



Stantec

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

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Seattle
LUST 2180

Quarterly Groundwater Monitoring Report - Second Quarter 2009
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.:
212301538

Submitted to:
LUST Coordinator
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

June 17, 2009

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Quarterly Groundwater Monitoring Report Second Quarter 2009

June 17, 2009

Dear LUST Coordinator:

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 second quarter of 2009 (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 April 20, 2009. 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 19.57 feet (MW-D) to 45.55 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 northwest at an approximate gradient of 0.22 foot 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 and placed directly into pre-cleaned sample containers provided by an independent laboratory. Two of the existing five groundwater monitoring wells (MW-G and MW-I) were sampled. Wells MW-D, MW-E, and MW-F were not sampled due to insufficient volumes 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;
- 1,2-Dichloroethane (EDC) by EPA Method 8260B;
- 1,2-Dibromoethane (EDB) by EPA Method 504.1;
- Total petroleum hydrocarbons (TPH) as gasoline (TPH-G) using DOE Northwest Method NWTPH-Gx;
- TPH as diesel (TPH-D) and TPH as oil (TPH-O) using DOE Northwest Method NWTPH-Dx with silica gal/acid cleanup; and
- Total and dissolved lead by EPA Method 6020.

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 three previous reporting periods. Analysis of EDB, EDC, total lead and dissolved lead was performed as part of a one-time event to quantify concentrations of these constituents in groundwater. Concentrations of EDB, EDC, total lead, and dissolved lead are included in Table 1 but are not illustrated on Figure 2.

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-I at a concentration of 2,850 micrograms per liter ($\mu\text{g/L}$), which exceeds the Model Toxics Control Act (MTCA) Method A cleanup level of 800 $\mu\text{g/L}$. These results are consistent with analytical results from other recent sampling events.
- Benzene was detected in MW-I at a concentration of 970 $\mu\text{g/L}$, which exceeds the MTCA Method A cleanup level of 5 $\mu\text{g/L}$. These results are 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, that 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. A copy of the signed waste manifest or other disposal documentation will be provided under a separate cover.

CONCLUSIONS

Concentrations of TPH-G and benzene exceeding 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 not detected in MW-I or MW-G (the only wells sampled) at concentrations exceeding 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 work plan 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

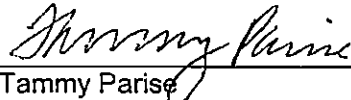
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Quarterly Groundwater Monitoring Report Second Quarter 2009

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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:

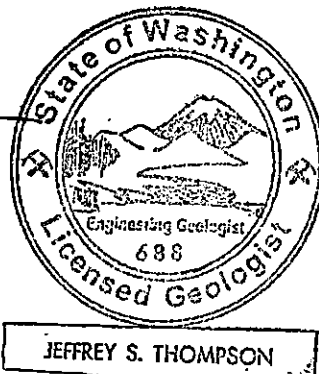


Tammy Parise
Staff Scientist

Reviewed by:



Jeffrey S. Thompson, L.G., L.E.G.
Principal Geologist



ATTACHMENTS

- Table 1 Cumulative Summary of Groundwater Elevations and Sample Analytical Results
- Figure 1 Site Plan with Groundwater Elevations (April 20, 2009)
- Figure 2 Site Plan with Analytical Results (April 20, 2009)

- Appendix A Field and Laboratory Procedures
- Appendix B Field Data Sheets
- Appendix C Certified Laboratory Analytical Report and Chain-of-Custody Documentation

TABLES

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

Well ID TOC Elevation	Sample Date	Depth to Water	GW Elevation	Total Petroleum Hydrocarbons			Aromatic Hydrocarbons						Metals		
				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	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--
	02/02/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--
87.76	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											
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	<76	<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											
MW-F	08/09/06	23.65	NE	29,000	2.1	<0.19	1,600	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	<94	1,100	2,300	330	4,800	<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	<64	710	45	77	2,600	<1	--	--	--	--
	04/20/09	27.00	74.28	Insufficient water to collect sample											

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

Well ID TOC Elevation	Sample Date	Depth to Water	GW Elevation	Total Petroleum Hydrocarbons			Aromatic Hydrocarbons						Metals		
				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-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	<76	<95	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--
102.80	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	0.6	--	--	--	--
	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	<64	<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

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	570	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	1,800	260	<100	870	11	110	67	2	--	--	--	--
	01/19/09	45.40	53.04	1,680	160	<63	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

MTCA Method A Cleanup Levels:	1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15	15
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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

Total and dissolved lead by Method 6020

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.

TABLE 1
CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
 ConocoPhillips Site No. 5753
 159 Denny Way
 Seattle, Washington
 Page 1 of 7

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE
MW-D NE	08/09/06	DRY									
MW-E NE	08/09/06	DRY									
MW-F NE	08/09/06	23.65	NE	29,000	2.1	<0.19	1,500	1,400	61	5,600	87
MW-G NE	08/09/06	20.32									
MW-I NE	08/09/06	45.15									
MTCA Method A Cleanup Level				1000/800*	500	500	5	1000	700	1000	20

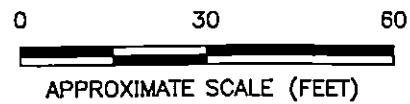
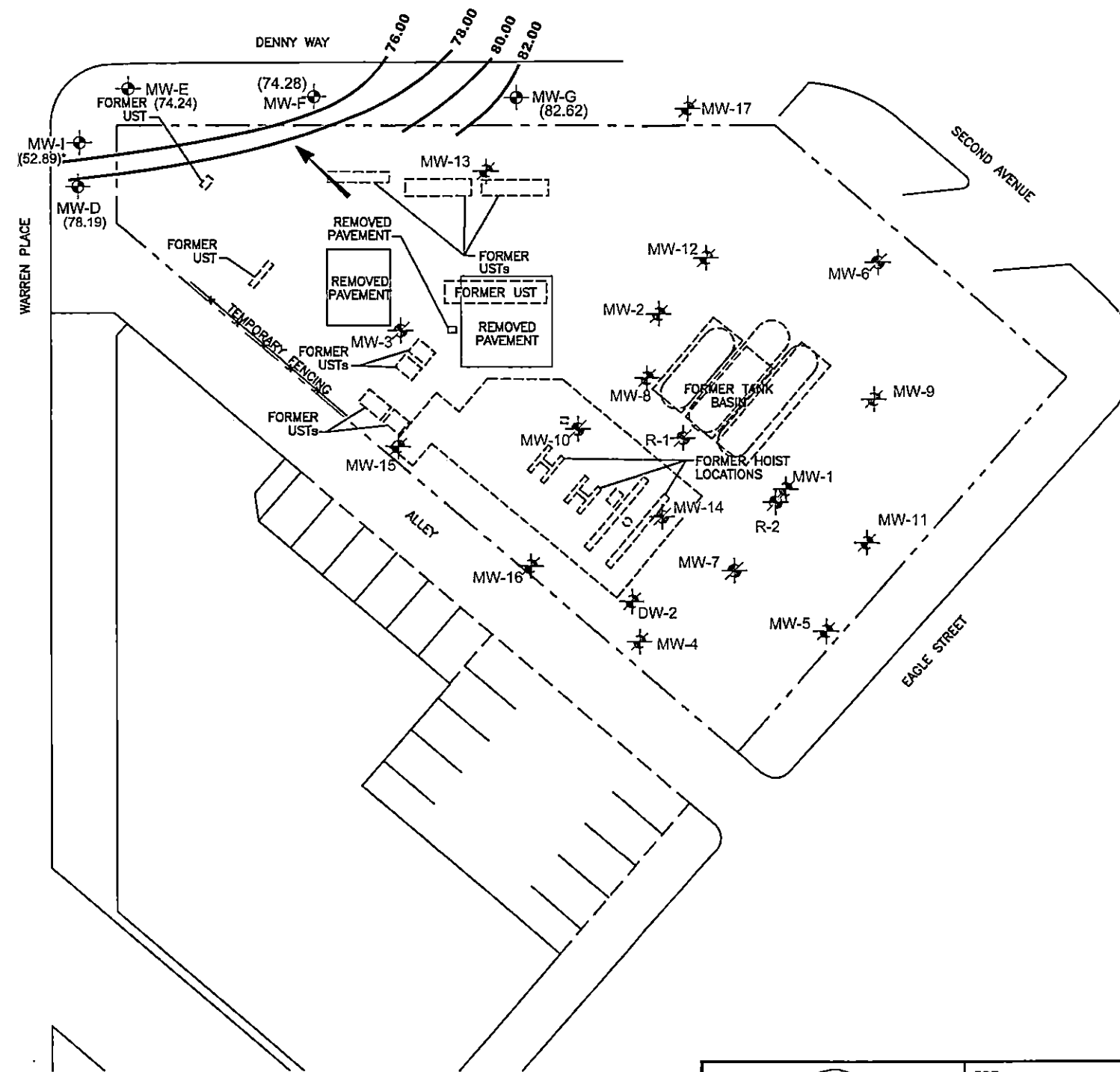
EXPLANATION:

All concentrations are in ug/L (ppb).
 Wellhead elevations were taken from prior consultant's reports.
 DTW = Depth to water in feet below top of casing
 GW Elev. = Groundwater elevation relative to top of casing elevations
 LPH = Liquid-phase petroleum hydrocarbon thickness in feet
 Groundwater elevations were corrected for LPH using a specific gravity of 0.85.
 TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method NWTPH-Gx
 TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-Dx

FIGURES


LEGEND

- SITE BOUNDARY
- ⊕ MONITORING WELL LOCATION
- ⊗ ABANDONED OR DESTROYED MONITORING WELL LOCATION
- (78.11) GROUNDWATER ELEVATION (IN FEET)
- 76.00 — GROUNDWATER ELEVATION CONTOUR (IN FEET)
- ← INFERRED GROUNDWATER FLOW DIRECTION
- ⊕ MW-1 NOT USED IN CONTOUR, IT IS LOCATED IN A SEPARATE (LOWER) AQUIFER
- CONTOUR INTERVAL OF 2.00 FT
- UST UNDERGROUND STORAGE TANK



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

No warranty is made by Stantec 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.

 Stantec 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	FOR: ConocoPhillips FACILITY NO 2705753 (RM&R 2857) 159 DENNY WAY SEATTLE, WASHINGTON		SITE PLAN WITH GROUNDWATER ELEVATIONS (APRIL 20, 2009)		FIGURE: 1
	JOB NUMBER: 212301538	DRAWN BY: DJH	CHECKED BY: JT	APPROVED BY: JT	DATE: 5/22/09

MW-E				
DATE	7/24/08	10/30/08	1/19/09	4/20/09
TPH-G	<50	<50	**	**
TPH-D	<76	<78	**	**
TPH-O	<95	<97	**	**
B	<0.5	<0.5	**	**
T	<0.7	<0.7	**	**
E	<0.8	<0.8	**	**
X	<0.8	<0.8	**	**
MTBE	<0.5	<0.5	**	**

MW-F				
DATE	7/24/08	10/30/08	1/19/09	4/20/09
TPH-G	22,000	23,000	14,200	**
TPH-D	1,100	760	990	**
TPH-O	<94	<96	<64	**
B	1,100	740	710	**
T	2,300	680	45	**
E	330	91	77	**
X	4,800	4,100	2,600	**
MTBE	<1	<3	<1	**

MW-G				
DATE	7/24/08	10/30/08	1/19/09	4/20/09
TPH-G	<50	<50	<25	<50.0
TPH-D	<75	<77	<39	<83
TPH-O	<94	<96	<64	<420
B	13	<0.5	<1	<1.0
T	<0.7	<0.7	<1	<1.0
E	<0.8	<0.8	<1	<1.0
X	<0.8	<0.8	<3	<3.0
MTBE	0.6	<0.5	<1	<1.0

MW-I				
DATE	7/24/08	10/30/08	1/19/09	4/20/09
TPH-G	1,900	1,800	1,680	2,850
TPH-D	260	260	160	88
TPH-O	<94	<100	<63	<420
B	1,200	870	1,000	970
T	41	11	20	20
E	170	110	170	160
X	180	67	110	92
MTBE	3	2	<1	3.5

MW-D				
DATE	7/24/08	10/30/08	1/19/09	4/20/09
TPH-G	-	**	**	**
TPH-D	-	**	**	**
TPH-O	-	**	**	**
B	-	**	**	**
T	-	**	**	**
E	-	**	**	**
X	-	**	**	**
MTBE	-	**	**	**

LEGEND

- SITE BOUNDARY
- ⊕ MONITORING WELL LOCATION
- ⊗ ABANDONED OR DESTROYED MONITORING WELL LOCATION
- ← INFERRED GROUNDWATER FLOW DIRECTION

