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 hydrocarbons (TPH-g) per Northwest Method NWTPH-Gx; diesel range (TPH-d) and heavy oil range (TPH-o) hydrocarbons per Northwest Method NWTPH-Dx, modified with an acid/silica gel cleanup; benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert butyl ether (MTBE) per United States Environmental Protection Agency (USEPA) Method 8260B. The laboratory analytical report is presented in Attachment A.

### WORK PROPOSED FOR NEXT QUARTER [4<sup>th</sup> - 2007]:

- Measure depth to water, purge, and sample eight groundwater monitoring wells (MW-1 through MW-8). Submit groundwater samples for analysis for NWTPH-Gx, NWTPH-Dx, BTEX, and MTBE.

### DATA SUMMARY THIS QUARTER:



Frequency of Sampling Events:	<u>Quarterly</u>	(03/07,06/07,09/07,12/07)
Depth to Groundwater:	<u>4.43 ft. (MW-5)</u>	(Measured Feet Below)
	<u>9.06 ft. (MW-2)</u>	Top of Well Casing/Well ID)
Groundwater Gradient:	<u>Southwest</u>	(Flow Direction)
	<u>0.05 feet per foot.</u>	(Magnitude)
Maximum TPH-G Concentrations:	<u>250 µg/L (MW-7)</u>	(ppb / well ID)
Maximum TPH-D Concentrations:	<u>1,000 µg/L (MW-7)</u>	(ppb / well ID)
Maximum TPH-O Concentrations:	<u>160 µg/L (MW-7)</u>	(ppb / well ID)
Maximum Benzene Concentration:	<u>None Detected</u>	(ppb / well ID)
Maximum Dissolved Lead Concentration:	<u>Not Analyzed</u>	(ppb / well ID)
Measurable Free Product Detected:	<u>No</u>	(Yes - ID well(s)/No)
Free Product Recovered This Quarter:	<u>None</u>	(Gallons)
Cumulative Free Product Recovered to Date:	<u>None</u>	(Gallons)
Water Wells or	<u>One Water Well</u>	(Type)

RECEIVED  
 NOV 19 2007  
 DEPT. OF ECOLOGY  
 TCP-NWRO

Surface Waters w/in 2,000 ft:	Connelly Creek	
Radius and Respective Direction From Site:	1,600 ft. West	(Respective Distance & Direction)
	1,000 ft. Southwest	
Current Remedial Action:	NA	(SVE/AS/P&T/NA etc.)
Permits for Discharge:	None	(NPDES, POTW, etc.)

**DISCUSSION:**

- The groundwater samples were received by Lancaster Laboratories on September 7, 2007. 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.
- TPH-g was detected at a concentration greater than the laboratory reporting limit (RL) in the groundwater sample collected from well MW-7 (250 micrograms per liter [ $\mu\text{g/L}$ ]). TPH-g was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- TPH-d was detected at a concentration greater than the Model Toxics Control Act (MTCA) Method A cleanup level in the groundwater sample collected from well MW-7 (1,000  $\mu\text{g/L}$ ). TPH-d was detected at a concentration greater than the RL, but less than the MTCA Method A cleanup level, in the groundwater sample collected from well MW-4 (170  $\mu\text{g/L}$ ). TPH-d was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- TPH-o was detected at a concentration greater than the RL, but less than the MTCA Method A cleanup level, in the groundwater sample collected from well MW-7 (160  $\mu\text{g/L}$ ). TPH-o was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- BTEX constituents were not detected at concentrations greater than the RLs in the groundwater samples collected this quarter.
- MTBE was detected at concentrations greater than the RLs, but less than MTCA Method A cleanup level, in the groundwater samples collected from wells MW-1, MW-4, and MW-7 (0.5  $\mu\text{g/L}$ , 0.6  $\mu\text{g/L}$ , and 0.8  $\mu\text{g/L}$ ). MTBE was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- No drums were left on site.

**ATTACHMENTS:**

Figure 1: Site Location Map

Figure 2: Site Plan with Groundwater Elevations (09/06/07)

Figure 3: Site Plan with Groundwater Analytical Results (09/06/07)

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

Attachment C: Limitations and Certifications for Non-Phase I Reports

Prepared By:

  
Tammy Parse  
Staff Geologist

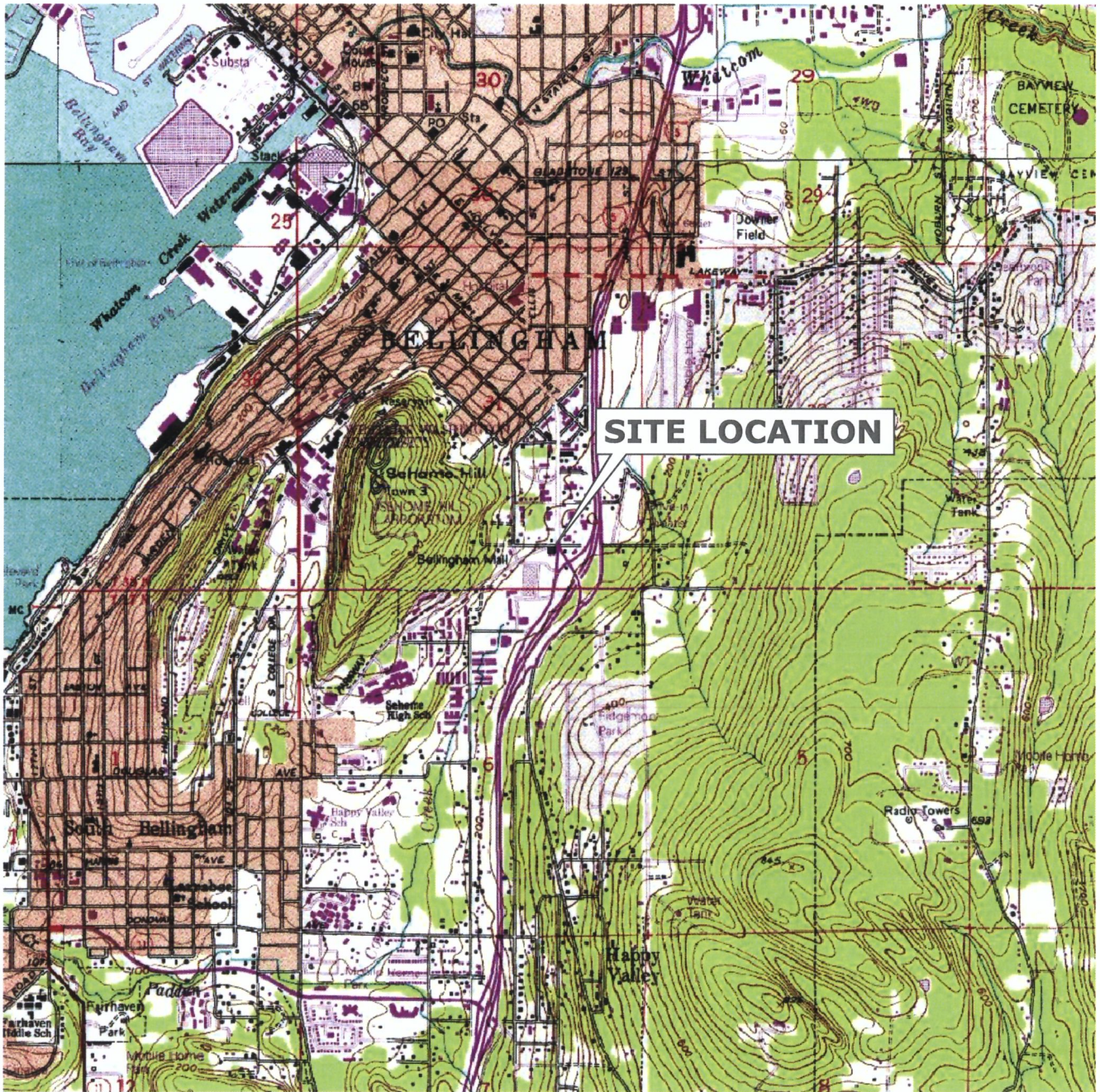
Reviewed By:

