FINAL REPORT

Environmental Studies in the Chukchi Sea 2008: Chemical Characterization

Volume 2: Appendices

Service Contract No. 68393.0-SA-AKR

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APPENDICES

Appendix A: Metals, Grain Size, and Total Organic Carbon Data

Appendix B: Hydrocarbon Data

Appendix C: Quality Control Data

Appendix D: Chemical Characterization Project Study Plan

Appendix E: Field Survey Report

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APPENDIX A

Metals, Grain Size, and Total Organic Carbon Data

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Sediment Data

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Environmental Studies in the Chukchi Sea

Table 1. Station Data for Burger 2008 Surficial Sediment Samples.

Sample Identification	Station Grouping	Collection Date	Comments
08-03-BF001-01-SC	Fixed Station	9/16/2008	
08-03-BF003-01-SC	Fixed Station	9/2/2008	
08-03-BF005-01-SC	Fixed Station	9/20/2008	Field Triplicate
08-03-BF005-02-SC	Fixed Station	9/20/2008	Field Triplicate
08-03-BF005-03-SC	Fixed Station	9/20/2008	Field Triplicate
08-03-BF007-01-SC	Fixed Station	9/16/2008	
08-03-BF009-01-SC	Fixed Station	9/20/2008	
08-03-BF011-01-SC	Fixed Station	9/13/2008	
08-03-BF013-01-SC	Fixed Station	9/16/2008	
08-03-BF015-01-SC	Fixed Station	9/19/2008	
08-03-BF017-01-SC	Fixed Station	9/12/2008	
08-03-BF019-01-SC	Fixed Station	9/19/2008	
08-03-BF021-01-SC	Fixed Station	9/13/2008	
08-03-BF023-01-SC	Fixed Station	9/17/2008	
08-03-BF025-01-SC	Fixed Station	9/18/2008	
08-03-BR005-01-SC	Primary Random Station	9/21/2008	
08-03-BR016-01-SC	Primary Random Station	9/18/2008	
08-03-BR020-01-SC	Primary Random Station	9/19/2008	
08-03-BR032-01-SC	Primary Random Station	9/14/2008	#1 of Field Triplicate
08-03-BR038-01-SC	Primary Random Station	9/19/2008	
08-03-BR043-01-SC	Primary Random Station	9/14/2008	
08-03-BR047-01-SC	Primary Random Station	9/17/2008	
08-03-BR077-01-SC	Primary Random Station	9/20/2008	
08-03-BR080-01-SC	Primary Random Station	9/19/2008	
08-03-BR086-01-SC	Primary Random Station	9/1/2008	
08-03-BR093-01-SC	Primary Random Station	9/2/2008	
08-03-BR098-01-SC	Primary Random Station	9/2/2008	
08-03-BR099-01-SC	Primary Random Station	9/3/2008	
08-03-BR100-01-SC	Secondary Random Station	9/3/2008	

Table 2. Station Data for Klondike 2008 Surficial Sediment Samples.

Sample Identification	Station Grouping	Collection Date	Comments
08-03-KF001-01-SC	Fixed Station	8/21/2008	
08-03-KF003-01-SC	Fixed Station	8/29/2008	
08-03-KF005-01-SC	Fixed Station	8/31/2008	
08-03-KF007-01-SC	Fixed Station	8/22/2008	
08-03-KF009-01-SC	Fixed Station	8/24/2008	
08-03-KF011-01-SC	Fixed Station	8/21/2008	
08-03-KF013-01-SC	Fixed Station	8/23/2008	
08-03-KF015-01-SC	Fixed Station	8/31/2008	
08-03-KF017-01-SC	Fixed Station	8/30/2008	
08-03-KF019-01-SC	Fixed Station	8/28/2008	
08-03-KF021-01-SC	Fixed Station	8/27/2008	
08-03-KF023-01-SC	Fixed Station	8/27/2008	
08-03-KF025-01-SC	Fixed Station	8/27/2008	
08-03-KR001-01-SC	Primary Random Station	8/27/2008	
08-03-KR007-01-SC	Primary Random Station	8/30/2008	
08-03-KR008-01-SC	Primary Random Station	8/30/2008	
08-03-KR009-01-SC	Primary Random Station	8/30/2008	
08-03-KR016-01-SC	Primary Random Station	8/30/2008	
08-03-KR019-01-SC	Primary Random Station	8/30/2008	#1 of Field Triplicate
08-03-KR034-01-SC	Primary Random Station	8/23/2008	
08-03-KR043-01-SC	Primary Random Station	8/22/2008	
08-03-KR045-01-SC	Primary Random Station	8/23/2008	Field Triplicate
08-03-KR045-02-SC	Primary Random Station	8/23/2008	Field Triplicate
08-03-KR045-03-SC	Primary Random Station	8/23/2008	Field Triplicate
08-03-KR056-01-SC	Primary Random Station	8/23/2008	
08-03-KR066-01-SC	Primary Random Station	8/22/2008	
08-03-KR083-01-SC	Primary Random Station	8/22/2008	
08-03-KR095-01-SC	Primary Random Station	8/29/2008	

Table 3. Station Data for Sediment Cores (historical drill sites).

Sample Identification	Station Grouping	Collection Date	Sectioning Interval	Comments
BD001	Burger	9/21/2008	2 cm to a depth of 10 cm	Only 0-2 cm analyzed.
BD002	Burger	9/15/2008	2 cm to a depth of 12 cm	Only 0-2 cm analyzed.
BD003	Burger	9/21/2008	2 cm to a depth of 10 cm	Only 0-2 cm analyzed.
BD004	Burger	9/21/2008	2 cm to a depth of 10 cm	Only 0-2 cm analyzed.
BD005	Burger	9/15/2008	2 cm to a depth of 12 cm	All sections analyzed.
KD001	Klondike	9/1/2008	2 cm to a depth of 14 cm	Only 0-2 cm analyzed.
KD002	Klondike	9/1/2008	2 cm to a depth of 8 cm	All sections analyzed.
KD003	Klondike	9/1/2008	2 cm to a depth of 12 cm	Only 0-2 cm analyzed.
KD004	Klondike	9/1/2008	2 cm to a depth of 12 cm	Only 0-2 cm analyzed.
KD005	Klondike	9/1/2008	2 cm to a depth of 12 cm	All sections analyzed.

Table 4. Trace Metal and Total Organic Carbon (TOC) Concentrations in Burger 2008 Surficial Sediment Samples (dry weight). Average Marine Sediment (Salomons and Förstner, 1984) and Continental Crust (Wedepohl, 1995) values provided for comparison.

Sample Identification	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)	Comments
Fixed Stations															
08-03-BF001-01-SC	0.11	4.33	14.7	744	0.17	65.9	11.9	2.33	0.025	216	10.8	0.55	56.4	0.85	
08-03-BF003-01-SC	0.11	5.25	16.3	696	0.15	74.3	12.2	2.80	0.032	280	9.8	0.44	64.6	0.74	
08-03-BF005-01-SC	0.10	5.31	11.8	572	0.16	73.0	13.0	2.75	0.034	275	10.3	0.40	65.7	0.77	Field Triplicate
08-03-BF005-02-SC	0.12	5.23	13.6	578	0.15	70.8	12.2	2.76	0.028	274	10.7	0.56	66.6	0.79	Field Triplicate
08-03-BF005-03-SC	0.11	5.34	12.6	582	0.15	70.1	13.1	2.79	0.028	277	10.4	0.47	68.2	0.93	Field Triplicate
08-03-BF007-01-SC	0.11	5.72	13.4	626	0.16	74.3	13.2	2.97	0.028	286	11.0	0.51	74.5	0.80	
08-03-BF009-01-SC	0.12	6.34	11.5	647	0.21	85.1	16.0	3.29	0.035	304	12.5	0.71	84.8	1.08	
08-03-BF011-01-SC	0.13	7.00	20.7	688	0.22	95.9	18.9	4.09	0.043	359	14.5	0.89	98.4	1.29	
08-03-BF013-01-SC	0.12	7.06	35.2	677	0.19	99.5	21.7	4.61	0.049	422	15.7	1.55	109	1.54	
08-03-BF015-01-SC	0.13	6.38	17.2	654	0.18	84.8	16.2	3.53	0.036	320	13.6	0.82	86.2	1.02	
08-03-BF017-01-SC	0.12	5.25	14.7	854	0.20	73.2	12.2	2.77	0.032	298	12.7	0.45	66.9	1.06	
08-03-BF019-01-SC	0.14	6.61	20.7	682	0.21	88.1	17.2	3.86	0.040	337	13.9	1.21	91.8	0.94	
08-03-BF021-01-SC	0.13	5.80	14.6	673	0.19	81.5	15.2	3.21	0.031	310	12.4	1.00	80.5	1.01	
08-03-BF023-01-SC	0.14	5.06	12.3	789	0.19	67.1	13.0	2.62	0.029	245	11.3	0.52	65.9	0.76	
08-03-BF025-01-SC	0.13	4.95	13.3	852	0.17	66.2	12.2	2.65	0.025	242	11.5	0.60	65.5	0.75	
Primary Random Stations															
08-03-BR005-01-SC	0.14	6.03	13.0	699	0.22	82.7	15.1	3.11	0.034	286	12.8	0.49	80.1	1.16	
08-03-BR016-01-SC	0.12	5.40	10.1	686	0.21	70.9	13.1	2.75	0.034	247	11.9	0.72	71.9	0.90	
08-03-BR020-01-SC	0.13	6.26	18.7	652	0.26	87.1	10.7	3.58	0.037	333	13.1	0.77	86.2	1.17	
08-03-BR032-01-SC	0.11	4.31	13.1	840	0.15	64.2	9.2	2.20	0.018	225	13.3	0.25	49.4	0.47	#1 of Field Triplicate
08-03-BR038-01-SC	0.12	6.38	17.9	670	0.23	86.5	16.2	3.57	0.037	315	13.8	0.70	87.4	1.15	
08-03-BR043-01-SC	0.13	7.21	37.5	701	0.23	98.9	20.9	4.63	0.047	394	15.7	1.33	111	1.50	
08-03-BR047-01-SC	0.12	6.75	22.4	686	0.21	89.6	17.1	3.85	0.044	331	13.7	0.84	95.0	1.22	
08-03-BR077-01-SC	0.11	5.66	12.9	612	0.18	77.9	13.2	3.00	0.037	303	11.7	0.56	75.7	0.87	
08-03-BR080-01-SC	0.13	6.67	18.0	757	0.22	92.9	19.7	3.78	0.045	352	14.2	0.95	94.4	1.21	
08-03-BR086-01-SC	0.11	5.47	15.2	637	0.19	76.2	14.9	3.03	0.044	296	11.8	0.48	74.2	0.82	
08-03-BR093-01-SC	0.10	5.39	13.3	624	0.16	72.8	13.9	2.99	0.033	285	11.6	0.71	70.9	0.84	
08-03-BR098-01-SC	0.10	4.86	11.8	623	0.17	68.0	12.7	2.59	0.030	263	10.8	0.30	61.9	0.73	
08-03-BR099-01-SC	0.10	4.78	13.4	580	0.17	64.2	12.9	2.54	0.030	272	10.6	0.28	59.6	0.66	
Secondary Random Stations															
08-03-BR100-01-SC #1	0.09	4.29	12.6	576	0.13	57.2	11.1	2.26	0.028	228	10.1	0.27	51.9	0.55	Lab Duplicate
08-03-BR100-01-SC #2	0.09	4.26	13.0	595	0.14	56.1	11.3	2.26	0.026	225	10.8	0.28	51.3	0.57	Lab Duplicate
Average Marine Sediment	0.06	7.2	7.7	460	0.17	72	33	4.1	0.19	770	19	0.42	95	-	
Continental Crust	0.07	7.96	1.7	584	0.1	126	25	4.32	0.04	716	14.8	0.12	65	-	

Table 5. Trace Metal and Total Organic Carbon (TOC) Concentrations in Klondike 2008 Surficial Sediment Samples (dry weight). Average Marine Sediment (Salomons and Förstner, 1984) and Continental Crust (Wedepohl, 1995) values provided for comparison.

Sample Identification	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)	Comments
Fixed Stations															
08-03-KF001-01-SC	0.12	5.23	12.9	669	0.19	73.9	15.5	2.85	0.035	329	12.3	0.47	73.5	1.31	
08-03-KF003-01-SC	0.11	4.88	11.4	607	0.17	69.8	12.8	2.61	0.032	331	11.6	0.40	65.8	0.63	
08-03-KF005-01-SC	0.11	5.37	13.0	639	0.18	80.2	15.7	2.91	0.039	326	12.6	0.48	76.3	0.83	
08-03-KF007-01-SC	0.11	4.33	13.4	583	0.14	57.7	11.6	2.32	0.024	317	10.3	0.37	54.8	0.49	
08-03-KF009-01-SC	0.10	3.40	9.2	480	0.13	55.3	8.4	1.69	0.022	183	9.7	0.25	43.8	0.38	
08-03-KF011-01-SC	0.10	4.52	10.0	589	0.14	65.5	11.6	2.29	0.026	275	10.5	0.26	54.8	0.47	
08-03-KF013-01-SC	0.11	4.21	9.9	579	0.14	59.3	10.4	2.12	0.025	257	10.1	0.41	52.4	0.52	
08-03-KF015-01-SC	0.09	1.91	8.3	436	0.08	30.3	4.3	0.99	0.010	154	8.2	0.18	19.3	0.12	
08-03-KF017-01-SC	0.11	5.66	16.3	614	0.17	83.6	14.9	3.18	0.037	386	12.2	0.44	77.7	0.90	
08-03-KF019-01-SC	0.12	3.84	12.3	591	0.18	61.7	13.3	2.07	0.012	226	11.2	0.39	54.3	0.67	
08-03-KF021-01-SC	0.10	5.56	8.3	604	0.18	84.8	14.8	2.96	0.064	323	12.0	0.28	77.0	1.54	
08-03-KF023-01-SC	0.11	5.96	12.0	630	0.18	81.7	15.0	3.14	0.038	351	12.3	0.75	81.1	0.94	
08-03-KF025-01-SC	0.10	5.39	11.0	594	0.17	79.7	12.9	2.80	0.031	327	11.7	0.34	72.9	0.70	
Primary Random Stations															
08-03-KR001-01-SC	0.11	6.04	8.7	637	0.20	87.9	15.1	3.09	0.044	347	12.6	0.29	81.5	0.85	
08-03-KR007-01-SC	0.11	5.78	12.0	622	0.18	74.3	14.0	2.90	0.056	334	12.5	0.23	75.4	0.81	
08-03-KR008-01-SC #1	0.12	3.70	10.4	579	0.14	58.7	10.4	1.99	0.023	241	10.6	0.31	51.4	0.48	Lab Duplicate
08-03-KR008-01-SC #2	0.12	3.68	10.7	565	0.14	60.7	9.7	1.93	0.022	237	10.0	0.28	49.7	0.46	Lab Duplicate
08-03-KR009-01-SC	0.14	4.07	18.3	652	0.17	65.2	11.3	2.34	0.035	261	10.4	0.34	54.5	0.71	
08-03-KR016-01-SC	0.10	4.72	9.1	572	0.15	64.3	11.6	2.35	0.028	266	10.4	0.40	56.8	0.57	
08-03-KR019-01-SC	0.12	5.75	15.5	641	0.17	79.8	14.9	3.21	0.038	343	12.4	0.54	77.1	0.97	#1 of Field Triplicate
08-03-KR034-01-SC	0.10	4.59	11.0	572	0.20	64.1	10.5	2.41	0.027	310	10.0	0.57	56.6	0.49	
08-03-KR043-01-SC	0.11	4.84	11.3	605	0.16	74.9	10.5	2.48	0.029	283	10.6	0.48	59.2	0.52	
08-03-KR045-01-SC	0.10	4.24	9.5	564	0.14	64.0	9.4	2.07	0.025	276	10.0	0.37	50.4	0.51	Field Triplicate
08-03-KR045-02-SC	0.11	4.77	9.6	596	0.17	70.5	10.5	2.34	0.027	288	10.9	0.42	60.3	0.62	Field Triplicate
08-03-KR045-03-SC	0.11	4.55	10.0	576	0.17	69.6	9.7	2.35	0.027	275	10.4	0.39	58.1	0.54	Field Triplicate
08-03-KR056-01-SC	0.11	4.23	10.60	575	0.15	58.6	10.1	2.13	0.034	243	10.7	0.42	53.7	0.54	
08-03-KR066-01-SC #1	0.11	4.45	12.4	559	0.16	65.0	10.0	2.32	0.033	265	10.5	0.50	57.3	0.60	Lab Duplicate
08-03-KR066-01-SC #2	0.11	4.46	12.0	573	0.16	66.6	9.9	2.30	0.031	263	10.3	0.51	56.7	0.59	Lab Duplicate
08-03-KR083-01-SC	0.13	4.25	17.0	725	0.16	57.3	10.9	2.47	0.026	329	10.4	0.61	59.9	0.63	
08-03-KR095-01-SC	0.12	5.56	14.9	632	0.21	79.8	13.1	3.06	0.036	368	11.6	0.71	74.3	1.06	
Average Marine Sediment	0.06	7.2	7.7	460	0.17	72	33	4.1	0.19	770	19	0.42	95	-	
Continental Crust	0.07	7.96	1.7	584	0.1	126	25	4.32	0.04	716	14.8	0.12	65	-	

Table 6. Trace Metal and Total Organic Carbon (TOC) Concentrations in Sediment Core Samples (dry weight).

Sample Identification	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)	Comments
Burger Sediment Cores															
08-03-BD001-01-SC02	0.11	5.63	13.4	604	0.16	72.6	12.3	2.79	0.031	294	10.8	0.36	72.0	0.67	0-2 cm
08-03-BD002-01-SC02	0.11	5.54	11.9	641	0.18	79.3	14.2	2.79	0.032	291	11.9	0.63	76.1	0.79	0-2 cm
08-03-BD003-01-SC02	0.11	4.90	14.7	713	0.16	67.2	12.3	2.61	0.029	283	11.3	0.57	68.6	0.80	0-2 cm
08-03-BD004-01-SC02	0.10	5.19	12.0	699	0.17	69.1	14.4	2.68	0.034	260	11.9	0.60	73.5	1.05	0-2 cm
08-03-BD005-01-SC02	0.12	5.91	11.8	1910	0.21	81.9	16.6	3.17	0.047	337	14.8	0.75	85.4	1.05	0-2 cm
08-03-BD005-01-SC24	0.12	6.02	10.4	1970	0.23	89.8	17.7	3.21	0.044	332	15.0	0.66	89.1	1.00	2-4 cm
08-03-BD005-01-SC46	0.12	5.92	12.8	2420	0.22	91.1	21.1	3.44	0.058	337	19.2	0.53	85.7	1.26	4-6 cm
08-03-BD005-01-SC68	0.12	6.06	10.3	1590	0.21	80.7	17.8	3.20	0.040	322	17.4	0.31	88.6	0.96	6-8 cm
08-03-BD005-01-SC810	0.12	6.07	9.4	1920	0.22	84.0	17.7	3.24	0.043	332	14.7	0.62	91.4	0.91	8-10 cm
08-03-BD005-01-SC1012	0.12	6.13	10.2	1660	0.20	84.3	17.8	3.19	0.038	327	14.7	0.54	88.2	0.90	10-12 cm
Klondike Sediment Cores															
08-03-KD001-01-SC02	0.11	5.26	10.0	634	0.18	83.1	11.9	2.73	0.034	317	11.2	0.41	67.1	0.64	0-2 cm
08-03-KD002-01-SC02	0.11	4.99	19.8	618	0.17	71.7	10.8	2.77	0.028	303	10.8	0.49	64.1	0.86	0-2 cm
08-03-KD002-01-SC24	0.12	5.32	7.4	632	0.19	68.7	12.0	2.73	0.035	280	11.4	0.72	70.4	0.72	2-4 cm
08-03-KD002-01-SC46	0.12	5.61	10.4	654	0.20	74.5	13.0	2.89	0.040	283	12.1	0.50	75.8	0.77	4-6 cm
08-03-KD002-01-SC68	0.12	5.73	9.4	661	0.20	81.9	10.4	2.96	0.035	292	12.4	0.46	76.7	0.77	6-8 cm
08-03-KD003-01-SC02	0.11	5.02	10.5	633	0.18	76.4	9.8	2.56	0.030	276	10.8	0.40	63.3	0.59	0-2 cm
08-03-KD004-01-SC02	0.11	5.09	15.7	919	0.17	68.7	11.0	2.73	0.032	309	10.9	0.40	65.4	0.80	0-2 cm
08-03-KD005-01-SC02	0.13	5.73	15.5	2000	0.20	71.7	14.3	2.92	0.039	312	14.2	0.65	73.7	1.51	0-2 cm
08-03-KD005-01-SC24	0.12	5.64	11.3	2070	0.22	81.3	14.6	2.96	0.037	293	23.8	0.61	76.3	2.25	2-4 cm
08-03-KD005-01-SC46	0.12	5.42	11.2	2130	0.21	84.5	13.7	2.89	0.034	291	13.3	0.63	74.7	1.42	4-6 cm
08-03-KD005-01-SC68	0.13	5.41	11.9	2040	0.22	80.9	16.0	2.92	0.035	288	14.1	0.73	79.2	0.93	6-8 cm
08-03-KD005-01-SC810	0.12	5.44	8.5	1960	0.20	78.1	14.8	2.90	0.036	292	13.7	0.55	76.3	1.03	8-10 cm
08-03-KD005-01-SC1012 #1	0.12	5.54	9.5	1640	0.20	78.6	14.5	2.86	0.036	297	12.8	0.53	75.7	0.95	10-12 cm, Lab Duplicate
08-03-KD005-01-SC1012 #2	0.13	5.50	9.4	1650	0.21	78.0	14.4	2.88	0.038	301	13.3	0.51	76.4	0.91	10-12 cm, Lab Duplicate

Table 7. Grain Size Distribution in Burger 2008 Surficial Sediment Samples.

Sample Identification*	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Total (%)	Comments
Fixed Stations						
08-03-BF001-01-SC	-	-	-	-	-	
08-03-BF003-01-SC	0.0	52.4	37.8	9.8	100.0	
08-03-BF005-01-SC	0.2	57.0	24.9	17.9	100.0	Field Triplicate
08-03-BF005-02-SC	0.5	60.0	24.6	14.8	99.9	Field Triplicate
08-03-BF005-03-SC	0.0	54.9	28.5	16.6	100.0	Field Triplicate
08-03-BF007-01-SC	0.6	49.4	31.2	18.7	99.9	
08-03-BF009-01-SC	0.0	34.0	40.9	25.1	100.0	
08-03-BF011-01-SC	1.9	16.9	50.1	31.1	100.0	
08-03-BF013-01-SC	0.1	25.5	45.7	28.7	100.0	
08-03-BF015-01-SC	0.4	26.2	48.9	24.4	99.9	
08-03-BF017-01-SC	13.4	49.6	22.8	14.2	100.0	
08-03-BF019-01-SC	0.0	18.5	54.7	26.8	100.0	
08-03-BF021-01-SC	0.4	35.8	40.1	23.7	100.0	
08-03-BF023-01-SC	32.0	36.8	19.2	11.9	99.9	
08-03-BF025-01-SC	14.4	50.2	20.7	14.7	100.0	
Primary Random Stations						
08-03-BR005-01-SC	8.4	43.0	29.4	19.2	100.0	
08-03-BR016-01-SC	1.2	55.0	25.2	18.6	100.0	
08-03-BR020-01-SC	0.8	27.2	44.1	27.9	100.0	
08-03-BR032-01-SC	23.2	54.9	14.2	7.7	100.0	
08-03-BR038-01-SC	0.0	23.9	47.3	28.9	100.1	
08-03-BR043-01-SC	1.4	13.7	48.7	36.2	100.0	
08-03-BR047-01-SC	0.8	27.6	44.2	27.4	100.0	
08-03-BR077-01-SC #1	1.4	48.1	29.8	20.8	100.1	Lab Duplicate
08-03-BR077-01-SC #2	2.6	50.4	26.8	20.2	100.0	Lab Duplicate
08-03-BR080-01-SC	0.6	50.6	29.2	19.6	100.0	
08-03-BR086-01-SC	7.4	47.7	29.2	15.8	100.1	
08-03-BR093-01-SC	1.2	49.3	30.7	18.8	100.0	
08-03-BR098-01-SC #1	6.7	57.1	20.9	15.2	99.9	Lab Duplicate
08-03-BR098-01-SC #2	1.9	60.6	21.0	16.4	99.9	Lab Duplicate
08-03-BR099-01-SC	0.0	62.0	27.1	10.9	100.0	
Secondary Random Stations						
08-03-BR100-01-SC	1.1	68.9	17.6	12.4	100.0	

* Sample collection dates are the same as the Metal samples.

Table 8. Grain Size Distribution in Klondike 2008 Surficial Sediment Samples.

Sample Identification*	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Total (%)	Comments
Fixed Stations						
08-03-KF001-01-SC	18.1	44.6	24.2	13.2	100.1	
08-03-KF003-01-SC	0.1	53.8	30.6	15.5	100.0	
08-03-KF005-01-SC	0.0	63.3	25.2	11.5	100.0	
08-03-KF007-01-SC	12.0	56.0	23.4	8.6	100.0	
08-03-KF009-01-SC	0.4	74.2	16.1	9.3	100.0	
08-03-KF011-01-SC	0.0	63.3	25.2	11.5	100.0	
08-03-KF013-01-SC	1.8	65.5	20.4	12.3	100.0	
08-03-KF015-01-SC	0.0	92.3	4.0	3.7	100.0	
08-03-KF017-01-SC	0.1	37.5	41.9	20.6	100.1	
08-03-KF019-01-SC	60.8	26.7	7.4	5.2	100.1	
08-03-KF021-01-SC	0.0	13.8	64.5	21.7	100.0	
08-03-KF023-01-SC	0.2	37.2	46.4	16.1	99.9	
08-03-KF025-01-SC	0.8	48.3	31.2	19.6	99.9	
Primary Random Stations						
08-03-KR001-01-SC	0.0	27.0	51.8	21.2	100.0	
08-03-KR007-01-SC	1.0	39.7	41.4	17.9	100.0	
08-03-KR008-01-SC	7.1	61.8	20.5	10.5	99.9	
08-03-KR009-01-SC	61.0	21.8	17.2	0.0	100.0	
08-03-KR016-01-SC	0.9	66.2	21.4	11.5	100.0	
08-03-KR019-01-SC	0.9	30.7	50.6	17.8	100.0	
08-03-KR034-01-SC	1.7	64.3	22.6	11.4	100.0	
08-03-KR043-01-SC	1.5	64.1	21.6	12.8	100.0	
08-03-KR045-01-SC	0.2	65.2	23.4	11.3	100.1	Field Triplicate
08-03-KR045-02-SC	0.3	59.0	27.5	13.1	99.9	Field Triplicate
08-03-KR045-03-SC	1.0	62.9	24.5	11.5	99.9	Field Triplicate
08-03-KR056-01-SC	0.6	69.8	18.4	11.1	99.9	
08-03-KR066-01-SC	1.2	67.4	31.3	0.0	99.9	
08-03-KR083-01-SC	16.1	49.9	22.2	11.9	100.1	
08-03-KR095-01-SC	6.4	44.5	34.8	14.3	100.0	

* Sample collection dates are the same as the Metal samples.

Table 9. Grain Size Distribution in Sediment Core Samples.

Sample Identification*	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Total (%)	Comments
Burger Sediment Cores						
08-03-BD001-01-SC02	0.1	40.8	43.7	15.4	100.0	
08-03-BD002-01-SC02	1.8	47.3	32.9	18.0	100.0	
08-03-BD003-01-SC02	2.7	53.8	27.4	16.1	100.0	
08-03-BD004-01-SC02	1.7	47.3	27.4	23.6	100.0	
08-03-BD005-01-SC02	1.0	40.1	39.5	19.3	99.9	
08-03-BD005-01-SC24	1.0	32.1	40.8	26.1	100.0	
08-03-BD005-01-SC46	4.4	30.7	39.2	25.8	100.1	
08-03-BD005-01-SC68	0.5	28.5	43.1	27.9	100.0	
08-03-BD005-01-SC810	0.1	31.0	39.8	29.0	99.9	
08-03-BD005-01-SC1012	0.0	52.7	11.0	36.2	99.9	
Klondike Sediment Cores						
08-03-KD001-01-SC02	0.2	56.2	29.5	14.1	100.0	
08-03-KD002-01-SC02	6.0	61.1	19.6	13.3	100.0	
08-03-KD002-01-SC24	0.5	51.9	30.9	16.7	100.0	
08-03-KD002-01-SC46	0.0	47.1	33.7	19.2	100.0	
08-03-KD002-01-SC68 #1	0.1	42.5	36.2	21.2	100.0	Lab Duplicate
08-03-KD002-01-SC68 #2	0.7	42.2	35.0	22.0	99.9	Lab Duplicate
08-03-KD003-01-SC02	0.6	60.1	26.7	12.6	100.0	
08-03-KD004-01-SC02	0.1	54.7	28.9	16.3	100.0	
08-03-KD005-01-SC02	21.9	48.8	18.9	10.4	100.0	
08-03-KD005-01-SC24	17.6	46.1	25.0	11.3	100.0	
08-03-KD005-01-SC46	16.5	43.1	26.4	14.0	100.0	
08-03-KD005-01-SC68 #1	4.9	44.3	32.9	17.9	100.0	Lab Duplicate
08-03-KD005-01-SC68 #2	3.2	45.4	32.1	19.3	100.0	Lab Duplicate
08-03-KD005-01-SC810	0.6	32.9	47.2	19.4	100.1	
08-03-KD005-01-SC1012	0.6	47.7	30.7	21.0	100.0	

* Sample collection dates are the same as the Metal samples.