ANALYTES

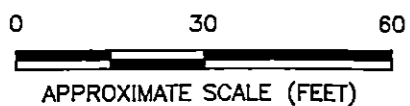
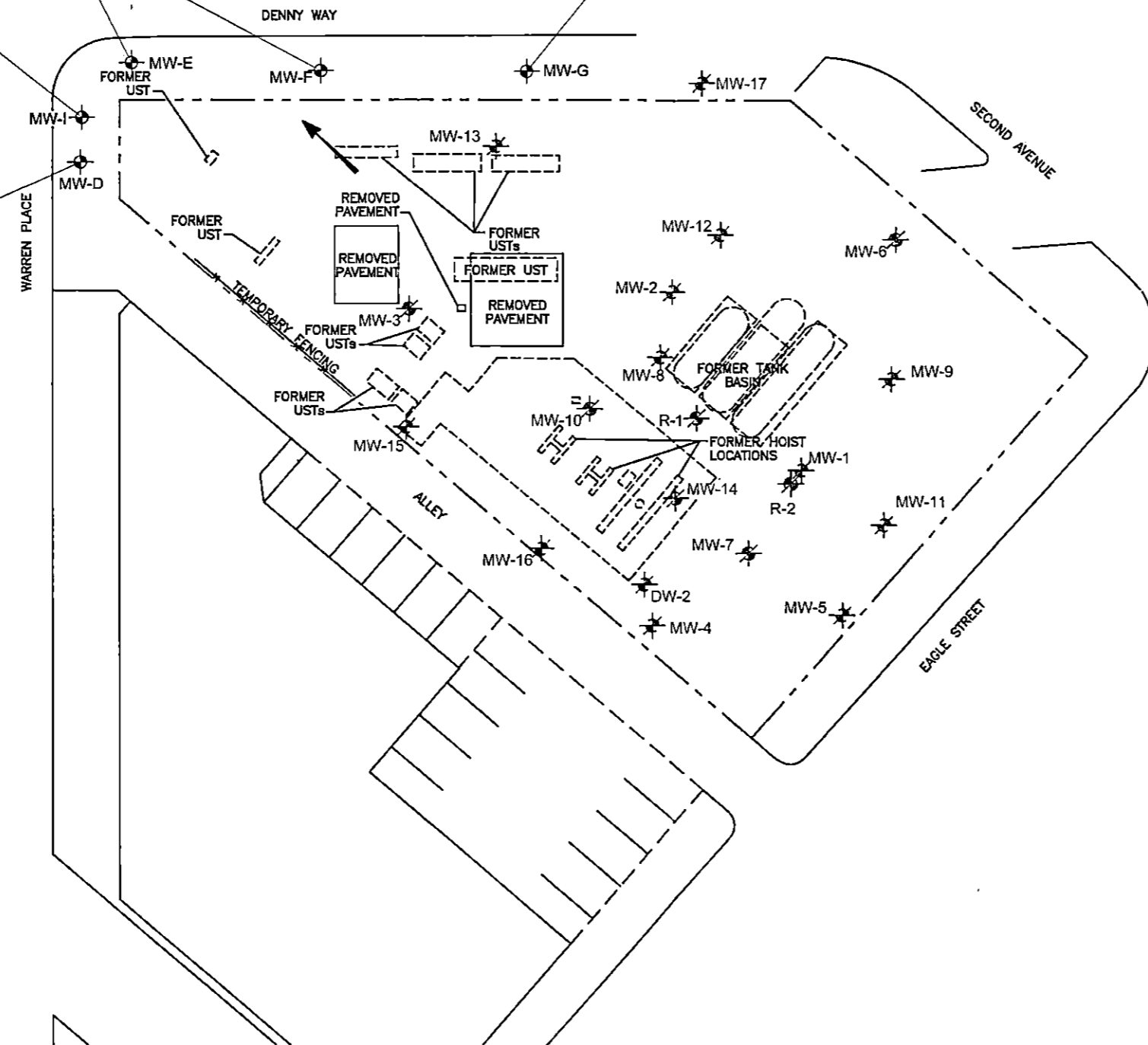
WELL ID	ANALYTE
TPH-G	GASOLINE RANGE HYDROCARBONS
TPH-D	DIESEL RANGE HYDROCARBONS
TPH-O	OIL RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYL BENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER

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

NOTES

ALL LOCATIONS ARE APPROXIMATE
GROUNDWATER FLOW PREDOMINANTLY NORTHWEST



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

No warranty is made by Stantec 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.

 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	FOR: ConocoPhillips FACILITY NO 2705753 (RM&R 2857) 159 DENNY WAY SEATTLE, WASHINGTON	SITE PLAN WITH ANALYTICAL RESULTS (APRIL 20, 2009)		FIGURE: 2
	JOB NUMBER: 212301538	DRAWN BY: DJH	CHECKED BY: JT	APPROVED BY: JT

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. Weitz Date: 04/20/09 Time of Arrival Call-In: 0930
 Arrival Time: 0930 Departure Time: 1450 Time of Departure Call-In: 1400
 Who did you call? C. Gdalk

DRUM INVENTORY

<u>1</u>	WATER	_____	CARBON	_____	TOTAL OPEN TOP	<u>1</u>
_____	SOIL	_____	EMPTY	_____	TOTAL BUNG TOP	_____

HEALTH AND SAFETY ASSESSMENT

Don P.P.E.
Site walk
Decon. station
Review HASP & JSA

DESCRIPTION OF ACTIVITIES ONSITE AND NOTES

0930 Arrive on job site. Purchase ice. Call in to office.
 Don appropriate P.P.E. Set-up decon. station
 0950 Conduct tailgate safety meeting. Perform site-walk.
 Stage & label drum.
 1010 Initiate gauging of physical measurements at
 5 gwm wells prior to 2009 GWM procedures.
 1050 Complete gauging of 5 wells & initiate 2009 GWM
 sample procedures (5 wells). Three wells appear to
 be without groundwater, but will attempt purging
 by bailer.
 1330 Complete 2009 GWM sample procedures. Decon. Equipment
 Release purge water/decon. rinsates into staged drum.
 1340 Pack sample cooler & load equipment into truck
 1400 Call-in to office to inform of departure. Perform
 well condition report protocol.
 1450 Depart job site.
 1510 Drop-off samples at lab.
 1600 Return to office.

[Signature] 04/20/09

Stantec Consulting
HYDROLOGIC DATA SHEET

Gauge Date: 04/20/09

Project Name: 5753

Field Technician: David Reitz

Project Number: 212301538

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

Flow through cell calibrated Y N

Wells checked for product and gauged prior to commencement of bailing or purging the wells Y 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.	1010		20.28	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.	1020		24.94	25.20	N	N	N	Dry Well
MW-D		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1030		19.57	19.90	N	N	N	Dry Well
MW-F		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1040		27.00	28.00	N	N	N	Dry Well
MW-I		Within the top half of the encountered water column. Top of screen interval if DTW < Depth to Screen.	1050		45.55	50.30	Y	N	Y	

Stantec Consulting

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212301538 PURGED BY: D. Rantz WELL I.D.: MW-G
 CLIENT NAME: COP SAMPLED BY: D. Rantz SAMPLE I.D.: MW-G
 LOCATION: 159 Denny Way Seattle, WA.

DATE PURGED 04/20/09 START (2400hr) 1100 END (2400hr) 1130
 DATE SAMPLED 04/20/09 SAMPLE TIME (2400hr) 1115 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) = 20.28
 WATER COLUMN HEIGHT (feet) = 8.52 ACTUAL PURGE (L) = 2.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (ML)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
<u>04/20/09</u>	<u>1105</u>	<u>800</u>	<u>13.6</u>	<u>0.413</u>	<u>6.83</u>	<u>Clr</u>
	<u>1108</u>	<u>500</u>	<u>13.6</u>	<u>0.413</u>	<u>6.84</u>	<u>Clr</u>
	<u>1111</u>	<u>500</u>	<u>13.6</u>	<u>0.412</u>	<u>6.84</u>	<u>Clr</u>
	<u>1114</u>	<u>500</u>	<u>13.6</u>	<u>0.412</u>	<u>6.84</u>	<u>Clr</u>
<i>[Handwritten Signature]</i> <u>04/20/09</u>						
Calculated Variance of Final Three Samples:			<u>0</u>	<u>0.001</u>	<u>0</u>	
Acceptable Variance Limits:			<u>≤10%</u>	<u>≤3%</u>	<u>≤0.1</u>	

DEPTH TO PURGE INTAKE DURING PURGE: 27.00 SAMPLE DTW: 20.78

ANTICIPATED PURGE INTAKE DEPTH: 27.00 ANALYSES: TPH-Dx _____
 TPH-Gx _____
 BTEX/MTBE _____
 SAMPLE VESSEL / PRESERVATIVE: HCl _____

PURGING EQUIPMENT:

Horiba water quality meter
 Peristaltic pump Interface probe

SAMPLING EQUIPMENT:

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 #: 212301538

PURGED BY: D. Reitz

WELL I.D.: MW-F

CLIENT NAME: COP

SAMPLED BY:

SAMPLE I.D.:

LOCATION: 159 Danny Way Seattle, Wa.

