Stantec Consulting Corporation
12034 134th Court NE, Suite 102
Redmond, WA 98052
Tel: (425) 372-1600
Fax: (425) 372-1650

Quarterly Groundwater Monitoring Report - Third Quarter 2010
Former ConocoPhillips Facility No. 2705753 (RM&R #2857)
Washington Department of Ecology Voluntary Cleanup Program ID #NW1307
159 Denny Way
Seattle, Washington 98012

Stantec Project No.:
212302322

Submitted to:
Dale Myers
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

Submitted by:
Stantec Consulting Corporation
12034 134th Court NE, Suite 102
Redmond, WA 98052

Prepared on behalf of:
ConocoPhillips Company

August 4, 2010

Dear Mr. Myers:

Stantec Consulting Corporation (Stantec) is pleased to present this quarterly groundwater monitoring report to the Washington State Department of Ecology (DOE) Voluntary Cleanup Program (VCP) on behalf of the ConocoPhillips Company (ConocoPhillips). This report describes the results of groundwater monitoring activities performed by Stantec during the third quarter of 2010 (the reporting period) at ConocoPhillips Facility No. 2705753 (RM&R #2857) located at 159 Denny Way in Seattle, Washington (the Site) (DOE VCP #NW1307).

GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring activities during the reporting period were performed on July 12, 2010. Groundwater monitoring activities were performed in accordance with Stantec's protocols for groundwater monitoring events. A copy of Stantec's protocols for groundwater monitoring events is included in Appendix A. Groundwater monitoring activities are described below.

Monitoring Well Gauging

Five of the existing five groundwater monitoring wells (MW-D, MW-E, MW-F, MW-G, and MW-I) were gauged. Monitoring wells were gauged for the presence of liquid phase hydrocarbons (LPH) and depth-to-groundwater prior to purging and sampling. LPH was not measured in the groundwater monitoring wells at thicknesses greater than or equal to 0.01 feet. The depth to groundwater ranged from 12.10 feet (MW-G) to 42.44 feet (MW-I) below the top of casing (TOC). Depth-to-groundwater data was used to calculate the groundwater elevation in each well and evaluate the groundwater flow direction and gradient. Historical groundwater gauging data and gauging data from the reporting period are summarized in Table 1. Well locations and groundwater flow direction are shown on Figure 1. Based on these data, the inferred groundwater flow direction was to the west at an approximate gradient of 0.23 feet per foot (ft/ft).

Monitoring Well Purging

Wells intended to be sampled were purged after gauging. Groundwater was purged from the wells using low-flow methods, which included using a peristaltic pump and dedicated polyethylene tubing. Water quality parameters were measured during purging and recorded on field data sheets. Copies of field data sheets are included in Appendix B. Purged groundwater and rinsate/decontamination water were stored on Site in a Department of Transportation (DOT)-approved, steel drum pending laboratory characterization and off-Site disposal.

Monitoring Well Sampling

Following purging operations, groundwater samples were collected using a peristaltic pump (MW-F and MW-G) or submersible whale pump and bailer (MW-I). The peristaltic pump is not capable of purging well MW-I, due to a well depth exceeding 30 feet below ground surface. The samples were placed directly into pre-cleaned sample containers provided by an independent laboratory. Four of the existing five groundwater monitoring wells (MW-E, MW-F, MW-G, and MW-I) were sampled. Wells MW-D was not sampled due to an insufficient volume of water in the wells.

Once the sample containers were filled and sealed, they were labeled with the pertinent sampling information, and placed on ice in an insulated cooler for delivery under chain-of-custody documentation to an independent laboratory.

CHEMICAL ANALYSES AND RESULTS

Chemical Analyses

Groundwater samples collected during the reporting period were submitted to Pace Analytical Services, Inc. (Pace) in Seattle, Washington for the following chemical analyses:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using Environmental Protection Agency (EPA) Method 8260B;
- Methyl tertiary butyl ether (MTBE) by EPA Method 8260B;
- Total petroleum hydrocarbons (TPH) as gasoline (TPH-G) using DOE Northwest Method NWTPH-Gx; and
- TPH as diesel (TPH-D) and TPH as oil (TPH-O) using DOE Northwest Method NWTPH-Dx with silica gel/acid cleanup.

Chemical analyses results are described below. A copy of the certified laboratory analytical report and chain-of-custody documentation from Pace are included in Appendix C.

Chemical Analyses Results

Historical chemical analyses results and those from the reporting period are summarized in Table 1. Analytical results for TPH-G, TPH-D, TPH-O, BTEX, and MTBE are illustrated on Figure 2 for the reporting period and the three previous reporting periods.

A summary of the analytical results exceeding Model Toxics Control Act (MTCA) Method A cleanup levels is provided below. Analytical results not described below did not exceed MTCA Method A cleanup levels.

- TPH-G was detected in MW-F and MW-I at a concentration of 13,100 micrograms per liter (µg/L) and 1,480 µg/L, respectively, which exceed the MTCA Method A cleanup level of 800 µg/L. These results are consistent with analytical results from other recent sampling events.
- TPH-D was detected in MW-F at a concentration of 666 µg/L, which exceeds the MTCA Method A cleanup level of 500 µg/L. This result is consistent with analytical results from recent sampling events.
- Benzene was detected in MW-F and MW-I at a concentration of 425 µg/L and 658 µg/L, respectively, which exceed the MTCA Method A cleanup level of 5 µg/L. These results are consistent with analytical results from other recent sampling events.
- Total xylenes were detected in MW-F at a concentration of 4,240 µg/L, which exceeds the MTCA Method A cleanup level of 1,000 µg/L. This result is consistent with analytical results from other recent sampling events.

Laboratory Quality Assurance/Quality Control (QA/QC)

A copy of the analytical report for the samples collected during the reporting period is included in Appendix C. Please refer to the analytical report for a description of QA/QC methods and potential concerns, if any, which were identified during chemical analysis. Potential QA/QC concerns identified in the analytical report are noted on the tabulated analytical results included in Table 1.

WASTE DISPOSAL

Purge and rinsate water generated during the monitoring and sampling event were temporarily stored on Site in a labeled, DOT-approved, steel drum. The drum and its contents will be transported off-Site to a licensed disposal or recycling facility approved by ConocoPhillips.

CONCLUSIONS

Concentrations of TPH-G, TPH-D, benzene, and total xylenes exceeding the MTCA Method A cleanup levels were detected in well MW-F. Concentrations of TPH-G and benzene exceeding the MTCA Method A cleanup levels were detected in well MW-I. These detected concentrations are generally consistent with data from other recent reporting periods. Concentrations of other analytes were detected in wells MW-F and MW-I at concentrations that did not exceed the MTCA Method A cleanup levels.

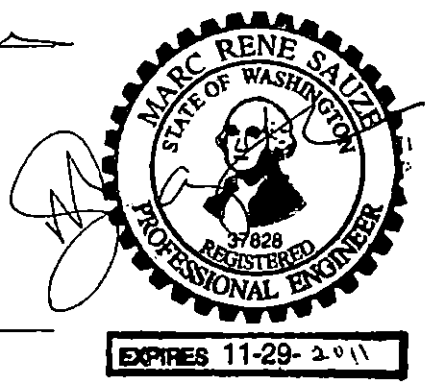
LIMITATIONS AND CERTIFICATIONS

This report was prepared in accordance with the scope of work outlined in Stantec'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 Stantec. To the extent that this report is based on information provided to Stantec by third parties, Stantec may have made efforts to verify this third party information, but Stantec 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 investigations. No other warranties, expressed or implied are made by Stantec.