Table 10. Statistics for Trace Metal and Total Organic Carbon (TOC) Concentrations in Burger 2008 Surficial Sediment Samples (dry weight). Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Station Grouping	Statistic	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)
Fixed Stations	Mean	0.12	5.77	16.7	639	0.18	79.0	14.8	3.19	0.033	300	12.3	0.75	77.8	0.97
	Std. Dev.	0.01	0.85	6.3	76	0.02	11.1	3.1	0.67	0.007	54	1.7	0.34	15.5	0.23
	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	Maximum	0.14	7.06	35.2	775	0.22	100	21.7	4.61	0.049	422	15.7	1.55	109	1.54
	Minimum	0.11	4.33	11.5	519	0.15	65.9	11.9	2.33	0.025	216	9.8	0.44	56.4	0.74
Primary Random Stations	Mean	0.12	5.78	16.7	611	0.20	79.4	14.6	3.20	0.036	300	12.7	0.64	78.3	0.98
	Std. Dev.	0.01	0.86	7.1	62	0.03	11.2	3.3	0.66	0.008	46	1.5	0.30	16.7	0.28
	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	Maximum	0.14	7.21	37.5	762	0.26	98.9	20.9	4.63	0.047	394	15.7	1.33	111	1.50
	Minimum	0.10	4.31	10.1	526	0.15	64.2	9.2	2.20	0.018	225	10.6	0.25	49.4	0.47
Cumulative*	Mean	0.12	5.62	16.1	681	0.19	77.0	14.3	3.08	0.034	293	12.3	0.66	75.6	0.93
	Std. Dev.	0.01	0.89	6.2	74	0.03	11.5	3.1	0.66	0.007	50	1.6	0.31	16.0	0.26
	n	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	Maximum	0.14	7.21	37.5	854	0.26	99.5	21.7	4.63	0.049	422	15.7	1.55	111	1.54
	Minimum	0.09	4.15	10.1	577	0.14	56.7	9.2	2.16	0.018	213	9.8	0.25	49.4	0.47

* Includes Secondary Random Station BR100.

Table 11. Statistics for Trace Metal and Total Organic Carbon (TOC) Concentrations in Klondike 2008 Surficial Sediment Samples (dry weight). Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Station Grouping	Statistic	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)
Fixed Stations	Mean	0.11	4.64	11.4	586	0.16	68.0	12.4	2.46	0.030	291	11.1	0.39	61.8	0.73
	Std. Dev.	0.01	1.12	2.3	63	0.03	15.4	3.3	0.63	0.014	68	1.3	0.14	17.6	0.38
	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	Maximum	0.12	5.96	16.3	669	0.19	84.8	15.7	3.18	0.064	386	12.6	0.75	81.1	1.54
	Minimum	0.09	1.91	8.3	436	0.08	30.3	4.3	0.99	0.010	154	8.2	0.18	19.3	0.12
Primary Random Stations	Mean	0.11	4.81	12.4	612	0.17	69.2	11.7	2.54	0.033	297	11.0	0.44	62.5	0.67
	Std. Dev.	0.01	0.74	3.1	46	0.02	9.4	1.9	0.40	0.009	43	0.9	0.14	10.5	0.19
	n	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	Maximum	0.14	6.04	18.3	725	0.21	87.9	15.1	3.21	0.056	368	12.6	0.71	81.5	1.06
	Minimum	0.10	3.69	8.7	566	0.14	57.3	9.9	1.96	0.023	239	10.0	0.23	50.6	0.47
Cumulative	Mean	0.11	4.54	11.7	590	0.16	65.9	11.5	2.39	0.030	283	10.8	0.40	59.4	0.67
	Std. Dev.	0.01	1.16	2.7	62	0.03	16.6	3.3	0.65	0.012	69	1.4	0.14	17.4	0.32
	n	28	28	28	28	28	28	28	28	28	28	28	28	28	28
	Maximum	0.14	6.04	18.3	725	0.21	87.9	15.7	3.21	0.064	386	12.6	0.75	81.5	1.54
	Minimum	0.09	1.01	7.9	436	0.05	9.7	2.5	0.50	0.006	78.1	6.4	0.18	10.7	0.07

Table 12. Statistics for Trace Metal and Total Organic Carbon (TOC) Concentrations in Sediment Cores (dry weight).
Lab Duplicates were averaged prior to statistical analysis.

Sediment Core	Statistic	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)
08-03-BD005	Mean	0.12	6.02	10.8	1912	0.22	85.3	18.1	3.24	0.045	331	16.0	0.57	88.1	1.01
	Std. Dev.	0.00	0.09	1.2	293	0.01	4.2	1.5	0.10	0.007	6	1.9	0.15	2.2	0.13
	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Maximum	0.12	6.13	12.8	2420	0.23	91.1	21.1	3.44	0.058	337	19.2	0.75	91.4	1.26
	Minimum	0.12	5.91	9.4	1590	0.2	80.7	16.6	3.17	0.038	322	14.7	0.31	85.4	0.90
08-03-KD002	Mean	0.12	5.41	11.8	641	0.19	74.2	11.6	2.84	0.035	290	11.7	0.54	71.8	0.78
	Std. Dev.	0.01	0.33	5.5	20	0.01	5.7	1.2	0.11	0.005	10	0.7	0.12	5.8	0.06
	n	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Maximum	0.12	5.73	19.8	661	0.20	81.9	13.0	2.96	0.040	303	12.4	0.72	76.7	0.86
	Minimum	0.11	4.99	7.4	618	0.17	68.7	10.4	2.73	0.028	280	10.8	0.46	64.1	0.72
08-03-KD005	Mean	0.12	5.53	11.3	1974	0.21	79.1	14.6	2.91	0.036	296	15.4	0.62	76.0	1.35
	Std. Dev.	0.00	0.13	2.4	171	0.01	4.3	0.8	0.03	0.002	9	4.2	0.07	1.9	0.51
	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Maximum	0.13	5.73	15.5	2130	0.22	84.5	16.0	2.96	0.039	312	23.8	0.73	79.2	2.25
	Minimum	0.12	5.41	8.5	1645	0.20	71.7	13.7	2.87	0.034	288	13.1	0.52	73.7	0.93

Table 13. Statistics for Grain Size in Burger 2008 Surficial Sediment Samples. Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Station Grouping	Statistic	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
Fixed Stations	Mean	5.3	37.7	36.5	20.5
	Std. Dev.	9.9	13.9	12.3	7.1
	n	12	12	12	12
	Maximum	32	57.3	54.7	31.1
	Minimum	0.0	16.9	19.2	9.8
Primary Random Stations	Mean	3.9	43.3	32.2	20.6
	Std. Dev.	6.4	15.2	10.6	7.8
	n	13	13	13	13
	Maximum	23.2	62	48.7	36.2
	Minimum	0.0	13.7	14.2	7.7
Cumulative*	Mean	4.2	42.9	33.5	19.5
	Std. Dev.	7.6	15.1	11.3	7.3
	n	29	29	29	29
	Maximum	32.0	68.9	54.7	36.2
	Minimum	0.0	13.7	14.2	7.7

* Includes Secondary Random Station BR100.

Table 14. Statistics for Grain Size in Klondike 2008 Surficial Sediment Samples. Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Station Grouping	Statistic	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
Fixed Stations	Mean	7.3	52.0	27.7	13.0
	Std. Dev.	17.0	20.8	16.2	5.6
	n	13	13	13	13
	Maximum	60.8	92.3	64.5	21.7
	Minimum	0.0	13.8	4.0	3.7
Primary Random Stations	Mean	7.6	51.5	29.1	11.7
	Std. Dev.	16.7	17.0	12.0	6.1
	n	13	13	13	13
	Maximum	61.0	69.8	51.8	21.2
	Minimum	0.0	21.8	17.2	0.0
Cumulative	Mean	7.0	54.4	26.9	11.7
	Std. Dev.	16.0	20.4	14.6	6.1
	n	28	28	28	28
	Maximum	61.0	95.8	64.5	21.7
	Minimum	0.0	13.8	0.9	0.0

Table 15. Statistics for Grain Size Distribution in Sediment Cores. Lab Duplicates were averaged prior to statistical analysis.

Sediment Core	Statistic	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
08-03-BD005	Mean	1.2	35.9	35.6	27.4
	Std. Dev.	1.6	9.2	12.1	5.5
	n	6	6	6	6
	Maximum	4.4	52.7	43.1	36.2
	Minimum	0.0	28.5	11.0	19.3
08-03-KD002	Mean	1.7	50.6	30.0	17.7
	Std. Dev.	2.9	8.0	7.2	3.6
	n	4	4	4	4
	Maximum	6.0	61.1	35.6	21.6
	Minimum	0.0	42.4	19.6	13.3
08-03-KD005	Mean	10.2	43.9	30.1	15.8
	Std. Dev.	9.5	5.8	9.6	4.5
	n	6	6	6	6
	Maximum	21.9	48.8	47.2	21.0
	Minimum	0.6	32.9	18.9	10.4

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Tissue Data

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Environmental Studies in the Chukchi Sea

Table 1. Station Data for Burger 2008 Trace Metal Organism Samples.

Sample Identification	Station Grouping	Collection Date	Organism Type	Comments
08-03-BF011-01-AC	Fixed Station	9/14/2008	Amphipods	
08-03-BF013-01-AC	"	9/17/2008	"	Field Triplicate
08-03-BF013-02-AC	"	9/17/2008	"	Field Triplicate
08-03-BF013-03-AC	"	9/17/2008	"	Field Triplicate
08-03-BR038-01-AC	Primary Random Station	9/19/2008	"	
08-03-BR080-01-AC	"	9/20/2008	"	
08-03-BR099-01-AC	"	9/3/2008	"	
08-03-BD004-01-AC	Historic Drill Site	9/21/2008	"	
08-03-BD005-01-AC	"	9/15/2008	"	
08-03-BF001-01-BC5	Fixed Station	9/16/2008	Clams (Astarte)	
08-03-BF003-01-BC5	"	9/2/2008	"	
08-03-BF005-01-BC5	"	9/20/2008	"	
08-03-BF007-01-BC5	"	9/16/2008	"	
08-03-BF011-01-BC5	"	9/13/2008	"	
08-03-BF015-01-BC5	"	9/19/2008	"	
08-03-BF017-01-BC5	"	9/12/2008	"	
08-03-BR005-01-BC5	Primary Random Station	9/21/2008	"	
08-03-BR038-01-BC5	"	9/18/2008	"	
08-03-BR080-01-BC5	"	9/19/2008	"	
08-03-BR093-01-BC5	"	9/2/2008	"	
08-03-BR098-01-BC5	"	9/2/2008	"	
08-03-BD001-01-BC5	Historic Drill Site	9/21/2008	"	
08-03-BF015-01-BC2	Fixed Station	9/19/2008	Clams (Macoma)	
08-03-BF025-01-BC2	"	9/18/2008	"	
08-03-BR038-01-BC2	Primary Random Station	9/18/2008	"	
08-03-BD001-01-BC2	"	9/21/2008	"	
08-03-BF005-01-CC	Fixed Station	9/20/2008	Crabs	
08-03-BF011-01-CC	"	9/13/2008	"	
08-03-BF013-01-CC	"	9/16/2008	"	
08-03-BF023-01-CC	"	9/17/2008	"	
08-03-BF025-01-CC	"	9/18/2008	"	
08-03-BR043-01-CC	Primary Random Station	9/14/2008	"	
08-03-BR080-01-CC	"	9/19/2008	"	
08-03-BR100-01-CC	Secondary Random Station	9/3/2008	"	
08-03-BF003-01-WC2	Fixed Station	9/2/2008	Worms	
08-03-BF021-01-WC2	"	9/13/2008	"	
08-03-BR086-01-WC2	Primary Random Station	9/2/2008	"	
08-03-BR093-01-WC2	"	9/2/2008	"	
08-03-BR098-01-WC2	"	9/2/2008	"	
08-03-BR099-01-WC2	"	9/3/2008	"	
08-03-BR087-01-WC2	Secondary Random Station	9/2/2008	"	
08-03-BR100-01-WC2	"	9/3/2008	"	
BF001, BF011, and BF021 composite	Fixed Station	9/13/2008	Zooplankton	
BF003, BF013, and BF023 composite	"	9/2/2008	"	
BF005, BF015, and BF025 composite	"	9/18/2008	"	
BF007 and BF017 composite	"	9/12/2008	"	
BF009 and BF019 composite	"	9/19/2008	"	

Table 2. Station Data for Klondike 2008 Trace Metal Organism Samples.

Sample Identification	Station Grouping	Collection Date	Organism Type	Comments
08-03-KR008-01-BC5	Primary Random Station	8/30/2008	Clams (Astarte)	
08-03-KF021-01-CC	Fixed Station	8/27/2008	Crabs	
08-03-KF023-01-CC	"	8/27/2008	"	
08-03-KF025-01-CC	"	8/27/2008	"	
08-03-KR001-01-CC	Primary Random Station	8/27/2008	"	
08-03-KR008-01-CC	"	8/30/2008	"	
08-03-KR016-01-CC	"	8/30/2008	"	
08-03-KR019-01-CC	"	8/30/2008	"	
08-03-KD002-01-CC	Historic Drill Site	9/1/2008	"	
08-03-KD005-01-CC	"	9/1/2008	"	
08-03-KF005-01-WC2	Fixed Station	8/31/2008	Worms	
08-03-KF013-01-WC2	"	8/23/2008	"	
08-03-KF025-01-WC2	"	8/27/2008	"	
08-03-KR009-01-WC2	Primary Random Station	8/30/2008	"	
08-03-KR045-01-WC2	"	8/23/2008	"	
KF003, KF013, and KF023 composite	Fixed Station	8/23/2008	Zooplankton	
KF005, KF015, and KF025 composite	"	8/27/2008	"	

Table 3. Trace Metal Concentrations in Burger 2008 Organism Sample (dry weight) and Water Content.

Sample Identification	Water Content (%)	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	Comments
Amphipods														
08-03-BF011-01-AC	73.6	1.03	13.5	7.58	4.16	0.31	45.0	181	0.089	9.1	0.126	3.36	142	
08-03-BF013-01-AC	75.5	0.48	14.0	8.27	4.82	0.45	46.5	289	0.113	9.5	0.147	3.40	169	Field Triplicate
08-03-BF013-02-AC	74.5	0.49	13.7	7.07	5.20	0.46	49.3	202	0.111	8.7	0.135	3.31	169	Field Triplicate
08-03-BF013-03-AC	74.3	0.64	14.9	6.82	5.48	0.35	51.0	206	0.122	8.1	0.107	3.11	165	Field Triplicate
08-03-BR038-01-AC #1	76.0	0.56	8.33	7.10	3.35	0.48	40.6	279	0.060	8.5	0.185	2.13	113	Lab Duplicate
08-03-BR038-01-AC #2	76.2	0.57	8.09	7.33	3.40	0.51	40.9	288	0.066	8.8	0.195	2.38	114	Lab Duplicate
08-03-BR080-01-AC	74.9	0.86	17.1	7.59	3.88	0.34	42.7	213	0.109	10.2	0.096	3.73	171	
08-03-BR099-01-AC	78.3	1.05	11.3	9.25	3.41	0.39	36.0	189	0.113	12.3	0.127	3.77	189	
08-03-BD004-01-AC	74.5	1.00	11.5	8.76	3.25	0.74	33.5	207	0.101	11.6	0.124	3.80	197	
08-03-BD005-01-AC	75.2	0.79	13.7	10.0	3.94	0.56	35.9	304	0.102	11.7	0.175	5.35	161	
Clams (Astarte)														
08-03-BF001-01-BC5	83.3	0.15	9.80	19.3	26.5	1.06	9.4	1510	0.040	20.2	0.566	9.64	85.2	
08-03-BF003-01-BC5	81.2	0.61	10.7	15.2	28.7	1.31	9.8	1020	0.049	21.5	0.565	8.61	94.1	
08-03-BF005-01-BC5	83.3	0.062	12.1	8.66	38.0	1.11	8.7	1340	0.041	46.9	0.674	9.52	72.2	
08-03-BF007-01-BC5	83.1	0.13	12.0	9.93	37.9	1.30	9.1	1410	0.042	16.4	0.806	9.20	86.5	
08-03-BF011-01-BC5	82.1	0.30	12.4	18.1	37.1	1.78	9.2	1600	0.052	21.5	0.858	8.57	84.0	
08-03-BF015-01-BC5	82.7	0.45	10.6	10.3	31.3	1.53	9.2	1080	0.043	14.1	0.762	9.05	73.1	
08-03-BF017-01-BC5	80.7	0.31	10.8	7.06	34.0	0.96	8.8	979	0.047	13.4	0.685	9.25	80.5	
08-03-BR005-01-BC5	80.6	0.091	12.8	10.1	32.9	0.88	7.7	1180	0.033	8.0	0.683	9.17	74.7	
08-03-BR038-01-BC5	81.0	0.17	10.7	6.59	38.4	1.49	7.8	1090	0.046	10.8	0.747	8.74	61.6	
08-03-BR080-01-BC5	83.0	0.16	14.7	13.3	61.6	1.83	13.3	1400	0.107	34.7	0.822	8.26	88.2	
08-03-BR093-01-BC5	84.2	0.41	12.8	26.3	42.7	1.34	11.3	1200	0.077	25.2	0.703	9.33	90.0	
08-03-BR098-01-BC5	82.3	0.026	12.9	8.36	29.9	1.25	9.4	1090	0.052	23.7	0.752	8.13	91.4	
08-03-BD001-01-BC5	82.8	0.14	13.2	10.6	46.4	1.45	9.3	4110	0.084	18.0	0.755	8.35	87.4	
Clams (Macoma)														
08-03-BF015-01-BC2	78.1	0.37	9.30	27.6	0.49	1.61	14.3	2080	0.055	24.6	0.981	2.62	86.2	
08-03-BF025-01-BC2	79.0	0.42	10.9	30.8	0.92	1.84	23.2	833	0.060	21.6	1.19	3.02	92.1	
08-03-BR038-01-BC2	77.6	0.39	10.2	22.2	0.98	1.65	21.3	1800	0.059	24.1	0.975	3.41	90.0	
08-03-BD001-01-BC2	77.8	0.37	9.75	29.7	0.31	2.04	21.9	2080	0.071	38.0	0.979	2.87	77.6	

Table 3. Trace Metal Concentrations in Burger 2008 Organism Sample (dry weight) and Water Content.

Sample Identification	Water Content (%)	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	Comments
Crabs														
08-03-BF005-01-CC	69.9	0.43	8.95	12.3	0.88	0.51	59.4	280	0.021	30.3	0.130	3.76	59.5	
08-03-BF011-01-CC #1	68.2	1.39	9.47	14.7	1.30	0.74	49.5	428	0.026	23.7	0.189	3.95	64.1	Lab Duplicate
08-03-BF011-01-CC #2	68.0	1.43	9.58	14.7	1.31	0.79	50.4	436	0.026	23.3	0.192	3.71	64.2	Lab Duplicate
08-03-BF013-01-CC	70.4	1.02	8.55	11.3	1.43	0.64	44.8	280	0.031	21.9	0.132	2.81	64.1	
08-03-BF023-01-CC	73.0	0.54	9.02	10.6	0.74	0.66	22.6	434	0.020	19.3	0.201	3.03	55.5	
08-03-BF025-01-CC	72.6	0.54	7.95	12.2	0.74	0.73	24.8	449	0.021	20.3	0.214	2.34	62.0	
08-03-BR043-01-CC	71.9	0.38	12.5	10.8	1.56	0.67	45.1	490	0.039	18.8	0.217	3.32	69.1	
08-03-BR080-01-CC	71.6	0.73	9.20	11.3	1.14	0.48	51.7	248	0.030	42.9	0.105	2.30	67.1	
08-03-BR100-01-CC	71.7	0.66	8.93	11.3	1.23	0.54	68.6	284	0.023	23.6	0.123	2.12	63.0	
Worms														
08-03-BF003-01-WC2	81.3	1.17	16.1	31.3	5.17	1.93	18.6	3210	0.145	50.9	1.37	4.88	62.6	
08-03-BF021-01-WC2	86.9	3.29	16.1	41.0	12.0	1.67	14.4	5330	0.340	38.8	2.48	4.16	77.5	
08-03-BR086-01-WC2	78.1	1.79	16.8	39.6	8.13	1.74	15.0	3840	0.168	56.6	1.85	2.86	69.3	
08-03-BR093-01-WC2	78.4	2.23	23.2	34.3	9.13	2.20	20.3	4580	0.246	66.8	2.37	4.33	75.2	
08-03-BR098-01-WC2	80.0	1.58	18.1	36.4	8.41	1.96	18.3	3670	0.201	62.3	1.99	4.70	70.9	
08-03-BR099-01-WC2	81.4	1.33	16.9	27.6	6.31	2.34	22.2	3760	0.224	60.3	1.67	5.43	74.9	
08-03-BR087-01-WC2	79.5	2.14	21.7	27.3	6.58	2.03	15.8	3330	0.169	52.9	1.58	5.09	70.0	
08-03-BR100-01-WC2	79.6	0.91	23.9	36.4	5.44	2.17	21.2	4200	0.193	57.4	1.90	6.28	78.9	
Zooplankton														
BF001, BF011, and BF021 composite	95.3	0.016	1.05	5.79	0.51	0.60	2.0	669	0.005	15.3	0.865	0.83	15.7	
BF003, BF013, and BF023 composite	94.7	0.022	1.49	6.47	0.67	0.78	6.8	859	0.008	15.5	0.547	0.52	31.7	
BF005, BF015, and BF025 composite	94.4	0.019	1.23	8.78	0.48	0.76	2.3	936	0.009	16.3	0.913	0.86	21.8	
BF007 and BF017 composite	95.0	0.017	1.22	6.65	0.51	0.65	2.7	807	0.008	14.0	0.786	0.88	19.9	
BF009 and BF019 composite #1	94.2	0.022	1.43	8.94	0.69	0.89	2.5	967	0.009	21.2	0.931	0.93	20.2	Lab Duplicate
BF009 and BF019 composite #2	94.2	0.021	1.49	9.59	0.72	0.87	2.2	991	0.009	22.9	0.938	0.87	20.9	Lab Duplicate

Table 4. Trace Metal Concentrations in Klondike 2008 Organism Sample (dry weight) and Water Content.

Sample Identification	Water Content (%)	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	Comments
Clams (Astarte)														
08-03-KR008-01-BC5	82.3	0.14	10.7	37.3	14.0	1.24	10.6	949	0.059	23.2	0.670	7.52	73.6	
Crabs														
08-03-KF021-01-CC	75.9	0.20	24.9	14.5	1.74	0.70	41.3	452	0.080	48.9	0.170	2.87	61.1	
08-03-KF023-01-CC	74.2	1.32	27.8	14.6	3.69	1.09	41.9	638	0.090	29.4	0.246	4.16	68.7	
08-03-KF025-01-CC	78.2	1.71	24.7	11.4	3.51	0.82	51.0	572	0.079	20.9	0.272	4.60	78.6	
08-03-KR001-01-CC	73.2	0.19	25.7	13.1	2.94	0.80	55.9	486	0.042	64.5	0.186	3.49	67.3	
08-03-KR008-01-CC	73.9	0.87	22.4	11.4	2.49	0.70	36.6	428	0.057	27.4	0.201	4.13	68.6	
08-03-KR016-01-CC	74.6	0.76	25.8	10.9	2.89	0.79	55.1	314	0.074	40.4	0.160	4.30	70.1	
08-03-KR019-01-CC	77.8	1.55	29.6	10.1	3.83	0.70	56.0	480	0.086	18.4	0.192	4.67	76.2	
08-03-KD002-01-CC	72.0	1.13	25.3	12.8	3.29	1.83	68.4	322	0.047	39.6	0.144	3.35	67.5	
08-03-KD005-01-CC	69.5	0.85	17.7	15.1	2.71	0.81	55.1	295	0.039	57.2	0.179	2.75	55.9	
Worms														
08-03-KF005-01-WC2	76.5	0.75	27.8	39.8	4.81	2.75	17.9	3780	0.252	59.2	1.91	4.51	79.1	
08-03-KF013-01-WC2	79.9	1.91	32.5	38.0	11.4	3.15	17.8	3890	0.301	59.4	2.17	3.91	81.3	
08-03-KF025-01-WC2 #1	80.3	1.03	19.6	40.3	5.91	4.07	18.2	4510	0.191	68.4	2.15	4.56	75.5	Lab Duplicate
08-03-KF025-01-WC2 #2	79.8	1.10	19.9	41.3	5.90	3.87	17.7	4650	0.202	70.1	2.13	4.65	78.3	Lab Duplicate
08-03-KR009-01-WC2	79.5	1.30	19.2	46.8	7.18	3.31	15.4	5460	0.175	76.2	2.35	4.12	72.7	
08-03-KR045-01-WC2	80.4	1.79	20.0	48.0	8.21	3.44	19.2	4710	0.234	58.9	2.17	4.78	80.8	
Zooplankton														
KF003, KF013, and KF023 composite	94.0	0.060	2.30	16.3	1.29	3.90	11.4	2290	0.008	51.6	2.72	1.21	101	
KF005, KF015, and KF025 composite	95.2	0.054	2.14	12.9	0.72	2.47	4.2	1460	-	86.0	2.62	1.59	72.6	Insufficient tissue for Hg

Table 5. Statistics for Burger 2008 Trace Metal Concentrations in Organisms (dry weight) and Water Content. Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Sample Identification	Statistic	Water Content (%)	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)
Amphipods	Mean	75.3	0.82	12.4	8.41	3.76	0.56	38.6	234	0.096	10.7	0.136	3.59	165
	Std. Dev.	1.4	0.20	2.8	1.09	0.70	0.29	7.2	44.8	0.018	1.7	0.031	0.87	26.9
	n	8	8	8	8	8	8	8	8	8	8	8	8	8
	Maximum	78.3	1.05	17.1	10.0	5.17	1.19	48.9	304	0.115	12.9	0.190	5.35	197
	Minimum	73.6	0.54	8.21	7.22	2.92	0.31	26.4	181	0.063	8.7	0.096	2.26	114
Clams (Astarte)	Mean	82.3	0.22	12.1	11.9	37.8	1.30	9.3	1416	0.054	21.6	0.718	8.98	81.7
	Std. Dev.	1.4	0.16	1.37	5.45	8.6	0.29	1.4	754	0.020	12.1	0.090	0.49	8.7
	n	16	16	16	16	16	16	16	16	16	16	16	16	16
	Maximum	84.8	0.61	14.7	26.3	61.6	1.83	13.3	4110	0.107	47.9	0.858	9.64	94.1
	Minimum	79.9	0.026	9.80	6.59	26.5	0.88	7.7	860	0.033	8.0	0.565	8.13	61.6
Clams (Macoma)	Mean	78.1	0.39	10.0	27.6	0.68	1.79	20.2	1698	0.061	27.1	1.03	2.98	86.5
	Std. Dev.	0.6	0.02	0.7	3.8	0.33	0.20	4.0	592	0.007	7.4	0.11	0.33	6.4
	n	4	4	4	4	4	4	4	4	4	4	4	4	4
	Maximum	79	0.42	10.9	30.8	0.98	2.04	23.2	2080	0.071	38.0	1.19	3.41	92.1
	Minimum	77.6	0.37	9.3	22.2	0.31	1.61	14.3	833	0.055	21.6	0.975	2.62	77.6
Clams (Cumulative)	Mean	81.4	0.26	11.7	15.0	30.3	1.40	11.5	1472	0.056	22.7	0.781	7.78	82.7
	Std. Dev.	2.1	0.16	1.5	8.2	17.0	0.34	4.9	719	0.018	11.4	0.157	2.50	8.3
	n	20	20	20	20	20	20	20	20	20	20	20	20	20
	Maximum	84.8	0.61	14.7	30.8	61.6	2.04	23.2	4110	0.107	47.9	1.19	9.64	94.1
	Minimum	77.6	0.026	9.3	6.59	0.31	0.88	7.7	833	0.033	8.0	0.565	2.62	61.6
Crabs	Mean	71.2	0.73	9.21	11.7	1.09	0.63	43.4	350	0.026	24.4	0.164	2.93	63.1
	Std. Dev.	1.5	0.33	1.33	1.2	0.31	0.10	16.5	98.7	0.006	7.8	0.043	0.62	4.0
	n	9	9	9	9	9	9	9	9	9	9	9	9	9
	Maximum	73.0	1.41	12.5	14.7	1.56	0.77	68.6	490	0.039	42.9	0.217	3.83	69.1
	Minimum	68.1	0.38	7.95	10.6	0.74	0.48	22.6	248	0.020	18.8	0.105	2.12	55.5
Worms	Mean	80.5	1.69	20.3	35.3	7.39	2.13	18.6	4079	0.206	55.7	1.90	4.59	74.0
	Std. Dev.	2.6	0.78	4.8	5.7	2.26	0.42	3.0	705	0.059	8.0	0.35	1.01	6.9
	n	9	9	9	9	9	9	9	9	9	9	9	9	9
	Maximum	86.9	3.29	30.2	43.7	12.0	3.10	22.2	5330	0.340	66.8	2.48	6.28	86.7
	Minimum	78.1	0.81	16.1	27.3	5.17	1.67	14.4	3210	0.145	38.8	1.37	2.86	62.6
Zooplankton	Mean	94.7	0.019	1.29	7.39	0.58	0.73	3.2	850	0.008	16.6	0.809	0.80	21.9
	Std. Dev.	0.4	0.003	0.18	1.53	0.10	0.11	2.0	121	0.002	3.1	0.157	0.16	5.9
	n	5	5	5	5	5	5	5	5	5	5	5	5	5
	Maximum	95.3	0.022	1.49	9.27	0.71	0.88	6.8	979	0.009	22.1	0.935	0.90	31.7
	Minimum	94.2	0.016	1.05	5.79	0.48	0.60	2.0	669	0.005	14.0	0.547	0.52	15.7

Table 6. Statistics for Klondike 2008 Trace Metal Concentrations in Organisms (dry weight) and Water Content. Lab Duplicates and Field Triplicates were averaged prior to statistical analysis.