DATE PURGED: 04/20/09

START (2400hr): 1205

END (2400hr): 1225

DATE SAMPLED: Dry Well

SAMPLE TIME (2400hr):

LOW-FLOW USED: x

SAMPLE TYPE: Groundwater x

Surface Water

Treatment Effluent

Other

CASING DIAMETER: 2" x (0.64) 3" (1.44) 4" (2.45) 5" (3.86) 6" (5.68) 8" (9.84) Other

DEPTH TO BOTTOM (feet) = 28.00

DEPTH TO WATER (feet) = 27.00

WATER COLUMN HEIGHT (feet) = 1.00

ACTUAL PURGE (L) =

FIELD MEASUREMENTS

Table with 7 columns: DATE, TIME (2400hr), VOLUME (L), TEMP. (degrees C), CONDUCTIVITY (umhos/cm), pH (units), COLOR (visual). Includes handwritten note: 'Well is dry - D. Reitz 04/20/09'.

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:

Horiba water quality meter, Peristaltic pump, Interface probe

SAMPLING EQUIPMENT:

Horiba water quality meter, Peristaltic pump, Interface probe

Flow Through Cell Disconnected Prior to Sample Collection?: 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: Unable to purge more than 1 liter of water. Well is dry

SIGNATURE: D. Reitz

Stantec Consulting Corporation

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 212301538 PURGED BY: D. Reitz WELL I.D.: MW-I
 CLIENT NAME: COP SAMPLED BY: D. Reitz SAMPLE I.D.: MW-I
 LOCATION: 159 Denny Way Seattle, WA

DATE PURGED 04/20/09 START (2400hr) 1230 END (2400hr) 1330
 DATE SAMPLED 04/20/09 SAMPLE TIME (2400hr) 1245 LOW-FLOW USED No
 SAMPLE TYPE: Groundwater Surface Water Treatment Effluent Other

CASING DIAMETER: 2" 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) = 50.30
 DEPTH TO WATER (feet) = 45.55
 WATER COLUMN HEIGHT (feet) = 4.75 ACTUAL PURGE (L) = 9.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (L)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)
<u>04/20/09</u>	<u>1235</u>	<u>3.0</u>	<u>12.8</u>	<u>0.484</u>	<u>6.87</u>	<u>Clr</u>
<u>✓</u>	<u>1240</u>	<u>3.0</u>	<u>12.5</u>	<u>0.519</u>	<u>6.53</u>	<u>Clr</u>
<u>✓</u>	<u>1245</u>	<u>3.0</u>	<u>12.0</u>	<u>0.537</u>	<u>7.18</u>	<u>Clr</u>

D. Reitz 04/20/09

Calculated Variance of Final Three Samples: _____
 Acceptable Variance Limits: ≤10% ≤3% ≤0.1

DEPTH TO PURGE INTAKE DURING PURGE: _____ SAMPLE DTW: 46.46

ANTICIPATED PURGE INTAKE DEPTH: _____ ANALYSES: TPH-Gx, TPH-Dx, Ox, EDB, EDC
MTBE, BTEX (8260)
HVOCs, Total and Dissolved Lead (Pb)

SAMPLE VESSEL / PRESERVATIVE: _____

PURGING EQUIPMENT: <u>3 well volume (whale pump)</u>	SAMPLING EQUIPMENT: <u>Bailers</u>
---	---------------------------------------

Flow Through Cell Disconnected Prior to Sample Collection?: 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: sampled by bailer

SIGNATURE: *D. Reitz* Page 1 of 1

Chain Of Custody Record

Lancaster Laboratories
2425 New Holland Pike, Lancaster, PA
(717) 656-2300

INVOICE REMITTANCE ADDRESS: ConocoPhillips	Purchase Order # ConocoPhillips AOC# 2857	DATE: <u>04/20/09</u> PAGE: <u>1</u> of <u>1</u>
---	---	---

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	
PROJECT CONTACT (Hardcopy or PDF Report to): Chris Gdak		ConocoPhillips Manager Jim Trotter	
TELEPHONE: (425) 372-1584	FAX: (425) 372-1650	E-MAIL: chris.gdak@stantec.com	E-MAIL: LAB USE ONLY

SAMPLER NAME(S) (Print): David Retz	CONSULTANT PROJECT NUMBER 212301538	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

LAB USE ONLY	Field Point Name	Sample ID	SAMPLING		MATRIX	NO. OF CONT.	NWTPH-Gx	NWTPH-Dx w/ silica gel cleanup	BTEX (8260 B)	MTBE (8260 B)	EDC by 8260 B	EDB by Method 8011	Total Lead	Dissolved Lead	TEMPERATURE ON RECEIPT C°
			DATE	TIME											
	MW-D	MW-D			GW		X	X	X	X	X	X	X	X	
	MW-E	MW-E			GW		X	X	X	X	X	X	X	X	
	MW-F	MW-F			GW		X	X	X	X	X	X	X	X	
	MW-G	MW-G	<u>04/20/09</u>	<u>1115</u>	GW	<u>13</u>	X	X	X	X	X	X	X	X	
	MW-I	MW-I	<u>04/20/09</u>	<u>1245</u>	GW	<u>13</u>	X	X	X	X	X	X	X	X	
	--	TB			TB	9	X	X	X	X	X	X	X	X	

Relinquished by (Signature):	Received by (Signature): JENN CROSS / PACB	Date: <u>04/20/09</u>	Time: <u>1510</u>
Relinquished by (Signature):	Received by (Signature):	Date: <u>04/20/09</u>	Time: <u>1510</u>
Relinquished by (Signature):	Received by (Signature):	Date:	Time:

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

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



Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Client: Stantec - Conoco Phillips
12034 134th Ct. NE Suite 102
Redmond, WA 98052

Project Name:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Date Received:	4/20/2009 3:10:00PM
Work Description:	Site# 02857	Date Reported:	05/07/2009

Enclosed are the analytical results for the sample(s) received by the laboratory on April 20, 2009. The results relate only to the samples included in this report. Unless otherwise instructed all samples with the exception of samples which are consumed during the analysis, such as microbiological samples, will be disposed of on or after August 2, 2009. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

If you have any question concerning the report, please feel free to contact me.

Respectfully submitted,
Pace Analytical Services, Inc.

A handwritten signature in black ink that reads "JENNI GROSS". The letters are slightly slanted and connected in a cursive-like style.

Jennifer Gross



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Sample Summary

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	

Sample Identification:

Sample Description	Lab Sample ID	Collection Date/Time	Type
MW-G	CPWA0930-001	04/20/2009 11:15	Water
MW-I	CPWA0930-002	04/20/2009 12:45	Water
Trip Blank	CPWA0930-003	04/20/2009 12:45	Water
MW-G	CPWA0930-004	04/20/2009 11:15	Water
MW-I	CPWA0930-005	04/20/2009 12:45	Water

Comments:

Sample CPWA0930-002 was analyzed one day past holding time as a dilution. The sample was run within holding time but was over calibration range. The diluted result outside of holding time was higher than the over range within holding time result so the diluted result was reported. Sample CPWA0930-002 was spiked in QC batch 40245 with a recovery of 100%, however it is not reported in the QC section because the parent sample was not accepted in that analytical run.