Prepared by:

Amanda Thompson, E.I.T.
Engineering Staff

Reviewed by:



Marc Sauze, P.E.
Senior Engineer

ATTACHMENTS

Table 1	Cumulative Summary of Groundwater Elevations and Sample Analytical Results
Figure 1	Site Plan with Groundwater Elevations (July 12, 2010)
Figure 2	Site Plan with Analytical Results (July 12, 2010)
Appendix A	Field and Laboratory Procedures
Appendix B	Field Data Sheets
Appendix C	Certified Laboratory Analytical Report and Chain-of-Custody Documentation

TABLE 1
CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
ConocoPhillips Site No. 2705753 (RM&R 2857)
159 Denny Way
Seattle, Washington

				Total Petroleum Hydrocarbons			Aromatic Hydrocarbons							Metals	
Well ID TOC Elevation	Sample Date	Depth to Water	GW Elevation	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	EDC (µg/L)	EDB (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)
MW-D	08/09/06	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
NE	12/04/06	16.60	NE	<48	<78	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	02/02/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
97.76	05/02/07	19.5	78.26	Insufficient water to collect sample											
	08/08/07	19.52	78.24	Insufficient water to collect sample											
	11/08/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	02/07/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	10/30/08	19.55	78.21	Insufficient water to collect sample											
	01/19/09	19.65	78.11	Insufficient water to collect sample											
	04/20/09	19.57	78.19	Insufficient water to collect sample											
	07/23/09	19.57	78.19	Insufficient water to collect sample											
	10/14/09	19.80	77.96	Insufficient water to collect sample											
	01/13/10	17.08	80.68	<50[2n]	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	04/12/10	19.55	78.21	Insufficient water to collect sample											
	07/12/10	19.57	78.19	Insufficient water to collect sample											
MW-E	08/09/06	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
NE	12/04/06	21.26	NE	<48	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	02/02/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
99.18	05/02/07	24.59	74.59	Insufficient water to collect sample											
	08/08/07	24.09	75.09	<50	120	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	11/08/07	23.69	75.49	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	02/07/08	24.90	74.28	Insufficient water to collect sample											
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	22.21	76.97	<50	<78	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	10/30/08	20.50	78.68	<50	<78	<97	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	01/19/09	25.00	74.18	Insufficient water to collect sample											
	04/20/09	24.94	74.24	Insufficient water to collect sample											
	07/23/09	20.52	78.66	<50	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	10/14/09	20.30	78.88	16.3J, Z2	<77	<380	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	01/13/10	19.00	80.18	<50[2n]	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	04/12/10	24.98	72.78	Insufficient water to collect sample											
	07/12/10	21.65	76.11	<50	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--

TABLE 1
CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
ConocoPhillips Site No. 2705753 (RM&R 2657)
159 Denny Way
Seattle, Washington

				Total Petroleum Hydrocarbons			Aromatic Hydrocarbons							Metals	
Well ID TOC Elevation	Sample Date	Depth to Water	GW Elevation	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	EDC (µg/L)	EDB (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)
MW-F	08/09/06	23.65	NE	29,000	2.1	<0.19	1,500	1,400	61	6,600	87	--	--	--	--
NE	12/04/06	22.84	NE	94,000	1,200	<190	2,800	9,700	1,600	8,800	<5	--	--	--	--
	02/02/07	24.41	NE	35,000	3,100	<950	1,000	1,300	300	4,100	4	--	--	--	--
101.28	05/02/07	24.90	76.38	15,000	1,900	670	940	540	110	1,200	2	--	--	--	--
	08/08/07	23.94	77.34	14,000	1,500	<190	1,300	1,100	210	1,200	2	--	--	--	--
	11/08/07	18.00	83.28	16,000	1,600	<96	890	570	150	2,300	1	--	--	--	--
	02/07/08	24.70	76.58	14,000	2,000	<190	820	230	140	2,600	3	--	--	--	--
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	22.65	78.63	22,000	1,100	<84	1,100	2,300	330	4,600	<1	--	--	--	--
	10/30/08	18.55	82.73	23,000	760	<96	740	680	91	4,100	<3	--	--	--	--
	01/19/09	24.33	76.95	14,200	990	<84	710	45	77	2,600	<1	--	--	--	--
	04/20/09	27.00	74.28	Insufficient water to collect sample											
	07/23/09	22.16	79.12	24,900	610	<390	683	543	261	6,530	<1.0	--	--	--	--
	10/14/09	21.30	79.98	20,700	800	<380	540	73.4	216	3,480	<5.0	--	--	--	--
	01/13/10	22.37	78.91	15,000	843	<388	605	50.1	52.2	2,900	<1.0	--	--	--	--
	04/12/10	24.65	76.63	12,800	2,040	661	599	11.8	50.9	2,470	<1.0	--	--	--	--
	07/12/10	21.88	79.40	13,100	666	<388	425	172	83.0	4,240	<1.0	--	--	--	--
MW-G	08/09/06	20.32	NE	<48	<0.076	<0.095	0.2	0.3	<0.2	2.9	2.2	--	--	--	--
NE	12/04/06	20.31	NE	<48	<75	<94	4	<0.7	<0.8	<0.8	2	--	--	--	--
	02/02/07	22.90	NE	<48	<78	<95	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--
102.90	05/02/07	22.75	80.15	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--
	08/08/07	23.08	79.82	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--
	11/08/07	21.60	81.30	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	1	--	--	--	--
	02/07/08	19.00	83.90	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	0.7	--	--	--	--
	05/21/08	22.40	80.50	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	1	--	--	--	--
	07/24/08	13.84	89.06	<50	<75	<94	13	<0.7	<0.8	<0.8	0.8	--	--	--	--
	10/30/08	11.75	91.15	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	01/19/09	17.85	85.05	<25	<39	<84	<1	<1	<1	<3	<1	--	--	--	--
	04/20/09	20.28	82.62	<50.0	<83	<420	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<0.010	<1.00	<1.00
	07/23/09	11.59	91.31	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	10/14/09	10.85	92.05	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	01/13/10	11.01	91.89	91.5	<76.9	<385	<1.0[MD]	<1.0[MD]	<1.0[MD]	1.3[J,MD]	<1.0[MD]	--	--	--	--
	04/12/10	17.39	85.51	<50.0	<77.7	<388	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
	07/12/10	12.10	90.80	<50.0	<78.4	<392	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--

TABLE 1

CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

ConocoPhillips Site No. 2705753 (RM&R 2857)

159 Denny Way

Seattle, Washington

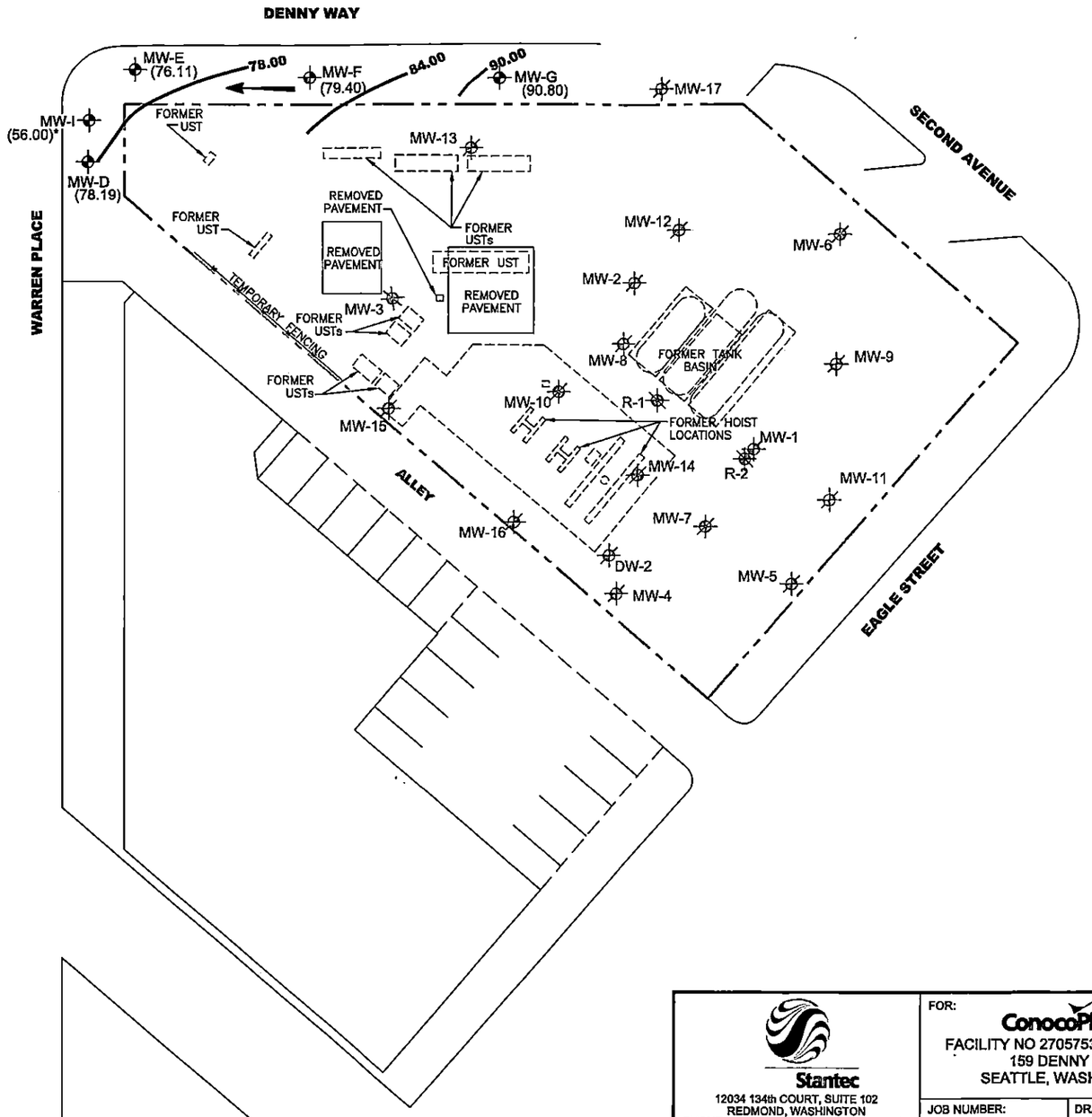
				Total Petroleum Hydrocarbons			Aromatic Hydrocarbons							Metals	
Well ID TOC Elevation	Sample Date	Depth to Water	GW Elevation	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	EDC (µg/L)	EDB (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)
MW-I	08/09/06	45.15	NE	2,900	<0.32"	<0.40	600	22	89	190	15	--	--	--	--
NE	12/04/06	45.51	NE	3,600	200	190	840	18	130	230	2	--	--	--	--
	02/02/07	44.83	NE	3,600	280	<95	660	13	120	180	2	--	--	--	--
98.44	05/02/07	44.15	54.29	2,200	210	230	670	7	110	100	1	--	--	--	--
	08/08/07	43.39	55.05	2,200	190	<96	380	5	61	58	0.7	--	--	--	--
	11/08/07	49.70	48.74	1,600	<800	<1000	840	13	110	110	2	--	--	--	--
	02/07/08	44.90	53.54	1,700	320	<95	520	8	84	79	1	--	--	--	--
	05/21/08	44.85	53.59	2,000	450	370	860	15	140	130	<0.5	--	--	--	--
	07/24/08	45.21	53.23	1,900	260	<94	1,200	41	170	180	3	--	--	--	--
	10/30/08	44.50	53.94	1,600	260	<100	870	11	110	67	2	--	--	--	--
	01/19/09	45.40	53.04	1,680	160	<83	1,000	20	170	110	<1	--	--	--	--
	04/20/09	45.55	52.89	2,850	88	<420	970	20	160	92	3.5	<1.0	<0.010	8.13	<1.00
	07/23/09	44.93	53.51	2,140	110	<390	1,830	17.7	159	81.4	2.7	--	--	--	--
	10/14/09	44.33	54.11	2,200	93	<390	962	13.9	125	71.4	2.1	--	--	--	--
	01/13/10	43.92	54.52	2,010	116	<388	621	11.3	122	66.4	1.5	--	--	--	--
	04/12/10	43.43	55.01	1,830	<80	<400	856	9.5	107	38.7	1.7	--	--	--	--
	07/12/10	42.44	56.00	1,480	<77.7	<388	658	8.3	91.5	39.3	<1.0	--	--	--	--
MTCA Method A Cleanup Levels:				1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15	15