Sample Identification	Statistic	Water Content (%)	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)
Clams	Mean	83.1	0.13	10.7	37.5	14.5	1.14	9.9	738	0.057	67.1	0.593	7.49	81.2
	Std. Dev.	1.1	0.02	0.0	0.3	0.6	0.14	1.1	298	0.003	62.1	0.110	0.05	10.7
	n	2	2	2	2	2	2	2	2	2	2	2	2	2
	Maximum	83.9	0.14	10.7	37.7	14.9	1.24	10.6	949	0.059	111	0.670	7.52	88.8
	Minimum	82.3	0.11	10.7	37.3	14.0	1.04	9.1	527	0.055	23.2	0.515	7.45	73.6
Crabs	Mean	74.4	0.95	24.9	12.7	3.01	0.92	51.3	443	0.066	38.5	0.194	3.81	68.2
	Std. Dev.	2.7	0.54	3.4	1.8	0.66	0.36	9.8	118	0.020	16.0	0.041	0.72	6.9
	n	9	9	9	9	9	9	9	9	9	9	9	9	9
	Maximum	78.2	1.71	29.6	15.1	3.83	1.83	68.4	638	0.090	64.5	0.272	4.67	78.6
	Minimum	69.5	0.19	17.7	10.1	1.74	0.70	36.6	295	0.039	18.4	0.144	2.75	55.9
Worms	Mean	78.7	1.41	23.2	42.2	7.32	3.22	17.5	4478	0.256	63.0	2.16	4.41	75.1
	Std. Dev.	2.0	0.45	5.6	4.2	2.31	0.47	1.3	610	0.073	8.0	0.14	0.33	8.2
	n	6	6	6	6	6	6	6	6	6	6	6	6	6
	Maximum	80.4	1.91	32.5	48.0	11.4	3.97	19.2	5460	0.375	76.2	2.35	4.78	81.3
	Minimum	75.9	0.75	19.2	38.0	4.81	2.71	15.4	3780	0.175	55.3	1.91	3.91	59.5
Zooplankton	Mean	94.6	0.057	2.22	14.6	1.01	3.19	7.8	1875	-	68.8	2.67	1.40	86.8
	Std. Dev.	0.8	0.004	0.11	2.4	0.40	1.01	5.1	587	-	24.3	0.07	0.27	20.1
	n	2	2	2	2	2	2	2	2	-	2	2	2	2
	Maximum	95.2	0.060	2.30	16.3	1.29	3.90	11.4	2290	-	86.0	2.72	1.59	101
	Minimum	94.0	0.054	2.14	12.9	0.72	2.47	4.2	1460	-	51.6	2.62	1.21	72.6

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APPENDIX B

Hydrocarbon Data

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Sediment Hydrocarbon Summary Data (samples represent the top 2 cm of surface sediment unless noted in "Station ID". Data reported µg/Kg, dry weight

Station ID	TPH	Σ SHC	Pristane	Phytane	Pr/Phy Ratio	Total PAH	LPAH	HPAH	Perylene	Total Biomarker
BD001	13,900	1,980	24.8	9.20	2.7	257	181	75.9	14.8	16.6
BD002	1,870	2,260	28.2	11.0	2.5	316	219	96.9	18.9	18.5
BD003	2,030	2,140	23.8	10.4	2.3	253	176	77.6	15.8	16.0
BD004	8,390	2,490	35.3	12.0	2.9	326	227	99.4	19.8	20.3
BD005 (0-2cm)	20,000	3,380	53.6	31.7	1.7	650	462	188	32.3	48.5
BD005 (10-12cm)	20,900	3,380	43.5	20.5	2.1	534	367	167	31.4	43.2
BD005 (2-4cm)	19,500	3,270	49.7	24.4	2.0	564	404	160	36.1	41.8
BD005 (4-6cm)	22,200	3,440	56.8	31.6	1.8	567	408	159	28.7	52.2
BD005 (6-8cm)	11,600	3,280	41.9	19.8	2.1	510	364	145	27.5	35.1
BD005 (8-10cm)	17,800	3,220	39.4	19.2	2.1	472	330	142	27.8	32.7
BF001	10,200	1,020	14.3	5.73	2.5	132	90.7	41.8	7.91	9.07
BF003	15,200	2,140	31.6	11.9	2.7	356	254	102	18.3	22.3
BF005	4,710	2,290	35.8	13.7	2.6	378	266	113	19.8	25.9
BF005	3,610	2,120	33.1	13.3	2.5	361	254	107	18.2	22.3
BF005	4,660	2,330	38.0	14.2	2.7	381	270	111	20.2	28.4
BF007	5,480	2,020	23.8	9.43	2.5	273	185	87.8	16.9	15.8
BF009	4,770	2,900	35.9	14.9	2.4	395	272	123	25.9	23.4
BF011	17,800	3,450	37.2	15.8	2.4	396	272	124	26.4	24.2
BF013	18,000	3,920	43.8	18.6	2.4	482	333	149	30.1	28.1
BF015	8,050	2,420	31.6	13.3	2.4	284	200	84.5	16.7	18.1
BF017	15,600	2,250	21.8	10.7	2.0	206	141	65.2	13.4	13.4
BF019	8,230	3,110	32.3	13.2	2.4	347	237	110	22.9	22.6
BF021	15,300	2,040	22.3	8.67	2.6	250	172	78.4	15.7	14.7
BF023	2,430	1,090	12.9	4.90	2.6	131	89.1	42.1	8.72	9.50
BF025	3,620	1,470	16.6	6.84	2.4	187	125	61.6	13.3	11.2
BR005	3,940	1,900	21.1	8.76	2.4	225	150	74.5	15.7	12.6
BR016	4,590	1,900	21.0	8.49	2.5	216	147	69.1	15.1	13.2
BR020	10,200	2,510	29.1	12.6	2.3	251	172	79.7	16.4	17.3
BR032	11,700	963	11.6	4.36	2.7	121	85.2	36.2	6.68	7.18
BR038	7,440	2,710	31.3	12.6	2.5	349	237	112	24.6	18.8
BR043	10,600	3,910	41.1	17.3	2.4	459	314	144	30.5	27.9
BR047	17,600	3,030	35.4	13.4	2.7	392	272	120	24.2	25.6
BR077	5,140	2,300	28.2	12.6	2.2	308	213	94.6	19.3	18.0
BR080	9,260	2,990	36.0	15.0	2.4	338	237	102	21.2	23.5
BR086	12,700	2,310	28.8	11.8	2.4	327	226	102	18.9	20.4
BR093	13,800	2,190	28.6	10.8	2.6	302	215	87.0	16.9	17.9
BR098	9,300	1,770	24.5	9.95	2.5	267	189	77.5	13.6	18.0
BR099	12,200	1,850	27.3	10.9	2.5	313	225	88.1	15.2	18.7
BR100	4,840	1,650	25.8	9.26	2.8	270	192	78.6	12.7	18.1
KD001	14,000	2,140	29.1	9.74	3.0	305	214	91.6	16.7	17.8
KD002 (0-2cm)	4,610	1,950	96.3	8.41	11.5	265	190	74.7	13.7	13.6
KD002 (2-4cm)	5,140	2,060	34.2	9.85	3.5	295	209	85.5	16.7	14.6
KD002 (4-6cm)	4,040	2,460	29.5	10.8	2.7	326	228	97.8	21.4	17.3
KD002 (6-8cm)	4,390	2,440	27.4	10.4	2.6	377	270	106	22.9	16.5
KD003	12,000	1,840	27.4	8.59	3.2	266	187	79.4	14.4	16.7
KD004	7,270	2,020	40.8	9.44	4.3	310	222	88.2	14.4	16.0
KD005 (0-2cm)	20,700	5,600	184	78.8	2.3	3,080	2,750	336	19.9	79.7
KD005 (10-12cm)	15,300	3,070	49.1	18.3	2.7	712	558	154	31.3	28.9
KD005 (2-4cm)	22,200	4,320	128	61.6	2.1	1,370	1,160	207	23.9	52.9

Station ID	TPH	Σ SHC	Pristane	Phytane	Pr/Phy Ratio	Total PAH	LPAH	HPAH	Perylene	Total Biomarker
KD005 (4-6cm)	21,200	4,480	105	43.7	2.4	1,400	1,180	222	27.7	47.9
KD005 (6-8cm)	10,400	3,640	76.5	35.4	2.2	959	782	176	28.7	59.3
KD005 (8-10cm)	15,100	2,980	47.0	19.7	2.4	635	510	125	25.7	32.6
KF001	4,980	1,530	19.8	6.23	3.2	153	109	44.5	8.89	10.6
KF003	4,890	1,930	29.1	9.61	3.0	291	208	83.4	14.6	15.0
KF005	14,200	2,660	39.3	13.2	3.0	451	325	126	23.3	23.7
KF007	4,270	1,340	19.2	5.41	3.5	130	93.3	36.9	7.17	9.52
KF009	5,080	1,060	13.5	5.02	2.7	116	85.7	30.8	6.12	7.97
KF011	4,700	1,220	27.4	5.48	5.0	126	92.2	34.4	6.42	8.89
KF013	3,640	1,300	19.9	5.68	3.5	146	103	43.5	8.96	8.63
KF015	461	371	7.17	1.81	4.0	47.2	33	14.2	3.35	2.94
KF017	5,910	2,110	30.0	8.93	3.4	219	154	64.7	13.3	13.7
KF019	2,170	851	19.7	4.02	4.9	132	94.5	37.8	7.92	9.72
KF021	8,340	4,010	44.8	14.5	3.1	351	241	110	25.1	23.1
KF023	5,870	2,320	26.1	9.68	2.7	249	173	76.1	16.0	16.0
KF025	3,980	1,950	24.1	8.43	2.9	258	181	76.9	15.9	13.4
KR001	4,410	2,220	28.4	10.3	2.8	262	189	73.6	17.5	15.7
KR007	5,060	2,040	25.2	7.95	3.2	213	148	65.2	14.0	13.9
KR008	10,100	1,180	12.6	5.31	2.4	127	90.1	37.4	7.41	7.84
KR009	3,420	1,390	15.0	6.90	2.2	145	102	43.8	8.98	8.17
KR016	4,350	1,550	19.9	6.16	3.2	156	107	49.2	10.9	10.0
KR019	15,300	2,450	28.9	10.3	2.8	306	217	89.8	19.7	18.2
KR034	6,460	1,320	24.5	5.59	4.4	132	94.4	37.4	7.14	8.73
KR043	4,040	1,440	17.3	5.77	3.0	150	104	45.8	11.8	9.74
KR045	3,380	1,260	19.7	5.41	3.6	142	99.6	42.2	8.42	8.91
KR045	3,960	1,620	30.2	7.20	4.2	173	120	52.5	11.3	11.0
KR045	3,930	1,300	18.8	5.73	3.3	152	105	46.5	9.67	9.38
KR056	3,940	1,220	21.9	5.77	3.8	143	100	42.5	8.25	9.75
KR066	4,460	1,230	22.7	5.73	4.0	142	102	39.6	7.27	9.51
KR083	3,800	1,230	21.2	4.87	4.4	122	86.2	35.8	7.41	8.06
KR095	4,060	2,310	41.9	34.4	1.2	325	233	92.0	17.9	170

Marine Invertebrate Tissue Hydrocarbon Summary Data. Data reported µg/Kg, dry weight

Station ID	Sample Type	TPH	Σ SHC	Pristane	Phytane	Pr/Phy Ratio	Total PAH	LPAH	HPAH	Perylene	Total Biomarker
BD001	Clam (*Macoma*)	10,100	2,920	291	22.3	13.1	138	103	35.2	4.01	8.80
BD001	Clam (*Astarte*)	37,900	2,690	69.7	24.1	2.90	67.6	48.4	19.3	1.36	0
BF001	Clam (*Astarte*)	12,200	1,050	53.0	6.47	8.28	26.7	22.2	4.47	1.37	2.59
BF003	Clam (*Astarte*)	10,600	1,240	63.8	9.91	6.40	43.4	25.8	17.6	1.91	0.39
BF005	Clam (*Astarte*)	4,690	1,120	53.0	6.73	7.90	27.1	21.3	5.81	1.96	1.34
BF007	Clam (*Astarte*)	21,100	1,690	37.3	8.36	4.50	44.6	37.5	7.06	1.41	4.14
BF011	Clam (*Astarte*)	74,500	1,510	39.8	6.38	6.20	36.4	29.3	7.04	1.56	4.45
BF015	Clam (*Macoma*)	6,500	2,380	269	13.2	20.4	152	108	44.5	5.27	15.4
BF015	Clam (*Astarte*)	13,600	1,140	31.1	5.01	6.20	47.2	30.7	16.5	2.65	0
BF017	Clam (*Astarte*)	24,000	1,020	30.8	3.46	8.90	29.2	24.6	4.58	1.16	3.57
BF025	Clam (*Macoma*)	14,500	3,230	470	12.3	38.3	204	160	44.2	5.59	12.3
BR005	Clam (*Astarte*)	44,900	1,180	30.6	4.82	6.30	27.2	21.6	5.58	1.49	0.72
BR038	Clam (*Macoma*)	18,000	3,040	286	10.4	27.4	190	165	25.1	3.81	14.3
BR038	Clam (*Astarte*)	33,700	2,160	35.9	7.12	5.00	76.0	48.5	27.6	2.36	1.76
BR080	Clam (*Astarte*)	129,000	1,740	31.3	12.2	2.60	113	72.5	40.5	3.86	4.17
BR093	Clam (*Astarte*)	15,100	1,220	35.9	6.06	5.90	27.4	19.0	8.38	2.18	5.25
BR098	Clam (*Astarte*)	66,800	3,040	52.4	17.0	3.10	151	118	32.7	1.96	0
KD005	Clam (*Astarte*)	247,000	4,390	144	18.5	7.80	160	110	49.8	1.91	0
KR007	Clam (*Astarte*)	124,000	8,510	266	50.1	5.30	262	188	74.4	2.63	0
KR008	Clam (*Astarte*)	79,800	1,720	100	7.95	12.6	70.6	47.8	22.8	1.83	0
KR009	Clam (*Astarte*)	89,000	2,480	55.4	11.3	4.90	106	74.5	31.9	1.19	5.09
KR019	Clam (*Astarte*)	207,000	7,250	154	29.8	5.20	256	182	73.9	2.38	6.53
KR095	Clam (*Macoma*)	191,000	8,830	1,850	37.6	49.1	355	255	100	6.68	8.76
BD004	Amphipod	15,800	12,600	10,800	5.21	2,070	40.1	37.4	2.77	0.33	4.48
BD005	Amphipod	38,400	6,320	5,450	0	0	35.5	31.2	4.30	0.74	5.43
BF011	Amphipod	12,100	9,830	8,740	7.58	1,150	45.8	40.9	4.86	0	1.66
BF013	Amphipod	6,220	2,130	816	5.31	154	38.8	36.9	1.87	0	2.23
BF013	Amphipod	6,980	2,170	1,140	10.1	112	32.2	31.0	1.19	0	1.02
BF013	Amphipod	32,400	1,510	752	0	0	34.0	32.9	1.11	0	2.73
BR038	Amphipod	3,150	1,050	350	4.48	78.2	35.5	32.2	3.27	0	0
BR080	Amphipod	8,240	3,920	2,960	4.87	608	35.1	32.5	2.58	0	4.59
BR099	Amphipod	9,910	4,430	2,910	12.9	225	41.6	38.4	3.18	0	3.91
KF001	Amphipod	33,700	6,340	1,060	42.8	24.8	84.8	65.2	19.6	0.25	25.8
BD004	Crab	5,900	3,980	129	16.5	7.80	99.9	70.4	29.5	0.47	5.06
BF005	Crab	7,550	1,580	17.4	4.46	3.90	29.6	24.9	4.70	0.47	4.64
BF011	Crab	3,500	512	10.8	2.18	5.00	22.7	18.8	3.86	0.54	5.07
BF013	Crab	5,990	831	9.01	5.38	1.70	23.5	18.4	5.12	0.34	4.41
BF023	Crab	6,470	1,030	83.5	3.28	25.4	31.4	25.0	6.41	0.48	3.91
BF025	Crab	1,450	832	204	3.71	55.0	33.8	27.1	6.66	0.57	3.71
BR043	Crab	1,690	662	9.29	3.55	2.60	30.4	25.0	5.45	0.49	5.83
BR080	Crab	8,010	716	35.2	2.95	11.9	24.2	19.5	4.65	0.44	3.72
BR100	Crab	2,270	500	13.1	3.05	4.30	31.5	25.8	5.73	0.48	5.12
KD002	Crab	19,800	14,200	13,400	4.73	2,820	39.8	34.6	5.18	0.49	5.21
KD005	Crab	12,900	11,600	10,800	5.13	2,110	55.4	49.5	5.98	0.58	5.10
KF021	Crab	11,800	10,200	9,300	3.81	2,440	69.8	62.3	7.52	0.84	5.40
KF023	Crab	6,340	1,140	16.7	4.98	3.40	35.1	26.8	8.27	0.78	6.71
KF025	Crab	2,070	1,090	10.8	3.39	3.20	41.9	33.0	8.89	0.94	15.4
KR001	Crab	7,970	7,020	6,140	3.75	1,640	52.4	43.7	8.65	0.68	5.14

Station ID	Sample Type	TPH	Σ SHC	Pristane	Phytane	Pr/Phy Ratio	Total PAH	LPAH	HPAH	Perylene	Total Biomarker
KR008	Crab	11,000	6,170	5,360	3.53	1,520	31.6	26.1	5.50	0.44	8.67
KR016	Crab	9,480	2,930	2,120	2.64	802	42.7	40.0	2.77	0.52	6.26
KR019	Crab	885	794	26.7	3.58	7.50	30.5	25.4	5.17	0.49	17.8
BF003	Worm	63,800	4,320	62.2	15.4	4.10	179	112	66.5	7.10	20.1
BF017	Worm	117,000	10,900	94.0	54.7	1.70	183	121	61.9	9.86	25.5
BF021	Worm	130,000	8,720	63.0	21.7	2.90	302	192	110	14.72	75.2
BR086	Worm	61,500	3,110	21.1	8.25	2.60	154	95.3	58.4	6.23	14.4
BR087	Worm	58,100	3,290	46.1	9.54	4.80	154	103	50.9	4.40	13.3
BR093	Worm	96,200	4,890	77.7	16.0	4.90	207	137	69.6	6.03	21.9
BR098	Worm	55,400	3,740	56.5	10.8	5.20	190	119	71.4	6.22	16.7
BR099	Worm	3,400	3,370	48.5	12.2	4.00	179	114	65.3	5.80	17.0
BR100	Worm	3,990	4,090	61.7	14.6	4.20	253	141	112	51.4	21.0
KD002	Worm	30,600	4,160	23.7	11.6	2.00	168	112	55.9	8.76	18.6
KD005	Worm	118,000	5,130	46.8	19.5	2.40	315	223	92.1	11.6	28.8
KF005	Worm	14,000	5,120	110	14.2	7.80	217	136	80.5	10.2	21.2
KF013	Worm	28,000	3,970	93.3	14.4	6.50	138	88.7	49.5	4.37	17.2
KF025	Worm	4,720	5,710	177	13.5	13.1	135	85.5	49.2	9.41	14.7
KR009	Worm	88,000	4,600	146	15.9	9.20	163	105	57.9	4.46	18.4
KR019	Worm	88,000	2,410	39.6	11.8	3.40	133	86.8	46.6	5.26	14.5
KR034	Worm	133,000	6,480	128	23.5	5.50	209	140	69.3	7.73	22.2
KR045	Worm	71,400	2,790	31.1	12.5	2.50	157	103	54.3	4.39	15.3
BF001, BF011, and BF021 Composite	Zooplankton	120,000	69,500	65,600	46.0	1,430	92.1	78.4	13.7	0.80	15.9
BF003, BF013, and BF023 Composite	Zooplankton	361,000	143,000	138,000	41.6	3,320	91.8	70.4	21.4	1.14	40.5
BF005, BF015, and BF025 Composite	Zooplankton	140,000	68,000	64,900	31.7	2,050	85.0	62.8	22.2	1.38	24.3
BF007 and BF017 Composite	Zooplankton	113,000	102,000	99,000	33.8	2,930	85.5	68.5	16.9	1.44	20.8
BF009 and BF019 Composite	Zooplankton	116,000	27,000	22,600	32.4	697	75.7	61.3	14.4	1.36	13.0
KF001 and KF021 Composite	Zooplankton	888,000	208,000	184,000	117	1,570	360	274	86.2	2.97	459
KF003, KF013 and KF023 Composite	Zooplankton	560,000	90,800	81,900	45.8	1,790	140	108	32.2	1.50	163
KF005, KF015 and KF025 Composite	Zooplankton	291,000	230,000	218,000	60.3	3,620	207	163	43.8	1.69	134
KF007 and KF017 Composite	Zooplankton	457,000	123,000	110,000	75.0	1,470	222	182	40.6	1.14	166
KF009 and KF019 Composite	Zooplankton	599,000	449,000	424,000	109	3,880	334	248	86.2	3.08	370

Sediment Data

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Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-SC02	08-03-BD002-01-SC02	08-03-BD003-01-SC02	08-03-BD004-01-SC02
Batch ID	09-0004	09-0003	09-0004	09-0004
Battelle ID	Q6000-P	Q5926-P	Q6005-P	Q6010-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/15/08	09/21/08	09/21/08
Extraction Date	02/03/09	01/29/09	02/03/09	02/03/09
Analysis Date	02/14/09	02/07/09	02/15/09	02/15/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	42.39	46.64	45.16	57.43
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.36	15.98	16.53	12.79
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	12.01 J	13.37 J	11.63 J	15.37 J
n-Decane	34.71 J	30.35 J	34.36 J	45.86 J
n-Undecane	47.05 J	29.5 J	22.6 J	28.3 J
n-Dodecane	23.75 J	28.58 J	22.54 J	29.1 J
n-Tridecane	27.41 J	31.58 J	25.73 J	34.12 J
Isoprenoid RRT 1380	7.25 J	7.47 J	6.43 J	9.78 J
n-Tetradecane	31.51 J	33.3 J	30.05 J	38.84 J
Isoprenoid RRT 1470	15.7 J	17.56 J	14.49 J	25.53 J
n-Pentadecane	39.26 J	41.78 J	37.35 J	68.11 J
Norpristane (1650)	8.04 J	9.12 J	7.99 J	10.63 J
n-Hexadecane	30.12 J	33.41 J	29.26 J	37.39 J
n-Heptadecane	37.07 J	41.95 J	35.19 J	47.75 J
Pristane	24.85 J	28.15 J	23.76 J	35.34 J
n-Octadecane	32.25 J	34.6 J	33.85 J	38.49 J
Phytane	9.2 J	11.04 J	10.4 J	12.01 J
n-Nonadecane	39.29 J	46.39 J	39.15 J	52.18 J
n-Eicosane	45.78 J	44.8 J	50.32 J	49.9 J
n-Heneicosane	68.24	82.53	71.91	93.83
n-Docosane	77.41	76.41	90.56	87.95
n-Tricosane	144.51	178.05	155.1	202.61
n-Tetracosane	90.83	87.79	107.25	100.2
n-Pentacosane	185.24	234.58	193.17	257.6
n-Hexacosane	92.39	89.05	113.29	97.24
n-Heptacosane	288.68	369.19	300.6	401.03
n-Octacosane	74.88	64.13 J	93.12	72.93 J
n-Nonacosane	195.06	253.69	209.6	273.02
n-Triacontane	50.33 J	34.09 J	66.72 J	36.88 J
n-Hentriacontane	143.63	200.91	158.41	199.95
n-Dotriacontane	34.2 J	20.94 J	50.46 J	20.74 J
n-Tritriacontane	41.94 J	68.27 J	49.3 J	54.17 J
n-Tetratriacontane	14.46 J	5.95 J	24.18 J	4.79 J
n-Pentatriacontane	5.01 J	7.41 J	9.06 J	5.41 J
n-Hexatriacontane	5.29 J	1.8 J	10.51 J	1.51 J
n-Heptatriacontane	U	U	2.85 J	U
n-Octatriacontane	U	U	2.8 J	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	1977.35	2257.74	2143.99	2488.56
TPH	13922.79	1869.15	2026.51	8394.8
Surrogate Recoveries (%)				
5a-androstane	84	86	88	96
n-Tetracosane-d50	82	85	87	93

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02	08-03-BD005-01-SC1012	08-03-BD005-01-SC24	08-03-BD005-01-SC46
Batch ID	09-0004	09-0003	09-0004	09-0003
Battelle ID	Q5932-P	Q5899-P	Q5933-P	Q5896-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/15/08	09/15/08
Extraction Date	02/03/09	01/29/09	02/03/09	01/29/09
Analysis Date	02/13/09	02/06/09	02/14/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	47.95	43.65	47.87	47.1
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	17.01	15.63	15.82
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	34.18 J	22.24 J	29.8 J	36.4 J
n-Decane	223.14 ME	44.87 J	51.34 J	57.83 J
n-Undecane	56.15 J	43.77 J	53.77 J	62 J
n-Dodecane	49.54 J	42.66 J	50.97 J	55.64 J
n-Tridecane	53.53 J	46.94 J	55.22 J	60.01 J
Isoprenoid RRT 1380	14.98 J	12.27 J	14.55 J	19.89 J
n-Tetradecane	57.57 J	50.61 J	58.04 J	62.56 J
Isoprenoid RRT 1470	36.99 J	25.93 J	29.94 J	33.51 J
n-Pentadecane	67.62 J	63.17 J	68.89 J	75.99
Norpristane (1650)	21.42 J	17.18 J	20.09 J	25.71 J
n-Hexadecane	57.96 J	51.26 J	58.66 J	61.8 J
n-Heptadecane	68.8 J	64.18 J	69.61 J	71.2
Pristane	53.58 J	43.51 J	49.69 J	56.81 J
n-Octadecane	62.54 J	53.85 J	59.57 J	62.23 J
Phytane	31.7 J	20.47 J	24.43 J	31.64 J
n-Nonadecane	77.36	69.22	74.02	77.18
n-Eicosane	75.46	69.5	71.28	73.57
n-Heneicosane	113.96	116.23	114.06	117.4
n-Docosane	107.34	114.2	108.67	110.66
n-Tricosane	227.57	243.7	233.73	231.82
n-Tetracosane	117.82	130.4	126.54	125.32
n-Pentacosane	292.8	319.92	311.48	302.18
n-Hexacosane	122.19	130.58	130.33	131.43
n-Heptacosane	445.31	501.11	472.14	460.78
n-Octacosane	87.83	102.12	98.15	98.66
n-Nonacosane	305.79	356.7	328.51	327.44
n-Triacontane	50.04 J	61.3 J	54.93 J	57.89 J
n-Hentriacontane	240.53	298.34	257.17	278.95
n-Dotriacontane	47.95 J	49.6 J	39.41 J	50.41 J
n-Tritriacontane	94.6	124.08	94.74	117.59
n-Tetratriacontane	19.06 J	20.07 J	15.73 J	23.05 J
n-Pentatriacontane	33.26 J	27.75 J	22.74 J	29.68 J
n-Hexatriacontane	11.08 J	12.52 J	8.45 J	14.62 J
n-Heptatriacontane	8.73 J	7.06 J	6.03 J	10.91 J
n-Octatriacontane	7.57 J	8.73 J	5.62 J	12.02 J
n-Nonatriacontane	4.77 J	4.02 J	3.18 J	7.9 J
n-Tetracontane	4.79 J	5.39 J	3.15 J	6.83 J
Total SHC	3385.51	3375.45	3274.63	3439.51
TPH	19950.02	20883.05	19513.94	22154.38
Surrogate Recoveries (%)				
5a-androstane	87	89	86	93
n-Tetracosane-d50	85	87	83	91