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Test Request Summary

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Pace Project No.:	212301538	Project Manager:	

Samples	Methods									
	NWTPH-1	NWTPH-2	504.1 3	8260B 4	6020 5	6020 6	7	8	9	10
Client Sample ID										
MW-G	X	X	X	X		X				
MW-I	X	X	X	X		X				
Trip Blank		X	X	X						
MW-G					X					
MW-I					X					

Determinations:

1 = NWTPH DX + Silica Gel (Water)

6 = 6020 Metals Water, Pb only, 3010A-GW

2 = NWTPH Gx (Water)

3 = 8011 EDB Water

4 = 8260-1 VOAs BTEX+MTBE+EDC water

5 = 6020 Diss. Metals Water, Pb only, 3010A-GW



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Analytical Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
Client Sample ID:	MW-G	Matrix:	Water
Collected On:	4/20/09 11:15	Lab Sample ID:	CPWA0930-001
Received On:	4/20/09 15:10		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
E504.1 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloro-prop				Methods (Preparation Analysis): METHOD 504.1					
1,2-Dibromoethane	ND	ug/L	1		0.010	Q40153	04/23/2009	04/24/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	87	% Rec	1		70-130	Q40153	04/23/2009	04/24/2009	
Total Metals by Inductively Coupled Plasma-Mass Spectrometry				Methods (Preparation Analysis): 3010A 6020					
Lead	ND	ug/L	1		1.00	Q40192	04/27/2009	05/01/2009	
Purgeable Organic Compounds by GC/MS				Methods (Preparation Analysis): 5030B 8260B					
Benzene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Ethylbenzene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Toluene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Xylenes, Total	ND	ug/L	1		3.0	Q40151	04/23/2009	04/23/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	101	% Rec	1		75-120	Q40151	04/23/2009	04/23/2009	
Dibromofluoromethane	104	% Rec	1		85-115	Q40151	04/23/2009	04/23/2009	
1,2-Dichloroethane-d4	102	% Rec	1		70-120	Q40151	04/23/2009	04/23/2009	
Toluene-d8	99	% Rec	1		85-120	Q40151	04/23/2009	04/23/2009	
NWTPH Diesel				Methods (Preparation Analysis): 3510C NWTPH-D					
Diesel Range Organics	ND	ug/L	1		83	Q40098	04/21/2009	04/22/2009	
Oil Range Organics	ND	ug/L	1		420	Q40098	04/21/2009	04/22/2009	
<i>Surrogates:</i>									
o-Terphenyl	74	% Rec	1		50-150	Q40098	04/21/2009	04/22/2009	
NWTPH Gas				Methods (Preparation Analysis): 5030B NWTPH-G					
Gasoline Range Organics	ND	ug/L	1		50.0	Q40245	05/02/2009	05/02/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	86	% Rec	1		61-121	Q40245	05/02/2009	05/02/2009	
Trifluorotoluene	80	% Rec	1		62-129	Q40245	05/02/2009	05/02/2009	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Analytical Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
Client Sample ID:	MW-I	Matrix:	Water
Collected On:	4/20/09 12:45	Lab Sample ID:	CPWA0930-002
Received On:	4/20/09 15:10		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
E504.1 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloro-prop				Methods (Preparation Analysis): METHOD 504.1					
1,2-Dibromoethane	ND	ug/L	1		0.010	Q40153	04/23/2009	04/24/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	85	% Rec	1		70-130	Q40153	04/23/2009	04/24/2009	
Total Metals by Inductively Coupled Plasma-Mass Spectrometry				Methods (Preparation Analysis): 3010A 6020					
Lead	8.13	ug/L	1		1.00	Q40192	04/27/2009	05/01/2009	
Purgeable Organic Compounds by GC/MS				Methods (Preparation Analysis): 5030B 8260B					
Benzene	970	ug/L	20		20	Q40215	04/29/2009	04/29/2009	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Ethylbenzene	160	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Methyl tert-butyl ether	3.5	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Toluene	20	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Xylenes, Total	92	ug/L	1		3.0	Q40151	04/23/2009	04/23/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	103	% Rec	1		75-120	Q40151	04/23/2009	04/23/2009	
4-Bromofluorobenzene	106	% Rec	20		72-128	Q40215	04/29/2009	04/29/2009	
Dibromofluoromethane	99	% Rec	1		85-115	Q40151	04/23/2009	04/23/2009	
Dibromofluoromethane	111	% Rec	20		76-127	Q40215	04/29/2009	04/29/2009	
1,2-Dichloroethane-d4	101	% Rec	1		70-120	Q40151	04/23/2009	04/23/2009	
1,2-Dichloroethane-d4	126	% Rec	20		66-133	Q40215	04/29/2009	04/29/2009	
Toluene-d8	95	% Rec	1		85-120	Q40151	04/23/2009	04/23/2009	
Toluene-d8	93	% Rec	20		75-130	Q40215	04/29/2009	04/29/2009	
NWTPH Diesel				Methods (Preparation Analysis): 3510C NWTPH-D					
Diesel Range Organics	88	ug/L	1		83	Q40098	04/21/2009	04/22/2009	
Oil Range Organics	ND	ug/L	1		420	Q40098	04/21/2009	04/22/2009	
<i>Surrogates:</i>									
o-Terphenyl	68	% Rec	1		50-150	Q40098	04/21/2009	04/22/2009	
NWTPH Gas				Methods (Preparation Analysis): 5030B NWTPH-G					
Gasoline Range Organics	2850	ug/L	10		500	Q40249	05/05/2009	05/05/2009	HP,HA
<i>Surrogates:</i>									
4-Bromofluorobenzene	101	% Rec	10		61-121	Q40249	05/05/2009	05/05/2009	HP,HA
Trifluorotoluene	106	% Rec	10		62-129	Q40249	05/05/2009	05/05/2009	HP,HA



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Analytical Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
Client Sample ID:	Trip Blank	Matrix:	Water
Collected On:	4/20/09 12:45	Lab Sample ID:	CPWA0930-003
Received On:	4/20/09 15:10		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
E504.1 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloro-prop				Methods (Preparation Analysis): METHOD 504.1					
1,2-Dibromoethane	ND	ug/L	1		0.010	Q40153	04/23/2009	04/24/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	84	% Rec	1		70-130	Q40153	04/23/2009	04/24/2009	
Purgeable Organic Compounds by GC/MS				Methods (Preparation Analysis): 5030B 8260B					
Benzene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
1,2-Dichloroethane	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Ethylbenzene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Methyl tert-butyl ether	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Toluene	ND	ug/L	1		1.0	Q40151	04/23/2009	04/23/2009	
Xylenes, Total	ND	ug/L	1		3.0	Q40151	04/23/2009	04/23/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	96	% Rec	1		75-120	Q40151	04/23/2009	04/23/2009	
Dibromofluoromethane	104	% Rec	1		85-115	Q40151	04/23/2009	04/23/2009	
1,2-Dichloroethane-d4	100	% Rec	1		70-120	Q40151	04/23/2009	04/23/2009	
Toluene-d8	99	% Rec	1		85-120	Q40151	04/23/2009	04/23/2009	
NWTPH Gas				Methods (Preparation Analysis): 5030B NWTPH-G					
Gasoline Range Organics	ND	ug/L	1		50.0	Q40245	05/02/2009	05/03/2009	
<i>Surrogates:</i>									
4-Bromofluorobenzene	84	% Rec	1		61-121	Q40245	05/02/2009	05/03/2009	
Trifluorotoluene	78	% Rec	1		62-129	Q40245	05/02/2009	05/03/2009	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Analytical Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
Client Sample ID:	MW-G	Matrix:	Water
Collected On:	4/20/09 11:15	Lab Sample ID:	CPWA0930-004
Received On:	4/20/09 15:10		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Dissolved Metals by Inductively Coupled Plasma-Mass Spectrometry				Methods (Preparation Analysis): 3010A 6020					
Lead	ND	ug/L	1		1.00	Q40193	04/27/2009	05/01/2009	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Analytical Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
Client Sample ID:	MW-I	Matrix:	Water
Collected On:	4/20/09 12:45	Lab Sample ID:	CPWA0930-005
Received On:	4/20/09 15:10		