NOTES:

All concentrations are in micrograms per liter (µg/L).
Depth to water in feet below top of casing.
TOC = Top of casing elevation in feet.
GW Elevation = Groundwater elevation in feet relative to top of casing elevations.
TPH-G = Gasoline range hydrocarbons by Ecology Method NWTPH-Gx.
TPH-D and TPH-O = Diesel and oil range organics, respectively, by Ecology Method NWTPH-Dx.
BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes by EPA Method 8260B.
MTBE=Methyl Tertiary Butyl Ether.EDC = 1,2-Dichloroethane by EPA Method 8260B.
EDC = 1,2-Dichloroethane by EPA Method 8260B.
EDB = 1,2-Dibromoethane by EPA Method 504.1

NE = Not Established; -- = Not Analyzed or Sampled.
< = Less than the stated laboratory reporting limit.
"<" refers to less than the laboratory detection limit threshold.
* MTCA Method A Cleanup Levels for TPH-g are 1,000 µg/L when no benzene is present and 800 µg/L when benzene is present.
Bolded values exceed MTCA Method A Cleanup Levels.
J flag = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
2n = Sample was evaluated to the MDL
M0 = Matrix spike recovery and/or spike duplicate recovery was outside the laboratory control limits.
Z2 = Analyte present in the associated method blank above the detection limit.

FIGURES



LEGEND

- SITE BOUNDARY
- MONITORING WELL LOCATION
- ABANDONDED OR DESTROYED MONITORING WELL LOCATION
- (78.19) GROUNDWATER ELEVATION (IN FEET)
- 84.00 GROUNDWATER ELEVATION CONTOUR (IN FEET)
- INFERRED GROUNDWATER FLOW DIRECTION
- * MW-I NOT USED IN CONTOUR, IT IS SCREENED IN A SEPARATE (LOWER) AQUIFER
- CONTOUR INTERVAL OF 6.00 FT
- UST UNDERGROUND STORAGE TANK
- GROUNDWATER GRADIENT = 0.23 FT/FT

NOTE

ALL LOCATIONS ARE APPROXIMATE

N

0 30 60

APPROXIMATE SCALE (FEET)

SOURCE:
BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC. (ERI), GROUNDWATER SAMPLE ANALYSIS MAP-- 07/23/03, PLATE 1, DATED 08/15/03, PROJECT NO. 31021, CADD FILE 31021.13.DWG

Stantec
12034 134th COURT, SUITE 102
REDMOND, WASHINGTON
PHONE: (425) 298-1000 FAX: (425) 298-1019

FOR: ConocoPhillips
FACILITY NO 2705753 (RM&R 2857)
159 DENNY WAY
SEATTLE, WASHINGTON

SITE PLAN WITH GROUNDWATER ELEVATIONS (JULY 12, 2010)

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302322	DJH	AT	CG	7/26/10

FILEPATH:K:\1-CLIENTS\ConocoPhillips\01CP\02857 - SEATTLE (5753)\2010 - QTRLY\3Q10\CP-5753(2857))3Q_2010.dwg|dheller|Aug 03, 2010 at 13:13|Layout: F1-GWE (3Q

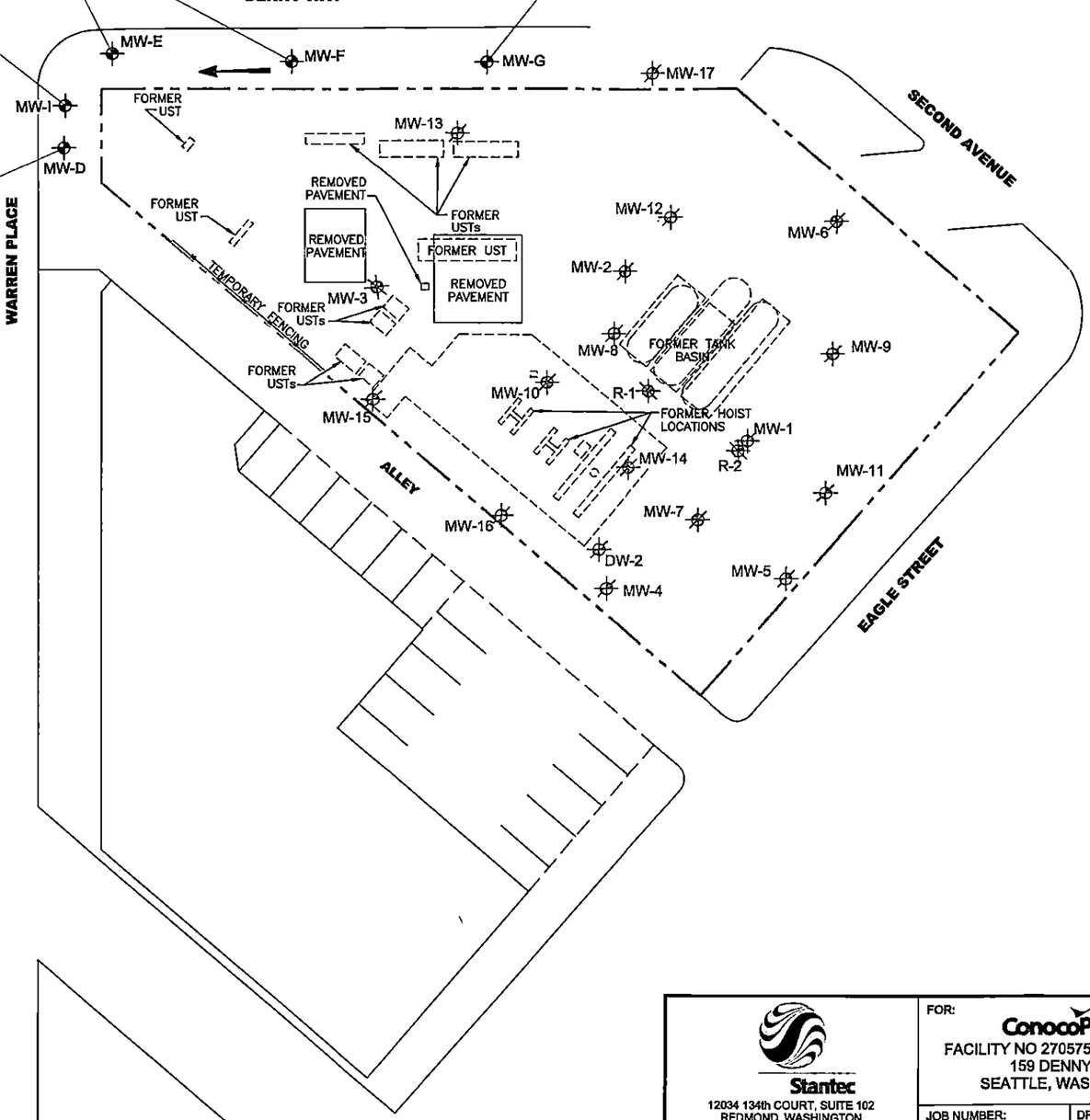
MW-E				µg/L
DATE	10/14/09	1/13/10	4/12/10	7/12/10
TPH-G	16.3J, Z2	<50 2n	**	<50.0
TPH-D	<77	<76.9	**	<76.9
TPH-O	<380	<385	**	<385
B	<1.0	<1.0	**	<1.0
T	<1.0	<1.0	**	<1.0
E	<1.0	<1.0	**	<1.0
X	<3.0	<3.0	**	<3.0
MTBE	<1.0	<1.0	**	<1.0