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC68	08-03-BD005-01-SC810	08-03-BF001-01-SC	08-03-BF003-01-SC
Batch ID	09-0003	09-0003	09-0003	09-0003
Battelle ID	Q5897-P	Q5898-P	Q5903-P	Q5879-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/16/08	09/02/08
Extraction Date	01/29/09	01/29/09	01/29/09	01/29/09
Analysis Date	02/06/09	02/06/09	02/07/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	45.56	44.34	31.34	47.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.27	16.73	20.60	15.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	26.32 J	20.52 J	5.8 J	15.21 J
n-Decane	41.13 J	37.36 J	17.41 J	29.51 J
n-Undecane	30.57 J	39.95 J	12.49 J	31.61 J
n-Dodecane	45.22 J	40.73 J	12.03 J	30.08 J
n-Tridecane	49.22 J	44.56 J	13.37 J	34.15 J
Isoprenoid RRT 1380	12.93 J	11.34 J	3.74 J	8.89 J
n-Tetradecane	54.39 J	48.8 J	17.22 J	37.61 J
Isoprenoid RRT 1470	26.25 J	22.43 J	8.2 J	18.5 J
n-Pentadecane	66.45 J	61.94 J	22.43 J	47.93 J
Norpristane (1650)	16.88 J	15.23 J	4.12 J	9.81 J
n-Hexadecane	53.27 J	48.77 J	15.83 J	36.68 J
n-Heptadecane	62.91 J	59.19 J	19.01 J	43.78 J
Pristane	41.92 J	39.37 J	14.33 J	31.57 J
n-Octadecane	53.82 J	50.6 J	16.75 J	37.45 J
Phytane	19.83 J	19.19 J	5.73 J	11.88 J
n-Nonadecane	68.19	65.5 J	21.44 J	49.09 J
n-Eicosane	66.88 J	64.84 J	20.98 J	46.81 J
n-Heneicosane	112.93	112.87	36.94 J	82.51
n-Docosane	106.32	105.66	34.5 J	73.6
n-Tricosane	236.61	239.82	78.13	168.78
n-Tetracosane	123.76	123.55	39.66 J	80.8
n-Pentacosane	326.58	325.24	105.35	211.06
n-Hexacosane	127.55	121.94	42.41 J	81.53
n-Heptacosane	495.01	491.36	157.13	318.17
n-Octacosane	95.02	92.34	31.31 J	59.58 J
n-Nonacosane	353.85	350.25	110.92	222.22
n-Triacontane	53.13 J	52.95 J	17.85 J	32.06 J
n-Hentriacontane	293.97	292.36	86.04	173.7
n-Dotriacontane	39.8 J	38.26 J	11.44 J	21.01 J
n-Tritriacontane	114.89	117.05	31.47 J	65.76 J
n-Tetratriacontane	15.42 J	15.85 J	3.19 J	7.02 J
n-Pentatriacontane	25.56 J	24.78 J	4.59 J	12.34 J
n-Hexatriacontane	7.58 J	8.71 J	0.75 J	4.18 J
n-Heptatriacontane	7.01 J	6.62 J	U	3.01 J
n-Octatriacontane	5.38 J	5.18 J	U	1.61 J
n-Nonatriacontane	3.65 J	4.01 J	U	U
n-Tetracontane	3.2 J	3.61 J	U	U
Total SHC	3283.4	3222.73	1022.56	2139.5
TPH	11649.39	17755.2	10155.33	15160.88
Surrogate Recoveries (%)				
5a-androstane	89	90	87	86
n-Tetracosane-d50	88	88	86	85

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-02-SC	08-03-BF005-03-SC	08-03-BF007-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0003
Battelle ID	Q5726-P	Q5727-P	Q5728-P	Q5900-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/20/08	09/16/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/29/09
Analysis Date	02/02/09	02/02/09	02/03/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	45.72	44.34	43.14	46.85
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.35	16.78	17.02	15.90
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	12.14 J	13.57 J	14.42 J	11.67 J
n-Decane	18.26 J	20.73 J	21.04 J	30.61 J
n-Undecane	25.31 J	26.6 J	27.96 J	24.34 J
n-Dodecane	27.69 J	27.82 J	30.31 J	24.68 J
n-Tridecane	31.95 J	31.42 J	33.99 J	27.47 J
Isoprenoid RRT 1380	9.66 J	8.72 J	10.05 J	6.84 J
n-Tetradecane	37.5 J	35.54 J	40.06 J	31.66 J
Isoprenoid RRT 1470	19.77 J	17.72 J	19.84 J	14.67 J
n-Pentadecane	49.08 J	44.93 J	50.05 J	40.75 J
Norpristane (1650)	10.67 J	10.72 J	12.36 J	8.83 J
n-Hexadecane	38.99 J	37.06 J	41.62 J	30.14 J
n-Heptadecane	46.1 J	44.43 J	49.28 J	36.33 J
Pristane	35.76 J	33.13 J	37.97 J	23.84 J
n-Octadecane	41.87 J	39.19 J	44.12 J	30.64 J
Phytane	13.69 J	13.3 J	14.22 J	9.43 J
n-Nonadecane	52.59 J	51.93 J	57.15 J	40.43 J
n-Eicosane	52.61 J	48.18 J	53.7 J	39.18 J
n-Heneicosane	87.31	86.35	93.94	72.04
n-Docosane	81.8	75.21	82.87	65.67 J
n-Tricosane	174.75	172.38	186.05	155.3
n-Tetracosane	89.54	78.59	85.62	78.21
n-Pentacosane	215.41	203.16	223.42	207.79
n-Hexacosane	87.22	73.8	80.92	83.19
n-Heptacosane	310.53	297.5	327.16	324.64
n-Octacosane	71.93	52.34 J	58.48 J	61.22 J
n-Nonacosane	228.16	223.29	243.1	225.9
n-Triacontane	60.98 J	40.63 J	45.71 J	34.6 J
n-Hentriacontane	183.12	184.88	198.91	179.73
n-Dotriacontane	36.21 J	19.06 J	20.92 J	20.39 J
n-Tritriacontane	74.62	74.02	80.46	62.39 J
n-Tetratriacontane	20.68 J	8.74 J	9.37 J	6.24 J
n-Pentatriacontane	16.12 J	16.19 J	17.6 J	9.93 J
n-Hexatriacontane	10.01 J	3.46 J	4.13 J	2.16 J
n-Heptatriacontane	4.73 J	3.49 J	4.15 J	1.66 J
n-Octatriacontane	7.32 J	2.96 J	3.29 J	U
n-Nonatriacontane	2.01 J	2.15 J	1.74 J	U
n-Tetracontane	3.88 J	2.11 J	2.28 J	U
Total SHC	2289.97	2125.3	2328.26	2022.57
TPH	4712.99	3606.85	4665.12	5483.96
Surrogate Recoveries (%)				
5a-androstane	81	87	82	95
n-Tetracosane-d50	83	89	83	94

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF009-01-SC	08-03-BF011-01-SC	08-03-BF013-01-SC	08-03-BF015-01-SC
Batch ID	09-0002	09-0004	09-0003	09-0001
Battelle ID	Q5729-P	Q6029-P	Q5906-P	Q5717-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/13/08	09/16/08	09/19/08
Extraction Date	01/22/09	02/03/09	01/29/09	01/15/09
Analysis Date	02/03/09	02/15/09	02/07/09	01/29/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	52.37	56.26	63.24	52.22
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	14.27	13.18	11.08	14.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	15.58 J	17.05 J	22.03 J	11.3 J
n-Decane	22.59 J	54.89 J	52.69 J	17.47 J
n-Undecane	29.7 J	36.37 J	46.81 J	24.85 J
n-Dodecane	32.51 J	36.38 J	45.39 J	27.22 J
n-Tridecane	37.1 J	41.78 J	52.76 J	32.07 J
Isoprenoid RRT 1380	9.8 J	11.11 J	13.33 J	8.33 J
n-Tetradecane	42.22 J	44.15 J	55.84 J	37.94 J
Isoprenoid RRT 1470	18.76 J	22.34 J	27.04 J	16.51 J
n-Pentadecane	53.6 J	53.84 J	74.63 J	50.18 J
Norpristane (1650)	12.82 J	12.02 J	16.45 J	10.61 J
n-Hexadecane	42.68 J	45.8 J	56.32 J	38.72 J
n-Heptadecane	52.38 J	56.61 J	70.29 J	46.41 J
Pristane	35.94 J	37.19 J	43.77 J	31.6 J
n-Octadecane	45.4 J	49.34 J	56.61 J	39.02 J
Phytane	14.88 J	15.81 J	18.62 J	13.31 J
n-Nonadecane	59.64 J	61.46 J	75.42 J	52.24 J
n-Eicosane	56.86 J	71.3 J	72.74 J	49.78 J
n-Heneicosane	106.85	113.17	137.97	93.45
n-Docosane	97.16	128.26	128.85	83.21
n-Tricosane	227.72	252.78	301.86	193.86
n-Tetracosane	106.56	164.34	151.05	92.16
n-Pentacosane	291.74	346.4	402.68	254.05
n-Hexacosane	107.94	177.89	150.7	91.69
n-Heptacosane	449.68	551.38	634.69	370.81
n-Octacosane	78.88	138.16	116.84	65.68 J
n-Nonacosane	331.83	369.76	449.38	273.23
n-Triacontane	57.39 J	90.06	62.46 J	46.4 J
n-Hentriacontane	275.11	274.58	367.16	215.94
n-Dotriacontane	27.59 J	58.21 J	38.99 J	21.85 J
n-Tritriacontane	108.8	78.85 J	131.46	83.37
n-Tetratriacontane	12.34 J	22.4 J	12.18 J	11.18 J
n-Pentatriacontane	20.51 J	8.15 J	18.8 J	14.13 J
n-Hexatriacontane	4.12 J	6.06 J	4.99 J	2.79 J
n-Heptatriacontane	4.17 J	U	3.29 J	2.36 J
n-Octatriacontane	3.28 J	U	1.92 J	1.36 J
n-Nonatriacontane	1.99 J	U	U	U
n-Tetracontane	1.88 J	U	U	U
Total SHC	2898	3447.89	3916.01	2425.08
TPH	4766.23	17801.34	18036.09	8051.47
Surrogate Recoveries (%)				
5a-androstane	81	101	97	66
n-Tetracosane-d50	83	97	96	68

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-SC	08-03-BF019-01-SC	08-03-BF021-01-SC	08-03-BF023-01-SC
Batch ID	09-0004	09-0002	09-0004	09-0002
Battelle ID	Q6015-P	Q5769-P	Q6019-P	Q5755-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/19/08	09/13/08	09/17/08
Extraction Date	02/03/09	01/22/09	02/03/09	01/22/09
Analysis Date	02/15/09	02/03/09	02/15/09	02/03/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	48.58	57.68	53.55	30.87
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.40	12.73	13.91	20.70
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	10 J	13.19 J	11.78 J	5.23 J
n-Decane	41.52 J	19.01 J	36.98 J	7.49 J
n-Undecane	14.76 J	24.46 J	20.85 J	9.51 J
n-Dodecane	19.78 J	27.83 J	22.43 J	10.31 J
n-Tridecane	23.63 J	33.59 J	25.95 J	12.33 J
Isoprenoid RRT 1380	5.53 J	8.28 J	6.6 J	3.46 J
n-Tetradecane	28.19 J	37.17 J	31.05 J	15.91 J
Isoprenoid RRT 1470	15.04 J	18.49 J	14.85 J	7.39 J
n-Pentadecane	36.84 J	65.3 J	40.47 J	22.12 J
Norpristane (1650)	6.35 J	10.11 J	7.38 J	4.16 J
n-Hexadecane	28.41 J	40.44 J	28.76 J	16.05 J
n-Heptadecane	31.84 J	48.97 J	36 J	18.52 J
Pristane	21.85 J	32.26 J	22.3 J	12.93 J
n-Octadecane	41.23 J	40.65 J	29.02 J	16.2 J
Phytane	10.71 J	13.24 J	8.67 J	4.9 J
n-Nonadecane	34.35 J	56.15 J	38.63 J	21.83 J
n-Eicosane	70.36 J	53.92 J	38.49 J	21.05 J
n-Heneicosane	61.11 J	99.89	72.19 J	37.79 J
n-Docosane	118.65	96.08	71.67 J	36.35 J
n-Tricosane	136.71	220.13	162.41	83.56
n-Tetracosane	147.53	122.53	86.88	41.74 J
n-Pentacosane	177.88	313.93	218.42	110.18
n-Hexacosane	159.8	139.41	93.56	43.47 J
n-Heptacosane	277.49	485.54	347.25	171.17
n-Octacosane	136.93	120.35	67.35 J	32.16 J
n-Nonacosane	185.89	365.46	229.29	128.06
n-Triacontane	103.84	91.36	34.65 J	23.68 J
n-Hentriacontane	142.51	297.85	159.01	106.43
n-Dotriacontane	73.3	45.56 J	20.03 J	11.65 J
n-Tritriacontane	41.1 J	116.09	42.49 J	42.92 J
n-Tetratriacontane	31.41 J	20.01 J	4.8 J	4.43 J
n-Pentatriacontane	4.93 J	21.53 J	12.19 J	7.76 J
n-Hexatriacontane	10.05 J	5.84 J	U	1.4 J
n-Heptatriacontane	U	3.51 J	U	1.16 J
n-Octatriacontane	U	1.96 J	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	2249.52	3110.09	2042.4	1093.3
TPH	15609.85	8230.07	15260.17	2426.47

Surrogate Recoveries (%)

5a-androstane	87	78	97	80
n-Tetracosane-d50	84	80	95	81

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-SC	08-03-BR005-01-SC	08-03-BR016-01-SC	08-03-BR020-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0001
Battelle ID	Q5764-P	Q5744-P	Q5760-P	Q5715-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/21/08	09/18/08	09/19/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/15/09
Analysis Date	02/03/09	02/03/09	02/03/09	01/28/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	39.63	47.36	47.58	56.83
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.11	15.82	15.80	12.96
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	6.56 J	8.71 J	9 J	9.06 J
n-Decane	10.07 J	12.63 J	11.9 J	16.15 J
n-Undecane	12.62 J	15.17 J	16.37 J	21.72 J
n-Dodecane	13.3 J	17.08 J	17.82 J	24.27 J
n-Tridecane	15.74 J	21.16 J	23.67 J	28.76 J
Isoprenoid RRT 1380	4.2 J	5.74 J	5.98 J	8 J
n-Tetradecane	20.07 J	25.71 J	25.31 J	42.96 J
Isoprenoid RRT 1470	8.72 J	13.2 J	12.56 J	15.53 J
n-Pentadecane	27.82 J	37.33 J	39.93 J	60.07 J
Norpristane (1650)	5.6 J	7.05 J	6.51 J	8.99 J
n-Hexadecane	20.63 J	25.07 J	25.85 J	36.63 J
n-Heptadecane	24.3 J	31.08 J	31.57 J	41.85 J
Pristane	16.63 J	21.1 J	21.01 J	29.12 J
n-Octadecane	20.47 J	26.19 J	26.03 J	36.07 J
Phytane	6.84 J	8.76 J	8.49 J	12.55 J
n-Nonadecane	28.01 J	34.42 J	35.77 J	48.47 J
n-Eicosane	26.63 J	33.93 J	35.2 J	47.63 J
n-Heneicosane	49.7 J	63.92 J	64.2 J	87.14
n-Docosane	47.11 J	60.84 J	60.93 J	86.05
n-Tricosane	109.84	141.36	141.93	191.48
n-Tetracosane	55.42 J	71.14	73.77	103.1
n-Pentacosane	156.31	199.65	194.93	256.25
n-Hexacosane	58.85 J	74.27	74.26	99.36
n-Heptacosane	234.68	309.26	304.98	385.87
n-Octacosane	42.85 J	56.28 J	55.8 J	74.81 J
n-Nonacosane	177.45	228.1	226.74	282.7
n-Triacontane	31.77 J	40.09 J	41.97 J	56.9 J
n-Hentriacontane	146.54	184.48	185.83	234.24
n-Dotriacontane	16.1 J	20.22 J	22.04 J	29.81 J
n-Tritriacontane	57.4 J	73.01	75.98	93.28
n-Tetratriacontane	5.71 J	9.05 J	9.49 J	12.09 J
n-Pentatriacontane	9.84 J	13.01 J	13.39 J	17.08 J
n-Hexatriacontane	1.64 J	3.18 J	3.17 J	3.46 J
n-Heptatriacontane	1.25 J	1.9 J	1.96 J	2.95 J
n-Octatriacontane	U	2.06 J	1.4 J	1.76 J
n-Nonatriacontane	U	0.77 J	U	U
n-Tetracontane	U	U	U	U
Total SHC	1470.67	1896.92	1905.74	2506.16
TPH	3622.98	3940.46	4592.6	10200.13
Surrogate Recoveries (%)				
5a-androstane	82	82	78	78
n-Tetracosane-d50	83	84	80	80

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR032-01-SC	08-03-BR038-01-SC	08-03-BR043-01-SC	08-03-BR047-01-SC
Batch ID	09-0003	09-0002	09-0004	09-0003
Battelle ID	Q5916-P	Q5766-P	Q6028-P	Q5909-P
Sample Type	SA	SA	SA	SA
Collection Date	09/14/08	09/18/08	09/14/08	09/17/08
Extraction Date	01/29/09	01/22/09	02/03/09	01/29/09
Analysis Date	02/07/09	02/03/09	02/15/09	02/07/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	36.69	53.86	60.44	55.54
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.97	13.81	11.90	13.45
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	5.79 J	12.99 J	20.96 J	16.49 J
n-Decane	18.15 J	18.37 J	70.36 J	41.5 J
n-Undecane	11.45 J	23.9 J	42.65 J	35.17 J
n-Dodecane	11.87 J	25.52 J	42.67 J	34.44 J
n-Tridecane	13.78 J	39.58 J	50.73 J	40.4 J
Isoprenoid RRT 1380	3.41 J	7.69 J	11.94 J	10.92 J
n-Tetradecane	14.7 J	36.96 J	50.45 J	44.38 J
Isoprenoid RRT 1470	7.61 J	19.02 J	26.7 J	22.44 J
n-Pentadecane	19.66 J	55.14 J	66.19 J	57.02 J
Norpristane (1650)	3.7 J	10.98 J	14.35 J	12.74 J
n-Hexadecane	14.16 J	38.39 J	52.48 J	44.11 J
n-Heptadecane	17.62 J	46.55 J	66.47 J	53.92 J
Pristane	11.6 J	31.29 J	41.09 J	35.45 J
n-Octadecane	14.24 J	38.74 J	55.21 J	44.45 J
Phytane	4.36 J	12.63 J	17.33 J	13.36 J
n-Nonadecane	18.82 J	55.2 J	72.45 J	61.47 J
n-Eicosane	18.77 J	50.21 J	75.68 J	58.27 J
n-Heneicosane	34.45 J	94.35	135.65	106.06
n-Docosane	31.73 J	87.41	140.62	98.09
n-Tricosane	74.57	205.23	301.85	236.57
n-Tetracosane	37.12 J	102.74	171.13	116.78
n-Pentacosane	98.22	288.1	397.33	320.61
n-Hexacosane	39.69 J	105.12	182.52	123.48
n-Heptacosane	155.83	429.89	633.63	484.09
n-Octacosane	28.85 J	79.64 J	136.6	88.87
n-Nonacosane	108.76	316.73	438.51	341.52
n-Triacontane	16.14 J	57.13 J	82.83 J	48.32 J
n-Hentriacontane	86.64	262.17	335.72	265.62
n-Dotriacontane	8.98 J	27.13 J	51.96 J	37.54 J
n-Tritriacontane	26.91 J	102.5	93.83	103.53
n-Tetratriacontane	2.26 J	10.08 J	18.04 J	8.54 J
n-Pentatriacontane	2.96 J	17.4 J	10.29 J	16.87 J
n-Hexatriacontane	U	2.75 J	5.25 J	3.63 J
n-Heptatriacontane	U	2.21 J	U	2.1 J
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	962.8	2713.74	3913.47	3028.75
TPH	11685.17	7442.5	10584.99	17647.44
Surrogate Recoveries (%)				
5a-androstane	88	79	98	85
n-Tetracosane-d50	86	81	94	84

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR077-01-SC	08-03-BR080-01-SC	08-03-BR086-01-SC	08-03-BR093-01-SC
Batch ID	09-0002	09-0001	09-0003	09-0003
Battelle ID	Q5732-P	Q5723-P	Q5861-P	Q5884-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/19/08	09/01/08	09/02/08
Extraction Date	01/22/09	01/15/09	01/29/09	01/29/09
Analysis Date	02/03/09	01/29/09	02/06/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	48.34	57.34	44.99	50.09
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	12.81	16.50	14.98
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	13.35 J	11.27 J	13.04 J	13.59 J
n-Decane	18.99 J	20.61 J	22.3 J	28.55 J
n-Undecane	24.9 J	27.31 J	27.6 J	28.75 J
n-Dodecane	26.11 J	29.73 J	27.99 J	28.08 J
n-Tridecane	30.07 J	35.31 J	31.79 J	31.9 J
Isoprenoid RRT 1380	8.02 J	10.36 J	7.64 J	7.98 J
n-Tetradecane	34.13 J	44.23 J	35.27 J	35.86 J
Isoprenoid RRT 1470	16.36 J	19.39 J	18.24 J	17.33 J
n-Pentadecane	44.91 J	57.07 J	45.33 J	48.36 J
Norpristane (1650)	10.06 J	13.01 J	9.69 J	9.94 J
n-Hexadecane	35.09 J	44.07 J	34.88 J	34.45 J
n-Heptadecane	42.26 J	55.31 J	43.21 J	41.86 J
Pristane	28.16 J	36.03 J	28.78 J	28.59 J
n-Octadecane	36.58 J	48.37 J	36.39 J	34.43 J
Phytane	12.56 J	15.05 J	11.78 J	10.84 J
n-Nonadecane	48.22 J	65 J	47.91 J	45.72 J
n-Eicosane	45.44 J	62.48 J	48.74 J	43.74 J
n-Heneicosane	84.07	119.57	86.19	80.72
n-Docosane	76.27	105.99	80.83	72.95
n-Tricosane	175.74	246.95	181.75	172.07
n-Tetracosane	85.47	113.72	90.62	82.38
n-Pentacosane	224.34	310.53	230.29	218.8
n-Hexacosane	87.18	112.24	91.95	85.39
n-Heptacosane	345.16	464.24	355.82	345.95
n-Octacosane	65.14 J	81.5 J	67.06	61.38 J
n-Nonacosane	261.07	339.64	253.95	241.15
n-Triacontane	49.64 J	60.39 J	36.99 J	32.8 J
n-Hentriacontane	212.03	273.02	206.88	190.76
n-Dotriacontane	27.93 J	29.56 J	28.89 J	20.93 J
n-Tritriacontane	86.25	103.39	79.21	69.82 J
n-Tetratriacontane	14.09 J	11.25 J	9.4 J	6.88 J
n-Pentatriacontane	15.94 J	16.86 J	13.13 J	11.27 J
n-Hexatriacontane	5.69 J	4.07 J	4.13 J	2.73 J
n-Heptatriacontane	3.06 J	2.66 J	2.59 J	2.5 J
n-Octatriacontane	3.69 J	1.38 J	2.25 J	1.44 J
n-Nonatriacontane	1.75 J	U	U	U
n-Tetracontane	1.98 J	U	U	U
Total SHC	2301.7	2991.56	2312.51	2189.89
TPH	5143.42	9264.29	12679.07	13797.08
Surrogate Recoveries (%)				
5a-androstane	101	72	85	87
n-Tetracosane-d50	103	75	84	85

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR098-01-SC	08-03-BR099-01-SC	08-03-BR100-01-SC	08-03-KD001-01-SC02
Batch ID	09-0003	09-0003	09-0003	09-0004
Battelle ID	Q5889-P	Q5870-P	Q5871-P	Q5950-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/03/08	09/03/08	09/01/08
Extraction Date	01/29/09	01/29/09	01/29/09	02/03/09
Analysis Date	02/06/09	02/06/09	02/06/09	02/14/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	44.08	44.37	44.04	42.65
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.79	16.72	16.77	17.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	11.98 J	12.1 J	10.86 J	13.64 J
n-Decane	23.57 J	21.01 J	21.32 J	65.93
n-Undecane	25.78 J	26.12 J	25.19 J	26.64 J
n-Dodecane	24.69 J	26.14 J	23.48 J	27.03 J
n-Tridecane	27.54 J	29.64 J	26.42 J	31.26 J
Isoprenoid RRT 1380	7.27 J	8 J	6.75 J	7.66 J
n-Tetradecane	31.6 J	33.14 J	30.09 J	35.16 J
Isoprenoid RRT 1470	15.29 J	16.76 J	15.07 J	16.51 J
n-Pentadecane	40.02 J	41.46 J	37.44 J	45.47 J
Norpristane (1650)	7.83 J	9.77 J	8.4 J	8.9 J
n-Hexadecane	30.24 J	32.4 J	29.1 J	32.64 J
n-Heptadecane	35.03 J	38.84 J	34.39 J	39.54 J
Pristane	24.52 J	27.29 J	25.77 J	29.1 J
n-Octadecane	30.21 J	32.99 J	30.44 J	33.34 J
Phytane	9.95 J	10.86 J	9.26 J	9.74 J
n-Nonadecane	39.16 J	43.6 J	39.59 J	43.24 J
n-Eicosane	38.98 J	41.88 J	37.78 J	44.35 J
n-Heneicosane	67.31	73.6	66.26	76.16
n-Docosane	60.69 J	64.84	58.18 J	75.78
n-Tricosane	139.72	150.4	135.11	165.22
n-Tetracosane	66.74	69.34	61.57 J	86.29
n-Pentacosane	173.92	177.86	161.13	220.94
n-Hexacosane	67.99	68.48	59.17 J	82.36
n-Heptacosane	265.58	268.96	235.66	337.87
n-Octacosane	48.91 J	48.21 J	44.1 J	61.59 J
n-Nonacosane	189.56	196.04	169.88	232.62
n-Triacontane	25.77 J	25.97 J	23.73 J	35.11 J
n-Hentriacontane	148.05	154.12	134.77	172.78
n-Dotriacontane	19.19 J	18 J	17.87 J	20.2 J
n-Tritriacontane	55.73 J	59.7 J	51.71 J	50.61 J
n-Tetratriacontane	5.38 J	5.71 J	4.91 J	7.49 J
n-Pentatriacontane	9.03 J	10.31 J	8.79 J	6.1 J
n-Hexatriacontane	2.21 J	2.29 J	1.83 J	2.27 J
n-Heptatriacontane	1.82 J	1.88 J	1.7 J	U
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	1771.26	1847.71	1647.72	2143.54
TPH	9302.05	12195.55	4841.55	13964.53
Surrogate Recoveries (%)				
5a-androstane	76	88	85	90
n-Tetracosane-d50	76	87	84	88