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Dissolved Metals by Inductively Coupled Plasma-Mass Spectrometry				Methods (Preparation Analysis): 3010A 6020					
Lead	ND	ug/L	1		1.00	Q40193	04/27/2009	05/01/2009	



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Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	

QC Batch(es):	Q40098	Analysis Method:	NWTPH-D
QC Batch Method:	3510C (NWTPH)	Analysis Description:	NWTPH Diesel
Preparation Started:	04/21/2009		

Blank: B042109GSVWLA

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Diesel Range Organics	ND	ug/L	1		50	
Oil Range Organics	ND	ug/L	1		250	
<i>Surrogates:</i>					% Rec	
o-Terphenyl			1		73	50-150

LCS: S042109GSVWLA
LCS Duplicate: SD042109GSVWLA

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Diesel Range Organics	3100	ug/L	1	5030	62	51-147			
	3700			5030	73	51-147	16	50	
<i>Surrogates:</i>									
o-Terphenyl			1		76	50-150			
					85	50-150			



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
QC Batch(es):	Q40151	Analysis Method:	8260B
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/23/2009		
Blank: B042309MVOWB1			

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Benzene	ND	ug/L	1		0.5	
1,2-Dichloroethane	ND	ug/L	1		0.5	
Ethylbenzene	ND	ug/L	1		0.5	
Methyl tert-butyl ether	ND	ug/L	1		0.5	
Toluene	ND	ug/L	1		0.5	
Xylenes, Total	ND	ug/L	1		1.5	
<i>Surrogates:</i>					% Rec	
4-Bromofluorobenzene			1		98	72-128
Dibromofluoromethane			1		105	76-127
1,2-Dichloroethane-d4			1		104	66-133
Toluene-d8			1		98	75-130

LCS: S042309MVOWB1
LCS Duplicate: S042309MVOWB1D

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Benzene	9.5	ug/L	1	10.0	94	80-120			
	9.0			10.0	90	80-120	5	30	
1,2-Dichloroethane	9.1	ug/L	1	10.0	91	70-130			
	8.5			10.0	85	70-130	7	30	
Ethylbenzene	9.1	ug/L	1	10.0	91	75-125			
	8.8			10.0	88	75-125	3	30	
Methyl tert-butyl ether	9.4	ug/L	1	10.0	94	65-125			
	9.0			10.0	90	65-125	5	30	
Toluene	9.2	ug/L	1	10.0	92	75-120			
	8.8			10.0	88	75-120	4	30	
Xylenes, Total	27	ug/L	1	30.0	90	75-130			
	26			30.0	87	75-130	4	30	
<i>Surrogates:</i>									
4-Bromofluorobenzene			1		99	72-128			
					100	72-128			
Dibromofluoromethane			1		101	76-127			
					100	76-127			
1,2-Dichloroethane-d4			1		97	66-133			
					96	66-133			
Toluene-d8			1		99	75-130			
					99	75-130			



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harnce
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
QC Batch(es):	Q40153	Analysis Method:	504.1
QC Batch Method:	504.1PR	Analysis Description:	E504.1 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloro-prop
Preparation Started:	04/23/2009		
Blank: B042309GVOW1			

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
1,2-Dibromoethane	ND	ug/L	1		0.005	
<i>Surrogates:</i>						
4-Bromofluorobenzene			1		% Rec 89 70-130	

LCS: S0423090GVOW1						
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Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane	0.19	ug/L	1	0.200	95	70-130	
<i>Surrogates:</i>							
4-Bromofluorobenzene			1		89	70-130	

Matrix Spike: CPWA0929-001MS				Parent Sample: CPWA0929-001			
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Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane	0.19	ug/L	1	0.200	ND	94	70-130	
1,2-Dibromoethane	0.19	ug/L	1	0.200	ND	94	70-130	
<i>Surrogates:</i>								
4-Bromofluorobenzene			1			86	70-130	
4-Bromofluorobenzene			1			86	70-130	

Sample Duplicate: CPWA0929-001D				Parent Sample: CPWA0929-001			
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Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
1,2-Dibromoethane	ND	ug/L	1	ND	0		
1,2-Dibromoethane	ND	ug/L	1	ND	0		
<i>Surrogates:</i>							
4-Bromofluorobenzene			1		% Rec 85	70-130	
4-Bromofluorobenzene			1		85	70-130	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	

QC Batch(es):	Q40192	Analysis Method:	6020
QC Batch Method:	3010A	Analysis Description:	Total Metals by Inductively Coupled Plasma-Mass Spectrometry
Preparation Started:	04/27/2009		

Blank: B042709ICPMSW02

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Lead	ND	ug/L	1		0.5	

LCS: S042709ICPMSW02

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Lead	58.4	ug/L	1	50.0	117	80-120	

Matrix Spike: CPWA0930-002MS Parent Sample: CPWA0930-002
 Matrix Spike Duplicate: CPWA0930-002MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Lead	58.3	ug/L	1	50.0	8.13	100	75-125			
	62.0			50.0	108	75-125		20		



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	

QC Batch(es):	Q40193	Analysis Method:	6020
QC Batch Method:	3010A	Analysis Description:	Dissolved Metals by Inductively Coupled Plasma-Mass Spectrometry
Preparation Started:	04/27/2009		

Blank: B042709ICPMSW03

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Lead	ND	ug/L	1		0.5	

LCS: S042709ICPMSW03

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Lead	53.5	ug/L	1	50.0	107	80-120	

Matrix Spike: CPWA0930-005MS Parent Sample: CPWA0930-005
 Matrix Spike Duplicate: CPWA0930-005MSD

Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	RPD	RPD Limit	Qualifiers
Lead	54.7	ug/L	1	50.0	ND	109	75-125			
	52.3			50.0		104	75-125		20	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
QC Batch(es):	Q40215	Analysis Method:	8260B
QC Batch Method:	5030B-L	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/29/2009		
Blank: B042909MVOWY1			

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Benzene	ND	ug/L	1		0.5	
1,2-Dichloroethane	ND	ug/L	1		0.5	
Ethylbenzene	ND	ug/L	1		0.5	
Methyl tert-butyl ether	ND	ug/L	1		0.5	
Toluene	ND	ug/L	1		0.5	
Xylenes, Total	ND	ug/L	1		1.5	
<i>Surrogates:</i>				% Rec		
4-Bromofluorobenzene			1		108	72-128
Dibromofluoromethane			1		107	76-127
1,2-Dichloroethane-d4			1		119	66-133
Toluene-d8			1		94	75-130