MW-F				µg/L
DATE	10/14/09	1/13/10	4/12/10	7/12/10
TPH-G	**20,700**	**15,000**	**12,800**	**13,100**
TPH-D	**800**	**843**	**2,040**	**666**
TPH-O	<380	<388	**861**	<388
B	**540**	**505**	**599**	**425**
T	73.4	50.1	11.8	172
E	216	52.2	50.9	83.0
X	**3,480**	**2,900**	**2,470**	**4,240**
MTBE	<5.0	<1.0	<1.0	<1.0

MW-G				µg/L
DATE	10/14/09	1/13/10	4/12/10	7/12/10
TPH-G	<50.0	91.5	<50.0	<50.0
TPH-D	<78	<76.9	<77.7	<78.4
TPH-O	<390	<385	<388	<392
B	<1.0	<1.0 M0	<1.0	<1.0
T	<1.0	<1.0 M0	<1.0	<1.0
E	<1.0	<1.0 M0	<1.0	<1.0
X	<3.0	1.3 J,M0	<3.0	<3.0
MTBE	<1.0	<1.0 M0	<1.0	<1.0

MW-I				µg/L
DATE	10/14/09	1/13/10	4/12/10	7/12/10
TPH-G	**2,200**	**2,010**	**1,630**	**1,480**
TPH-D	93	116	<80	<77.7
TPH-O	<390	<388	<400	<388
B	**962**	**621**	**856**	**658**
T	13.9	11.3	9.5	8.3
E	125	122	107	91.5
X	71.4	66.4	38.7	39.3
MTBE	2.1	1.5	1.7	<1.0

MW-D				µg/L
DATE	10/14/09	1/13/10	4/12/10	7/12/10
TPH-G	**	<50 2n	**	**
TPH-D	**	<76.9	**	**
TPH-O	**	<385	**	**
B	**	<1.0	**	**
T	**	<1.0	**	**
E	**	<1.0	**	**
X	**	<3.0	**	**
MTBE	**	<1.0	**	**



LEGEND

- SITE BOUNDARY
- MONITORING WELL LOCATION
- ABANDONDED OR DESTROYED MONITORING WELL LOCATION
- INFERRED GROUNDWATER FLOW DIRECTION

ANALYTES

WELL ID	
TPH-G	GASOLINE RANGE HYDROCARBONS
TPH-D	DIESEL RANGE HYDROCARBONS
TPH-O	OIL RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYL BENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER

UNITS IN MICROGRAMS PER LITER (µg/L)

ND NOT DETECTED AT OR ABOVE THE LABORATORY METHOD DETECTION LIMIT

– NOT ANALYZED OR NOT APPLICABLE

** INSUFFICIENT WATER TO SAMPLE

< LESS THAN LABORATORY REPORTING LIMIT

UST UNDERGROUND STORAGE TANK

BOLD ANALYTES DETECTED ABOVE THE MTCA METHOD "A" CLEANUP LEVEL

J ESTIMATE CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT

Z2 ANALYTE PRESENT IN THE ASSOCIATED METHOD BLANK ABOVE THE DETECTION LIMIT

2n SAMPLE WAS EVALUATED TO THE MDL

M0 MATRIX SPIKE RECOVERY AND/OR SPIKE DUPLICATE RECOVERY WAS OUTSIDE THE LABORATORY CONTROL LIMITS

NOTES

ALL LOCATIONS ARE APPROXIMATE

GROUNDWATER FLOW PREDOMINANTLY NORTHWEST

N

0 30 60

APPROXIMATE SCALE (FEET)

SOURCE:
BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC. (ERI), GROUNDWATER SAMPLE ANALYSIS MAP– 07/23/03, PLATE 1, DATED 08/15/03, PROJECT NO. 31021, CADD FILE 31021.13.DWG

Stantec
12034 134th COURT, SUITE 102
REDMOND, WASHINGTON
PHONE: (425) 298-1000 FAX: (425) 298-1019

FOR: ConocoPhillips
FACILITY NO 2705753 (RM&R 2857)
159 DENNY WAY
SEATTLE, WASHINGTON

SITE PLAN WITH ANALYTICAL RESULTS (JULY 12, 2010)

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302322	DJH	AT	CG	7/26/10

FILEPATH:K:\1-CLIENTS\ConocoPhillips\01CP\02857 - SEATTLE (5753)\2010 - QTRLY\3Q10\CP-5753(2857)\3Q_2010.dwg|dheller|Aug 03, 2010 at 13:12|Layout: F2-SPA (3Q)

*/

APPENDIX A
FIELD AND LABORATORY PROCEDURES

STANTEC 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.

APPENDIX B
FIELD DATA SHEETS

SITE VISITATION REPORT
76 Service Station No. 5753 Seattle, WA

Name(s) D. Reitz Date: 07/12/10 Time of Arrival Call-In: 1000

Arrival Time: 1000 Departure Time: 1445 Time of Departure Call-In 1440

Who did you call? T. Parise

DRUM INVENTORY

1	WATER		CARBON	TOTAL OPEN TOP	1
	SOIL		EMPTY	TOTAL BUNG TOP	

HEALTH AND SAFETY ASSESSMENT

Don P.P.E.
Review HASP & J.S.A.
Set up Decon. Station

DESCRIPTION OF ACTIVITIES ONSITE AND NOTES

1000 Arrive on site. Calling to office. Purchase ice. Perform tailgate safety meeting. Don appropriate p.p.e. Set up decon. station.
1030 Initiate gauging of physical measurements of 5 gwm wells. prior to 3010 GWM sample procedures.
1110 Complete gauging procedures. Initiate 3010 GWM sample procedures at 5 gwm wells.
1415 Complete 3010 sample procedures. Decon. Equipment and release purge water/decon. rinsates into staged drum. Label drum.
1430 Pack sample coolers & load equipment into truck.
1440 Calling to office.
1445 Depart job site.
1500 Drop-off samples at lab.