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD002-01-SC02	08-03-KD002-01-SC24	08-03-KD002-01-SC46	08-03-KD002-01-SC68
Batch ID	09-0002	09-0002	09-0002	09-0002
Battelle ID	Q5774-P	Q5775-P	Q5776-P	Q5777-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/22/09
Analysis Date	02/03/09	02/03/09	02/03/09	02/04/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	48.09	43.73	39.07	37.88
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.56	16.93	18.39	18.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	10.85 J	11.07 J	12.03 J	11.36 J
n-Decane	14.81 J	16.47 J	17.51 J	18.45 J
n-Undecane	19.8 J	20.28 J	23.46 J	23.59 J
n-Dodecane	21.01 J	23.53 J	24.91 J	26.33 J
n-Tridecane	24.2 J	25.8 J	28.78 J	28.58 J
Isoprenoid RRT 1380	6.14 J	5.9 J	6.8 J	7.61 J
n-Tetradecane	28.04 J	29.17 J	32.62 J	30.09 J
Isoprenoid RRT 1470	14.83 J	13.85 J	15.28 J	14.45 J
n-Pentadecane	40.28 J	38.94 J	40.3 J	37.65 J
Norpristane (1650)	7.6 J	8.7 J	9.68 J	8.84 J
n-Hexadecane	28.32 J	30.25 J	33.06 J	32.19 J
n-Heptadecane	33.8 J	35.85 J	40.78 J	40.56 J
Pristane	96.33	34.15 J	29.49 J	27.41 J
n-Octadecane	28.75 J	31.54 J	36.01 J	34.7 J
Phytane	8.41 J	9.85 J	10.81 J	10.45 J
n-Nonadecane	37.7 J	40.84 J	47.13 J	45.57 J
n-Eicosane	37.24 J	39.96 J	46.12 J	45.63 J
n-Heneicosane	67.7 J	72.48	86.54	86.01
n-Docosane	61.97 J	67.56	80.41	79.81
n-Tricosane	144.18	157.81	186.53	189.13
n-Tetracosane	69.62 J	77.21	94.31	94.16
n-Pentacosane	193.21	209.94	253.36	263.08
n-Hexacosane	66.77 J	74.34	93.74	92.22
n-Heptacosane	302.09	339.76	405.89	411.85
n-Octacosane	52.19 J	55.76 J	70.6	67.71
n-Nonacosane	216.33	241.3	292.43	294.47
n-Triacontane	38.24 J	39.87 J	53.32 J	48.72 J
n-Hentriacontane	173.33	192.34	237.14	239.96
n-Dotriacontane	18.69 J	20.5 J	28.95 J	22.77 J
n-Tritriacontane	67.23 J	73.84	90.35	89.04
n-Tetratriacontane	7.45 J	6.36 J	13.21 J	8.39 J
n-Pentatriacontane	9.67 J	10.13 J	13.02 J	11.71 J
n-Hexatriacontane	1.54 J	1.39 J	3.72 J	1.61 J
n-Heptatriacontane	1.26 J	1.09 J	1.42 J	1.02 J
n-Octatriacontane	U	U	1.29 J	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	1949.58	2057.83	2461	2445.12
TPH	4607.68	5144.98	4041.59	4393.92
Surrogate Recoveries (%)				
5a-androstane	78	81	77	75
n-Tetracosane-d50	80	83	79	77

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD003-01-SC-02	08-03-KD004-01-SC02	08-03-KD005-01-SC02	08-03-KD005-01-SC1012
Batch ID	09-0004	09-0004	09-0004	09-0004
Battelle ID	Q5947-P	Q5936-P	Q5941-P	Q5940-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	02/03/09	02/03/09
Analysis Date	02/14/09	02/14/09	02/14/09	02/14/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	39.89	42.73	29.06	34.57
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	17.16	21.37	19.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	11.69 J	13.6 J	189.07	54.37 J
n-Decane	30.76 J	32.76 J	243.59	76.03
n-Undecane	22.98 J	24.91 J	237.89	71.36
n-Dodecane	23.66 J	26.43 J	218.1	65.57
n-Tridecane	26.67 J	30.65 J	208	65.19
Isoprenoid RRT 1380	6.57 J	7.42 J	52.68	15.72 J
n-Tetradecane	30.8 J	34.77 J	195.62	63.71
Isoprenoid RRT 1470	15.59 J	17.29 J	98.89	31.74 J
n-Pentadecane	38.97 J	44.43 J	200.57	68.58
Norpristane (1650)	7.83 J	9.11 J	72.14	19.16 J
n-Hexadecane	28.82 J	33.87 J	178.53	57.22
n-Heptadecane	35 J	40.49 J	174.69	62.93
Pristane	27.4 J	40.77 J	184.48	49.14 J
n-Octadecane	29.98 J	34.07 J	172.1	52.39 J
Phytane	8.59 J	9.44 J	78.84	18.3 J
n-Nonadecane	38.7 J	44.19 J	167.5	64.45
n-Eicosane	38.46 J	42.31 J	192.9	63.2
n-Heneicosane	67.22	74.13	172.42	99.99
n-Docosane	63.86	68.69	235.01	100.83
n-Tricosane	144.51	155.61	220.52	204.04
n-Tetracosane	72.23	79.27	245.8	115.79
n-Pentacosane	190.01	203.91	219.04	267.91
n-Hexacosane	69.52	81.17	241.79	115.62
n-Heptacosane	296.87	316.47	243.69	423.6
n-Octacosane	51.28 J	57.66 J	209.35	91.51
n-Nonacosane	203.58	214.33	172.92	292.22
n-Triacontane	27.36 J	30.44 J	165.22	58.25
n-Hentriacontane	151.4	161.3	130.38	229.17
n-Dotriacontane	17.58 J	18.09 J	140.27	40.43 J
n-Tritriacontane	48.87 J	51.95 J	62.46	82.32
n-Tetratriacontane	5.4 J	6.29 J	95.83	20.12 J
n-Pentatriacontane	10.01 J	7.69 J	30.22 J	13.93 J
n-Hexatriacontane	1.28 J	2.07 J	65.8	9.65 J
n-Heptatriacontane	0.75 J	1.39 J	13.77 J	2.59 J
n-Octatriacontane	U	U	38.53 J	3.88 J
n-Nonatriacontane	U	U	8.88 J	U
n-Tetracontane	U	U	18.95 J	U
Total SHC	1844.2	2016.97	5596.44	3070.91
TPH	12019.02	7267.83	20713.44	15279.25
Surrogate Recoveries (%)				
5a-androstane	90	91	91	97
n-Tetracosane-d50	88	89	89	94

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-SC24	08-03-KD005-01-SC46	08-03-KD005-01-SC68	08-03-KD005-01-SC810
Batch ID	09-0004	09-0004	09-0002	09-0004
Battelle ID	Q5942-P	Q5943-P	Q5785-P	Q5939-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	01/22/09	02/03/09
Analysis Date	02/14/09	02/14/09	02/04/09	02/14/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	36.14	34.39	35.54	35.7
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.11	19.80	19.33	19.25
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	186.53	183.47	95.66	59.69
n-Decane	235.46	244.85	99.38	83.19
n-Undecane	208.72	206.12	105.32	75.5
n-Dodecane	173.69	164.05	96.36	65.06
n-Tridecane	163.25	150.77	93.09	63.67
Isoprenoid RRT 1380	42.29 J	37.75 J	23.38 J	16.11 J
n-Tetradecane	153.22	137.16	93.87	62.15
Isoprenoid RRT 1470	73.95	65.15	40.87 J	29.42 J
n-Pentadecane	159.51	136.03	100.05	64.99
Norpristane (1650)	59.21	41.28 J	29.5 J	17.22 J
n-Hexadecane	144.21	114.74	83.26	55.76 J
n-Heptadecane	144.8	114.68	91.5	60.71
Pristane	127.56	105.42	76.54	46.99 J
n-Octadecane	125.92	103.4	79.07	53.32 J
Phytane	61.55	43.69 J	35.43 J	19.73 J
n-Nonadecane	131.85	108.41	90.76	63.74
n-Eicosane	116.57	112.54	88.13	63.04
n-Heneicosane	141.68	131	124.61	98.45
n-Docosane	131.93	147.11	115.94	98.23
n-Tricosane	211.96	219.07	219.31	199.45
n-Tetracosane	124.99	160.74	120.56	113.95
n-Pentacosane	246.33	268.89	285.99	262.66
n-Hexacosane	112.53	158.48	115.02	113.67
n-Heptacosane	345.42	377.81	411.42	413.36
n-Octacosane	79.65	125.38	84.9	84.27
n-Nonacosane	235.63	261.92	302.62	280.44
n-Triacontane	44.26 J	91.18	64.94	48.25 J
n-Hentriacontane	181.86	207.88	255.19	215.01
n-Dotriacontane	29.66 J	69.96	34.79 J	32.25 J
n-Tritriacontane	68.17	80.45	109.55	76.47
n-Tetratriacontane	14.06 J	38.89 J	18.94 J	13.28 J
n-Pentatriacontane	18.74 J	21.28 J	26.45 J	14.64 J
n-Hexatriacontane	7.76 J	22.53 J	8.08 J	6.59 J
n-Heptatriacontane	5.21 J	6.33 J	6.95 J	3.1 J
n-Octatriacontane	5.08 J	12.33 J	4.83 J	3.91 J
n-Nonatriacontane	2.56 J	2.84 J	3.21 J	U
n-Tetracontane	1.98 J	4.61 J	1.45 J	U
Total SHC	4317.75	4478.19	3636.92	2978.27
TPH	22182.25	21240.13	10392.66	15134
Surrogate Recoveries (%)				
5a-androstane	97	89	76	94
n-Tetracosane-d50	93	86	77	92

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF001-01-SC	08-03-KF003-01-SC	08-03-KF005-01-SC	08-03-KF007-01-SC
Batch ID	09-0001	09-0002	09-0003	09-0001
Battelle ID	Q5704-P	Q5821-P	Q5826-P	Q5705-P
Sample Type	SA	SA	SA	SA
Collection Date	08/21/08	08/29/08	08/31/08	08/22/08
Extraction Date	01/15/09	01/22/09	01/29/09	01/15/09
Analysis Date	01/30/09	02/04/09	02/06/09	01/30/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	39.91	43.9	48.42	31.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.99	16.88	15.45	20.67
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	6.9 J	10.33 J	17.42 J	4.6 J
n-Decane	10.31 J	14.47 J	29.59 J	8.01 J
n-Undecane	13.52 J	19.21 J	36.09 J	10.74 J
n-Dodecane	14.52 J	19.98 J	35.86 J	11.73 J
n-Tridecane	17.38 J	23.28 J	40.17 J	14.01 J
Isoprenoid RRT 1380	3.89 J	5.64 J	9.8 J	3.74 J
n-Tetradecane	17.93 J	27.14 J	43.6 J	20.09 J
Isoprenoid RRT 1470	9.09 J	13.73 J	21.55 J	7.75 J
n-Pentadecane	23.94 J	36.52 J	53.71 J	29.4 J
Norpristane (1650)	5.45 J	7.35 J	11.51 J	4.58 J
n-Hexadecane	19.05 J	28.29 J	42.55 J	18.01 J
n-Heptadecane	25.2 J	35.22 J	51.27 J	21.5 J
Pristane	19.8 J	29.1 J	39.33 J	19.19 J
n-Octadecane	21.64 J	31.16 J	43.21 J	19.12 J
Phytane	6.23 J	9.61 J	13.16 J	5.41 J
n-Nonadecane	28.89 J	40.93 J	56.19 J	24.29 J
n-Eicosane	29.38 J	38.73 J	53.68 J	25.77 J
n-Heneicosane	54.24 J	71.93	96.48	44.66 J
n-Docosane	52.25 J	65.34	86.57	44.7 J
n-Tricosane	118.07	150.39	200.1	96.25
n-Tetracosane	62.2	74.28	96.04	54.36
n-Pentacosane	161.77	206.14	255.17	134.8
n-Hexacosane	62.46	73.16	97.75	57.55
n-Heptacosane	258.52	312.59	397.76	227.51
n-Octacosane	44.31 J	50.99 J	70.26 J	44.15 J
n-Nonacosane	182.23	222.01	280.02	153
n-Triacontane	32.67 J	37.06 J	36.45 J	34.72 J
n-Hentriacontane	144.39	177.77	221.31	116.63
n-Dotriacontane	17.29 J	17.75 J	23.97 J	19.85 J
n-Tritriacontane	52.53 J	64.69	83.81	43.26 J
n-Tetratriacontane	8.02 J	5.63 J	8.84 J	8.7 J
n-Pentatriacontane	6.77 J	7.34 J	15.4 J	5.95 J
n-Hexatriacontane	2.77 J	1.23 J	3.75 J	2.41 J
n-Heptatriacontane	0.79 J	U	3.28 J	0.88 J
n-Octatriacontane	U	U	3.17 J	U
n-Nonatriacontane	U	U	48.71 J	U
n-Tetracontane	U	U	36.67 J	U
Total SHC	1534.4	1928.99	2664.2	1337.32
TPH	4985.89	4890.22	14225.96	4274.38
Surrogate Recoveries (%)				
5a-androstane	79	84	91	75
n-Tetracosane-d50	82	86	89	78

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF009-01-SC	08-03-KF011-01-SC	08-03-KF013-01-SC	08-03-KF015-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0003
Battelle ID	Q5710-P	Q5708-P	Q5694-P	Q5824-P
Sample Type	SA	SA	SA	SA
Collection Date	08/24/08	08/21/08	08/23/08	08/31/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/29/09
Analysis Date	01/30/09	01/30/09	01/30/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	37.74	38.25	36.78	24.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.72	18.50	18.92	22.71
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	4.6 J	6.22 J	5.54 J	2.96 J
n-Decane	7.51 J	9.64 J	8.84 J	6.14 J
n-Undecane	10.2 J	11.97 J	11.87 J	19 J
n-Dodecane	10.79 J	12.05 J	12.32 J	5.34 J
n-Tridecane	11.64 J	13.75 J	14.65 J	5.22 J
Isoprenoid RRT 1380	2.83 J	4.88 J	3.41 J	1.36 J
n-Tetradecane	21.98 J	20.99 J	15.2 J	7.46 J
Isoprenoid RRT 1470	6.25 J	7.99 J	8.56 J	2.83 J
n-Pentadecane	29.72 J	31.89 J	20.09 J	9.55 J
Norpristane (1650)	4.08 J	5.55 J	5.08 J	1.45 J
n-Hexadecane	17.63 J	19.53 J	17.44 J	6.25 J
n-Heptadecane	18.58 J	21.12 J	22.52 J	6.46 J
Pristane	13.53 J	27.41 J	19.91 J	7.17 J
n-Octadecane	16.37 J	20.28 J	19.07 J	5.89 J
Phytane	5.02 J	5.48 J	5.68 J	1.81 J
n-Nonadecane	21.29 J	23.96 J	25.62 J	6.76 J
n-Eicosane	21.06 J	25.24 J	24.96 J	7.29 J
n-Heneicosane	38.68 J	42.6 J	46.87 J	11.8 J
n-Docosane	35.74 J	41.79 J	43.62 J	11.24 J
n-Tricosane	82.61	91.67	102.52	25.23 J
n-Tetracosane	41.46 J	49.24 J	50.58 J	13.23 J
n-Pentacosane	110.56	130.25	133.62	30.79 J
n-Hexacosane	41.41 J	49.22 J	50.4 J	14.91 J
n-Heptacosane	165.46	192.24	212.42	47.58 J
n-Octacosane	29.49 J	35.05 J	37.62 J	12.38 J
n-Nonacosane	120.04	132.16	153.7	34.32 J
n-Triacontane	22.13 J	24.77 J	27.12 J	9.03 J
n-Hentriacontane	95.82	102.22	125.95	26.05 J
n-Dotriacontane	10.52 J	12.46 J	14 J	7.08 J
n-Tritriacontane	33.98 J	37.7 J	46.28 J	9.57 J
n-Tetratriacontane	3.55 J	4.36 J	6.14 J	4.86 J
n-Pentatriacontane	3.97 J	5.25 J	8.2 J	2.27 J
n-Hexatriacontane	0.6 J	0.97 J	2.05 J	4.08 J
n-Heptatriacontane	U	U	1.49 J	0.76 J
n-Octatriacontane	U	U	1.04 J	3.22 J
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	1059.1	1219.9	1304.38	371.34
TPH	5077.13	4697.32	3635.75	461.06

Surrogate Recoveries (%)

5a-androstane	77	74	73	86
n-Tetracosane-d50	81	78	76	86

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF017-01-SC	08-03-KF019-01-SC	08-03-KF021-01-SC	08-03-KF023-01-SC
Batch ID	09-0001	09-0002	09-0001	09-0001
Battelle ID	Q5678-P	Q5811-P	Q5664-P	Q5669-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/28/08	08/27/08	08/27/08
Extraction Date	01/15/09	01/22/09	01/15/09	01/15/09
Analysis Date	01/29/09	02/04/09	01/29/09	01/29/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	48.56	20.45	56.24	47.49
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.48	23.93	13.12	15.75
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	8.27 J	3.94 J	13.37 J	9.58 J
n-Decane	13.07 J	6.24 J	20 J	14.98 J
n-Undecane	18.22 J	7.76 J	27.88 J	20.95 J
n-Dodecane	19.45 J	8.75 J	29.81 J	21.4 J
n-Tridecane	22.86 J	10.7 J	35.83 J	26.24 J
Isoprenoid RRT 1380	7.61 J	3.18 J	8.83 J	7.05 J
n-Tetradecane	23.95 J	13.23 J	40.73 J	27.1 J
Isoprenoid RRT 1470	14.02 J	7.95 J	20.46 J	14.27 J
n-Pentadecane	37.8 J	17.01 J	58.27 J	38.75 J
Norpristane (1650)	7.84 J	4.33 J	11.92 J	8.18 J
n-Hexadecane	27.01 J	13.6 J	43.91 J	29.7 J
n-Heptadecane	36.07 J	15.95 J	58.43 J	38.48 J
Pristane	29.98 J	19.72 J	44.75 J	26.06 J
n-Octadecane	29.91 J	15.13 J	48.78 J	32.28 J
Phytane	8.93 J	4.02 J	14.53 J	9.68 J
n-Nonadecane	41.17 J	19.41 J	69.7 J	43.68 J
n-Eicosane	39.93 J	19.44 J	67.25 J	43.81 J
n-Heneicosane	76.27	32.08 J	140.9	81.05
n-Docosane	70.95	30.96 J	129.83	76.52
n-Tricosane	165.29	65.42	316.28	178.27
n-Tetracosane	83.18	34.31 J	154.67	90.91
n-Pentacosane	224.53	84.52	455.04	251.72
n-Hexacosane	82.95	32.63 J	156.53	91.96
n-Heptacosane	350.97	123.02	718.84	387.52
n-Octacosane	59.61 J	22.92 J	112.52	65.88 J
n-Nonacosane	246.12	92.32	494.97	268.85
n-Triacontane	41.08 J	17.44 J	77.28 J	46.6 J
n-Hentriacontane	194.89	76.26	387.81	214.62
n-Dotriacontane	20.34 J	8.05 J	38.41 J	23.52 J
n-Tritriacontane	75.12	33.86 J	152.16	82.64
n-Tetratriacontane	8.85 J	2.71 J	16.43 J	12.2 J
n-Pentatriacontane	13.67 J	4.55 J	27.43 J	16.01 J
n-Hexatriacontane	3.15 J	U	5.27 J	4.85 J
n-Heptatriacontane	2.41 J	U	5.36 J	3.19 J
n-Octatriacontane	1.87 J	U	4.55 J	3.43 J
n-Nonatriacontane	1.22 J	U	3.03 J	1.56 J
n-Tetracontane	0.77 J	U	2.58 J	1.67 J
Total SHC	2109.33	851.41	4014.34	2315.16
TPH	5908.08	2167.31	8339.43	5873.87
Surrogate Recoveries (%)				
5a-androstane	75	81	76	73
n-Tetracosane-d50	78	83	79	76

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-SC	08-03-KR001-01-SC	08-03-KR007-01-SC	08-03-KR008-01-SC
Batch ID	09-0002	09-0001	09-0001	09-0004
Battelle ID	Q5806-P	Q5662-P	Q5682-P	Q5973-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	01/22/09	01/15/09	01/15/09	02/03/09
Analysis Date	02/04/09	01/23/09	01/29/09	02/14/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	47.43	44.27	45.56	32.06
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.88	16.68	16.38	20.48
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	9.89 J	11.57 J	8.04 J	7.67 J
n-Decane	13.93 J	16.16 J	12.47 J	30.34 J
n-Undecane	17.48 J	21.16 J	17.39 J	19.22 J
n-Dodecane	20.05 J	23.34 J	18.28 J	13.16 J
n-Tridecane	22.52 J	27.98 J	21.66 J	14.18 J
Isoprenoid RRT 1380	6.76 J	7.26 J	6.29 J	3.48 J
n-Tetradecane	26.78 J	28.59 J	23.25 J	18.52 J
Isoprenoid RRT 1470	12.77 J	13.58 J	14.05 J	8.01 J
n-Pentadecane	37.23 J	36.44 J	33.64 J	23.19 J
Norpristane (1650)	7.57 J	9.28 J	8.04 J	3.83 J
n-Hexadecane	27.92 J	30.29 J	26.35 J	16.09 J
n-Heptadecane	33.52 J	39.26 J	34.63 J	18.76 J
Pristane	24.09 J	28.36 J	25.16 J	12.63 J
n-Octadecane	28.66 J	33.04 J	28.56 J	17.96 J
Phytane	8.43 J	10.26 J	7.95 J	5.31 J
n-Nonadecane	37.39 J	45.47 J	38.46 J	19.84 J
n-Eicosane	37.27 J	43.21 J	37.73 J	25 J
n-Heneicosane	68.5 J	80.86	71.8	36.2 J
n-Docosane	64.25 J	78.35	65.98 J	43.87 J
n-Tricosane	149.04	174.63	154.81	81.46
n-Tetracosane	75.35	94.02	77.82	54.35
n-Pentacosane	205.4	237.84	214.97	109.79
n-Hexacosane	78.45	90.48	82.59	59.34
n-Heptacosane	314.57	368.11	339.65	174.19
n-Octacosane	58.85 J	63.41 J	60.11 J	49.51 J
n-Nonacosane	226.51	251.67	242.46	117.48
n-Triacontane	45.08 J	44.31 J	42.12 J	35.42 J
n-Hentriacontane	179.52	192.41	195.21	89.56
n-Dotriacontane	24.91 J	21.85 J	21.29 J	24.79 J
n-Tritriacontane	66.02 J	72.35	75.76	27.54 J
n-Tetratriacontane	11.33 J	8.03 J	8.82 J	12.95 J
n-Pentatriacontane	8.8 J	11.72 J	13.4 J	4.08 J
n-Hexatriacontane	2.86 J	2.43 J	3.39 J	5.61 J
n-Heptatriacontane	0.81 J	1.5 J	2.67 J	U
n-Octatriacontane	U	1.36 J	1.67 J	U
n-Nonatriacontane	U	U	0.99 J	U
n-Tetracontane	U	U	0.83 J	U
Total SHC	1952.51	2220.58	2038.29	1183.33
TPH	3982.27	4406.49	5059.24	10117.5
Surrogate Recoveries (%)				
5a-androstane	79	73	75	91
n-Tetracosane-d50	81	74	77	89

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR009-01-SC	08-03-KR016-01-SC	08-03-KR019-01-SC	08-03-KR034-01-SC
Batch ID	09-0004	09-0001	09-0004	09-0001
Battelle ID	Q5978-P	Q5687-P	Q5983-P	Q5697-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/03/09	01/15/09	02/03/09	01/15/09
Analysis Date	02/14/09	01/30/09	02/14/09	01/30/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	29.83	38.36	48.67	39.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	21.08	18.49	15.36	18.22
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	6.3 J	4.84 J	14.64 J	5.54 J
n-Decane	24.91 J	8 J	55.31 J	8.19 J
n-Undecane	11.89 J	11.43 J	27.89 J	11.38 J
n-Dodecane	12.22 J	12.2 J	28.37 J	11.78 J
n-Tridecane	13.81 J	14.89 J	32.06 J	14.02 J
Isoprenoid RRT 1380	3.73 J	4.2 J	8.36 J	3.85 J
n-Tetradecane	17.73 J	15.83 J	37.25 J	16.14 J
Isoprenoid RRT 1470	9.45 J	8.34 J	18.01 J	8.85 J
n-Pentadecane	22.86 J	21.25 J	51.06 J	22.7 J
Norpristane (1650)	4.31 J	7.54 J	9.83 J	4.39 J
n-Hexadecane	18.28 J	18.81 J	35.05 J	17.2 J
n-Heptadecane	20.57 J	23.89 J	42.46 J	21.89 J
Pristane	15 J	19.87 J	28.94 J	24.47 J
n-Octadecane	27.23 J	20.74 J	35.65 J	18.97 J
Phytane	6.9 J	6.16 J	10.33 J	5.59 J
n-Nonadecane	22.72 J	27.56 J	47.26 J	24.56 J
n-Eicosane	44.82 J	27.99 J	46.07 J	25.44 J
n-Heneicosane	38.64 J	51.32 J	87.28	46.2 J
n-Docosane	74.34	49.64 J	81.87	43.6 J
n-Tricosane	83.73	111.24	195.5	99.78
n-Tetracosane	91.86	62.18	96.76	52 J
n-Pentacosane	110.88	150.25	260.97	137.85
n-Hexacosane	98.08	65.34	99.32	53.37 J
n-Heptacosane	170.9	236.55	413.52	213.82
n-Octacosane	81.93	53.5 J	69.21 J	39.53 J
n-Nonacosane	119.59	169.37	279.32	155.99
n-Triacontane	57.92	46.28 J	36.52 J	29.22 J
n-Hentriacontane	89.95	139.75	207.4	123.93
n-Dotriacontane	37.35 J	34.87 J	19.96 J	15.68 J
n-Tritriacontane	28.88 J	53.54 J	59.35 J	46.2 J
n-Tetratriacontane	15.76 J	25.69 J	5.04 J	6.6 J
n-Pentatriacontane	3.71 J	10.5 J	7.02 J	7.21 J
n-Hexatriacontane	5.45 J	18.19 J	1.73 J	2.06 J
n-Heptatriacontane	U	2.21 J	U	1.07 J
n-Octatriacontane	U	13.2 J	U	U
n-Nonatriacontane	U	1.05 J	U	U
n-Tetracontane	U	6.5 J	U	U
Total SHC	1391.7	1554.71	2449.31	1319.07
TPH	3417.78	4353.52	15278.2	6461.97
Surrogate Recoveries (%)				
5a-androstane	88	75	91	77
n-Tetracosane-d50	86	77	89	79

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR043-01-SC	08-03-KR045-01-SC	08-03-KR045-02-SC	08-03-KR045-03-SC
Batch ID	09-0001	09-0001	09-0001	09-0001
Battelle ID	Q5699-P	Q5693-P	Q5696-P	Q5695-P
Sample Type	SA	SA	SA	SA
Collection Date	08/22/08	08/23/08	08/23/08	08/23/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/15/09
Analysis Date	01/30/09	01/30/09	01/30/09	01/30/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	39.57	36.7	42.09	37.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	19.09	17.37	18.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	7.36 J	5.8 J	7.54 J	5.83 J
n-Decane	10.03 J	8.3 J	11.59 J	9 J
n-Undecane	13.21 J	11.29 J	15.37 J	12.17 J
n-Dodecane	13.84 J	12.07 J	15.98 J	12.33 J
n-Tridecane	16.44 J	14.26 J	18.65 J	14.78 J
Isoprenoid RRT 1380	4.52 J	3.88 J	4.48 J	4.07 J
n-Tetradecane	16.57 J	14.75 J	19.1 J	15.88 J
Isoprenoid RRT 1470	8.34 J	8 J	9.28 J	9.2 J
n-Pentadecane	22.11 J	19.21 J	25.9 J	21.09 J
Norpristane (1650)	5.29 J	4.74 J	6.02 J	5.27 J
n-Hexadecane	18.32 J	16.65 J	21.46 J	18.37 J
n-Heptadecane	24.11 J	21.46 J	27.49 J	23.07 J
Pristane	17.29 J	19.67 J	30.16 J	18.85 J
n-Octadecane	20.27 J	18.37 J	23.91 J	20.38 J
Phytane	5.77 J	5.41 J	7.2 J	5.73 J
n-Nonadecane	27.48 J	24.76 J	31.62 J	26.57 J
n-Eicosane	27.01 J	24.78 J	31.61 J	26.05 J
n-Heneicosane	51.08 J	45.32 J	57.81 J	47.26 J
n-Docosane	47.3 J	42.04 J	54.01 J	43.97 J
n-Tricosane	111.48	99.01	123.05	102.02
n-Tetracosane	55.89 J	49.16 J	61.96 J	51.55 J
n-Pentacosane	156.34	130.37	167.57	135.62
n-Hexacosane	57.66 J	49.83 J	64.29	51.41 J
n-Heptacosane	243.66	207.08	266.12	213.77
n-Octacosane	40.59 J	36.2 J	45.71 J	36.28 J
n-Nonacosane	174.17	146.64	190.12	153.19
n-Triacontane	29 J	25.68 J	32.58 J	26.02 J
n-Hentriacontane	139.21	117.81	151.91	121.49
n-Dotriacontane	14.05 J	12.82 J	17.27 J	12.39 J
n-Tritriacontane	50.47 J	45.01 J	57.04 J	44.9 J
n-Tetratriacontane	5.48 J	5.43 J	6.9 J	5 J
n-Pentatriacontane	7.55 J	7.86 J	9.16 J	7.39 J
n-Hexatriacontane	1.31 J	1.72 J	1.96 J	1.49 J
n-Heptatriacontane	0.71 J	1.42 J	1.3 J	1.02 J
n-Octatriacontane	U	0.91 J	U	0.42 J
n-Nonatriacontane	U	0.56 J	U	U
n-Tetracontane	U	U	U	U
Total SHC	1443.91	1258.27	1616.12	1303.83
TPH	4044.49	3384.19	3960.6	3929.79
Surrogate Recoveries (%)				
5a-androstane	76	71	76	76
n-Tetracosane-d50	78	74	78	79