LCS: S042909MVOWY1						
LCS Duplicate: S042909MVOWY1D						

Analyte	Blank Spike		DF	Spike		% Rec	Limits	RPD	RPD Limit	Qualifiers
	Result	Units		Conc.						
Benzene	9.2	ug/L	1	10.0		92	80-120			
	9.0			10.0		90	80-120	3	30	
1,2-Dichloroethane	10	ug/L	1	10.0		102	70-130			
	10			10.0		100	70-130	2	30	
Ethylbenzene	8.8	ug/L	1	10.0		88	75-125			
	8.5			10.0		85	75-125	3	30	
Methyl tert-butyl ether	10	ug/L	1	10.0		102	65-125			
	9.5			10.0		95	65-125	7	30	
Toluene	8.1	ug/L	1	10.0		81	75-120			
	8.2			10.0		82	75-120	1	30	
Xylenes, Total	25	ug/L	1	30.0		85	75-130			
	25			30.0		84	75-130	1	30	
<i>Surrogates:</i>										
4-Bromofluorobenzene			1			106	72-128			
						105	72-128			
Dibromofluoromethane			1			110	76-127			
						107	76-127			
1,2-Dichloroethane-d4			1			116	66-133			
						117	66-133			
Toluene-d8			1			98	75-130			
						99	75-130			



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	

QC Batch(es):	Q40245	Analysis Method:	NWTPH-G
QC Batch Method:	5030B-GCVOA	Analysis Description:	NWTPH Gas
Preparation Started:	05/02/2009		

Blank: B050209GVOWS2

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1		25	
<i>Surrogates:</i>						
					% Rec	
4-Bromofluorobenzene			1		89	61-121
Trifluorotoluene			1		84	62-129

LCS: S050209GVOWS2

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	297	ug/L	1	250	119	50-163	
<i>Surrogates:</i>							
					% Rec		
4-Bromofluorobenzene			1		89	61-121	
Trifluorotoluene			1		84	62-129	

Sample Duplicate: CPWA0930-001D **Parent Sample:** CPWA0930-001

Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1	ND	0	30	
<i>Surrogates:</i>							
					% Rec		
4-Bromofluorobenzene			1		87	61-121	
Trifluorotoluene			1		80	62-129	



Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
 940 South Harney
 Seattle, WA 98108
 Phone: (206)767-5060
 Fax: (206)767-5063

Quality Control Results

Project:	Conoco Phillips Site# 02857	SDG Number:	CPWA0930
Project Number:	212301538	Project Manager:	
QC Batch(es):	Q40249	Analysis Method:	NWTPH-G
QC Batch Method:	5030B-GCVOA	Analysis Description:	NWTPH Gas
Preparation Started:	05/05/2009		
Blank: B050509GVOWS1			

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Gasoline Range Organics	ND	ug/L	1		25	
<i>Surrogates:</i>						
				% Rec		
4-Bromofluorobenzene			1	95	61-121	
Trifluorotoluene			1	90	62-129	

LCS: S050509GVOWS1						
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Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	309	ug/L	1	250	123	50-163	
<i>Surrogates:</i>							
					% Rec		
4-Bromofluorobenzene			1		87	61-121	
Trifluorotoluene			1		86	62-129	

Matrix Spike: CPWA0931-004MS				Parent Sample: CPWA0931-004			
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Analyte	Matrix Spike Result	Units	DF	Spike Conc.	Parent Result	% Rec	% Rec Limits	Qualifiers
<i>Surrogates:</i>								
						% Rec		
4-Bromofluorobenzene			1			76	61-121	
Trifluorotoluene			1			73	62-129	

Sample Duplicate: CPWA0931-003D				Parent Sample: CPWA0931-003			
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Analyte	Duplicate Result	Units	DF	Parent Result	RPD	RPD Limit	Qualifiers
Gasoline Range Organic	0.0550	mg/L	1	0.0635	14.3	30	
<i>Surrogates:</i>							
					% Rec		
4-Bromofluorobenzene			1		89	61-121	
Trifluorotoluene			1		77	62-129	



Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Notes and Definitions

SDG No: CPWA0930

Report Specific Notes:

ND	The analyte of interest was not detected, to the limit of detection indicated
*	Recovery result outside established control limits
HA	Method analytical hold time exceeded
HP	Method analytical preparation time exceeded

Laboratory Reporting Conventions:

DF	Dilution factor
Detection Limit Threshold	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value.
MDL	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value. Detection Limit Thresholds are listed on the report only if the data has been evaluated below the Reporting Limit. Results between the Reporting Limit and the Detection Limit Threshold are reported as estimated results.
IDL	Instrument Detection Limit. IDLs are in instrument basis units. Reported results for samples are normalized appropriately using the preparation and analysis steps performed.
Reporting Limit	The minimum detection limit for reporting unqualified results under routine laboratory operating conditions. Typically this is the PQL but it may be a different concentration on a project-specific basis.
QC Batch Group	Quality Control Batch Group. The entity that links analytical results and supporting quality control results.
% Rec	Percent recovery.
Limits	The upper and lower control limits for spike recoveries.
RPD	Relative Percent Difference. The relative difference between duplicate results (matrix spike, blank spike, or sample duplicate) expressed as a percentage.
RPD Limit	The maximum RPD allowed for a set of duplicate measurements (see RPD).
Spike conc.	The measured concentration, in sample basis units, of a spiked sample.
PQL	Practical Quantitation Limit. The quantitation limit achievable by the laboratory under routine operating conditions. The PQL will be normalized for deviations from these conditions such as dilutions, dry weight adjustment, etc.
LCS	Laboratory Control Sample

PACE ANALYTICAL SERVICES, INC. - SAMPLE CONFIRMATION LOG										
Mtx	Sample ID (SDG-#)	VTSR	Collected On	Client ID	6020 Diss. Metals Water, Pb only, 3010A-GW	6020 Metals Water, Pb only, 3010A-GW	8011 EDB Water	8260-1 VOAs BTEX+MTBE+EDC water	NWTPH DX + Silica Gel (Water)	NWTPH Gx (Water)
WD	CPWA0930-001	04/20/2009 03:10 PM	04/20/2009 11:15 AM	MW-G		IN	IN	IN	IN	IN
WD	CPWA0930-002	04/20/2009 03:10 PM	04/20/2009 12:45 PM	MW-I		IN	IN	IN	IN	IN
WD	CPWA0930-003	04/20/2009 03:10 PM	04/20/2009 12:45 PM	Trip Blank			IN	IN		IN
WD	CPWA0930-004	04/20/2009 03:10 PM	04/20/2009 11:15 AM	MW-G	IN					
WD	CPWA0930-005	04/20/2009 03:10 PM	04/20/2009 12:45 PM	MW-I	IN					
Approved By: <i>Jenni Gross</i>					On: <i>4/21/09</i>					
Notes:										
Samples identified with a '*' client has requested QC for										
LEGEND: -:Started , +:Completed , IN:Logged In , P:Preparation , A:Analysis , X:Cancelled, PL:Pre-logged										
Matrices: Water=WD										
FORM LTL-PM-8.0										