07/12/10

Stantec Consulting

HYDROLOGIC DATA SHEET

Gauge Date: July 12, 2010 **Project Name:** 5753 (AOC 2857)

Field Technician: David Reitz **Project Number:** 212302322

DTP = Depth to Free Product (FP or NAPH) Below TOC
DTW = Depth to Groundwater Below TOC
DTB = Depth to Bottom of Well Casing Below TOC

Flow through cell calibrated Y X N___

Wells checked for product and gauged prior to commencement of bailing or purging the wells Y X N___

WELL OR LOCATION	WELL SCREEN DEPTH	PROPOSED INTAKE RANGE (feet below TOC)	MEASUREMENTS				PURGE? (Y/N)	SHEEN? (Y/N)	SAMPLE? (Y/N)	COMMENTS / PROBE CALIBRATION
			TIME	DTP (feet)	DTW (feet)	DTB (feet)				
MW-G		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1030	—	12.10	28.80	Y	N	Y	
MW-E		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1040	—	21.65	25.20	Y	N	Y	
MW-D		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1050	—	19.57	19.70	N	N	N	MW-D is a dry well
MW-F		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1100	—	21.88	27.50	Y	N	Y	
MW-I		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1110	—	42.44	50.00	Y	N	Y	

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212302322 PURGED BY: D. Reitz WELL I.D.: MW-D

CLIENT NAME: COP SAMPLED BY: _____ SAMPLE I.D.: _____

LOCATION: 159 Denny Way, Seattle

DATE PURGED 07/12/10 START (2400hr) 1235 END (2400hr) 1250

DATE SAMPLED # SAMPLE TIME (2400hr) _____ LOW-FLOW USED x

SAMPLE TYPE: Groundwater x Surface Water _____ Treatment Effluent _____ Other _____

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (liters per foot)	X (0.64)	(1.44)	(2.45)	(3.86)	(5.68)	(9.84)	( )

DEPTH TO BOTTOM (feet) = 19.70

DEPTH TO WATER (feet) = 19.57

WATER COLUMN HEIGHT (feet) = 0.13 ACTUAL PURGE (L) = Ø

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (L)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
07/12/10	1235	Ø				
		MW-D is a dry well				
					07/12/10	
Calculated Variance of Final Three Samples:						
Acceptable Variance Limits:			≤ 10%	≤ 3%	≤ 0.1	

DEPTH TO PURGE INTAKE DURING PURGE: _____ SAMPLE DTW: _____

ANTICIPATED PURGE INTAKE DEPTH: _____ ANALYSES: TPH-Dx, TPH-Gx, BTEX/MTBE

SAMPLE VESSEL / PRESERVATIVE: HCl

PURGING EQUIPMENT:	SAMPLING EQUIPMENT:
Horiba water quality meter Peristaltic pump Interface probe	Horiba water quality meter Peristaltic pump Interface probe

Flow Through Cell Disconnected Prior to Sample Collection?: N/A YES _____ NO _____

WELL PAD CONDITION: Fair WELL CASING CONDITION: Fair

WELL VAULT CONDITION: Fair SEAL PRESENT?: yes BOLTS PRESENT?: yes

WELL INTEGRITY: Fair WELL TAG: yes LOCK#: yes

REMARKS: MW-D is a dry well.

SIGNATURE: _____

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212302322 PURGED BY: D. Reitz WELL I.D.: MW-E

CLIENT NAME: COP SAMPLED BY: D. Reitz SAMPLE I.D.: MW-E

LOCATION: 159 Denny Way, Seattle

DATE PURGED 07/12/10 START (2400hr) 1155 END (2400hr) 1220

DATE SAMPLED 07/12/10 SAMPLE TIME (2400hr) 1210 LOW-FLOW USED x

SAMPLE TYPE: Groundwater x Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER: 2" X 3" ___ 4" ___ 5" ___ 6" ___ 8" ___ Other ___

Casing Volume: (liters per foot) (0.64) (1.44) (2.45) (3.86) (5.68) (9.84) ( )

DEPTH TO BOTTOM (feet) = 25.20

DEPTH TO WATER (feet) = 21.65

WATER COLUMN HEIGHT (feet) = 3.55 ACTUAL PURGE (L) = 2.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (mL)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
07/12/10	1200	800	15.4	0.032	6.31	Clr
	1203	500	15.5	0.032	6.27	Clr
	1206	500	15.5	0.032	6.25	Clr
	1209	500	15.5	0.032	6.26	Clr
					07/12/10	
Calculated Variance of Final Three Samples:			0	0	0.02	
Acceptable Variance Limits:			≤ 10%	≤ 3%	≤ 0.1	

DEPTH TO PURGE INTAKE DURING PURGE: 23.00 SAMPLE DTW: 22.25

ANTICIPATED PURGE INTAKE DEPTH: 23.00 ANALYSES: TPH-Dx; TPH-Gx; BTEX/MTBE

SAMPLE VESSEL / PRESERVATIVE: HCl

PURGING EQUIPMENT:	SAMPLING EQUIPMENT:
Horiba water quality meter Peristaltic pump Interface probe	Horiba water quality meter Peristaltic pump Interface probe

Flow Through Cell Disconnected Prior to Sample Collection?: YES X NO ___

WELL PAD CONDITION: Fair WELL CASING CONDITION: Fair

WELL VAULT CONDITION: Fair SEAL PRESENT?: YES BOLTS PRESENT?: YES

WELL INTEGRITY: Fair WELL TAG: YES LOCK#: YES

REMARKS:

SIGNATURE: [signature]

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212302322 PURGED BY: D. Reitz WELL I.D.: MW-F

CLIENT NAME: COP SAMPLED BY: D. Reitz SAMPLE I.D.: MW-F

LOCATION: 159 Denny Way, Seattle

DATE PURGED 07/12/10 START (2400hr) 1255 END (2400hr) 1320

DATE SAMPLED 07/12/10 SAMPLE TIME (2400hr) 1310 LOW-FLOW USED x

SAMPLE TYPE: Groundwater x Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (liters per foot)	X (0.64)	(1.44)	(2.45)	(3.86)	(5.68)	(9.84)	( )

DEPTH TO BOTTOM (feet) = 27.50

DEPTH TO WATER (feet) = 21.89

WATER COLUMN HEIGHT (feet) = 5.62 ACTUAL PURGE (L) = 2.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (L)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
07/12/10	1300	500	16.2	0.039	5.92	Clr
	1303	500	16.2	0.039	5.94	Clr
	1306	500	16.4	0.039	5.93	Clr
	1309	500	16.4	0.038	5.94	Clr
					07/12/10	
Calculated Variance of Final Three Samples:			0.2	0.001	0.001	
Acceptable Variance Limits:			≤ 10%	≤ 3%	≤ 0.1	

DEPTH TO PURGE INTAKE DURING PURGE: 25.00 SAMPLE DTW: 22.28

ANTICIPATED PURGE INTAKE DEPTH: 25.00 ANALYSES: TPH-Dx; TPH-Gx; BTEX/MTBE

SAMPLE VESSEL / PRESERVATIVE: HCl

PURGING EQUIPMENT:	SAMPLING EQUIPMENT:
Horiba water quality meter	Horiba water quality meter
Peristaltic pump Interface probe	Peristaltic pump Interface probe

Flow Through Cell Disconnected Prior to Sample Collection?: YES X NO ____

WELL PAD CONDITION: Fair WELL CASING CONDITION: Fair

WELL VAULT CONDITION: Fair SEAL PRESENT?: YES BOLTS PRESENT?: YES

WELL INTEGRITY: Fair WELL TAG: YES LOCK#: YES

REMARKS: ____

SIGNATURE: ____

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212302322 PURGED BY: D. Reitz WELL I.D.: MW-G

CLIENT NAME: COP SAMPLED BY: D. Reitz SAMPLE I.D.: MW-G

LOCATION: 159 Denny Way, Seattle

DATE PURGED 07/12/10 START (2400hr) 1115 END (2400hr) 1140

DATE SAMPLED 07/12/10 SAMPLE TIME (2400hr) 1130 LOW-FLOW USED x

SAMPLE TYPE: Groundwater x Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER: 2" X 3" ___ 4" ___ 5" ___ 6" ___ 8" ___ Other ___

Casing Volume: (liters per foot) (0.64) (1.44) (2.45) (3.86) (5.68) (9.84) ( )

DEPTH TO BOTTOM (feet) = 28.80

DEPTH TO WATER (feet) = 12.10

WATER COLUMN HEIGHT (feet) = 16.70 ACTUAL PURGE (L) = 2.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (mL)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
07/12/10	1120	500	15.5	0.034	5.88	Clr
	1123	500	15.5	0.033	5.98	Clr
	1126	500	15.5	0.033	6.06	Clr
	1129	500	15.5	0.033	6.08	Clr
Calculated Variance of Final Three Samples:			0	0	0.10	
Acceptable Variance Limits:			≤ 10%	≤ 3%	≤ 0.1	

07/12/10

DEPTH TO PURGE INTAKE DURING PURGE: 25.00 SAMPLE DTW: 12.47

ANTICIPATED PURGE INTAKE DEPTH: 25.00 ANALYSES: TPH-Dx; TPH-Gx; BTEX/MTBE

SAMPLE VESSEL / PRESERVATIVE: HCl

PURGING EQUIPMENT:	SAMPLING EQUIPMENT:
Horiba water quality meter	Horiba water quality meter
Peristaltic pump Interface probe	Peristaltic pump Interface probe

Flow Through Cell Disconnected Prior to Sample Collection?: YES X NO ___

WELL PAD CONDITION: Fair WELL CASING CONDITION: Fair

WELL VAULT CONDITION: Fair SEAL PRESENT?: yes BOLTS PRESENT?: yes

WELL INTEGRITY: Fair WELL TAG: yes LOCK#: yes

REMARKS: ___

SIGNATURE: ___

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212302322 PURGED BY: D. Reitz WELL I.D.: MW-1