  
Mark Trewartha, R.G.  
Senior Project Hydrogeologist

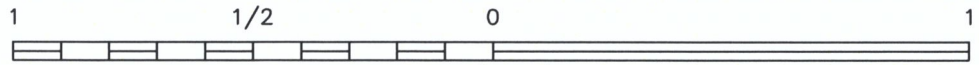
TP/MT:dc

cc: LUST Coordinator, Washington State Department of Ecology - Bellevue, WA  
Mr. Victor Boulos, Keith Oil Corporation

## FIGURES



WASHINGTON



SCALE (MILES)



SCALE (FEET)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; BELLINGHAM SOUTH, WASHINGTON; 1972



**SECOR**

12034 134th COURT, SUITE 102  
 REDMOND, WASHINGTON  
 PHONE: (425) 372-1600 FAX: (425) 372-1650

FOR:

**ConocoPhillips**

FACILITY NO 256380 (RM & R 1571)  
 200 SOUTH 36th STREET  
 BELLINGHAM, WASHINGTON

**SITE LOCATION MAP**

FIGURE:

**1**

JOB NUMBER:  
 01CP.01571.07

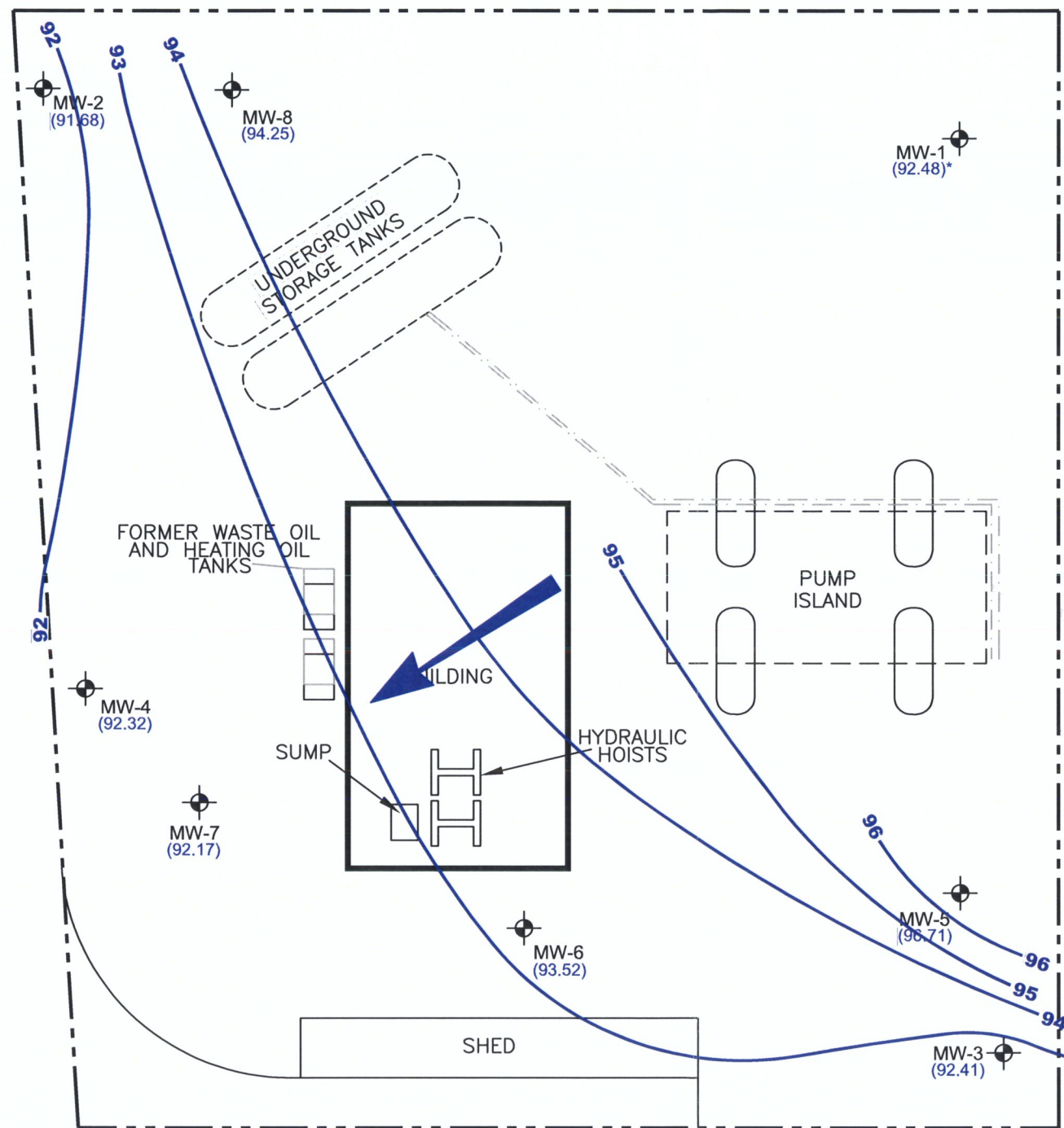
DRAWN BY:  
 JCR

CHECKED BY:

APPROVED BY:

DATE:  
 9/24/07

BILL McDONALD PARKWAY



**LEGEND**

- MONITORING WELL LOCATION
- SITE BOUNDARY

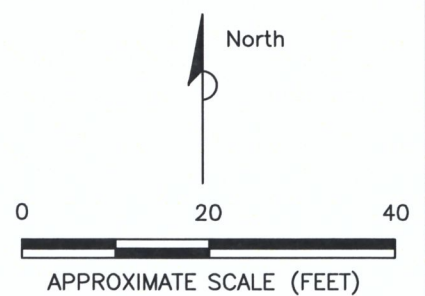
**GROUNDWATER**

- (70.60) GROUNDWATER ELEVATION (FEET)
- INFERRED GROUNDWATER FLOW DIRECTION
- 94** GROUNDWATER ELEVATION CONTOUR (FEET)

\* WELLS MW-1 NOT USED IN CONTOURING DUE TO AN ANOMALY

**NOTES:**

- 1). ALL LOCATIONS ARE APPROXIMATE.