LS#: 11351
SDG: CPWA 0930

Chain Of Custody Record

Lancaster Laboratories
2425 New Holland Pike, Lancaster, PA
(717) 656-2300

INVOICE REMITTANCE ADDRESS: ConocoPhillips

Purchase Order#

DATE: 04/20/09
PAGE: 1 of 1

ConocoPhillips AOC#

2857

SAMPLING COMPANY: Stanlec		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 Jim Trotter
PROJECT CONTACT (Hardcopy or PDF Report to): Chris Gdak		EDF DELIVERABLE TO (RP or PHONE NO.):		E-MAIL: LAB USE ONLY
TELEPHONE: (425) 372-1584	FAX: (425) 372-1650	E-MAIL: chris.gdak@stanlec.com		

SAMPLER NAME(S) (Print): David Reitz	CONSULTANT PROJECT NUMBER 212301538	REQUESTED ANALYSES	
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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 EDF IS NEEDED

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

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Point Name	Sample ID	SAMPLING		MATRIX	NO. OF CONT.	NWTPH-GX	NWTPH-DX w/ silica gel cleanup	BTEX (8260 B)	MTBE (8260 B)	EDC by 8260 B	EDB by Method 8011	Total Lead	Dissolved Lead
			DATE	TIME										
	MW-D	MW-D			GW		X	X	X	X	X	X	X	X
	MW-E	MW-E			GW		X	X	X	X	X	X	X	X
	MW-F	MW-F			GW		X	X	X	X	X	X	X	X
	MW-G	MW-G	04/20/09	1115	GW	13	X	X	X	X	X	X	X	X
	MW-I	MW-I	04/20/09	1245	GW	13	X	X	X	X	X	X	X	X
	-	TB			TB	9	X	X	X	X	X	X	X	X

Requested by (Signature):	Received by (Signature):	Date: 04/20/09	Time: 1510
Requested by (Signature):	Received by (Signature): JENNI Gross/PACB	Date: 04/20/09	Time: 1510
Requested by (Signature):	Received by (Signature):	Date:	Time:

Cooler Receipt Form
Pace Analytical Services, Inc.

SDG: CPWA0930

Taken By: Client

Cooler: AAP254

Transferred: Client

COC #: 2857

Project: WA Conoco Phillips (Stantec - Conoco Phillips)

Date samples were received at the laboratory: 4/20/2009

Date cooler was opened: 4/20/2009 3:10PM

A. PRELIMINARY EXAMINATION PHASE:

1. Did cooler come with a shipping slip (airbill, etc.)? NO
if YES, record carrier name and airbill number:
2. Were custody seals unbroken and intact at the date and time of arrival? INTACT
Date On Custody Seal: 4/19/2009 Custody Seals Description: one in front
3. Were custody papers sealed in a plastic bag and taped inside to the lid? YES
4. Did you screen samples for radioactivity using the Geiger Counter? NO
5. Were custody papers filled out properly (ink, signed, etc.)? YES
6. Did you sign custody papers in the appropriate place? YES
7. If required, was enough cooling material present? YES
8. Have designated person initial here to acknowledge receipt of cooler: TJN

B. LOG-IN PHASE:

Date samples were logged-in: 4/20/2009 4:05PM

Logged-in by Taryn Namba (sign) Taryn Namba

9. Describe type of packing in cooler:

bubble wrap, ice in bags, plastic bags

10. Were all bottles sealed in separate plastic bags? YES
11. Were labels in good condition? YES
12. Were all bottle labels complete (ID, date, time signature, preservative, etc.)? YES
13. Did all bottle labels agree with custody papers? YES
14. Were correct containers used for the tests indicated? YES
15. Were the correct pHs observed? YES
16. Was a sufficient amount of sample sent for tests indicated? YES
17. Were VOA samples compliant with headspace, septum and cap? YES
18. Temperatures: 14.2

DISCREPANCIES:

COMMENTS:

Samples were taken today.

Date Printed: 4/20/2009 16:09

**Supplemental Sample Receipt Log
Pace Analytical Services, Inc.**

SDG: CPWA0930
Cooler: AAP254
Temperatures: 14.2
COC #: 2857

Sample	Bottle #	Bottle Description	pH	VOA*
CPWA0930-001	0001	1000 mL boston round, amber glass, HCl	<2	N/A
	0002	250 ml cylinder poly HN03	<2	N/A
	0003	250 ml cylinder poly HN03	<2	N/A
	0004	40 ml OTWS, clear glass, HCl	N/C	Yes
	0005	40 ml OTWS, clear glass, HCl	N/C	Yes
	0006	40 ml OTWS, clear glass, HCl	N/C	Yes
	0007	40 ml OTWS, clear glass, HCl	N/C	Yes
	0008	40 ml OTWS, clear glass, HCl	N/C	Yes
	0009	40 ml OTWS, clear glass, HCl	N/C	Yes
	0010	40 ml OTWS, clear glass, HCl	N/C	Yes
	0011	40 ml OTWS, clear glass, HCl	N/C	Yes
	0012	40 ml OTWS, clear glass, HCl	N/C	Yes
	0013	500 ml cylinder, poly	7	N/A
CPWA0930-002	0001	1000 mL boston round, amber glass, HCl	<2	N/A
	0002	250 ml cylinder poly HN03	<2	N/A
	0003	250 ml cylinder poly HN03	<2	N/A
	0004	40 ml OTWS, clear glass, HCl	N/C	Yes
	0005	40 ml OTWS, clear glass, HCl	N/C	Yes
	0006	40 ml OTWS, clear glass, HCl	N/C	Yes
	0007	40 ml OTWS, clear glass, HCl	N/C	Yes
	0008	40 ml OTWS, clear glass, HCl	N/C	Yes
	0009	40 ml OTWS, clear glass, HCl	N/C	Yes
	0010	40 ml OTWS, clear glass, HCl	N/C	Yes
	0011	40 ml OTWS, clear glass, HCl	N/C	Yes
	0012	40 ml OTWS, clear glass, HCl	N/C	Yes
	0013	500 ml cylinder, poly	7	N/A
CPWA0930-003	0001	40 ml OTWS, clear glass, HCl	N/C	Yes
	0002	40 ml OTWS, clear glass, HCl	N/C	Yes
	0003	40 ml OTWS, clear glass, HCl	N/C	Yes
	0004	40 ml OTWS, clear glass, HCl	N/C	Yes
	0005	40 ml OTWS, clear glass, HCl	N/C	Yes

* VOA vial compliant
Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature Allowable temperature range is 4+/- 2 degrees Celsius

Acid Preserved pH pH must be less than 2
Base Preserved pH pH must be greater than 12
NC Not Checked for pH

**Supplemental Sample Receipt Log
Pace Analytical Services, Inc.**

SDG: CPWA0930
Cooler: AAP254
Temperatures: 14.2
COC #: 2857

Sample	Bottle #	Bottle Description	pH	VOA*
	0006	40 ml OTWS, clear glass, HCl	N/C	Yes
	0007	40 ml OTWS, clear glass, HCl	N/C	Yes
	0008	40 ml OTWS, clear glass, HCl	N/C	Yes
	0009	40 ml OTWS, clear glass, HCl	N/C	Yes
CPWA0930-004	0001	J.500.mL.Plastic.HNO3Filtered	<2	N/A
CPWA0930-005	0001	J.500.mL.Plastic.HNO3Filtered	<2	N/A

* VOA vial compliant
 Allowable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

Temperature Allowable temperature range is 4+/- 2 degrees Celsius

Acid Preserved pH pH must be less than 2
 Base Preserved pH pH must be greater than 12
 NC Not Checked for pH