CLIENT NAME: COP SAMPLED BY: D. Reitz SAMPLE I.D.: MW-1

LOCATION: 159 Denny Way, Seattle

DATE PURGED 07/12/10 START (2400hr) 1325 END (2400hr) 1415

DATE SAMPLED 07/12/10 SAMPLE TIME (2400hr) 1400 LOW-FLOW USED No

SAMPLE TYPE: Groundwater x Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (liters per foot)	X (0.64)	____ (1.44)	____ (2.45)	____ (3.86)	____ (5.68)	____ (9.84)	____ ( )

DEPTH TO BOTTOM (feet) = 50.00

DEPTH TO WATER (feet) = 42.44

WATER COLUMN HEIGHT (feet) = 7.56

ACTUAL PURGE (GALLON) 4.0 gallons

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (GALLON)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
07/12/10	1400	4.0				Cldy
			Sample by	Bailer		
					07/12/10	
Calculated Variance of Final Three Samples:						
Acceptable Variance Limits:			≤ 10%	≤ 3%	≤ 0.1	

DEPTH TO PURGE INTAKE DURING PURGE: ____ SAMPLE DTW: 44.14

ANTICIPATED PURGE INTAKE DEPTH: ____ ANALYSES: TPH-Dx; TPH-Gx; BTEX/MTBE

SAMPLE VESSEL / PRESERVATIVE: HCl

PURGING EQUIPMENT:	SAMPLING EQUIPMENT:
Horiba water quality meter	Horiba water quality meter
Peristaltic pump Interface probe Bailer	Peristaltic pump Interface probe Bailer

Flow Through Cell Disconnected Prior to Sample Collection?: N/A YES ____ NO ____

WELL PAD CONDITION: Fair WELL CASING CONDITION: Fair

WELL VAULT CONDITION: Fair SEAL PRESENT?: YES BOLTS PRESENT?: YES

WELL INTEGRITY: Fair WELL TAG: YES LOCK#: YES

REMARKS: ____

SIGNATURE: ____

Chain Of Custody Record

PACE Analytical Laboratory
940 S. Harney Street, Seattle, WA 98108
(206) 767-5060

INVOICE REMITTANCE ADDRESS: ConocoPhillips

Purchase Order #: 4512896465
ConocoPhillips AOCI#: 2857

DATE: 07/12/10
PAGE: 1 of 1

SAMPLING COMPANY: Stantec	Valid Value ID:	CONOCOPHILLIPS SITE NUMBER: 2705753	GLOBAL ID NO.:
ADDRESS: 12034 134th CT Redmond, WA		SITE ADDRESS (Street and City): 159 Denny Way, Seattle	ConocoPhillips Manager: Myron Smith
PROJECT CONTACT (Hardcopy or PDF Report to): Chris Gdak		EDF DELIVERABLE TO (RP or):	PHONE NO.: / E-MAIL: / LAB USE ONLY
TELEPHONE: 425 298-1023 / FAX: (425) 298-1020	E-MAIL: chris.gdak@stantec.com		
SAMPLER NAME(S) (Print): David Reitz	CONSULTANT PROJECT NUMBER: 212302322	REQUESTED ANALYSES	

TURNAROUND TIME (CALENDAR DAYS):
☑ 14 DAYS ☐ 7 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES:

CHECK BOX IF EDD IS NEEDED ☑

FIELD NOTES:
Container/Preservative or PID Readings or Laboratory Notes

* Field Point name only required if different from Sample ID

Lab use only	Field Point Name*	Sample ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	NWTPH-Gx	NWTPH-Dx w/ silica gel cleanup	BTEX (8260 B)	MTBE (8260 B)	TEMPERATURE ON RECEIPT C°
[redacted]											
	MW-E	MW-E	07/12/10	1210	GW	7	X	X	X	X	
	MW-F	MW-F	"	1310	GW	7	X	X	X	X	
	MW-G	MW-G	"	1130	GW	7	X	X	X	X	
	MW-I	MW-I	"	1400	GW	7	X	X	X	X	
	TB					6	X		X	X	

Relinquished by: (Signature)	Received by: (Signature) Mai Teras	Date: 07/12/10	Time: 1500
Relinquished by: (Signature)	Received by: (Signature) Teras	Date: 07/12/10	Time: 15:07
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

9/19/03 Revision

APPENDIX C
CERTIFIED LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

July 22, 2010

Chris Gdak
Stantec
12034 134th Ct NE, Suite 102
Redmond, WA 98052

RE: Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Dear Chris Gdak:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Andrea Donnell, COP_Stantec Washington
Tammy Parise, COP_Stantec Washington

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

CERTIFICATIONS

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Washington Certification IDs
940 South Harney Street, Seattle, WA 98108
Alaska CS Certification #: UST-025
Alaska Drinking Water VOC Certification #: WA01230
Alaska Drinking Water Micro Certification #: WA01230
California Certification #: 01153CA
Florida/NELAP Certification #: E87617
Oregon Certification #: WA200007
Washington Certification #: C1229

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

SAMPLE ANALYTE COUNT

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
254222001	**MW-E**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LNH	9	PASI-S
254222002	**MW-F**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LNH	9	PASI-S
254222003	**MW-G**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LNH	9	PASI-S
254222004	**MW-I**	NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LNH	9	PASI-S
254222005	**TB**	NWTPH-Gx	LPM	3	PASI-S
		EPA 5030B/8260	LNH	9	PASI-S

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ANALYTICAL RESULTS

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Sample: MW-E **Lab ID: 254222001** Collected: 07/12/10 12:10 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	ug/L	76.9	1	07/20/10 15:35	07/21/10 14:50		
Motor Oil Range SG	ND	ug/L	385	1	07/20/10 15:35	07/21/10 14:50	64742-65-0	
n-Octacosane (S) SG	114	%	50-150	1	07/20/10 15:35	07/21/10 14:50	630-02-4	
o-Terphenyl (S) SG	107	%	50-150	1	07/20/10 15:35	07/21/10 14:50	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		07/14/10 02:28		
a,a,a-Trifluorotoluene (S)	105	%	50-150	1		07/14/10 02:28	98-08-8	
4-Bromofluorobenzene (S)	97	%	50-150	1		07/14/10 02:28	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		07/13/10 13:39	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/13/10 13:39	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/13/10 13:39	1634-04-4	
Toluene	ND	ug/L	1.0	1		07/13/10 13:39	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/13/10 13:39	1330-20-7	
4-Bromofluorobenzene (S)	103	%	80-120	1		07/13/10 13:39	460-00-4	
Dibromofluoromethane (S)	102	%	80-122	1		07/13/10 13:39	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	80-124	1		07/13/10 13:39	17060-07-0	
Toluene-d8 (S)	104	%	80-123	1		07/13/10 13:39	2037-26-5	

Sample: MW-F **Lab ID: 254222002** Collected: 07/12/10 13:10 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	**666**	ug/L	77.7	1	07/20/10 15:35	07/21/10 15:06		
Motor Oil Range SG	ND	ug/L	388	1	07/20/10 15:35	07/21/10 15:06	64742-65-0	
n-Octacosane (S) SG	110	%	50-150	1	07/20/10 15:35	07/21/10 15:06	630-02-4	
o-Terphenyl (S) SG	101	%	50-150	1	07/20/10 15:35	07/21/10 15:06	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	**13100**	ug/L	500	10		07/15/10 00:55		
a,a,a-Trifluorotoluene (S)	110	%	50-150	10		07/15/10 00:55	98-08-8	
4-Bromofluorobenzene (S)	107	%	50-150	10		07/15/10 00:55	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	**425**	ug/L	50.0	50		07/14/10 09:41	71-43-2	
Ethylbenzene	**83.0**	ug/L	1.0	1		07/14/10 10:05	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/10 10:05	1634-04-4	
Toluene	**172**	ug/L	1.0	1		07/14/10 10:05	108-88-3	
Xylene (Total)	**4240**	ug/L	150	50		07/14/10 09:41	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120	1		07/14/10 10:05	460-00-4	
Dibromofluoromethane (S)	107	%	80-122	1		07/14/10 10:05	1868-53-7	
1,2-Dichloroethane-d4 (S)	108	%	80-124	1		07/14/10 10:05	17060-07-0	

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ANALYTICAL RESULTS

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Sample: MW-F **Lab ID: 254222002** Collected: 07/12/10 13:10 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Toluene-d8 (S)	106	%	80-123	1		07/14/10 10:05	2037-26-5	