No warranty is made by SECOR International, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

**SOURCE:**  
 BASE MAP FROM: ENVIRONMENTAL RESOLUTIONS, INC.  
 (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP--  
 06/10/03, PLATE 1, DATED 07/08/03, PROJECT  
 NO. 31065. CADD FILE 31065.13.DWG

 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	FOR: <b>ConocoPhillips</b> FACILITY NO. 256380 (RM & R 1571) 200 SOUTH 36th STREET BELLINGHAM, WASHINGTON		<b>SITE PLAN WITH GROUNDWATER ELEVATIONS (9/6/07)</b>		FIGURE: <b>2</b>
	JOB NUMBER: 01CP.01571.07	DRAWN BY: JCR	CHECKED BY: DC	APPROVED BY: MT	DATE: 9/24/07

MW-8	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	<76	<75	--	<76
TPHo	<95	<94	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-2	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	<76	<76	--	<76
TPHo	<94	<95	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-1	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	--	<50	<50
TPHd	84	--	--	<76
TPHo	<94	--	--	<95
B	<0.5	--	<0.5	<0.5
T	<0.7	--	<0.7	<0.7
E	<0.8	--	<0.8	<0.8
X	<0.8	--	<0.8	<0.8
MTBE	1	--	1	0.5
Pb	--	--	--	--

MW-4	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	120	83	--	170
TPHo	<95	<95	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	0.6
Pb	--	--	--	--

MW-7	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	290	340	210	250
TPHd	1300	870	--	1000
TPHo	130	<94	--	160
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	0.7	0.7	0.8	0.8
Pb	--	--	--	--

MW-6	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	<77	<76	--	<76
TPHo	<96	<95	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-5	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	83	<76	--	<76
TPHo	<95	<94	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	0.6	<0.5
Pb	--	--	--	--

MW-3	12/13/06	3/7/07	6/1/07	9/6/07
TPHg	<48	<48	<50	<50
TPHd	<76	<76	--	<76
TPHo	<95	<95	--	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

**LEGEND**

- MONITORING WELL LOCATION
- SITE BOUNDARY
- INFERRED GROUNDWATER FLOW DIRECTION

**ANALYTES**

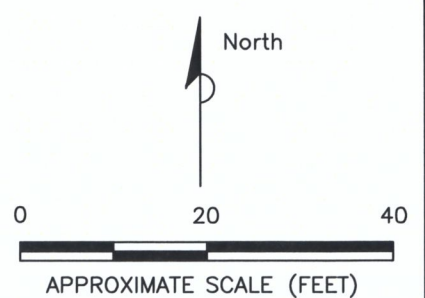
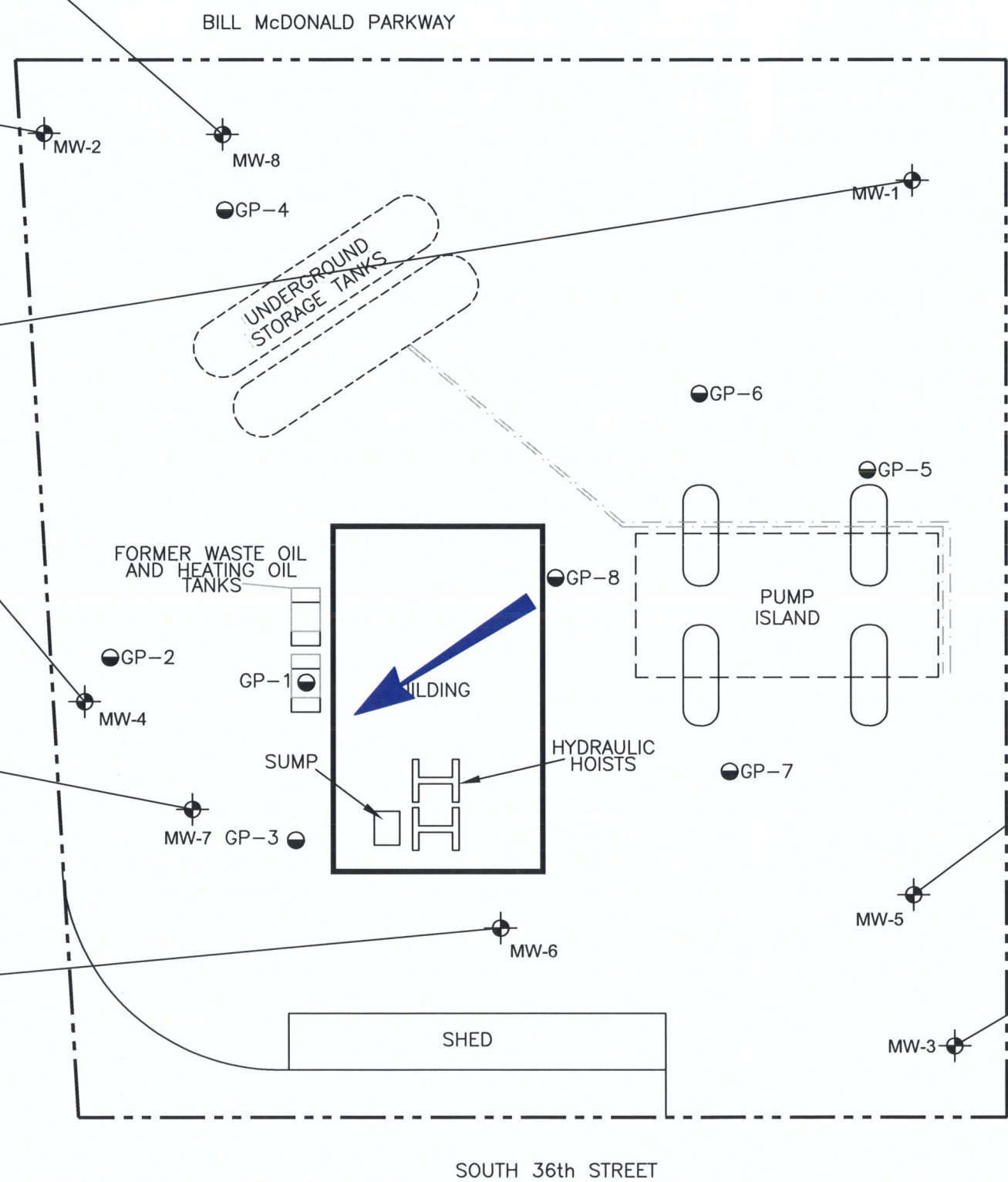
WELL ID	ANALYTES
TPHg	GASOLINE RANGE HYDROCARBONS
TPHd	DIESEL RANGE HYDROCARBONS
TPHo	HEAVY OIL RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYL BENZENE
X	TOTAL XYLENES
MTBE	METHYL TERT-BUTYL ETHER

UNITS IN MICROGRAMS PER LITER (µg/L)

- < LESS THAN LABORATORY REPORTING LIMITS
- ND NOT DETECTED AT OR ABOVE THE LABORATORY METHOD DETECTION LIMIT
- NOT ANALYZED OR NOT APPLICABLE

**NOTES:**

- 1). ALL LOCATIONS ARE APPROXIMATE



No warranty is made by SECOR International, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

**SOURCE:**  
 BASE MAP FROM: ENVIRONMENTAL RESOLUTIONS, INC.  
 (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP-  
 06/10/03, PLATE 1, DATED 07/08/03, PROJECT  
 NO. 31065. CADD FILE 31065.13.DWG

 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	<b>FOR:</b>  FACILITY NO. 256380 (RM & R 1571) 200 SOUTH 36th STREET BELLINGHAM, WASHINGTON		<b>SITE PLAN WITH          ANALYTICAL RESULTS          (9/6/07)</b>		<b>FIGURE:</b> <b>3</b>
	<b>JOB NUMBER:</b> 01CP.01571.07	<b>DRAWN BY:</b> JCR	<b>CHECKED BY:</b> DC	<b>APPROVED BY:</b> MT	<b>DATE:</b> 9/24/07

**TABLE**

**TABLE 1  
GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**

ConocoPhillips Facility No. 256380 (RM&R 1571)  
200 South 36th Street  
Bellingham, Washington