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR056-01-SC	08-03-KR066-01-SC	08-03-KR083-01-SC	08-03-KR095-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0002
Battelle ID	Q5706-P	Q5707-P	Q5698-P	Q5819-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/22/08	08/22/08	08/29/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/22/09
Analysis Date	01/30/09	01/30/09	01/30/09	02/04/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	37.06	41.67	32.21	45.95
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.03	17.60	20.30	16.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	5.43 J	6.35 J	4.85 J	12.56 J
n-Decane	8.96 J	13.68 J	7.34 J	18.46 J
n-Undecane	12.43 J	11.43 J	10.19 J	22.57 J
n-Dodecane	12.55 J	12.35 J	10.54 J	24.24 J
n-Tridecane	14.51 J	14.47 J	12.29 J	28.23 J
Isoprenoid RRT 1380	2.69 J	4.4 J	3.64 J	7.31 J
n-Tetradecane	19.09 J	20.09 J	13.38 J	30.99 J
Isoprenoid RRT 1470	8.03 J	9.26 J	7.31 J	16.17 J
n-Pentadecane	25.04 J	26.74 J	19.81 J	45.96 J
Norpristane (1650)	5.16 J	5.31 J	4.29 J	9.37 J
n-Hexadecane	18.72 J	18.54 J	15.03 J	33.28 J
n-Heptadecane	22 J	21.93 J	20.15 J	41.78 J
Pristane	21.94 J	22.69 J	21.23 J	41.89 J
n-Octadecane	19.65 J	19.39 J	16.95 J	34.82 J
Phytane	5.77 J	5.73 J	4.87 J	34.39 J
n-Nonadecane	25.06 J	25.34 J	23.02 J	46.53 J
n-Eicosane	25.38 J	25.09 J	23.03 J	44.35 J
n-Heneicosane	44.8 J	45.17 J	43.59 J	83.72
n-Docosane	42.75 J	41.09 J	40.11 J	75.72
n-Tricosane	94.28	94.22	96.49	177.68
n-Tetracosane	48.1 J	47.85 J	47.68 J	85.8
n-Pentacosane	128.84	130.61	133.52	241.55
n-Hexacosane	47.71 J	47.29 J	47.92 J	85.15
n-Heptacosane	193.72	193.47	206.05	367.16
n-Octacosane	34.47 J	33.42 J	34.76 J	59.99 J
n-Nonacosane	137.69	136.94	150.78	263.73
n-Triacontane	24.95 J	24.53 J	25.59 J	44.01 J
n-Hentriacontane	108.17	105.09	119.03	213.25
n-Dotriacontane	12.56 J	12.31 J	12.52 J	20.76 J
n-Tritriacontane	40.51 J	40.23 J	43.77 J	76.18
n-Tetratriacontane	5.21 J	4.45 J	4.65 J	7.32 J
n-Pentatriacontane	5.5 J	5.28 J	6.48 J	9.92 J
n-Hexatriacontane	1.35 J	1.01 J	1.25 J	1.54 J
n-Heptatriacontane	0.58 J	0.64 J	0.93 J	1.01 J
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	1223.6	1226.39	1233.04	2307.39
TPH	3937.41	4456.94	3795.67	4064.35
Surrogate Recoveries (%)				
5a-androstane	77	71	78	80
n-Tetracosane-d50	80	74	81	83

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-SC02	08-03-BD002-01-SC02	08-03-BD003-01-SC02	08-03-BD004-01-SC02
Batch ID	09-0004	09-0003	09-0004	09-0004
Battelle ID	Q6000-P	Q5926-P	Q6005-P	Q6010-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/15/08	09/21/08	09/21/08
Extraction Date	02/03/09	01/29/09	02/03/09	02/03/09
Analysis Date	02/23/09	02/20/09	02/23/09	02/23/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	42.39	46.64	45.16	57.43
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.36	15.98	16.53	12.79
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	8.06	9.2	7.73	9.74
C1-Naphthalenes	16.8	19	16.03	20.17
C2-Naphthalenes	23.86	27.57	22.3	30.33
C3-Naphthalenes	17.46	20.63	16.56	21.18
C4-Naphthalenes	10.11	11.94	9.37	11.96
Acenaphthylene	0.06 J	0.06 J	0.06 J	0.08 J
Acenaphthene	0.32 J	0.39 J	0.35 J	0.41 J
Biphenyl	3.59	4.25	3.64	4.5
Fluorene	2.48	2.94	2.55	3.35
C1-Fluorenes	3.62	4.27	3.59	4.89
C2-Fluorenes	5.61	6.6	5.68	7.41
C3-Fluorenes	2.95	6.7	3.14	5.04
Anthracene	0.33 J	0.49 J	0.38 J	0.47 J
Phenanthrene	15.02	17.95	14.48	18.48
C1-Phenanthrenes/Anthracenes	21.62	26.75	21.03	26.83
C2-Phenanthrenes/Anthracenes	20.02	24.36	19.58	25.34
C3-Phenanthrenes/Anthracenes	10.12	12.59	9.84	12.88
C4-Phenanthrenes/Anthracenes	7.22	8.81	7.29	8.71
Dibenzothiophene	1.79	2.25	1.84	2.37
C1-Dibenzothiophenes	3.61	4.4	3.64	4.73
C2-Dibenzothiophenes	3.85	4.8	3.94	4.95
C3-Dibenzothiophenes	2.43	3.06	2.58	3.17
Fluoranthene	2.92	3.65	2.94	3.65
Pyrene	3.45	4.7	3.54	4.54
C1-Fluoranthenes/Pyrenes	9.96	12.96	9.99	12.93
C2-Fluoranthenes/Pyrenes	8.69	11.41	8.62	11.5
C3-Fluoranthenes/Pyrenes	6.01	7.75	5.99	7.99
Benzo(a)anthracene	1.02	1.33	1.06	1.34
Chrysene	5.5	6.84	5.54	6.95
C1-Chrysenes	5.36	6.73	5.54	6.96
C2-Chrysenes	4.63	5.92	4.63	6.17
C3-Chrysenes	2.41	2.93	2.57	3.18
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	2.97	3.89	3.06	4.13
Benzo(k)fluoranthene	0.64 J	0.68 J	0.66 J	0.63 J
Benzo(e)pyrene	3.39	4.13	3.4	4.38
Benzo(a)pyrene	0.65	0.8	0.65	0.84
Perylene	14.81	18.88	15.78	19.82
Indeno(1,2,3-cd)pyrene	0.62	0.75	0.61 J	0.79 J
Dibenz(a,h)anthracene	0.35 J	0.43 J	0.38 J	0.45 J
Benzo(g,h,i)perylene	2.55	3.15	2.59	3.2
Total PAH	256.86	315.94	253.15	326.44
Surrogate Recoveries (%)				
Naphthalene-d8	56	57	60	61
Acenaphthene-d10	68	71	73	76
Phenanthrene-d10	75	77	80	85
Benzo(a)pyrene-d12	72	75	79	83

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02	08-03-BD005-01-SC1012	08-03-BD005-01-SC24	08-03-BD005-01-SC46
Batch ID	09-0004	09-0003	09-0004	09-0003
Battelle ID	Q5932-P	Q5899-P	Q5933-P	Q5896-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/15/08	09/15/08
Extraction Date	02/03/09	01/29/09	02/03/09	01/29/09
Analysis Date	02/22/09	02/19/09	02/22/09	02/19/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	47.95	43.65	47.87	47.1
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	17.01	15.63	15.82
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	41.27	16.98	21.46	20.36
C1-Naphthalenes	56.41	30.95	41.51	38.49
C2-Naphthalenes	59.65	44	54.37	53.9
C3-Naphthalenes	41.83	34.73	40.71	41.97
C4-Naphthalenes	26.04	21.87	25.2	24.96
Acenaphthylene	U	0.16 J	U	0.16 J
Acenaphthene	1.27	0.89	1.19	1.08
Biphenyl	9.22	6.42	7.99	7.03
Fluorene	8.17	5.63	7.39	6.86
C1-Fluorenes	11.07	8.9	10.61	9.93
C2-Fluorenes	14.96	13.53	14.55	14.62
C3-Fluorenes	11.29	13.01	13.13	12.66
Anthracene	0.84	0.74	0.76	0.91
Phenanthrene	29.18	26.25	28.56	27.6
C1-Phenanthrenes/Anthracenes	42.52	41.43	42.93	43.53
C2-Phenanthrenes/Anthracenes	40.42	37.62	36.95	39.93
C3-Phenanthrenes/Anthracenes	23.45	22.2	20.83	23.57
C4-Phenanthrenes/Anthracenes	16.94	15.41	14.05	14.46
Dibenzothiophene	4.14	3.57	3.14	3.86
C1-Dibenzothiophenes	8.32	7.54	6.87	7.83
C2-Dibenzothiophenes	9.03	8.95	7.06	9
C3-Dibenzothiophenes	5.87	6.04	4.63	5.8
Fluoranthene	6.49	6.11	6.29	6.89
Pyrene	8.55	7.8	8.24	8.18
C1-Fluoranthenes/Pyrenes	27.35	22.95	21.87	21.29
C2-Fluoranthenes/Pyrenes	25.58	20.78	18.84	19.36
C3-Fluoranthenes/Pyrenes	16.24	14.42	12.63	13.36
Benzo(a)anthracene	2.49	2.23	1.51	2.14
Chrysene	9.99	9.9	7.64	9.39
C1-Chrysenes	11.07	10.77	7.64	10.06
C2-Chrysenes	9.98	9.34	6.1	8.68
C3-Chrysenes	5.22	4.9	3.1	4.51
C4-Chrysenes	2.1	1.69	U	1.79
Benzo(b)fluoranthene	7.67	6.87	9.71	6.87
Benzo(k)fluoranthene	2.12	1.58	1.87	1.6
Benzo(e)pyrene	8.46	7.6	10.4	7.65
Benzo(a)pyrene	1.94	1.67	1.77	1.69
Perylene	32.29	31.39	36.11	28.71
Indeno(1,2,3-cd)pyrene	1.96	1.5	1.27	1.41
Dibenz(a,h)anthracene	0.95	0.73	0.62 J	0.64 J
Benzo(g,h,i)perylene	7.3	5.08	4.35	4.55
Total PAH	649.64	534.13	563.85	567.28
Surrogate Recoveries (%)				
Naphthalene-d8	62	51	55	54
Acenaphthene-d10	78	66	71	68
Phenanthrene-d10	86	73	75	76
Benzo(a)pyrene-d12	73	64	36 N	61

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC68	08-03-BD005-01-SC810	08-03-BF001-01-SC	08-03-BF003-01-SC
Batch ID	09-0003	09-0003	09-0003	09-0003
Battelle ID	Q5897-P	Q5898-P	Q5903-P	Q5879-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/16/08	09/02/08
Extraction Date	01/29/09	01/29/09	01/29/09	01/29/09
Analysis Date	02/19/09	02/19/09	02/19/09	02/19/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	45.56	44.34	31.34	47.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.27	16.73	20.60	15.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	18.83	14.71	4.13	11.42
C1-Naphthalenes	36.14	29.52	8.15	23.36
C2-Naphthalenes	47.51	41.7	11.69	32.49
C3-Naphthalenes	34.19	32.21	8.97	24.24
C4-Naphthalenes	20.34	19.78	5.32	13.82
Acenaphthylene	U	U	0.03 J	U
Acenaphthene	0.85	0.84	0.17 J	0.45 J
Biphenyl	7.48	6.18	1.79	4.84
Fluorene	5.91	5.38	1.3	3.38
C1-Fluorenes	8.83	8.15	1.79	4.8
C2-Fluorenes	12.57	12.1	2.84	7.05
C3-Fluorenes	12.08	9.89	U	8.93
Anthracene	0.69	0.7	0.18 J	0.5 J
Phenanthrene	26.65	24.26	7.35	20.25
C1-Phenanthrenes/Anthracenes	40.91	37.63	10.86	29.75
C2-Phenanthrenes/Anthracenes	35.78	33.38	10.73	26.61
C3-Phenanthrenes/Anthracenes	19.79	18.77	5.54	14.33
C4-Phenanthrenes/Anthracenes	13.14	12.67	3.88	11.13
Dibenzothiophene	3.44	3.25	0.9	2.49
C1-Dibenzothiophenes	6.89	6.57	1.83	5.04
C2-Dibenzothiophenes	7.52	7.23	1.94	5.53
C3-Dibenzothiophenes	4.63	4.62	1.32	3.42
Fluoranthene	5.43	5.41	1.61	4.05
Pyrene	7.09	7.05	1.99	4.81
C1-Fluoranthenes/Pyrenes	19.74	18.97	5.45	14.49
C2-Fluoranthenes/Pyrenes	17.53	16.39	4.98	12.52
C3-Fluoranthenes/Pyrenes	12.05	11.55	3.26	8.59
Benzo(a)anthracene	1.96	1.84	0.63	1.43
Chrysene	9.07	8.82	2.9	7.05
C1-Chrysenes	9.75	9.38	2.84	7.08
C2-Chrysenes	8.33	7.78	2.41	5.89
C3-Chrysenes	4.28	3.96	1.35	3.34
C4-Chrysenes	1.6	1.95	U	U
Benzo(b)fluoranthene	6.13	6.17	1.9	4.02
Benzo(k)fluoranthene	1.37	1.44	0.38 J	0.98 J
Benzo(e)pyrene	6.89	7.1	1.93	4.45
Benzo(a)pyrene	1.42	1.37	0.39 J	0.91
Perylene	27.51	27.85	7.91	18.28
Indeno(1,2,3-cd)pyrene	1.17	1.08	0.34 J	0.8
Dibenz(a,h)anthracene	0.55 J	0.55 J	0.18 J	0.46 J
Benzo(g,h,i)perylene	3.57	3.78	1.31	3.19
Total PAH	509.61	471.98	132.47	356.17
Surrogate Recoveries (%)				
Naphthalene-d8	53	50	54	52
Acenaphthene-d10	69	63	67	65
Phenanthrene-d10	75	71	74	71
Benzo(a)pyrene-d12	64	57	64	67

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-02-SC	08-03-BF005-03-SC	08-03-BF007-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0003
Battelle ID	Q5726-P	Q5727-P	Q5728-P	Q5900-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/20/08	09/16/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/29/09
Analysis Date	02/09/09	02/09/09	02/09/09	03/07/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	45.72	44.34	43.14	46.85
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.35	16.78	17.02	15.90
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	12.31	11.94	13.4	10.35
C1-Naphthalenes	27.09	25.79	27.59	8.22
C2-Naphthalenes	36.79	34.83	36.55	21.87
C3-Naphthalenes	27.86	26.22	27.89	19.51
C4-Naphthalenes	15.9	15.36	16.34	12.48
Acenaphthylene	U	U	U	0.08 J
Acenaphthene	0.49 J	0.51 J	0.48 J	0.29 J
Biphenyl	5.07	4.88	5.35	2.67
Fluorene	3.55	3.34	3.48	2.83
C1-Fluorenes	5.28	4.7	4.82	4.72
C2-Fluorenes	8.59	7.65	7.97	7.03
C3-Fluorenes	U	U	U	U
Anthracene	0.66	0.49 J	0.6	0.41 J
Phenanthrene	21.17	20.78	21.49	14.46
C1-Phenanthrenes/Anthracenes	30.86	29.48	31.03	24.22
C2-Phenanthrenes/Anthracenes	26.23	25.59	27.51	21.85
C3-Phenanthrenes/Anthracenes	14.86	14.51	15.45	12.15
C4-Phenanthrenes/Anthracenes	11.75	11.26	12.35	8.62
Dibenzothiophene	2.56	2.54	2.64	1.82
C1-Dibenzothiophenes	5.56	5.33	5.61	4.06
C2-Dibenzothiophenes	5.6	5.54	5.85	4.5
C3-Dibenzothiophenes	3.64	3.48	3.82	2.96
Fluoranthene	4.37	4.12	4.2	3.34
Pyrene	5.44	5.15	5.53	4.25
C1-Fluoranthenes/Pyrenes	15.18	15.57	15.12	11.53
C2-Fluoranthenes/Pyrenes	13.04	12.82	12.5	10.3
C3-Fluoranthenes/Pyrenes	8.39	8.54	8.84	8.23
Benzo(a)anthracene	1.76	1.55	1.54	1.13
Chrysene	7.73	7.52	7.78	5.5
C1-Chrysenes	8.09	7.48	8.03	5.97
C2-Chrysenes	6.46	6.42	6.59	5.67
C3-Chrysenes	4.04	3.79	4.08	3.17
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	5	4.55	4.64	3.2
Benzo(k)fluoranthene	1.2 J	0.93 J	1.08 J	0.46 J
Benzo(e)pyrene	5.41	4.88	5.28	3.69
Benzo(a)pyrene	1.25	0.99	1.08	0.83
Perylene	19.84	18.2	20.23	16.86
Indeno(1,2,3-cd)pyrene	1.25	0.72	0.71	0.64 J
Dibenz(a,h)anthracene	0.54 J	0.42 J	0.41 J	0.46 J
Benzo(g,h,i)perylene	3.76	3.32	3.46	2.55
Total PAH	378.57	361.19	381.32	272.88
Surrogate Recoveries (%)				
Naphthalene-d8	60	62	55	3 N
Acenaphthene-d10	68	69	65	64
Phenanthrene-d10	73	75	70	78
Benzo(a)pyrene-d12	66	71	63	78

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF009-01-SC	08-03-BF011-01-SC	08-03-BF013-01-SC	08-03-BF015-01-SC
Batch ID	09-0002	09-0004	09-0003	09-0001
Battelle ID	Q5729-P	Q6029-P	Q5906-P	Q5717-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/13/08	09/16/08	09/19/08
Extraction Date	01/22/09	02/03/09	01/29/09	01/15/09
Analysis Date	02/09/09	02/23/09	02/19/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	52.37	56.26	63.24	52.22
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	14.27	13.18	11.08	14.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	11.93	11.1	13.5	8.38
C1-Naphthalenes	26.75	23.63	28.73	19.59
C2-Naphthalenes	36.6	33.88	41.28	27.64
C3-Naphthalenes	27	25.02	30.03	20.26
C4-Naphthalenes	15.46	14.32	16.94	10.98
Acenaphthylene	U	0.11 J	0.13 J	0.1 J
Acenaphthene	0.54 J	0.54 J	0.64 J	0.43 J
Biphenyl	5.86	5.64	7.03	4.3
Fluorene	4.04	4.02	5.06	2.93
C1-Fluorenes	5.64	5.93	7.17	4.02
C2-Fluorenes	8.59	8.77	11.2	6.33
C3-Fluorenes	U	8.38	10.28	U
Anthracene	0.67 J	0.7 J	0.77 J	0.47 J
Phenanthrene	22.55	22.9	27.56	17.07
C1-Phenanthrenes/Anthracenes	32.1	33.59	40.74	23.45
C2-Phenanthrenes/Anthracenes	28.68	29.92	37.75	21.02
C3-Phenanthrenes/Anthracenes	15.33	15.18	18.31	10.75
C4-Phenanthrenes/Anthracenes	10.52	10.17	12.52	7.68
Dibenzothiophene	3.09	2.91	3.68	2.37
C1-Dibenzothiophenes	5.98	5.78	7.18	4.38
C2-Dibenzothiophenes	6.32	5.99	7.87	4.69
C3-Dibenzothiophenes	4.08	3.65	4.84	3.04
Fluoranthene	4.6	4.54	5.54	3.27
Pyrene	5.78	5.55	7.21	4.11
C1-Fluoranthenes/Pyrenes	15.36	15.28	19.08	10.9
C2-Fluoranthenes/Pyrenes	12.85	13.76	16.74	8.98
C3-Fluoranthenes/Pyrenes	8.81	9.73	11.56	6.04
Benzo(a)anthracene	1.56	1.67	1.83	1.08
Chrysene	8.66	8.58	10.79	6.37
C1-Chrysenes	8.88	8.97	10.19	6.09
C2-Chrysenes	7.15	7.88	8.92	4.99
C3-Chrysenes	4.47	3.77	4.52	2.75
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	5.23	4.73	5.94	3.79
Benzo(k)fluoranthene	1.09 J	1.13 J	1.23 J	0.73 J
Benzo(e)pyrene	6.01	5.57	6.84	4.12
Benzo(a)pyrene	1.02	0.96	1.15	0.71 J
Perylene	25.88	26.41	30.1	16.71
Indeno(1,2,3-cd)pyrene	1	0.97	1.1	0.62 J
Dibenz(a,h)anthracene	0.63 J	0.53 J	0.64 J	0.37 J
Benzo(g,h,i)perylene	4.43	4.22	5.42	2.83
Total PAH	395.14	396.38	482.01	284.34
Surrogate Recoveries (%)				
Naphthalene-d8	59	65	57	58
Acenaphthene-d10	67	80	73	64
Phenanthrene-d10	71	86	80	69
Benzo(a)pyrene-d12	65	82	77	66

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-SC	08-03-BF019-01-SC	08-03-BF021-01-SC	08-03-BF023-01-SC
Batch ID	09-0004	09-0002	09-0004	09-0002
Battelle ID	Q6015-P	Q5769-P	Q6019-P	Q5755-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/19/08	09/13/08	09/17/08
Extraction Date	02/03/09	01/22/09	02/03/09	01/22/09
Analysis Date	02/23/09	02/10/09	02/23/09	02/10/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.58	57.68	53.55	30.87
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.40	12.73	13.91	20.70
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.75	10.15	6.78	3.71
C1-Naphthalenes	12.07	22.13	14.3	7.96
C2-Naphthalenes	17.69	31.98	21.37	11.83
C3-Naphthalenes	12.95	23.78	15.64	9.09
C4-Naphthalenes	7.33	13.43	9.04	5.9
Acenaphthylene	0.05 J	U	0.05 J	U
Acenaphthene	0.29 J	0.55 J	0.3 J	0.2 J
Biphenyl	3.03	5.46	3.64	2.01
Fluorene	2.14	3.73	2.7	1.36
C1-Fluorenes	3.06	5.2	3.85	1.89
C2-Fluorenes	4.91	8.48	6.02	3.01
C3-Fluorenes	2.81	U	3.93	U
Anthracene	0.34 J	0.5 J	0.37 J	0.21 J
Phenanthrene	11.94	20.33	14.78	8.15
C1-Phenanthrenes/Anthracenes	17.27	27.75	21.1	10.43
C2-Phenanthrenes/Anthracenes	15.93	25.39	19.56	9.44
C3-Phenanthrenes/Anthracenes	8.12	12.86	9.84	4.51
C4-Phenanthrenes/Anthracenes	5.82	8.26	6.53	3.17
Dibenzothiophene	1.52	2.81	1.89	1.07
C1-Dibenzothiophenes	3.1	5.47	3.58	1.89
C2-Dibenzothiophenes	3.23	5.38	3.93	1.98
C3-Dibenzothiophenes	1.99	3.65	2.53	1.26
Fluoranthene	2.41	4.1	2.92	1.93
Pyrene	2.93	5.37	3.89	2.07
C1-Fluoranthenes/Pyrenes	8.22	13.24	9.87	4.8
C2-Fluoranthenes/Pyrenes	7.1	11.01	9.05	3.79
C3-Fluoranthenes/Pyrenes	5.21	7.36	6.33	2.73
Benzo(a)anthracene	0.87	1.74	1.06	0.59
Chrysene	4.67	8.11	5.52	3.03
C1-Chrysenes	4.53	7.97	5.52	2.87
C2-Chrysenes	4.11	6.6	4.87	2.51
C3-Chrysenes	2.04	4.26	2.56	1.69
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	2.78	4.74	3.01	2.1
Benzo(k)fluoranthene	0.41 J	1.12 J	0.59 J	0.64 J
Benzo(e)pyrene	2.89	5.5	3.37	2.12
Benzo(a)pyrene	0.48 J	0.96	0.6 J	0.38 J
Perylene	13.37	22.91	15.7	8.72
Indeno(1,2,3-cd)pyrene	0.59 J	0.88	0.56 J	0.4 J
Dibenz(a,h)anthracene	0.3 J	0.49 J	0.34 J	0.18 J
Benzo(g,h,i)perylene	2.31	3.79	2.64	1.55
Total PAH	206.56	347.44	250.13	131.17
Surrogate Recoveries (%)				
Naphthalene-d8	56	55	62	61
Acenaphthene-d10	68	63	77	67
Phenanthrene-d10	74	67	86	71
Benzo(a)pyrene-d12	72	63	85	64

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-SC	08-03-BR005-01-SC	08-03-BR016-01-SC	08-03-BR020-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0001
Battelle ID	Q5764-P	Q5744-P	Q5760-P	Q5715-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/21/08	09/18/08	09/19/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/15/09
Analysis Date	02/10/09	02/10/09	02/10/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.63	47.36	47.58	56.83
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.11	15.82	15.80	12.96
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.31	6.33	6.3	6.67
C1-Naphthalenes	11.65	13.35	13.55	15.69
C2-Naphthalenes	16.59	19.85	19.67	22.74
C3-Naphthalenes	12.34	14.89	14.38	16.91
C4-Naphthalenes	7.06	8.42	8.14	9.44
Acenaphthylene	U	U	U	0.09 J
Acenaphthene	0.23 J	0.36 J	0.31 J	0.39 J
Biphenyl	2.81	3.44	3.35	4.02
Fluorene	1.99	2.38	2.3	2.7
C1-Fluorenes	2.79	3.49	3.23	3.6
C2-Fluorenes	4.21	5.09	5.17	5.65
C3-Fluorenes	U	U	U	U
Anthracene	0.16 J	0.41 J	0.35 J	0.38 J
Phenanthrene	10.67	12.74	12.5	14.66
C1-Phenanthrenes/Anthracenes	14.95	17.78	17.49	20.19
C2-Phenanthrenes/Anthracenes	13.87	16.89	16.33	19.33
C3-Phenanthrenes/Anthracenes	6.96	8.62	8.01	9.7
C4-Phenanthrenes/Anthracenes	4.41	5.59	5.03	6.61
Dibenzothiophene	1.46	1.76	1.74	2.08
C1-Dibenzothiophenes	2.9	3.31	3.26	4.04
C2-Dibenzothiophenes	2.92	3.49	3.26	3.92
C3-Dibenzothiophenes	1.99	2.23	2.25	2.76
Fluoranthene	2.15	2.55	2.44	2.88
Pyrene	2.74	3.44	3.15	3.8
C1-Fluoranthenes/Pyrenes	7.18	9.01	8.24	9.71
C2-Fluoranthenes/Pyrenes	6.17	7.88	6.74	8.31
C3-Fluoranthenes/Pyrenes	4.33	5.41	4.85	5.64
Benzo(a)anthracene	0.69	0.88	0.8	0.95
Chrysene	4.46	5.18	4.84	5.78
C1-Chrysenes	4.39	5.5	4.85	5.57
C2-Chrysenes	3.74	4.69	4.16	4.62
C3-Chrysenes	2.39	2.92	2.35	2.97
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	2.79	3.18	3.49	3.61
Benzo(k)fluoranthene	0.66 J	0.78 J	0.64 J	0.9 J
Benzo(e)pyrene	3.12	3.4	3.73	3.95
Benzo(a)pyrene	0.51 J	0.68	0.55 J	0.73 J
Perylene	13.26	15.68	15.11	16.43
Indeno(1,2,3-cd)pyrene	0.48 J	0.59 J	0.5 J	0.59 J
Dibenz(a,h)anthracene	0.28 J	0.29 J	0.26 J	0.39 J
Benzo(g,h,i)perylene	2.23	2.41	2.38	2.83
Total PAH	186.84	224.89	215.7	251.23
Surrogate Recoveries (%)				
Naphthalene-d8	53	59	58	61
Acenaphthene-d10	60	69	66	68
Phenanthrene-d10	65	74	70	74
Benzo(a)pyrene-d12	59	72	57	69