Sample: MW-G **Lab ID: 254222003** Collected: 07/12/10 11:30 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	ug/L	78.4	1	07/20/10 15:35	07/21/10 15:23		
Motor Oil Range SG	ND	ug/L	392	1	07/20/10 15:35	07/21/10 15:23	64742-65-0	
n-Octacosane (S) SG	99	%	50-150	1	07/20/10 15:35	07/21/10 15:23	630-02-4	
o-Terphenyl (S) SG	95	%	50-150	1	07/20/10 15:35	07/21/10 15:23	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		07/15/10 01:19		
a,a,a-Trifluorotoluene (S)	111	%	50-150	1		07/15/10 01:19	98-08-8	
4-Bromofluorobenzene (S)	102	%	50-150	1		07/15/10 01:19	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		07/13/10 14:02	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/13/10 14:02	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/13/10 14:02	1634-04-4	
Toluene	ND	ug/L	1.0	1		07/13/10 14:02	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/13/10 14:02	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120	1		07/13/10 14:02	460-00-4	
Dibromofluoromethane (S)	103	%	80-122	1		07/13/10 14:02	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	80-124	1		07/13/10 14:02	17060-07-0	
Toluene-d8 (S)	103	%	80-123	1		07/13/10 14:02	2037-26-5	

Sample: MW-I **Lab ID: 254222004** Collected: 07/12/10 14:00 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	ug/L	77.7	1	07/20/10 15:35	07/21/10 15:39		
Motor Oil Range SG	ND	ug/L	388	1	07/20/10 15:35	07/21/10 15:39	64742-65-0	
n-Octacosane (S) SG	89	%	50-150	1	07/20/10 15:35	07/21/10 15:39	630-02-4	
o-Terphenyl (S) SG	83	%	50-150	1	07/20/10 15:35	07/21/10 15:39	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	1480	ug/L	50.0	1		07/14/10 04:04		
a,a,a-Trifluorotoluene (S)	108	%	50-150	1		07/14/10 04:04	98-08-8	
4-Bromofluorobenzene (S)	146	%	50-150	1		07/14/10 04:04	460-00-4	

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ANALYTICAL RESULTS

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Sample: MW-I **Lab ID: 254222004** Collected: 07/12/10 14:00 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	**658**	ug/L	5.0	5		07/20/10 10:21	71-43-2	
Ethylbenzene	**91.5**	ug/L	1.0	1		07/14/10 08:14	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/14/10 08:14	1634-04-4	
Toluene	**8.3**	ug/L	1.0	1		07/14/10 08:14	108-88-3	
Xylene (Total)	**39.3**	ug/L	3.0	1		07/14/10 08:14	1330-20-7	
4-Bromofluorobenzene (S)	103	%	80-120	1		07/14/10 08:14	460-00-4	
Dibromofluoromethane (S)	111	%	80-122	1		07/14/10 08:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	114	%	80-124	1		07/14/10 08:14	17060-07-0	
Toluene-d8 (S)	104	%	80-123	1		07/14/10 08:14	2037-26-5	

Sample: TB **Lab ID: 254222005** Collected: 07/12/10 00:00 Received: 07/12/10 15:07 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		07/14/10 19:44		
a,a,a-Trifluorotoluene (S)	115	%	50-150	1		07/14/10 19:44	98-08-8	
4-Bromofluorobenzene (S)	101	%	50-150	1		07/14/10 19:44	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		07/21/10 13:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/21/10 13:28	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/21/10 13:28	1634-04-4	
Toluene	ND	ug/L	1.0	1		07/21/10 13:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/21/10 13:28	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120	1		07/21/10 13:28	460-00-4	
Dibromofluoromethane (S)	119	%	80-122	1		07/21/10 13:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	111	%	80-124	1		07/21/10 13:28	17060-07-0	
Toluene-d8 (S)	102	%	80-123	1		07/21/10 13:28	2037-26-5	

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

QC Batch: OEXT/2397 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 254222001, 254222002, 254222003, 254222004

METHOD BLANK: 33895 Matrix: Water
Associated Lab Samples: 254222001, 254222002, 254222003, 254222004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	ug/L	ND	80.0	07/21/10 10:08	
Motor Oil Range SG	ug/L	ND	400	07/21/10 10:08	
n-Octacosane (S) SG	%	103	50-150	07/21/10 10:08	
o-Terphenyl (S) SG	%	95	50-150	07/21/10 10:08	

LABORATORY CONTROL SAMPLE & LCSD: 33896 33897

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range SG	ug/L	5000	4250	4200	85	84	51-147	1	30	
Motor Oil Range SG	ug/L	5000	4840	4810	97	96	20-160	.6	30	
n-Octacosane (S) SG	%				99	93	50-150			
o-Terphenyl (S) SG	%				101	99	50-150			

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
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QC Batch: GCV/1669 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 254222001, 254222004

METHOD BLANK: 33181 Matrix: Water
Associated Lab Samples: 254222001, 254222004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	07/13/10 18:54	
4-Bromofluorobenzene (S)	%	91	50-150	07/13/10 18:54	
a,a,a-Trifluorotoluene (S)	%	107	50-150	07/13/10 18:54	

LABORATORY CONTROL SAMPLE: 33182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	204	82	50-163	
4-Bromofluorobenzene (S)	%			82	50-150	
a,a,a-Trifluorotoluene (S)	%			73	50-150	

SAMPLE DUPLICATE: 33419

Parameter	Units	254181007 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		
4-Bromofluorobenzene (S)	%	92	93	2	
a,a,a-Trifluorotoluene (S)	%	105	106	.9	

SAMPLE DUPLICATE: 33420

Parameter	Units	254222004 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	1480	1500	1	
4-Bromofluorobenzene (S)	%	146	147	.7	
a,a,a-Trifluorotoluene (S)	%	108	109	1	

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
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QC Batch: GCV/1677 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 254222002, 254222003, 254222005

METHOD BLANK: 33460 Matrix: Water
Associated Lab Samples: 254222002, 254222003, 254222005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	07/14/10 19:21	
4-Bromofluorobenzene (S)	%	93	50-150	07/14/10 19:21	
a,a,a-Trifluorotoluene (S)	%	107	50-150	07/14/10 19:21	

LABORATORY CONTROL SAMPLE: 33461

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	291	116	50-163	
4-Bromofluorobenzene (S)	%			101	50-150	
a,a,a-Trifluorotoluene (S)	%			112	50-150	

SAMPLE DUPLICATE: 33945

Parameter	Units	254222003 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	15.2J		
4-Bromofluorobenzene (S)	%	102	101	1	
a,a,a-Trifluorotoluene (S)	%	111	110	.8	

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

QC Batch: MSV/2662
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 254222001, 254222003

METHOD BLANK: 33274 Matrix: Water
Associated Lab Samples: 254222001, 254222003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/13/10 12:01	
Ethylbenzene	ug/L	ND	1.0	07/13/10 12:01	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/13/10 12:01	
Toluene	ug/L	ND	1.0	07/13/10 12:01	
Xylene (Total)	ug/L	ND	3.0	07/13/10 12:01	
1,2-Dichloroethane-d4 (S)	%	104	80-124	07/13/10 12:01	
4-Bromofluorobenzene (S)	%	102	80-120	07/13/10 12:01	
Dibromofluoromethane (S)	%	105	80-122	07/13/10 12:01	
Toluene-d8 (S)	%	104	80-123	07/13/10 12:01	

LABORATORY CONTROL SAMPLE: 33275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	40	38.4	96	75-124	
Ethylbenzene	ug/L	40	38.7	97	76-124	
Methyl-tert-butyl ether	ug/L	20	21.6	108	72-130	
Toluene	ug/L	40	38.1	95	75-124	
Xylene (Total)	ug/L	120	115	96	76-123	
1,2-Dichloroethane-d4 (S)	%			104	80-124	
4-Bromofluorobenzene (S)	%			106	80-120	
Dibromofluoromethane (S)	%			106	80-122	
Toluene-d8 (S)	%			103	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 33276 33277

Parameter	Units	254222001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	16.9	18.8	85	94	75-124	10	
Ethylbenzene	ug/L	ND	20	20	17.5	19.2	87	96	76-124	9	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.0	21.4	100	107	72-130	7	
Toluene	ug/L	ND	20	20	17.1	18.6	85	93	75-124	8	
Xylene (Total)	ug/L	ND	60	60	52.4	57.5	87	96	76-123	9	
1,2-Dichloroethane-d4 (S)	%						104	105	80-124		
4-Bromofluorobenzene (S)	%						106	106	80-120		
Dibromofluoromethane (S)	%						105	105	80-122		
Toluene-d8 (S)	%						104	104	80-123		

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

QC Batch: MSV/2669 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 254222002, 254222004