Well Name	Sample Date	Elevation Data		Total Petroleum Hydrocarbons			Aromatic Hydrocarbons					Lead
		Depth to Water	GW Elevation	Gasoline Range	Diesel Range	Heavy Range	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE	Total Pb
MW-1	12/13/06	5.75	92.74	<48	84	<94	<0.5	<0.7	<0.8	<0.8	1	--
98.49	03/07/07	Unable to sample; Public Works truck parked over well.										--
	06/01/07	5.47	93.02	<50	--	--	<0.5	<0.7	<0.8	<0.8	1	--
	09/06/07	6.01	92.48	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	0.5	--
MW-2	12/13/06	7.80	92.94	<48	<76	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
100.74	03/07/07	7.80	92.94	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/01/07	8.38	92.36	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	9.06	91.68	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-3	12/13/06	4.75	93.09	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
97.84	03/07/07	4.42	93.42	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/01/07	4.94	92.90	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	5.43	92.41	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-4	12/13/06	5.86	93.58	<48	120	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
99.44	03/07/07	5.81	93.63	<48	83	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/01/07	6.60	92.84	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	7.12	92.32	<50	170	<95	<0.5	<0.7	<0.8	<0.8	0.6	--
MW-5	12/13/06	4.98	96.16	<48	83	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
101.14	03/07/07	3.48	97.66	<48	<76	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/01/07	4.10	97.04	<50	--	--	<0.5	<0.7	<0.8	<0.8	0.6	--
	09/06/07	4.43	96.71	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-6	12/13/06	4.98	94.76	<48	<77	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--
99.74	03/07/07	5.08	94.66	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/10/07	5.73	94.01	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	6.22	93.52	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--

**TABLE 1  
GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**

ConocoPhillips Facility No. 256380 (RM&R 1571)  
200 South 36th Street  
Bellingham, Washington

Well Name	Sample Date	Elevation Data		Total Petroleum Hydrocarbons			Aromatic Hydrocarbons					Lead
		Depth to Water	GW Elevation	Gasoline Range	Diesel Range	Heavy Range	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE	Total Pb
MW-7	12/13/06	6.05	93.59	290	<b>1,300</b>	130	<0.5	<0.7	<0.8	<0.8	0.7	--
99.64	03/07/07	6.00	93.64	340	<b>870</b>	<94	<0.5	<0.7	<0.8	<0.8	0.7	--
	06/01/07	6.99	92.65	210	--	--	<0.5	<0.7	<0.8	<0.8	0.8	--
	09/06/07	7.47	92.17	250	<b>1,000</b>	160	<0.5	<0.7	<0.8	<0.8	0.8	--
MW-8	12/13/06	7.10	95.60	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
102.7	03/07/07	6.93	95.77	<48	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
	06/01/07	7.77	94.93	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	8.45	94.25	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
<b>MTCA Method A Cleanup Levels:</b>				<b>1000/800<sup>a</sup></b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1000</b>	<b>700</b>	<b>1000</b>	<b>20</b>	<b>15</b>

**NOTES:**

All concentrations are in micrograms per liter ( $\mu\text{g/L}$ )(ppb).

DTW = Depth to water in feet below top of casing.

GW Elev. = Groundwater elevation relative to top of casing elevation.

TPH-g = Gasoline range hydrocarbons by Northwest Method NWTPH-Gx.

TPH-d and TPH-o = Diesel and heavy oil range hydrocarbons, respectively, by Northwest Method NWTPH-Dx.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 5030/8260B.

Total lead by ICP-US EPA Method 6010.

-- = Not Analyzed or Sampled.

< = Less than the stated laboratory reporting limit.

**Bolded** values equal or exceed MTCA Method A Cleanup Levels.

<sup>a</sup> Cleanup levels stated by MTCA Method A for TPH-G are 1000  $\mu\text{g/L}$  when no benzene is present and 800  $\mu\text{g/L}$  when benzene is present.

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

## ANALYTICAL RESULTS

Prepared for:

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

Prepared by:

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

The sample group for this submittal is 1055061. Samples arrived at the laboratory on Friday, September 07, 2007. The PO# for this group is 4506583796 and the release number is NOLL.

<u>Client Description</u>	<u>Lancaster Labs Number</u>
MW-8 Grab Water Sample	5149171
MW-2 Grab Water Sample	5149172
MW-4 Grab Water Sample	5149173
MW-7 Grab Water Sample	5149174
MW-6 Grab Water Sample	5149175
MW-3 Grab Water Sample	5149176
MW-5 Grab Water Sample	5149177
MW-1 Grab Water Sample	5149178
Trip Blank Water Sample	5149179

ELECTRONIC COPY TO  
ELECTRONIC COPY TO  
ELECTRONIC COPY TO

SECOR International  
SECOR International  
SECOR International

Attn: Alice Larsen

Attn: Meredith Redmon

Attn: Tammy Parise



## Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative  
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,

A handwritten signature in cursive script that reads "Martha L. Seidel".

Martha L. Seidel  
Senior Chemist

**Lancaster Laboratories Sample No. WW 5149171**
**MW-8 Grab Water Sample**
**Site# 1571 (256380)**
**200 S 36th St-Bellingham, WA**

Collected: 09/06/2007 10:16

by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B08

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received	Units	Dilution Factor
				Method Detection Limit		
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007	02:19	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007	14:27	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007	17:51	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007	14:27	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007	17:51	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007	02:45	Sherry L Morrow	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Lancaster Laboratories Sample No. WW 5149172

**MW-2 Grab Water Sample**

Site# 1571 (256380)

200 S 36th St-Bellingham, WA

Collected: 09/06/2007 10:55

by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B02

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received	Units	Dilution Factor
				Method		
				Detection Limit		
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis	Analyst	Dilution Factor
				Date and Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007 02:38	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007 14:56	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007 18:15	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007 14:56	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007 18:15	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007 02:45	Sherry L Morrow	1

**Lancaster Laboratories Sample No. WW 5149173**
**MW-4 Grab Water Sample**
**Site# 1571 (256380)**
**200 S 36th St-Bellingham, WA**

Collected: 09/06/2007 11:30

by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B04

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	170.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	0.6	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007 02:58	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007 15:26	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007 18:38	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007 15:26	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007 18:38	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007 02:45	Sherry L Morrow	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 5149174

**MW-7 Grab Water Sample**

Site# 1571 (256380)

200 S 36th St-Bellingham, WA

Collected: 09/06/2007 11:56 by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B07

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	1,000.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	160.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	250.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	0.8	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007 03:17	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007 15:55	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007 19:02	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007 15:55	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007 19:02	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007 02:45	Sherry L Morrow	1

**Lancaster Laboratories Sample No. WW 5149175**
**MW-6 Grab Water Sample**

Site# 1571 (256380)

200 S 36th St-Bellingham, WA

Collected: 09/06/2007 12:26

by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B06

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
02211	TPH by NWTPH-Dx(water) w/SiGel						
02095	Diesel Range Organics	n.a.	N.D.		76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.		95.	ug/l	1
08273	TPH by NWTPH-Gx waters						
01645	TPH by NWTPH-Gx waters	n.a.	N.D.		50.	ug/l	1
02300	GC/MS Volatiles						
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	ug/l	1
05401	Benzene	71-43-2	N.D.		0.5	ug/l	1
05407	Toluene	108-88-3	N.D.		0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.		0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.		0.8	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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date	Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007	03:37	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007	16:25	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007	19:25	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007	16:25	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007	19:25	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007	02:45	Sherry L Morrow	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Lancaster Laboratories Sample No. WW 5149176

**MW-3 Grab Water Sample**

Site# 1571 (256380)

200 S 36th St-Bellingham, WA

Collected: 09/06/2007 12:59

by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B03

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date	Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007	03:56	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007	16:54	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/13/2007	20:12	Matthew F Regan	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007	16:54	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/13/2007	20:12	Matthew F Regan	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007	02:45	Sherry L Morrow	1

**Lancaster Laboratories Sample No. WW 5149177**
**MW-5 Grab Water Sample**

Site# 1571 (256380)