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR032-01-SC	08-03-BR038-01-SC	08-03-BR043-01-SC	08-03-BR047-01-SC
Batch ID	09-0003	09-0002	09-0004	09-0003
Battelle ID	Q5916-P	Q5766-P	Q6028-P	Q5909-P
Sample Type	SA	SA	SA	SA
Collection Date	09/14/08	09/18/08	09/14/08	09/17/08
Extraction Date	01/29/09	01/22/09	02/03/09	01/29/09
Analysis Date	02/20/09	02/10/09	02/23/09	02/19/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	36.69	53.86	60.44	55.54
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.97	13.81	11.90	13.45
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	3.75	10.76	12.33	12.36
C1-Naphthalenes	7.75	22.38	26.75	23.63
C2-Naphthalenes	11.27	31.91	39.08	34.41
C3-Naphthalenes	8.11	24.1	28.73	25.2
C4-Naphthalenes	4.54	13.32	16.25	14.37
Acenaphthylene	U	U	0.12 J	0.1 J
Acenaphthene	0.17 J	0.5 J	0.6 J	0.48 J
Biphenyl	1.9	5.25	6.54	5.6
Fluorene	1.29	3.65	4.97	4.03
C1-Fluorenes	1.85	5.27	7.04	5.75
C2-Fluorenes	2.9	7.53	11.03	8.81
C3-Fluorenes	U	U	6.96	6.91
Anthracene	0.21 J	0.53 J	0.82 J	0.62 J
Phenanthrene	7.41	20.21	26.32	22.31
C1-Phenanthrenes/Anthracenes	10.49	27.74	39.36	32.89
C2-Phenanthrenes/Anthracenes	9.79	25.61	35.56	29.92
C3-Phenanthrenes/Anthracenes	4.68	12.92	17.71	15.4
C4-Phenanthrenes/Anthracenes	3.12	8.35	11.76	10.51
Dibenzothiophene	0.94	2.68	3.6	2.81
C1-Dibenzothiophenes	1.86	5.23	6.97	5.72
C2-Dibenzothiophenes	1.91	5.41	7.38	6.05
C3-Dibenzothiophenes	1.23	3.49	4.59	3.79
Fluoranthene	1.42	3.79	5.31	4.33
Pyrene	1.79	5.21	6.52	5.42
C1-Fluoranthenes/Pyrenes	4.67	13.28	18.46	15.45
C2-Fluoranthenes/Pyrenes	4.11	11.21	16.18	13.6
C3-Fluoranthenes/Pyrenes	2.88	7.82	11.21	9.57
Benzo(a)anthracene	0.5 J	1.48	1.88	1.52
Chrysene	2.71	8.15	10.21	8.46
C1-Chrysenes	2.48	8.21	10.38	8.45
C2-Chrysenes	2.17	6.31	8.18	7.03
C3-Chrysenes	1.11	4.08	4.46	3.7
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.48	5.3	5.51	5.03
Benzo(k)fluoranthene	0.37 J	1.23 J	1.26 J	1.08 J
Benzo(e)pyrene	1.65	5.71	6.52	5.44
Benzo(a)pyrene	0.34 J	0.9	1.16	0.94
Perylene	6.68	24.59	30.52	24.2
Indeno(1,2,3-cd)pyrene	0.28 J	0.8	1.14	0.99
Dibenz(a,h)anthracene	0.17 J	0.48 J	0.73 J	0.59 J
Benzo(g,h,i)perylene	1.34	3.91	4.95	4.1
Total PAH	121.32	349.3	459.05	391.57
Surrogate Recoveries (%)				
Naphthalene-d8	55	48	62	49
Acenaphthene-d10	67	58	77	67
Phenanthrene-d10	72	61	83	74
Benzo(a)pyrene-d12	69	53	83	73

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR077-01-SC	08-03-BR080-01-SC	08-03-BR086-01-SC	08-03-BR093-01-SC
Batch ID	09-0002	09-0001	09-0003	09-0003
Battelle ID	Q5732-P	Q5723-P	Q5861-P	Q5884-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/19/08	09/01/08	09/02/08
Extraction Date	01/22/09	01/15/09	01/29/09	01/29/09
Analysis Date	02/09/09	02/09/09	02/19/09	02/19/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.34	57.34	44.99	50.09
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	12.81	16.50	14.98
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	9.74	9.8	9.45	9.32
C1-Naphthalenes	21.65	22.57	20.05	19.53
C2-Naphthalenes	29.06	32.41	28.4	27.62
C3-Naphthalenes	20.93	24.53	20.94	20.34
C4-Naphthalenes	11.71	13.68	12.56	11.44
Acenaphthylene	U	U	0.09 J	0.09 J
Acenaphthene	0.44 J	0.55 J	0.42 J	0.41 J
Biphenyl	4.67	5.23	4.46	4.48
Fluorene	3.25	3.69	3.17	3.16
C1-Fluorenes	4.47	4.91	4.63	4.39
C2-Fluorenes	6.92	7.87	7.64	6.73
C3-Fluorenes	U	U	6.79	4.82
Anthracene	0.42 J	0.49 J	0.47 J	0.41 J
Phenanthrene	17.96	19.96	17.87	17.8
C1-Phenanthrenes/Anthracenes	25.22	27.6	26.86	25.83
C2-Phenanthrenes/Anthracenes	22.35	24.9	24.3	23.32
C3-Phenanthrenes/Anthracenes	11.53	12.52	12.87	11.7
C4-Phenanthrenes/Anthracenes	8.02	8.71	9.77	8.5
Dibenzothiophene	2.4	2.79	2.26	2.32
C1-Dibenzothiophenes	4.61	5.46	4.63	4.6
C2-Dibenzothiophenes	4.8	5.58	5.09	4.86
C3-Dibenzothiophenes	3.22	3.65	3.14	3.01
Fluoranthene	3.42	3.89	3.94	3.47
Pyrene	4.28	5.21	4.67	4.24
C1-Fluoranthenes/Pyrenes	11.73	12.83	13.79	11.76
C2-Fluoranthenes/Pyrenes	10.02	10.38	12.54	10
C3-Fluoranthenes/Pyrenes	6.68	7.24	8.51	6.71
Benzo(a)anthracene	1.17	1.3	1.44	1.13
Chrysene	6.83	7.45	6.98	6.23
C1-Chrysenes	7.03	7.35	6.91	5.88
C2-Chrysenes	5.85	5.84	5.96	5.11
C3-Chrysenes	3.56	2.89	3.22	2.49
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	3.98	4.59	4	3.71
Benzo(k)fluoranthene	0.91 J	0.78 J	0.95 J	0.62 J
Benzo(e)pyrene	4.58	4.96	4.35	4
Benzo(a)pyrene	0.8	0.8 J	0.92	0.78
Perylene	19.28	21.21	18.86	16.89
Indeno(1,2,3-cd)pyrene	0.71	0.77 J	0.8	0.59 J
Dibenz(a,h)anthracene	0.41 J	0.41 J	0.42 J	0.36 J
Benzo(g,h,i)perylene	3.33	3.62	3.24	2.98
Total PAH	307.94	338.42	327.36	301.63
Surrogate Recoveries (%)				
Naphthalene-d8	61	57	56	54
Acenaphthene-d10	69	66	68	66
Phenanthrene-d10	72	73	76	73
Benzo(a)pyrene-d12	66	69	73	67

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR098-01-SC	08-03-BR099-01-SC	08-03-BR100-01-SC	08-03-KD001-01-SC02
Batch ID	09-0003	09-0003	09-0003	09-0004
Battelle ID	Q5889-P	Q5870-P	Q5871-P	Q5950-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/03/08	09/03/08	09/01/08
Extraction Date	01/29/09	01/29/09	01/29/09	02/03/09
Analysis Date	02/19/09	02/19/09	02/19/09	02/23/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	44.08	44.37	44.04	42.65
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.79	16.72	16.77	17.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	8.3	12.5	8.52	10.6
C1-Naphthalenes	17.75	21.34	17.29	20.81
C2-Naphthalenes	24.73	29.02	24.29	28.41
C3-Naphthalenes	17.86	21.36	18.33	20.23
C4-Naphthalenes	10.43	12.52	10.56	11.57
Acenaphthylene	0.07 J	U	0.08 J	0.06 J
Acenaphthene	0.35 J	0.44 J	0.34 J	0.34 J
Biphenyl	3.7	4.46	3.51	4.13
Fluorene	2.61	3.09	2.53	2.76
C1-Fluorenes	3.68	4.45	3.67	4.09
C2-Fluorenes	5.8	6.91	5.96	6.31
C3-Fluorenes	4.81	5.95	6.84	5.86
Anthracene	0.34 J	0.47 J	0.34 J	0.46 J
Phenanthrene	15.44	17.45	15.1	17.31
C1-Phenanthrenes/Anthracenes	22.37	25.66	22.34	24.97
C2-Phenanthrenes/Anthracenes	20.19	22.93	20.44	22.32
C3-Phenanthrenes/Anthracenes	10.65	12.56	10.78	11.91
C4-Phenanthrenes/Anthracenes	7.78	9.22	8.07	8.89
Dibenzothiophene	1.9	2.12	1.84	1.98
C1-Dibenzothiophenes	3.8	4.37	3.87	3.97
C2-Dibenzothiophenes	4.2	4.9	4.2	4.27
C3-Dibenzothiophenes	2.54	2.99	2.61	2.57
Fluoranthene	3.01	3.47	3.2	3.34
Pyrene	3.72	4.22	3.96	4.19
C1-Fluoranthenes/Pyrenes	10.82	12.49	11.34	12.18
C2-Fluoranthenes/Pyrenes	9.38	10.77	9.99	11.05
C3-Fluoranthenes/Pyrenes	6.35	7.47	6.7	7.57
Benzo(a)anthracene	1.09	1.25	1.08	1.31
Chrysene	5.58	6.33	5.63	6.29
C1-Chrysenes	5.38	6.21	5.55	6.67
C2-Chrysenes	4.51	5.15	4.83	5.71
C3-Chrysenes	2.67	2.79	2.19	2.88
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	3.19	3.55	3.19	3.9
Benzo(k)fluoranthene	0.72 J	0.62 J	0.75 J	0.91 J
Benzo(e)pyrene	3.43	3.82	3.32	3.93
Benzo(a)pyrene	0.62	0.75	0.74	0.81
Perylene	13.55	15.18	12.66	16.66
Indeno(1,2,3-cd)pyrene	0.59 J	0.71	0.67	0.81
Dibenz(a,h)anthracene	0.33 J	0.41 J	0.36 J	0.43 J
Benzo(g,h,i)perylene	2.57	2.89	2.41	2.92
Total PAH	266.81	312.79	270.08	305.38
Surrogate Recoveries (%)				
Naphthalene-d8	56	45	55	56
Acenaphthene-d10	68	66	69	69
Phenanthrene-d10	73	75	76	75
Benzo(a)pyrene-d12	70	73	75	72

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD002-01-SC02	08-03-KD002-01-SC24	08-03-KD002-01-SC46	08-03-KD002-01-SC68
Batch ID	09-0002	09-0002	09-0002	09-0002
Battelle ID	Q5774-P	Q5775-P	Q5776-P	Q5777-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/22/09
Analysis Date	02/10/09	02/10/09	02/10/09	03/14/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.09	43.73	39.07	37.88
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.56	16.93	18.39	18.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	10.23	10.88	10.95	11.16
C1-Naphthalenes	20.96	21.68	24.36	24.52
C2-Naphthalenes	27.25	29.09	32.55	36.34
C3-Naphthalenes	19.28	21.42	23.41	25.95
C4-Naphthalenes	10.85	12.4	12.91	16.02
Acenaphthylene	U	U	U	U
Acenaphthene	0.37 J	0.43 J	0.46 J	0.48 J
Biphenyl	4.15	4.48	5.06	4.93
Fluorene	2.59	2.88	3.27	2.76
C1-Fluorenes	3.54	3.78	4.45	5.63
C2-Fluorenes	5.64	6.2	7.17	7.92
C3-Fluorenes	U	U	U	7.44
Anthracene	0.46 J	0.5 J	0.34 J	0.61
Phenanthrene	15.52	17.47	19.17	19.93
C1-Phenanthrenes/Anthracenes	21.19	23.74	26.44	30.01
C2-Phenanthrenes/Anthracenes	19.02	21.03	22.2	28.04
C3-Phenanthrenes/Anthracenes	9.92	11.35	12.39	16.39
C4-Phenanthrenes/Anthracenes	7.37	9.06	8.87	15.69
Dibenzothiophene	1.91	2.15	2.29	2.32
C1-Dibenzothiophenes	3.93	4.22	4.57	4.93
C2-Dibenzothiophenes	3.81	4.16	4.55	5.47
C3-Dibenzothiophenes	2.46	2.55	2.89	3.85
Fluoranthene	2.95	3.51	3.64	3.88
Pyrene	3.65	4.37	4.61	4.79
C1-Fluoranthenes/Pyrenes	9.67	11.22	11.54	13.57
C2-Fluoranthenes/Pyrenes	7.75	8.8	9.46	12
C3-Fluoranthenes/Pyrenes	5.26	5.9	6.51	8.86
Benzo(a)anthracene	1.04	1.16	1.36	1.52
Chrysene	5.75	6.21	6.72	6.27
C1-Chrysenes	5.68	6.34	6.2	6.79
C2-Chrysenes	4.62	5.1	4.73	5.17
C3-Chrysenes	3.11	3.07	2.81	3.29
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	3.21	3.64	5.67	5.21
Benzo(k)fluoranthene	0.78 J	0.87 J	1.15	1.52
Benzo(e)pyrene	3.51	4.14	6.45	5.66
Benzo(a)pyrene	0.62 J	0.81	0.82	1.2
Perylene	13.69	16.67	21.45	22.94
Indeno(1,2,3-cd)pyrene	0.62 J	0.62	0.75	0.88
Dibenz(a,h)anthracene	0.33 J	0.35 J	0.42 J	0.54 J
Benzo(g,h,i)perylene	2.45	2.75	3.46	2.5
Total PAH	265.14	295	326.05	376.98
Surrogate Recoveries (%)				
Naphthalene-d8	55	53	59	54
Acenaphthene-d10	62	63	64	63
Phenanthrene-d10	66	67	69	66
Benzo(a)pyrene-d12	60	58	41	48

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD003-01-SC-02	08-03-KD004-01-SC02	08-03-KD005-01-SC02	08-03-KD005-01-SC1012
Batch ID	09-0004	09-0004	09-0004	09-0004
Battelle ID	Q5947-P	Q5936-P	Q5941-P	Q5940-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	02/03/09	02/03/09
Analysis Date	02/22/09	02/22/09	02/22/09	03/15/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.89	42.73	29.06	34.57
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	17.16	21.37	19.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	9.16	10.6	494.82	40.61
C1-Naphthalenes	18.65	21.28	593.32	81.2
C2-Naphthalenes	25.58	29.07	476.43	93.28
C3-Naphthalenes	18.79	21.33	256.29	57.69
C4-Naphthalenes	11.03	12.53	116.99	32.19
Acenaphthylene	0.07 J	U	1.65	0.27 J
Acenaphthene	0.31 J	0.37 J	7.65	1.68
Biphenyl	3.61	4.08	42.67	9.64
Fluorene	2.4	2.75	48.73	8.49
C1-Fluorenes	3.58	4.23	56.13	12.44
C2-Fluorenes	5.14	6.55	49.28	15.11
C3-Fluorenes	U	5.06	35.47	11.93
Anthracene	0.4 J	0.5 J	3.95	1.12
Phenanthrene	15.44	17.57	122.16	31.48
C1-Phenanthrenes/Anthracenes	22.55	26.56	144.31	46.29
C2-Phenanthrenes/Anthracenes	20.22	24.3	105.28	41.46
C3-Phenanthrenes/Anthracenes	10.81	13.07	60.03	24.75
C4-Phenanthrenes/Anthracenes	7.86	9.17	31.69	17.92
Dibenzothiophene	1.74	2.01	22.85	4.62
C1-Dibenzothiophenes	3.48	4.12	33.86	9.54
C2-Dibenzothiophenes	3.65	4.35	28.29	9.95
C3-Dibenzothiophenes	2.26	2.71	14.21	6.05
Fluoranthene	3.05	3.45	15.16	5.88
Pyrene	3.55	4.14	17.66	6.91
C1-Fluoranthenes/Pyrenes	10.73	12.28	65.9	21.36
C2-Fluoranthenes/Pyrenes	9.22	10.93	55.11	18.5
C3-Fluoranthenes/Pyrenes	6.56	7.71	33.8	11
Benzo(a)anthracene	1.24	1.45	6.51	2.55
Chrysene	5.46	6.3	17.62	8.43
C1-Chrysenes	5.68	6.63	22.34	9.47
C2-Chrysenes	4.97	5.78	20.04	7.42
C3-Chrysenes	2.69	2.95	11.43	4.73
C4-Chrysenes	U	U	7.86	U
Benzo(b)fluoranthene	3.24	3.34	8.36	7.13
Benzo(k)fluoranthene	0.72 J	0.91 J	3.07	2.21
Benzo(e)pyrene	3.5	3.51	12.44	8.16
Benzo(a)pyrene	0.69	0.85	3.98	1.84
Perylene	14.38	14.41	19.94	31.3
Indeno(1,2,3-cd)pyrene	0.7	0.62	2.38	1.61
Dibenz(a,h)anthracene	0.4 J	0.39 J	1.77	0.81
Benzo(g,h,i)perylene	2.67	2.5	10.87	4.79
Total PAH	266.18	310.36	3082.3	711.81
Surrogate Recoveries (%)				
Naphthalene-d8	59	65	59	54
Acenaphthene-d10	72	79	78	60
Phenanthrene-d10	79	87	84	65
Benzo(a)pyrene-d12	71	86	89	49

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-SC24	08-03-KD005-01-SC46	08-03-KD005-01-SC68	08-03-KD005-01-SC810
Batch ID	09-0004	09-0004	09-0002	09-0004
Battelle ID	Q5942-P	Q5943-P	Q5785-P	Q5939-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	01/22/09	02/03/09
Analysis Date	02/22/09	02/22/09	02/10/09	02/22/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	36.14	34.39	35.54	35.7
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.11	19.80	19.33	19.25
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	143.61	158.32	86.29	48.3
C1-Naphthalenes	209.54	207.18	139.85	77.64
C2-Naphthalenes	196.43	191.65	132.75	81.41
C3-Naphthalenes	119.91	119.26	85.73	52.47
C4-Naphthalenes	61.59	62.11	45.12	28.94
Acenaphthylene	0.64	0.62	U	0.25 J
Acenaphthene	3.51	3.28	2.45	1.44
Biphenyl	18.08	16.55	12.95	8.61
Fluorene	20.27	20.23	14.6	9.32
C1-Fluorenes	25.54	24.93	17.82	11.7
C2-Fluorenes	27.09	26.28	19.21	14.06
C3-Fluorenes	19.88	20.39	U	11.13
Anthracene	1.73	1.79	1.32	0.89
Phenanthrene	55.09	58.24	42.17	31.02
C1-Phenanthrenes/Anthracenes	79.09	82.98	52.97	43.62
C2-Phenanthrenes/Anthracenes	66.82	70.64	43.05	35.26
C3-Phenanthrenes/Anthracenes	40.74	41.65	28.34	19.86
C4-Phenanthrenes/Anthracenes	22.7	23.9	23.24	13.62
Dibenzothiophene	8.37	9.08	6.18	3.23
C1-Dibenzothiophenes	15.36	16.37	11.09	6.81
C2-Dibenzothiophenes	14.82	15.43	11.06	6.52
C3-Dibenzothiophenes	8.55	8.56	6.19	4.07
Fluoranthene	8.52	8.76	7.28	5.82
Pyrene	9.85	11.02	8.44	7.17
C1-Fluoranthenes/Pyrenes	35.53	36.69	29.15	19.65
C2-Fluoranthenes/Pyrenes	31.57	32.8	22.02	15.28
C3-Fluoranthenes/Pyrenes	20.37	22.16	14.75	9.51
Benzo(a)anthracene	3.11	3.55	2.52	1.33
Chrysene	10.51	11.53	9.04	5.96
C1-Chrysenes	12.23	13.72	10.12	5.69
C2-Chrysenes	10.72	12.26	8.18	4.17
C3-Chrysenes	6.03	6.61	4.71	2.18
C4-Chrysenes	4.69	5.15	U	U
Benzo(b)fluoranthene	7.86	7.2	8.39	8.08
Benzo(k)fluoranthene	1.78	2.23	2.67	1.85
Benzo(e)pyrene	9.76	9.86	10.44	8.11
Benzo(a)pyrene	2.15	2.4	1.97	1.43
Perylene	23.94	27.67	28.71	25.73
Indeno(1,2,3-cd)pyrene	1.58	1.64	1.43	0.74
Dibenz(a,h)anthracene	0.93	0.92	0.84	0.38 J
Benzo(g,h,i)perylene	5.97	6.11	5.69	2.24
Total PAH	1366.46	1401.72	958.73	635.49
Surrogate Recoveries (%)				
Naphthalene-d8	59	57	52	55
Acenaphthene-d10	74	72	60	68
Phenanthrene-d10	81	76	65	71
Benzo(a)pyrene-d12	57	60	40	25 N

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF001-01-SC	08-03-KF003-01-SC	08-03-KF005-01-SC	08-03-KF007-01-SC
Batch ID	09-0001	09-0002	09-0003	09-0001
Battelle ID	Q5704-P	Q5821-P	Q5826-P	Q5705-P
Sample Type	SA	SA	SA	SA
Collection Date	08/21/08	08/29/08	08/31/08	08/22/08
Extraction Date	01/15/09	01/22/09	01/29/09	01/15/09
Analysis Date	02/08/09	02/10/09	03/14/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.91	43.9	48.42	31.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.99	16.88	15.45	20.67
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.52	12	13.85	5.01
C1-Naphthalenes	11.81	22.71	32.01	9.81
C2-Naphthalenes	15.61	29.46	45.81	12.94
C3-Naphthalenes	11.19	21.43	32	9.8
C4-Naphthalenes	6.02	12.14	18.86	5.46
Acenaphthylene	U	U	0.1 J	0.02 J
Acenaphthene	0.2 J	0.4 J	0.52 J	0.19 J
Biphenyl	2.56	4.34	5.99	2.17
Fluorene	1.56	2.91	3.11	1.28
C1-Fluorenes	1.94	3.96	6.08	1.8
C2-Fluorenes	3.31	6.49	9.58	2.71
C3-Fluorenes	U	U	8.07	U
Anthracene	0.27 J	0.49 J	0.75	0.2 J
Phenanthrene	9.39	16.98	23.49	8.04
C1-Phenanthrenes/Anthracenes	12.43	22.98	35.97	10.48
C2-Phenanthrenes/Anthracenes	10.88	20.31	33.24	9.14
C3-Phenanthrenes/Anthracenes	5.69	10.46	19.26	4.72
C4-Phenanthrenes/Anthracenes	4	8.15	15.68	3.64
Dibenzothiophene	1.05	2.1	2.86	0.99
C1-Dibenzothiophenes	2	3.9	6.05	1.85
C2-Dibenzothiophenes	1.98	3.9	7.09	1.88
C3-Dibenzothiophenes	1.28	2.48	4.66	1.14
Fluoranthene	1.79	3.18	4.52	1.49
Pyrene	2.27	3.88	5.56	1.88
C1-Fluoranthenes/Pyrenes	5.5	10.51	16.59	4.7
C2-Fluoranthenes/Pyrenes	4.65	8.72	14.81	3.77
C3-Fluoranthenes/Pyrenes	2.98	6.08	10.26	2.61
Benzo(a)anthracene	0.6	1.1	2.01	0.56
Chrysene	3.35	5.98	7.91	2.86
C1-Chrysenes	3.3	6.03	9.15	2.69
C2-Chrysenes	2.79	5.05	7.79	2.16
C3-Chrysenes	1.74	3.04	5.06	1.26
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.81	3.37	5.65	1.71
Benzo(k)fluoranthene	0.4 J	4.39	0.86 J	0.31 J
Benzo(e)pyrene	1.99	3.87	5.69	1.7
Benzo(a)pyrene	0.39 J	0.66	1.27	0.3 J
Perylene	8.89	14.65	23.27	7.17
Indeno(1,2,3-cd)pyrene	0.36 J	U	1.29	0.34 J
Dibenz(a,h)anthracene	0.22 J	0.32 J	0.66 J	0.18 J
Benzo(g,h,i)perylene	1.5	2.61	3.99	1.24
Total PAH	153.22	291.03	451.37	130.2
Surrogate Recoveries (%)				
Naphthalene-d8	64	49	58	59
Acenaphthene-d10	70	62	68	66
Phenanthrene-d10	74	69	72	72
Benzo(a)pyrene-d12	72	63	70	69

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF009-01-SC	08-03-KF011-01-SC	08-03-KF013-01-SC	08-03-KF015-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0003
Battelle ID	Q5710-P	Q5708-P	Q5694-P	Q5824-P
Sample Type	SA	SA	SA	SA
Collection Date	08/24/08	08/21/08	08/23/08	08/31/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/29/09
Analysis Date	01/26/09	02/08/09	02/08/09	02/18/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	37.74	38.25	36.78	24.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.72	18.50	18.92	22.71
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	3.37	4.51	5.12	1.88
C1-Naphthalenes	8.45	9.7	10.36	3.26
C2-Naphthalenes	13.12	13.03	14.29	4.43
C3-Naphthalenes	9.87	9.81	10.61	3.08
C4-Naphthalenes	6.08	5.19	6.03	1.79
Acenaphthylene	0.03 J	0.05 J	U	0.02 J
Acenaphthene	0.17 J	0.18 J	0.21 J	0.07 J
Biphenyl	1.83	2.1	2.31	0.75
Fluorene	1.1	1.21	1.54	0.52
C1-Fluorenes	1.82	1.62	2.06	0.72
C2-Fluorenes	2.7	2.99	3.45	1.14
C3-Fluorenes	2.27	U	U	U
Anthracene	0.15 J	0.15 J	0.22 J	0.05 J
Phenanthrene	5.65	7.97	8.64	2.79
C1-Phenanthrenes/Anthracenes	8.3	10.56	11.85	3.82
C2-Phenanthrenes/Anthracenes	8.01	9.41	10.71	3.48
C3-Phenanthrenes/Anthracenes	4.21	4.54	5.19	1.71
C4-Phenanthrenes/Anthracenes	3.4	3.34	3.85	1.21
Dibenzothiophene	0.76	0.98	1.05	0.35 J
C1-Dibenzothiophenes	1.51	1.73	2.06	0.75
C2-Dibenzothiophenes	1.8	1.89	2.13	0.72
C3-Dibenzothiophenes	1.14	1.21	1.24	0.46
Fluoranthene	1.06	1.39	1.68	0.49
Pyrene	1.34	1.66	2.08	0.65
C1-Fluoranthenes/Pyrenes	3.46	4.26	5.16	1.73
C2-Fluoranthenes/Pyrenes	3.01	3.38	4.49	1.49
C3-Fluoranthenes/Pyrenes	2.19	2.31	2.91	1.1
Benzo(a)anthracene	0.44 J	0.51 J	0.6	0.18 J
Chrysene	2.08	2.73	3.26	0.96
C1-Chrysenes	1.98	2.63	3.16	0.95
C2-Chrysenes	1.77	2.22	2.61	0.88
C3-Chrysenes	1.1	1.4	1.8	0.57
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.44	1.5	1.81	0.46
Benzo(k)fluoranthene	0.63 J	0.4 J	0.5 J	0.12 J
Benzo(e)pyrene	1.62	1.68	2.04	0.54
Benzo(a)pyrene	0.42 J	0.32 J	0.41 J	0.13 J
Perylene	6.12	6.42	8.96	3.35
Indeno(1,2,3-cd)pyrene	0.45 J	0.27 J	0.33 J	0.09 J
Dibenz(a,h)anthracene	0.44 J	0.17 J	0.22 J	0.06 J
Benzo(g,h,i)perylene	1.28	1.14	1.45	0.4 J
Total PAH	116.57	126.56	146.39	47.15
Surrogate Recoveries (%)				
Naphthalene-d8	70	62	62	56
Acenaphthene-d10	70	68	68	69
Phenanthrene-d10	93	71	75	72
Benzo(a)pyrene-d12	84	64	71	74

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF017-01-SC	08-03-KF019-01-SC	08-03-KF021-01-SC	08-03-KF023-01-SC
Batch ID	09-0001	09-0002	09-0001	09-0001
Battelle ID	Q5678-P	Q5811-P	Q5664-P	Q5669-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/28/08	08/27/08	08/27/08
Extraction Date	01/15/09	01/22/09	01/15/09	01/15/09
Analysis Date	02/07/09	02/10/09	02/07/09	02/07/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.56	20.45	56.24	47.49
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.48	23.93	13.12	15.75
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	7.2	3.32	10.73	7.87
C1-Naphthalenes	15.16	7.55	23.14	17.5
C2-Naphthalenes	21.18	12.26	32.61	24.12
C3-Naphthalenes	16.14	12.93	24.62	17.91
C4-Naphthalenes	9.15	8.98	13.85	10.03
Acenaphthylene	U	U	U	U
Acenaphthene	0.28 J	0.16 J	0.51 J	0.33 J
Biphenyl	3.46	1.48	5.4	3.88
Fluorene	2.24	1.03	3.56	2.46
C1-Fluorenes	3.02	1.36	4.93	3.23
C2-Fluorenes	4.51	2.24	7.88	5.42
C3-Fluorenes	U	U	U	U
Anthracene	0.34 J	0.17 J	0.66 J	0.37 J
Phenanthrene	12.97	6.35	20.56	14.68
C1-Phenanthrenes/Anthracenes	17.97	10.07	28.33	20.46
C2-Phenanthrenes/Anthracenes	16.11	10.14	25.1	17.61
C3-Phenanthrenes/Anthracenes	8.28	6.11	13.24	9.43
C4-Phenanthrenes/Anthracenes	5.95	5.28	9.21	6.9
Dibenzothiophene	1.56	0.73	2.64	1.76
C1-Dibenzothiophenes	3.12	1.79	5.05	3.39
C2-Dibenzothiophenes	3.32	1.6	5.33	3.47
C3-Dibenzothiophenes	2	0.94	3.31	2.25
Fluoranthene	2.54	1.39	4.24	2.93
Pyrene	3.07	1.64	5.28	3.66
C1-Fluoranthenes/Pyrenes	8.18	4.44	13.22	9.12
C2-Fluoranthenes/Pyrenes	6.55	3.72	11.22	7.9
C3-Fluoranthenes/Pyrenes	4.66	2.61	7.93	5.47
Benzo(a)anthracene	0.9	0.53	1.45	0.99
Chrysene	4.77	2.38	7.64	5.3
C1-Chrysenes	4.63	2.58	7.66	5.47
C2-Chrysenes	3.8	2.27	6.62	4.67
C3-Chrysenes	2.27	1.74	3.79	2.99
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	2.81	1.99	4.53	3.37
Benzo(k)fluoranthene	0.57 J	0.57 J	0.81 J	0.63 J
Benzo(e)pyrene	3	2.07	4.87	3.43
Benzo(a)pyrene	0.56 J	0.37 J	0.87	0.67
Perylene	13.33	7.92	25.13	16.06
Indeno(1,2,3-cd)pyrene	0.55 J	0.29 J	0.92	0.64 J
Dibenz(a,h)anthracene	0.32 J	0.13 J	0.54 J	0.37 J
Benzo(g,h,i)perylene	2.17	1.11	3.77	2.46
Total PAH	218.64	132.24	351.15	249.2
Surrogate Recoveries (%)				
Naphthalene-d8	63	61	63	60
Acenaphthene-d10	71	67	72	68
Phenanthrene-d10	78	71	78	73
Benzo(a)pyrene-d12	74	42	76	68