METHOD BLANK: 33354 Matrix: Water
Associated Lab Samples: 254222002, 254222004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/14/10 01:29	
Ethylbenzene	ug/L	ND	1.0	07/14/10 01:29	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/14/10 01:29	
Toluene	ug/L	ND	1.0	07/14/10 01:29	
Xylene (Total)	ug/L	ND	3.0	07/14/10 01:29	
1,2-Dichloroethane-d4 (S)	%	124	80-124	07/14/10 01:29	
4-Bromofluorobenzene (S)	%	121	80-120	07/14/10 01:29	S3
Dibromofluoromethane (S)	%	106	80-122	07/14/10 01:29	
Toluene-d8 (S)	%	101	80-123	07/14/10 01:29	

LABORATORY CONTROL SAMPLE: 34014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.4	102	75-124	
Ethylbenzene	ug/L	20	20.3	101	76-124	
Methyl-tert-butyl ether	ug/L	20	24.7	124	72-130	
Toluene	ug/L	20	20.2	101	75-124	
Xylene (Total)	ug/L	60	61.4	102	76-123	
1,2-Dichloroethane-d4 (S)	%			103	80-124	
4-Bromofluorobenzene (S)	%			106	80-120	
Dibromofluoromethane (S)	%			106	80-122	
Toluene-d8 (S)	%			105	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 33355 33356

Parameter	Units	254179003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	19.5	18.8	98	94	75-124	4	
Ethylbenzene	ug/L	ND	20	20	19.4	18.6	97	93	76-124	4	
Methyl-tert-butyl ether	ug/L	ND	20	20	23.2	20.1	116	101	72-130	14	
Toluene	ug/L	ND	20	20	19.2	18.3	96	91	75-124	5	
Xylene (Total)	ug/L	ND	60	60	58.3	55.5	97	92	76-123	5	
1,2-Dichloroethane-d4 (S)	%						105	104	80-124		
4-Bromofluorobenzene (S)	%						105	105	80-120		
Dibromofluoromethane (S)	%						105	106	80-122		
Toluene-d8 (S)	%						105	103	80-123		

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QUALITY CONTROL DATA

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

QC Batch: MSV/2724
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 254222005

METHOD BLANK: 34184 Matrix: Water
Associated Lab Samples: 254222005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/21/10 13:07	
Ethylbenzene	ug/L	ND	1.0	07/21/10 13:07	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/21/10 13:07	
Toluene	ug/L	ND	1.0	07/21/10 13:07	
Xylene (Total)	ug/L	ND	3.0	07/21/10 13:07	
1,2-Dichloroethane-d4 (S)	%	108	80-124	07/21/10 13:07	
4-Bromofluorobenzene (S)	%	99	80-120	07/21/10 13:07	
Dibromofluoromethane (S)	%	115	80-122	07/21/10 13:07	
Toluene-d8 (S)	%	107	80-123	07/21/10 13:07	

LABORATORY CONTROL SAMPLE: 34185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.1	90	75-124	
Ethylbenzene	ug/L	20	18.8	94	76-124	
Methyl-tert-butyl ether	ug/L	20	19.3	97	72-130	
Toluene	ug/L	20	18.4	92	75-124	
Xylene (Total)	ug/L	60	58.5	97	76-123	
1,2-Dichloroethane-d4 (S)	%			105	80-124	
4-Bromofluorobenzene (S)	%			102	80-120	
Dibromofluoromethane (S)	%			109	80-122	
Toluene-d8 (S)	%			115	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 34187 34188

Parameter	Units	254274001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	17.2	17.1	86	86	75-124	.09	
Ethylbenzene	ug/L	ND	20	20	16.6	18.4	83	92	76-124	10	
Methyl-tert-butyl ether	ug/L	ND	20	20	17.2	16.5	86	82	72-130	5	
Toluene	ug/L	ND	20	20	16.4	17.5	82	87	75-124	6	
Xylene (Total)	ug/L	ND	60	60	50.8	54.5	85	91	76-123	7	
1,2-Dichloroethane-d4 (S)	%						114	112	80-124		
4-Bromofluorobenzene (S)	%						102	107	80-120		
Dibromofluoromethane (S)	%						115	108	80-122		
Toluene-d8 (S)	%						107	111	80-123		

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

QUALIFIERS

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S Pace Analytical Services - Seattle

BATCH QUALIFIERS

Batch: GCSV/1739

[1] A sample duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2857 159 Denny Way Seattle
Pace Project No.: 254222

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
254222001	**MW-E**	EPA 3510	OEXT/2397	NWTPH-Dx	GCSV/1739
254222002	**MW-F**	EPA 3510	OEXT/2397	NWTPH-Dx	GCSV/1739
254222003	**MW-G**	EPA 3510	OEXT/2397	NWTPH-Dx	GCSV/1739
254222004	**MW-I**	EPA 3510	OEXT/2397	NWTPH-Dx	GCSV/1739
254222001	**MW-E**	NWTPH-Gx	GCV/1669		
254222002	**MW-F**	NWTPH-Gx	GCV/1677		
254222003	**MW-G**	NWTPH-Gx	GCV/1677		
254222004	**MW-I**	NWTPH-Gx	GCV/1669		
254222005	**TB**	NWTPH-Gx	GCV/1677		
254222001	**MW-E**	EPA 5030B/8260	MSV/2662		
254222002	**MW-F**	EPA 5030B/8260	MSV/2669		
254222003	**MW-G**	EPA 5030B/8260	MSV/2662		
254222004	**MW-I**	EPA 5030B/8260	MSV/2669		
254222005	**TB**	EPA 5030B/8260	MSV/2724		

Chain Of Custody Record

254222

PACE Analytical Laboratory
940 S. Harney Street, Seattle, WA 98108
(206) 767-5060

INVOICE REMITTANCE ADDRESS: ConocoPhillips

Purchase Order #: 4512896465
ConocoPhillips AOC#: 2857

DATE: 07/12/10
PAGE: 1 of 1

SAMPLING COMPANY: Stantec	Valid Value ID:	CONOCOPHILLIPS SITE NUMBER: 2705753	GLOBAL ID NO.:
ADDRESS: 12034 134th CT Redmond, WA		SITE ADDRESS (Street and City): 159 Denny Way, Seattle	ConocoPhillips Manager: Myron Smith
PROJECT CONTACT (Hardcopy or PDF Report to): Chris Gdak		EDF DELIVERABLE TO (RP or): PHONE NO.:	E-MAIL: LAB USE ONLY
TELEPHONE: 425 298-1023 / FAX: (425) 298-1020	E-MAIL: chris.gdak@stantec.com		
SAMPLER NAME(S) (Print): David Reitz	CONSULTANT PROJECT NUMBER: 212302322	REQUESTED ANALYSES	21631

TURNAROUND TIME (CALENDAR DAYS): ☑ 14 DAYS ☐ 7 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NEEDED ☑

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

* Field Point name only required if different from Sample ID

LAB USE ONLY	Field Point Name	Sample ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	NWTPH-Gx	NWTPH-Dx w/ silica gel cleanup	BTEX (8260 B)	MTBE (8260 B)	TEMPERATURE ON RECEIPT C°
	[redacted]										
	MW-E	MW-E	07/12/10	1210	GW	7	X	X	X	X	
	MW-F	MW-F	"	1310	GW	7	X	X	X	X	
	MW-G	MW-G	"	1130	GW	7	X	X	X	X	
	MW-I	MW-I	"	1400	GW	7	X	X	X	X	
	TB					6	X		X	X	

Relinquished by: (Signature)	Received by: (Signature) Mai Tenas	Date: 07/12/10	Time: 1500
Relinquished by: (Signature)	Received by: (Signature) Tenas	Date: 07/12/10	Time: 15:07
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

9/19/03 Revision

2.5° onice

Sample Container Count

CLIENT: COP Stantec

COC PAGE 1 of 1

COC ID#

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WGFU	WGKU				Comments
1	6	1 2													
2	6	1 2													
3	6	1 2													
4	6	1 2													
5	6														
6															
7															
8															
9															
10															
11															
12															Trip Blank? yes

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic		JGFU	4oz unpreserved amber wide
AG1U	1liter unpreserved amber glass		BP2U	500mL unpreserved plastic		R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac		U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic		VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic		VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic		VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic		VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial		VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber voa vial		WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial		WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial		ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved amber vial			
BP2O	500mL NaOH plastic			Wipe/Swab			

Sample Condition Upon Receipt

Pace Analytical

Client Name: CoP Stantec Project # 254222

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other _____

Optional: Proj. Due Date: Proj. Name:

Tracking #: NA

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used: Horiba 132013 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 2.5 Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: RSM 07/12/10

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: _____				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: (VOA), coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☑Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☑Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: RSM Date: 07/12/10

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