200 S 36th St-Bellingham, WA

Collected: 09/06/2007 13:29 by TP

Account Number: 11817

Submitted: 09/07/2007 09:25

Reported: 09/18/2007 at 14:21

Discard: 10/19/2007

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

36B05

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
02211	TPH by NWTPH-Dx(water) w/SiGel						
02095	Diesel Range Organics	n.a.	N.D.	76.		ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.		ug/l	1
08273	TPH by NWTPH-Gx waters						
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.		ug/l	1
02300	GC/MS Volatiles						
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5		ug/l	1
05401	Benzene	71-43-2	N.D.	0.5		ug/l	1
05407	Toluene	108-88-3	N.D.	0.7		ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8		ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8		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 Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007	04:16	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007	17:24	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/17/2007	15:13	Lauren C Marzario	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007	17:24	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/17/2007	15:13	Lauren C Marzario	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007	02:45	Sherry L Morrow	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 5149178

**MW-1 Grab Water Sample**

Site# 1571 (256380)  
 200 S 36th St-Bellingham, WA

Collected: 09/06/2007 14:01 by TP Account Number: 11817

Submitted: 09/07/2007 09:25  
 Reported: 09/18/2007 at 14:21  
 Discard: 10/19/2007

ConocoPhillips  
 5528 NW Doane Ave.  
 Portland OR 97210

36B-1  
 I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	0.5	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	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 Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	09/14/2007 04:55	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007 17:53	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/17/2007 15:36	Lauren C Marzario	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007 17:53	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/17/2007 15:36	Lauren C Marzario	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	09/11/2007 02:45	Sherry L Morrow	1

Lancaster Laboratories Sample No. WW 5149179

Trip Blank Water Sample  
 Site# 1571 (256380)  
 200 S 36th St-Bellingham, WA  
 Collected: 09/06/2007

Account Number: 11817

Submitted: 09/07/2007 09:25  
 Reported: 09/18/2007 at 14:21  
 Discard: 10/19/2007

ConocoPhillips  
 5528 NW Doane Ave.  
 Portland OR 97210

36BTR  
 I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Units	Dilution Factor
				Method	Detection Limit		
08273	TPH by NWTPH-Gx waters						
01645	TPH by NWTPH-Gx waters	n.a.	N.D.		50.	ug/l	1
02300	GC/MS Volatiles						
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	ug/l	1
05401	Benzene	71-43-2	N.D.		0.5	ug/l	1
05407	Toluene	108-88-3	N.D.		0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.		0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.		0.8	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 Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	09/10/2007 13:57	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	09/17/2007 16:00	Lauren C Marzario	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/10/2007 13:57	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/17/2007 16:00	Lauren C Marzario	1

## Quality Control Summary

 Client Name: ConocoPhillips  
 Reported: 09/18/07 at 02:21 PM

Group Number: 1055061

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

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 072530005A Diesel Range Organics Heavy Range Organics	N.D.	80.	ug/l	75	79	61-106	5	20
Batch number: 07253A07A TPH by NWTPH-Gx waters	N.D.	50.	ug/l	94	99	75-135	5	30
Batch number: T072561AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D.	0.5	ug/l	97	101	73-119	3	30
	N.D.	0.5	ug/l	107	108	78-119	1	30
	N.D.	0.7	ug/l	94	97	85-115	3	30
	N.D.	0.8	ug/l	84	88	82-119	5	30
	N.D.	0.8	ug/l	87	89	83-113	3	30
Batch number: T072601AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D.	0.5	ug/l	82	80	73-119	2	30
	N.D.	0.5	ug/l	112	109	78-119	3	30
	N.D.	0.7	ug/l	100	97	85-115	3	30
	N.D.	0.8	ug/l	93	91	82-119	2	30
	N.D.	0.8	ug/l	93	90	83-113	3	30

### Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07253A07A TPH by NWTPH-Gx waters	111		63-154						
Batch number: T072561AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	101		69-127						
	111		83-128						
	98		83-127						
	91		82-129						
	92		82-130						
Batch number: T072601AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	109		69-127						
	119		83-128						
	101		83-127						
	92		82-129						
	94		82-130						

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: ConocoPhillips  
Reported: 09/18/07 at 02:21 PM

Group Number: 1055061

### 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: 072530005A  
Orthoterphenyl

5149171	96
5149172	102
5149173	102
5149174	99
5149175	103
5149176	103
5149177	101
5149178	105
Blank	97
LCS	106
LCSD	112

Limits: 50-150

Analysis Name: TPH by NWTPH-Gx waters  
Batch number: 07253A07A  
Trifluorotoluene-F

5149171	99
5149172	100
5149173	98
5149174	101
5149175	96
5149176	99
5149177	101
5149178	98
5149179	96
Blank	101
LCS	104
LCSD	104
MS	107

Limits: 63-135

Analysis Name: GC/MS Volatiles  
Batch number: T072561AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5149171	110	99	93	97
5149172	110	97	94	98
5149173	110	97	92	97
5149174	110	99	95	102
5149175	110	98	95	98
5149176	108	98	96	100
Blank	106	98	93	98
LCS	105	96	98	102
LCSD	103	97	97	102
MS	107	98	97	102

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: ConocoPhillips  
Reported: 09/18/07 at 02:21 PM

Group Number: 1055061

### Surrogate Quality Control

Limits:	80-116	77-113	80-113	78-113
Analysis Name: GC/MS Volatiles				
Batch number: T072601AA				
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5149177	105	94	94	100
5149178	107	97	94	100
5149179	108	98	93	99
Blank	106	98	95	101
LCS	104	99	96	103
LCSD	103	95	97	104
MS	104	98	94	104
Limits:	80-116	77-113	80-113	78-113

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

# ConocoPhillips Analysis Request/Chain of Custody



For Lancaster Labs Use ONLY Acct. #: 11817 Group # 1055061 Sample#: 5149171-79 SCR#: \_\_\_\_\_

005466

Site #: 256380 AOC#: \_\_\_\_\_  
 Site City: Bellingham State: WA  
 Enfos PO#: 4506583796  
 ConocoPhillips PM: Mike Noll  
 Samplers Name: Tammy Paine

**Analyses Requested** List total number of containers in the box under each analysis.

**Preservative Codes**  
 H = HCl T = Thiosulfate  
 N = HNO<sub>3</sub> B = NaOH  
 S = H<sub>2</sub>SO<sub>4</sub> O = Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix			Preservation Codes				Remarks	
					Soil	Water	Air	#	#	#	#		
MW-8	9/6/07	10:16	X		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
MW-2		10:55											
MW-4		11:30											
MW-7		11:56											
MW-6		12:26											
MW-3		12:59											
MW-5		1:29											
MW-1		2:01											
trip blanks													

**Consultant Information:**  
 Office City: Redmond State: WA  
 Project Manager: Meredith Redman  
 Phone Number: 425 372-1600 Fax: 372-1650  
 Email: Mredman@slcor.com

**Turnaround Time Requested in Business Days (TAT) (Circle One):**  
 STD.  5 day  48 hour  24 hour  Other \_\_\_\_\_

Relinquished by: <u>Tammy Paine</u>	Date: <u>9/6/07</u>	Time: <u>3pm</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <u>Rachel Binkley</u>	Date: <u>9-7-07</u>	Time: <u>0929</u>
Relinquished by Commercial Carrier:	UPS _____ FedEx <input checked="" type="checkbox"/> Other _____		Temperature Upon Receipt <u>3.6° + 3.2°</u>		

**Electronic Data Deliverables (Circle One) Yes/No Format**  
**Reporting Requirements (Circle One)**  
 Standard Reports/QC Summary  Full Validation (LLI Type I)  
 NJ Regulatory  NJ Reduced  NY ASP-A  NY ASP-B  Other \_\_\_\_\_



## Lancaster Laboratories Explanation of Symbols and Abbreviations

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

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers	Inorganic Qualifiers
<b>A</b> TIC is a possible aldol-condensation product	<b>B</b> Value is <CRDL, but ≥IDL
<b>B</b> Analyte was also detected in the blank	<b>E</b> Estimated due to interference
<b>C</b> Pesticide result confirmed by GC/MS	<b>M</b> Duplicate injection precision not met
<b>D</b> Compound quantitated on a diluted sample	<b>N</b> Spike amount not within control limits
<b>E</b> Concentration exceeds the calibration range of the instrument	<b>S</b> Method of standard additions (MSA) used for calculation
<b>J</b> Estimated value	<b>U</b> Compound was not detected
<b>N</b> Presumptive evidence of a compound (TICs only)	<b>W</b> Post digestion spike out of control limits
<b>P</b> Concentration difference between primary and confirmation columns >25%	<b>*</b> Duplicate analysis not within control limits
<b>U</b> Compound was not detected	<b>+</b> Correlation coefficient for MSA <0.995
<b>X,Y,Z</b> Defined in case narrative	

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.

**WARRANTY AND LIMITS OF LIABILITY** – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

**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.
  1. 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

## DAILY FIELD LOG

Page: 1 of 1  
Date: 9/6/2007

Client: **ConocoPhillips** Site No: **256380** Project No: **01CP.01571.07**

Scope of Work:  Quarter Monitoring/Sampling

Describe Daily Activities:

Gauged 8 monitoring wells.  
Purged 8 monitoring wells.  
Sampled 8 monitoring wells.

Number of drums left on site: 0

Field Notes:

8:50 Arrived on site check in w/meredith + station  
Go over HASP, PTW, apply PPE  
Purchase ice + pack coolers  
Set up decon + begin gauging  
Set up equipment + begin sampling

10:16 Sampled MW-8  
10:55 Sampled MW-2  
11:30 Sampled MW-4  
11:56 Sampled MW-7  
12:26 Sampled MW-6  
12:59 Sampled MW-3  
1:29 Sampled MW-5  
2:01 Sampled MW-1

Decon equipment + pack up  
Empty purge water into drum  
Purchase more ice + pack samples for shipping  
Sealme load  
Check out w/ Meredith + station upon departure  
Remove PPE

Arrived on Site: 8:50

Departed Site: 2:45

Decontamination Procedures: **3-Stage (Alconox Wash, Tap Water Rinse, & Distilled Water Rinse)**

Daily Health and Safety Log Completed?: yes

Utility Locations Checked?: ←

Important Conversations:

Important Changes in Scope of Work:

Weather Conditions: Sunny/partly cloudy 60°F Subcontractors On Site: —

SECOR Personnel On Site: Tammy Parise

Signed: JP

Date: 9/6/07

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-1

FACILITY NAME: 256380 TEMPERATURE: 70 °F or °C

FIELD PERSONNEL: Tammy Parise WEATHER: Sunny

**FIELD MEASUREMENTS:**

A. Static Water Level (SWL) below top of casing/piezometer: 6.01 FT. or IN.

B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.

C. Total Depth of well (TD) from top of casing/piezometer: 22.60 FT. or IN.

D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	3 Well Vols.	5 Well Vols.			
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	=	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 1:49 END: 2:17

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>1:54</u>	<u>cloudy</u>	<u>980</u>	<u>-128</u>	<u>7.18</u>	<u>8.19</u>	<u>19.70</u>	<u>0.623</u>	<u>6.38</u>
2 <sup>nd</sup> Volume:	<u>1:57</u>	<u>cloudy</u>	<u>-5</u>	<u>-120</u>	<u>7.14</u>	<u>7.66</u>	<u>19.99</u>	<u>0.620</u>	<u>6.35</u>
3 <sup>rd</sup> Volume:	<u>2:00</u>	<u>cloudy</u>	<u>-5</u>	<u>-104</u>	<u>7.11</u>	<u>7.35</u>	<u>20.61</u>	<u>0.600</u>	<u>6.31</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 6.31

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-1</u>	<u>2:01</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

COMMENTS:  
\_\_\_\_\_  
\_\_\_\_\_

Casing Capacities:  
2-inch hole.....0.16 gal/in ft.  
4-inch hole.....0.65 gal/in ft.  
6.5-inch hole.....1.70 gal/in ft.  
8-inch hole.....2.60 gal/in ft.  
10-inch hole.....4.10 gal/in ft.

**Recharge Calculation at Time of Sample Collection:**  
Total Depth of Well: \_\_\_\_\_  
Original Water Column: \_\_\_\_\_ x 0.80 = -( )  
Collect sample when Depth to Water measures  
**Less than or equal to:**

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-2  
 FACILITY NAME: 256380 TEMPERATURE: 65 °F or °C  
 FIELD PERSONNEL: Tanmy Parise WEATHER: Sunny

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 9.06 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: 20.74 FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	3 Well Vols.	5 Well Vols.		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ =	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 10:34 END: 11:09

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	10:39	C	140	-23	7.32	9.71	19.66	0.009	9.10
2 <sup>nd</sup> Volume:	10:42	C	150	-18	7.26	9.23	19.74	0.550	9.11
3 <sup>rd</sup> Volume:	10:45	C	140	-11	7.34	8.17	20.48	0.971	9.11
4 <sup>th</sup> Volume:	10:48	C	130	-5	7.24	7.79	20.86	0.562	9.11
Addl. Volumes:	10:51	C	130	-3	7.22	7.45	21.38	0.560	9.12
	10:54	C	130	3	7.24	7.38	21.37	0.562	9.12

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons

PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 9.12

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-2</u>	<u>10:55</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

**COMMENTS:**

I took additional readings to stabilize conductivity & temp.

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well: \_\_\_\_\_  
 Original Water Column: \_\_\_\_\_ x 0.80 = \_\_\_\_ (\_\_\_\_)  
 Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-3  
 FACILITY NAME: 256380 TEMPERATURE: 70 °F or °C  
 FIELD PERSONNEL: Tammy Parise WEATHER: Sunny

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 5.43 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: 21.0 FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	3 Well Vols.	5 Well Vols.		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	= _____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 12:44 END: 1:12

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	12:49	C	190	-146	7.38	10.32	18.68	0.93	5.56
2 <sup>nd</sup> Volume:	12:52	C	200	-133	7.35	8.61	18.78	0.756	5.53
3 <sup>rd</sup> Volume:	12:55	C	200	-124	7.31	8.24	19.00	0.751	5.53
4 <sup>th</sup> Volume:	12:58	C	180	-118	7.33	7.89	19.69	0.745	5.53
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 5.53

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-3</u>	<u>12:59</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

**COMMENTS:**

I took additional readings to stabilize conductivity.

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well:  
 Original Water Column: \_\_\_\_\_ x 0.80 = --(\_\_\_\_\_)  
 Collect sample when Depth to Water measures  
Less than or equal to:

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: \_\_\_\_\_ ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-4

FACILITY NAME: 256380 TEMPERATURE: 65 °F or °C

FIELD PERSONNEL: Tammy Parise WEATHER: partly sunny

**FIELD MEASUREMENTS:**

A. Static Water Level (SWL) below top of casing/piezometer: 7.12 FT. or IN.

B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.

C. Total Depth of well (TD) from top of casing/piezometer: 20.40 FT. or IN.

D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	3 Well Vols.	5 Well Vols.		=	
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	=	PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 11:15 END: 11:43

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>ST</sup> Volume:	<u>11:20</u>	<u>C</u>	<u>480</u>	<u>-47</u>	<u>7.07</u>	<u>8.27</u>	<u>18.52</u>	<u>0.999</u>	<u>7.20</u>
2 <sup>nd</sup> Volume:	<u>11:23</u>	<u>C</u>	<u>390</u>	<u>-43</u>	<u>7.05</u>	<u>7.90</u>	<u>19.14</u>	<u>0.680</u>	<u>7.20</u>
3 <sup>rd</sup> Volume:	<u>11:26</u>	<u>C</u>	<u>350</u>	<u>-31</u>	<u>7.03</u>	<u>7.89</u>	<u>19.39</u>	<u>0.688</u>	<u>7.20</u>
4 <sup>th</sup> Volume:	<u>11:29</u>	<u>C</u>	<u>300</u>	<u>-19</u>	<u>7.03</u>	<u>8.13</u>	<u>19.91</u>	<u>0.687</u>	<u>7.15</u>
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons

PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 7.15

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-4</u>	<u>11:30</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

**COMMENTS:**

I took additional readings to stabilize conductivity.

Casing Capacities:  
2-inch hole.....0.16 gal/lin ft.  
4-inch hole.....0.65 gal/lin ft.  
6.5-inch hole.....1.70 gal/lin ft.  
8-inch hole.....2.60 gal/lin ft.  
10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well: \_\_\_\_\_  
Original Water Column: \_\_\_\_\_ x 0.80 = -- ( \_\_\_\_\_ )  
Collect sample when Depth to Water measures  
**Less than or equal to:**

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: \_\_\_\_\_ ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-5

FACILITY NAME: 256380 TEMPERATURE: 70 °F or °C

FIELD PERSONNEL: Tammy Parise WEATHER: Sunny

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 4.43 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: 13.72 FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	3 Well Vols.	5 Well Vols.			
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	=	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 1:17 END: 1:43

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>1:22</u>	<u>C</u>	<u>230</u>	<u>-83</u>	<u>7.12</u>	<u>7.18</u>	<u>20.91</u>	<u>0.805</u>	<u>4.76</u>
2 <sup>nd</sup> Volume:	<u>1:25</u>	<u>C</u>	<u>180</u>	<u>-75</u>	<u>7.14</u>	<u>7.22</u>	<u>21.37</u>	<u>0.803</u>	<u>4.84</u>
3 <sup>rd</sup> Volume:	<u>1:28</u>	<u>C</u>	<u>170</u>	<u>-68</u>	<u>7.09</u>	<u>7.83</u>	<u>21.69</u>	<u>0.803</u>	<u>4.86</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 4.86

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-5</u>	<u>1:29</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

**COMMENTS:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Casing Capacities:  
2-inch hole.....0.16 gal/lin ft.  
4-inch hole.....0.65 gal/lin ft.  
6.5-inch hole.....1.70 gal/lin ft.  
8-inch hole.....2.60 gal/lin ft.  
10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well: \_\_\_\_\_  
Original Water Column: \_\_\_\_\_ x 0.80 = ---  
Collect sample when Depth to Water measures Less than or equal to:

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-6  
 FACILITY NAME: 256380 TEMPERATURE: 65/70 F or °C  
 FIELD PERSONNEL: Tammy Parise WEATHER: partly sunny

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 622 FT. or IN.  
 B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.  
 C. Total Depth of well (TD) from top of casing/piezometer: 13.90 FT. or IN.  
 D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.  
 E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:
- |               |                     |                     |  |
|---------------|---------------------|---------------------|--|
|               | <u>3 Well Vols.</u> | <u>5 Well Vols.</u> |  |
| 2" Diameter = | 0.5 gals/ft         | 0.82 gals/ft        | x feet of water _____ = _____ PV (Gal) |
| 4" Diameter = | 2.0 gals/ft         | 3.25 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 DURATION: START: 12:14 END: 12:39

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>12:19</u>	<u>C</u>	<u>220</u>	<u>-71</u>	<u>7.25</u>	<u>9.85</u>	<u>18.07</u>	<u>0.93</u>	<u>6.30</u>
2 <sup>nd</sup> Volume:	<u>12:22</u>	<u>C</u>	<u>190</u>	<u>-78</u>	<u>7.23</u>	<u>8.75</u>	<u>17.96</u>	<u>0.93</u>	<u>6.30</u>
3 <sup>rd</sup> Volume:	<u>12:25</u>	<u>C</u>	<u>150</u>	<u>-76</u>	<u>7.27</u>	<u>8.40</u>	<u>17.98</u>	<u>0.93</u>	<u>6.30</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 6.30

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-6</u>	<u>12:26</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well: \_\_\_\_\_  
 Original Water Column: \_\_\_\_\_ x 0.80 = -- ( \_\_\_\_\_ )  
 Collect sample when Depth to Water measures  
Less than or equal to:

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: ENFOS PO# 4506583796      DATE: 9/6/07      WELL NO. MW-7  
 FACILITY NAME: 256380      TEMPERATURE: 65 °F or °C  
 FIELD PERSONNEL: Tammy Parise      WEATHER: partly sunny

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 7.47 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: 18.16 FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:

	3 Well Vols.	5 Well Vols.			
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	=	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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      DURATION: START: 11:44      END: 12:09

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>11:49</u>	<u>C</u>	<u>190</u>	<u>-130</u>	<u>7.23</u>	<u>893</u>	<u>20.18</u>	<u>0.672</u>	<u>7.56</u>
2 <sup>nd</sup> Volume:	<u>11:52</u>	<u>C</u>	<u>180</u>	<u>-123</u>	<u>7.25</u>	<u>7.98</u>	<u>20.10</u>	<u>0.660</u>	<u>7.56</u>
3 <sup>rd</sup> Volume:	<u>11:55</u>	<u>C</u>	<u>170</u>	<u>-119</u>	<u>7.24</u>	<u>7.57</u>	<u>20.18</u>	<u>0.644</u>	<u>7.56</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 7.56

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-7</u>	<u>11:56</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well:  
 Original Water Column: \_\_\_\_\_ x 0.80 = --(\_\_\_\_\_)  
 Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# 4506583796 DATE: 9/6/07 WELL NO. MW-8  
 FACILITY NAME: 256380 TEMPERATURE: 65 °F or °C  
 FIELD PERSONNEL: Tammy Parise WEATHER:  Sunny

**FIELD MEASUREMENTS:**

A. Static Water Level (SWL) below top of casing/piezometer: 8.45 FT. or IN.  
 B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.  
 C. Total Depth of well (TD) from top of casing/piezometer: 17.51 FT. or IN.  
 D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	<u>3 Well Vols.</u>	<u>5 Well Vols.</u>	
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ = _____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 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 DURATION: START: 10:04 END: 10:29

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>10:09</u>	<u>C</u>	<u>170</u>	<u>-112</u>	<u>7.19</u>	<u>8.85</u>	<u>19.11</u>	<u>0.781</u>	<u>8.52</u>
2 <sup>nd</sup> Volume:	<u>10:12</u>	<u>C</u>	<u>160</u>	<u>-100</u>	<u>7.25</u>	<u>8.15</u>	<u>19.10</u>	<u>0.800</u>	<u>8.55</u>
3 <sup>rd</sup> Volume:	<u>10:15</u>	<u>C</u>	<u>160</u>	<u>-114</u>	<u>7.26</u>	<u>7.82</u>	<u>19.28</u>	<u>0.796</u>	<u>8.55</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 8.55

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-8</u>	<u>10:16</u>	<u>6 voas</u>	<u>HCl</u>
		<u>1 amber</u>	<u>HCl</u>

**COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well:  
 Original Water Column: \_\_\_\_\_ x 0.80 = -- ( \_\_\_\_\_ )  
 Collect sample when Depth to Water measures  
**Less than or equal to:**

# ConocoPhillips Analysis Request/Chain of Custody



For Lancaster Labs Use ONLY Acct. #: \_\_\_\_\_ Group # \_\_\_\_\_ Sample#: \_\_\_\_\_ SCR#: \_\_\_\_\_

005466

Site #: 256380 AOC#: \_\_\_\_\_  
 Site City: Bellingham State: WA  
 Enfos PO#: 4506583796  
 ConocoPhillips PM: Mike NOLI  
 Samplers Name: Tammy Ruise

**Analyses Requested** List total number of containers in the box under each analysis.

Matrix	Preservation Codes												Preservative Codes H = HCl    T = Thiosulfate N = HNO <sub>3</sub> B = NaOH S = H <sub>2</sub> SO <sub>4</sub> O = Other					
	H	H	H	H	H	H	H	H	H	H	H	H						
Soil	X	X	X	X	X	X	X	X	X	X	X	X						
Water																		
Oil																		
Air																		
Composite																		
Potable																		
NPDES																		

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Composite	Remarks
MW-8	9/6/07	10:16	X		X					
MW-2		10:55								
MW-4		11:30								
MW-7		11:56								
MW-6		12:26								
MW-3		12:59								
MW-5		1:29								
MW-1		2:01								
trip blanks										

**Consultant Information:**  
 Office City: Edmond State: WA  
 Project Manager: Meredith Ledman  
 Phone Number: 425 372-1600 Fax: 372-1650  
 Email: Mledman@scd.com

**Turnaround Time Requested in Business Days (TAT) (Circle One):**  
 STD. 5 day 48 hour 24 hour Other \_\_\_\_\_

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Tammy Ruise</u>	<u>9/6/07</u>	<u>3pm</u>			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

**Electronic Data Deliverables (Circle One) Yes / No Format** \_\_\_\_\_

**Reporting Requirements (Circle One)**  
 Standard Reports/QC Summary    Full Validation (LLI Type I)  
 NJ Regulatory    NJ Reduced    NY ASP-A    NY ASP-B    Other \_\_\_\_\_

Relinquished by Commercial Carrier:  
 UPS \_\_\_\_\_ FedEx \_\_\_\_\_ Other \_\_\_\_\_    Temperature Upon Receipt \_\_\_\_\_ °C

# ConocoPhillips Analysis Request/Chain of Custody



For Lancaster Labs Use ONLY Acct. #: \_\_\_\_\_ Group # \_\_\_\_\_ Sample#: \_\_\_\_\_ SCR#: \_\_\_\_\_

005465

Site #: 256380 AOC#: \_\_\_\_\_  
 Site City: Collingham State: WA  
 Enfos PO#: 4506583796  
 ConocoPhillips PM: Mike Noll  
 Samplers Name: TAMMY PARISE

List total number of containers in the box under each analysis.

Matrix	Preservation Codes									
	#	#	#	#	#	#	#	#	#	#
<input type="checkbox"/> Potable <input type="checkbox"/> Water <input type="checkbox"/> NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Air	X	X	X	X	X	X	X	X	X	X
Soil	MWTPH g	PIEX 8260 B	MIBE 8260 B	MRTF H d w	Silka gel Cleanings					

**Preservative Codes**  
 H = HCl      T = Thiosulfate  
 N = HNO<sub>3</sub>    B = NaOH  
 S = H<sub>2</sub>SO<sub>4</sub>   O = Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Remarks
MW-8	9/16/07	10:16	X			X			
MW-2		10:55							
MW-4		11:30							
MW-7		11:56							
MW-6		12:26							
MW-3		12:59							
MW-5		1:29							
MW-1		2:01							
Trip blanks									

**Consultant Information:**  
 Office City: Redmond State: WA  
 Project Manager: M. Redmon  
 Phone Number: 425 372-1600 Fax: 372-1650  
 Email: mredmon@scior.com

**Turnaround Time Requested in Business Days (TAT) (Circle One):**  
 STD    5 day    48 hour    24 hour    Other \_\_\_\_\_

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Tammy Parise</u>	<u>9/16/07</u>	<u>3:00</u>			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

**Electronic Data Deliverables (Circle One)**  Yes /  No Format \_\_\_\_\_

**Reporting Requirements (Circle One)**  
 Standard Reports/QC Summary    Full Validation (LLI Type I)  
 NJ Regulatory    NJ Reduced    NY ASP-A    NY ASP-B    Other \_\_\_\_\_

Relinquished by Commercial Carrier:  
 UPS \_\_\_\_\_ FedEx \_\_\_\_\_ Other \_\_\_\_\_      Temperature Upon Receipt \_\_\_\_\_ C°



Sample Container Record

Order Number: 47534  
Order Date: 08/17/2007  
Page 1 of 1  
Standard Frm#: 69200

Client: 11817  
ConocoPhillips  
1571 - Bellingham, WA

Ship To:  
SECOR International  
12034 134th Court NE  
Ste 102  
Redmond, WA 98052  
425-372-1590  
Attn: Tammy Parise

Group: 1

Number of Sample Locations: 9  
One complete set of bottles listed below must be filled for each of the 9 sample location(s).  
QC type

<u>Count</u>	<u>Code</u>	<u>Description</u>	<u>Preservative</u>	<u>Analysis Name</u>	<u>Hold Time</u>
3	26	40 ml glass vial	HCl	TPH by NWTPH-Gx waters	14 days
1	29	1000 ml round amber glass	HCl	TPH by NWTPH-Dx(water) w/SiGel	14 days
3	38	40 ml glass vial (GC/MS)	HCl	GC/MS Volatiles	14 days

Group: 2

Number of Sample Locations: 1  
Sample Description  
Trip Blank  
QC type  
Trip Blank

<u>Count</u>	<u>Code</u>	<u>Description</u>	<u>Preservative</u>	<u>Analysis Name</u>	<u>Hold Time</u>
2	26	40 ml glass vial	HCl	TPH by NWTPH-Gx waters	14 days
2	38	40 ml glass vial (GC/MS)	HCl	GC/MS Volatiles	14 days

If you have any questions, please contact your Client Service Representative, Barbara Weyandt at (717) 656-2300 X 1576

Date Needed:

08/27/2007

Shipping Method

2nd Day

This order is:

Per your Request

**ATTACHMENT C  
LIMITATIONS AND CERTIFICATIONS FOR  
NON-PHASE I REPORTS**



**LIMITATIONS AND CERTIFICATIONS FOR  
NON-PHASE I REPORTS**

**QA/QC-302B**

Page 1 of 1

Rev. 1.1

Apr 3, 2007

This report was prepared in accordance with the scope of work outlined in SECOR's contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of ConocoPhillips Company for the express purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to SECOR. To the extent that this report is based on information provided to SECOR by third parties, SECOR may have made efforts to verify this third party information, but SECOR cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by SECOR.

**Prepared by:**

Tammy Parise, Staff Geologist

Name

Title

**Reviewed by:**

Mark Trewartha, Senior Project Hydrogeologist

Name

Title

All information, conclusions, and recommendations provided by SECOR in this document regarding the site have been prepared under the supervision of, and reviewed by, the Licensed Professional whose signature appears below:

**Licensed Approver:**

**Name:** Mark Trewartha, R.G.

**Signature:**

**Date:** 10/22/07