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-SC	08-03-KR001-01-SC	08-03-KR007-01-SC	08-03-KR008-01-SC
Batch ID	09-0002	09-0001	09-0001	09-0004
Battelle ID	Q5806-P	Q5662-P	Q5682-P	Q5973-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	01/22/09	01/15/09	01/15/09	02/03/09
Analysis Date	02/10/09	03/14/09	02/07/09	02/23/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	47.43	44.27	45.56	32.06
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.88	16.68	16.38	20.48
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	8.98	7.67	6.56	4.2
C1-Naphthalenes	18.41	17.45	14.18	8.59
C2-Naphthalenes	25.15	26.38	20.29	12.18
C3-Naphthalenes	18.47	18.83	15.72	8.83
C4-Naphthalenes	10.29	11.54	9.16	4.96
Acenaphthylene	U	0.11 J	U	U
Acenaphthene	0.4 J	0.28 J	0.25 J	0.16 J
Biphenyl	3.98	3.8	3.24	1.96
Fluorene	2.58	1.87	2.14	1.33
C1-Fluorenes	3.39	3.53	2.82	1.93
C2-Fluorenes	5.93	5.44	4.81	2.79
C3-Fluorenes	U	5.19	U	U
Anthracene	0.39 J	0.48 J	0.29 J	0.24 J
Phenanthrene	15.16	14.16	12.41	7.89
C1-Phenanthrenes/Anthracenes	21.27	20.87	17.48	10.89
C2-Phenanthrenes/Anthracenes	18.69	19.48	15.64	9.91
C3-Phenanthrenes/Anthracenes	9.44	11.01	8.07	5.04
C4-Phenanthrenes/Anthracenes	6.89	9.29	5.74	3.54
Dibenzothiophene	1.89	1.6	1.47	0.92
C1-Dibenzothiophenes	3.77	3.5	2.89	1.77
C2-Dibenzothiophenes	3.79	3.8	3.06	1.85
C3-Dibenzothiophenes	2.49	2.67	2.01	1.08
Fluoranthene	2.9	2.73	2.41	1.44
Pyrene	3.74	3.29	3	1.73
C1-Fluoranthenes/Pyrenes	9.35	8.99	7.8	4.69
C2-Fluoranthenes/Pyrenes	7.89	7.87	6.57	4.2
C3-Fluoranthenes/Pyrenes	5.68	5.31	4.57	2.95
Benzo(a)anthracene	1.03	0.95	0.85	0.53
Chrysene	5.66	4.3	4.53	2.75
C1-Chrysenes	5.5	4.5	4.66	2.72
C2-Chrysenes	4.58	3.96	3.99	2.46
C3-Chrysenes	2.89	2.39	2.57	1.27
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	3.22	4.28	2.95	1.41
Benzo(k)fluoranthene	0.83 J	0.6 J	0.56 J	0.32 J
Benzo(e)pyrene	3.56	3.8	3.04	1.6
Benzo(a)pyrene	0.69	0.66	0.54 J	0.31 J
Perylene	15.87	17.51	14.04	7.41
Indeno(1,2,3-cd)pyrene	0.63 J	0.62	0.55 J	0.27 J
Dibenz(a,h)anthracene	0.35 J	0.34 J	0.31 J	0.17 J
Benzo(g,h,i)perylene	2.53	1.49	2.28	1.18
Total PAH	258.26	262.54	213.45	127.47
Surrogate Recoveries (%)				
Naphthalene-d8	55	57	59	61
Acenaphthene-d10	64	64	69	75
Phenanthrene-d10	68	69	77	83
Benzo(a)pyrene-d12	63	49	70	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR009-01-SC	08-03-KR016-01-SC	08-03-KR019-01-SC	08-03-KR034-01-SC
Batch ID	09-0004	09-0001	09-0004	09-0001
Battelle ID	Q5978-P	Q5687-P	Q5983-P	Q5697-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/03/09	01/15/09	02/03/09	01/15/09
Analysis Date	02/23/09	02/08/09	02/23/09	01/25/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	29.83	38.36	48.67	39.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	21.08	18.49	15.36	18.22
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	3.88	4.82	9.96	4.12
C1-Naphthalenes	7.75	10.17	20.83	9.69
C2-Naphthalenes	11.76	14.49	28.76	14.56
C3-Naphthalenes	11.23	11.12	21.08	10.4
C4-Naphthalenes	7.24	6.43	11.97	6.49
Acenaphthylene	U	0.05 J	0.08 J	0.08 J
Acenaphthene	0.18 J	0.19 J	0.39 J	0.19 J
Biphenyl	1.77	2.29	4.5	1.95
Fluorene	1.27	1.53	2.99	1.1
C1-Fluorenes	1.89	2.24	4.26	1.86
C2-Fluorenes	3.23	3.23	6.48	3.06
C3-Fluorenes	U	U	4.3	2.53
Anthracene	0.21 J	0.23 J	0.47 J	0.16 J
Phenanthrene	7.99	9.08	17.88	6.43
C1-Phenanthrenes/Anthracenes	13.22	12.88	25.94	9.31
C2-Phenanthrenes/Anthracenes	13.35	11.54	23.24	8.88
C3-Phenanthrenes/Anthracenes	6.35	5.98	11.61	4.56
C4-Phenanthrenes/Anthracenes	4.09	4.32	8.51	3.6
Dibenzothiophene	0.94	1.05	2.17	0.78
C1-Dibenzothiophenes	1.94	2.08	4.2	1.52
C2-Dibenzothiophenes	2	2.19	4.46	1.86
C3-Dibenzothiophenes	1.22	1.31	2.65	1.27
Fluoranthene	1.49	1.83	3.47	1.19
Pyrene	1.81	2.3	4.09	1.5
C1-Fluoranthenes/Pyrenes	5.41	5.65	11.3	3.86
C2-Fluoranthenes/Pyrenes	5.04	4.91	9.59	3.22
C3-Fluoranthenes/Pyrenes	3.62	3.42	6.54	2.29
Benzo(a)anthracene	0.6	0.65	1.21	0.59
Chrysene	2.83	3.59	6.36	2.39
C1-Chrysenes	2.96	3.48	6.03	2.17
C2-Chrysenes	2.7	2.94	5.1	2.06
C3-Chrysenes	1.45	1.87	2.96	1.45
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.89	2.17	3.65	1.85
Benzo(k)fluoranthene	0.45 J	0.48 J	0.82 J	1.27
Benzo(e)pyrene	2.18	2.29	4.12	2.07
Benzo(a)pyrene	0.36 J	0.39 J	0.72	0.66
Perylene	8.98	10.94	19.71	7.14
Indeno(1,2,3-cd)pyrene	0.34 J	0.39 J	0.67 J	0.84
Dibenz(a,h)anthracene	0.2 J	0.25 J	0.36 J	0.99
Benzo(g,h,i)perylene	1.47	1.65	3.05	1.81
Total PAH	145.29	156.42	306.48	131.75
Surrogate Recoveries (%)				
Naphthalene-d8	57	59	59	71
Acenaphthene-d10	68	69	69	75
Phenanthrene-d10	75	75	77	94
Benzo(a)pyrene-d12	53	67	69	86

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR043-01-SC	08-03-KR045-01-SC	08-03-KR045-02-SC	08-03-KR045-03-SC
Batch ID	09-0001	09-0001	09-0001	09-0001
Battelle ID	Q5699-P	Q5693-P	Q5696-P	Q5695-P
Sample Type	SA	SA	SA	SA
Collection Date	08/22/08	08/23/08	08/23/08	08/23/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/15/09
Analysis Date	02/08/09	02/08/09	02/08/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.57	36.7	42.09	37.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	19.09	17.37	18.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.09	4.67	5.76	4.84
C1-Naphthalenes	11	9.85	12.43	10.57
C2-Naphthalenes	14.95	13.82	16.94	14.73
C3-Naphthalenes	10.79	10.37	12.36	10.94
C4-Naphthalenes	6.01	5.88	6.8	6.21
Acenaphthylene	0.05 J	U	U	U
Acenaphthene	0.2 J	0.22 J	0.25 J	0.27 J
Biphenyl	2.38	2.23	2.72	2.29
Fluorene	1.54	1.46	1.66	1.56
C1-Fluorenes	2.06	1.95	2.23	2.02
C2-Fluorenes	3.3	3.37	3.66	3.56
C3-Fluorenes	U	U	U	U
Anthracene	0.27 J	0.17 J	0.27 J	0.32 J
Phenanthrene	8.92	8.31	10.18	8.78
C1-Phenanthrenes/Anthracenes	11.89	11.57	14.41	12.21
C2-Phenanthrenes/Anthracenes	10.32	10.32	12.61	10.97
C3-Phenanthrenes/Anthracenes	5.34	5.31	6.4	5.49
C4-Phenanthrenes/Anthracenes	3.89	3.61	4.56	3.84
Dibenzothiophene	1.02	1.03	1.18	1.04
C1-Dibenzothiophenes	1.96	2.03	2.23	2.05
C2-Dibenzothiophenes	2	2.11	2.28	2.06
C3-Dibenzothiophenes	1.28	1.28	1.49	1.35
Fluoranthene	1.76	1.63	2.13	1.91
Pyrene	1.96	2.03	2.52	2.32
C1-Fluoranthenes/Pyrenes	5.32	5.06	6.22	5.55
C2-Fluoranthenes/Pyrenes	4.26	4.32	5.06	4.64
C3-Fluoranthenes/Pyrenes	2.92	3.08	3.5	3.06
Benzo(a)anthracene	0.6	0.59	0.71	0.66
Chrysene	3.19	3.1	3.82	3.25
C1-Chrysenes	3.12	3.09	3.66	2.92
C2-Chrysenes	2.55	2.76	3.06	2.34
C3-Chrysenes	1.42	1.72	1.83	1.55
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.84	1.71	2.32	2.09
Benzo(k)fluoranthene	0.53 J	0.44 J	0.66 J	0.89 J
Benzo(e)pyrene	1.98	1.9	2.65	2.61
Benzo(a)pyrene	0.44 J	0.38 J	0.4 J	0.59
Perylene	11.79	8.42	11.27	9.67
Indeno(1,2,3-cd)pyrene	0.4 J	0.37 J	0.47 J	0.48 J
Dibenz(a,h)anthracene	0.22 J	0.21 J	0.27 J	0.34 J
Benzo(g,h,i)perylene	1.49	1.37	1.91	1.64
Total PAH	150.05	141.74	172.88	151.61
Surrogate Recoveries (%)				
Naphthalene-d8	63	62	64	64
Acenaphthene-d10	68	69	70	71
Phenanthrene-d10	73	75	73	77
Benzo(a)pyrene-d12	69	74	60	55

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR056-01-SC	08-03-KR066-01-SC	08-03-KR083-01-SC	08-03-KR095-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0002
Battelle ID	Q5706-P	Q5707-P	Q5698-P	Q5819-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/22/08	08/22/08	08/29/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/22/09
Analysis Date	02/08/09	02/08/09	02/08/09	02/10/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	37.06	41.67	32.21	45.95
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.03	17.60	20.30	16.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	4.74	5.2	4.19	11.96
C1-Naphthalenes	10.07	10.99	8.7	25.01
C2-Naphthalenes	13.47	14.56	12.09	33.08
C3-Naphthalenes	10.18	10.64	9.06	24.02
C4-Naphthalenes	5.99	5.85	4.77	13.4
Acenaphthylene	0.07 J	0.04 J	0.04 J	U
Acenaphthene	0.23 J	0.19 J	0.16 J	0.47 J
Biphenyl	2.19	2.2	1.9	4.9
Fluorene	1.44	1.44	1.27	3.26
C1-Fluorenes	1.88	1.85	1.75	4.78
C2-Fluorenes	3.39	2.89	2.92	7
C3-Fluorenes	U	U	U	U
Anthracene	0.2 J	0.19 J	0.14 J	0.39 J
Phenanthrene	8.28	8.55	7.15	19.56
C1-Phenanthrenes/Anthracenes	11.48	11.14	9.78	26.1
C2-Phenanthrenes/Anthracenes	10.19	10.73	8.98	23.38
C3-Phenanthrenes/Anthracenes	5.61	5.25	4.51	12.03
C4-Phenanthrenes/Anthracenes	4.31	3.84	3.31	9.19
Dibenzothiophene	1.06	1.04	0.84	2.33
C1-Dibenzothiophenes	2.06	2.02	1.64	4.57
C2-Dibenzothiophenes	2.12	2.09	1.72	4.67
C3-Dibenzothiophenes	1.29	1.39	1.26	2.99
Fluoranthene	1.78	1.6	1.42	3.64
Pyrene	2.21	1.91	1.75	4.44
C1-Fluoranthenes/Pyrenes	5.33	4.96	4.41	12.19
C2-Fluoranthenes/Pyrenes	4.45	4.37	3.6	9.59
C3-Fluoranthenes/Pyrenes	2.94	2.83	2.4	6.86
Benzo(a)anthracene	0.6	0.53 J	0.48 J	1.23
Chrysene	3.08	2.9	2.68	6.74
C1-Chrysenes	3.05	2.74	2.48	6.85
C2-Chrysenes	2.6	2.25	2.08	5.55
C3-Chrysenes	1.58	1.43	1.4	3.02
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.82	1.94	1.48	3.91
Benzo(k)fluoranthene	0.49 J	0.6 J	0.41 J	0.97 J
Benzo(e)pyrene	1.99	2.07	1.66	4.31
Benzo(a)pyrene	0.36 J	0.37 J	0.33 J	0.81
Perylene	8.25	7.27	7.41	17.87
Indeno(1,2,3-cd)pyrene	0.34 J	0.27 J	0.28 J	0.66
Dibenz(a,h)anthracene	0.22 J	0.18 J	0.18 J	0.43 J
Benzo(g,h,i)perylene	1.41	1.35	1.34	2.97
Total PAH	142.75	141.66	121.97	325.13
Surrogate Recoveries (%)				
Naphthalene-d8	65	64	60	57
Acenaphthene-d10	72	71	69	65
Phenanthrene-d10	77	76	76	71
Benzo(a)pyrene-d12	68	61	71	66

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-SC02	08-03-BD002-01-SC02	08-03-BD003-01-SC02	08-03-BD004-01-SC02
Batch ID	09-0004	09-0003	09-0004	09-0004
Battelle ID	Q6000-P	Q5926-P	Q6005-P	Q6010-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/15/08	09/21/08	09/21/08
Extraction Date	02/03/09	01/29/09	02/03/09	02/03/09
Analysis Date	02/16/09	02/09/09	02/16/09	02/16/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	42.39	46.64	45.16	57.43
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.36	15.98	16.53	12.79
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.23 J	0.28 J	0.39 J	0.36 J
13b(H),17a(H)-20R-Diacholestane	0.18 J	0.13 J	0.15 J	0.15 J
14a(H),17a(H)-20R-methylcholestane	0.63 J	0.62 J	0.56 J	0.78 J
14a(H),17a(H)-20S-Ethylcholestane	0.29 J	0.52 J	0.4 J	0.44 J
14a(H),17a(H)-20R-Ethylcholestane	2.29 J	2.07 J	2.18 J	2.53 J
C23 Tricyclic Terpane	0.24 J	0.21 J	0.29 J	0.25 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	0.29 J	0.48 J
17a(H)-22,29,30-Trisnorhopane -TM	1.6 J	1.61 J	1.3 J	1.91 J
30-Norhopane	2.29 J	2.85 J	2.33 J	2.75 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.72	4.22	3.33	4.28
30-Homohopane -22S	1.98 J	2.11 J	1.79 J	2.39 J
30-Homohopane -22R	3.16	3.86	2.94	4.01
Surrogate Recoveries (%)				
5b(H)-Cholane	78	72	89	89

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02	08-03-BD005-01-SC1012	08-03-BD005-01-SC24	08-03-BD005-01-SC46
Batch ID	09-0004	09-0003	09-0004	09-0003
Battelle ID	Q5932-P	Q5899-P	Q5933-P	Q5896-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/15/08	09/15/08
Extraction Date	02/03/09	01/29/09	02/03/09	01/29/09
Analysis Date	02/15/09	02/08/09	02/15/09	02/20/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	47.95	43.65	47.87	47.1
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	17.01	15.63	15.82
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	1.28 J	1.27 J	0.86 J	1.45 J
13b(H),17a(H)-20R-Diacholestane	0.71 J	0.74 J	0.51 J	0.81 J
14a(H),17a(H)-20R-methylcholestane	1.6 J	1.4 J	1.47 J	1.54 J
14a(H),17a(H)-20S-Ethylcholestane	1.34 J	1.37 J	1.35 J	1.56 J
14a(H),17a(H)-20R-Ethylcholestane	4.75	4.22	4.06	4.18
C23 Tricyclic Terpane	1.45 J	1.83 J	0.98 J	1.96 J
C29 Tricyclic Terpane -22S	0.73 J	0.59 J	0.36 J	0.76 J
C29 Tricyclic Terpane -22R	0.55 J	0.55 J	0.53 J	0.63 J
18a(H)-22,29,30-Trisnorneohopane -TS	1.12 J	0.93 J	1.11 J	1.34 J
17a(H)-22,29,30-Trisnorhopane -TM	3.28	3.3	3.34	3.85
30-Norhopane	6.04	5.67	5.5	7.09
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	11.1	9.42	9.77	13.41
30-Homohopane -22S	4.83	4.33	5.03	5.96
30-Homohopane -22R	9.68	7.61	6.9	7.64
Surrogate Recoveries (%)				
5b(H)-Cholane	95	75	91	83

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC68	08-03-BD005-01-SC810	08-03-BF001-01-SC	08-03-BF003-01-SC
Batch ID	09-0003	09-0003	09-0003	09-0003
Battelle ID	Q5897-P	Q5898-P	Q5903-P	Q5879-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/15/08	09/16/08	09/02/08
Extraction Date	01/29/09	01/29/09	01/29/09	01/29/09
Analysis Date	02/08/09	02/08/09	02/09/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	45.56	44.34	31.34	47.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.27	16.73	20.60	15.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.74 J	0.63 J	0.15 J	0.39 J
13b(H),17a(H)-20R-Diacholestane	0.41 J	0.4 J	0.07 J	0.23 J
14a(H),17a(H)-20R-methylcholestane	1.1 J	1.13 J	0.3 J	0.81 J
14a(H),17a(H)-20S-Ethylcholestane	0.98 J	0.94 J	0.22 J	0.63 J
14a(H),17a(H)-20R-Ethylcholestane	4.16	3.69	0.9 J	3.56
C23 Tricyclic Terpane	0.77 J	0.77 J	0.08 J	0.27 J
C29 Tricyclic Terpane -22S	0.25 J	U	U	U
C29 Tricyclic Terpane -22R	0.4 J	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.77 J	0.67 J	0.14 J	0.37 J
17a(H)-22,29,30-Trisnorhopane -TM	2.93	2.66 J	0.76 J	1.95 J
30-Norhopane	4.73	4.42	1.32 J	2.65 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	7.95	7.88	1.78 J	4.91
30-Homohopane -22S	4.11	3.88	1.31 J	2.68 J
30-Homohopane -22R	5.78	5.62	2.04 J	3.89
Surrogate Recoveries (%)				
5b(H)-Cholane	79	75	77	71

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-02-SC	08-03-BF005-03-SC	08-03-BF007-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0003
Battelle ID	Q5726-P	Q5727-P	Q5728-P	Q5900-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/20/08	09/16/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/29/09
Analysis Date	02/05/09	02/03/09	02/03/09	02/09/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	45.72	44.34	43.14	46.85
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.35	16.78	17.02	15.90
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.36 J	0.3 J	0.41 J	0.3 J
13b(H),17a(H)-20R-Diacholestane	0.19 J	0.28 J	0.22 J	0.13 J
14a(H),17a(H)-20R-methylcholestane	1.51 J	1.25 J	1.43 J	0.59 J
14a(H),17a(H)-20S-Ethylcholestane	0.71 J	0.65 J	0.61 J	0.47 J
14a(H),17a(H)-20R-Ethylcholestane	5.02	4.63	5.98	2.08 J
C23 Tricyclic Terpane	0.42 J	0.34 J	0.31 J	0.19 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.37 J	U	0.31 J	0.19 J
17a(H)-22,29,30-Trisnorhopane -TM	2.09 J	1.81 J	2.34 J	1.58 J
30-Norhopane	3	2.72 J	3.27	2.1 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	4.85	4.36	5.5	3.61
30-Homohopane -22S	2.39 J	1.99 J	2.65 J	1.82 J
30-Homohopane -22R	5	3.93	5.36	2.79 J
Surrogate Recoveries (%)				
5b(H)-Cholane	78	83	75	73

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF009-01-SC	08-03-BF011-01-SC	08-03-BF013-01-SC	08-03-BF015-01-SC
Batch ID	09-0002	09-0004	09-0003	09-0001
Battelle ID	Q5729-P	Q6029-P	Q5906-P	Q5717-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/13/08	09/16/08	09/19/08
Extraction Date	01/22/09	02/03/09	01/29/09	01/15/09
Analysis Date	02/03/09	02/16/09	02/09/09	01/25/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	52.37	56.26	63.24	52.22
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	14.27	13.18	11.08	14.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.5 J	0.48 J	0.55 J	0.39 J
13b(H),17a(H)-20R-Diacholestane	0.3 J	0.25 J	0.27 J	0.19 J
14a(H),17a(H)-20R-methylcholestane	0.85 J	0.68 J	0.93 J	0.71 J
14a(H),17a(H)-20S-Ethylcholestane	0.56 J	0.62 J	0.8 J	0.55 J
14a(H),17a(H)-20R-Ethylcholestane	3.59	2.44 J	3.11 J	2.56 J
C23 Tricyclic Terpane	0.35 J	0.28 J	0.39 J	0.27 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.28 J	0.72 J	0.34 J	U
17a(H)-22,29,30-Trisnorhopane -TM	2.17 J	2.05 J	2.54 J	1.47 J
30-Norhopane	3.16 J	3.5 J	3.72 J	2.76 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	5.37	5.64	6.58	3.94
30-Homohopane -22S	2.26 J	3.32 J	3.22 J	1.92 J
30-Homohopane -22R	3.98	4.24	5.65	3.37
Surrogate Recoveries (%)				
5b(H)-Cholane	80	91	75	80

Battelle
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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-SC	08-03-BF019-01-SC	08-03-BF021-01-SC	08-03-BF023-01-SC
Batch ID	09-0004	09-0002	09-0004	09-0002
Battelle ID	Q6015-P	Q5769-P	Q6019-P	Q5755-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/19/08	09/13/08	09/17/08
Extraction Date	02/03/09	01/22/09	02/03/09	01/22/09
Analysis Date	02/16/09	02/04/09	02/16/09	02/03/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.58	57.68	53.55	30.87
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.40	12.73	13.91	20.70
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.29 J	0.49 J	0.3 J	0.16 J
13b(H),17a(H)-20R-Diacholestane	0.15 J	0.27 J	0.17 J	0.11 J
14a(H),17a(H)-20R-methylcholestane	0.5 J	0.75 J	0.41 J	0.25 J
14a(H),17a(H)-20S-Ethylcholestane	0.36 J	0.56 J	0.41 J	0.18 J
14a(H),17a(H)-20R-Ethylcholestane	1.29 J	2.03 J	1.37 J	0.89 J
C23 Tricyclic Terpane	0.16 J	0.57 J	0.14 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	0.63 J	0.34 J	U
17a(H)-22,29,30-Trisnorhopane -TM	1.13 J	1.83 J	1.28 J	1.04 J
30-Norhopane	2.06 J	3.41 J	2.19 J	1.43 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.02	5.58	3.57	2.24
30-Homohopane -22S	1.71 J	2.61 J	1.76 J	1.07 J
30-Homohopane -22R	2.7 J	3.85	2.8 J	2.13 J
Surrogate Recoveries (%)				
5b(H)-Cholane	76	73	85	77

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-SC	08-03-BR005-01-SC	08-03-BR016-01-SC	08-03-BR020-01-SC
Batch ID	09-0002	09-0002	09-0002	09-0001
Battelle ID	Q5764-P	Q5744-P	Q5760-P	Q5715-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/21/08	09/18/08	09/19/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/15/09
Analysis Date	02/03/09	02/03/09	02/03/09	01/25/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.63	47.36	47.58	56.83
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.11	15.82	15.80	12.96
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.22 J	0.3 J	0.26 J	0.39 J
13b(H),17a(H)-20R-Diacholestane	0.18 J	0.18 J	0.14 J	0.19 J
14a(H),17a(H)-20R-methylcholestane	0.38 J	0.4 J	0.42 J	0.54 J
14a(H),17a(H)-20S-Ethylcholestane	0.22 J	0.38 J	0.4 J	0.47 J
14a(H),17a(H)-20R-Ethylcholestane	1.24 J	1.24 J	1.45 J	1.76 J
C23 Tricyclic Terpane	0.17 J	0.22 J	0.22 J	0.26 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.76 J	1.08 J	1.03 J	1.46 J
30-Norhopane	1.65 J	1.84 J	1.87 J	2.42 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.45 J	2.9 J	3.12	3.97
30-Homohopane -22S	1.08 J	1.6 J	1.58 J	1.98 J
30-Homohopane -22R	2.81	2.5 J	2.69 J	3.84
Surrogate Recoveries (%)				
5b(H)-Cholane	82	80	78	84

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR032-01-SC	08-03-BR038-01-SC	08-03-BR043-01-SC	08-03-BR047-01-SC
Batch ID	09-0003	09-0002	09-0004	09-0003
Battelle ID	Q5916-P	Q5766-P	Q6028-P	Q5909-P
Sample Type	SA	SA	SA	SA
Collection Date	09/14/08	09/18/08	09/14/08	09/17/08
Extraction Date	01/29/09	01/22/09	02/03/09	01/29/09
Analysis Date	02/09/09	02/03/09	02/16/09	02/09/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	36.69	53.86	60.44	55.54
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.97	13.81	11.90	13.45
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.11 J	0.42 J	0.45 J	0.36 J
13b(H),17a(H)-20R-Diacholestane	0.06 J	0.16 J	0.29 J	0.19 J
14a(H),17a(H)-20R-methylcholestane	0.28 J	0.62 J	0.82 J	0.77 J
14a(H),17a(H)-20S-Ethylcholestane	0.21 J	0.51 J	0.84 J	0.64 J
14a(H),17a(H)-20R-Ethylcholestane	0.71 J	1.96 J	2.7 J	2.82 J
C23 Tricyclic Terpane	0.21 J	0.37 J	0.42 J	0.28 J
C29 Tricyclic Terpane -22S	U	U	U	0.21 J
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	0.44 J	0.51 J
17a(H)-22,29,30-Trisnorhopane -TM	0.75 J	1.84 J	2.56 J	2.03 J
30-Norhopane	1.08 J	2.61 J	3.63 J	3.1 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	1.62 J	4.27	6.61	5.43
30-Homohopane -22S	0.88 J	1.83 J	3.83 J	2.2 J
30-Homohopane -22R	1.27 J	4.21	5.34	7.09
Surrogate Recoveries (%)				
5b(H)-Cholane	73	74	86	79

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR077-01-SC	08-03-BR080-01-SC	08-03-BR086-01-SC	08-03-BR093-01-SC
Batch ID	09-0002	09-0001	09-0003	09-0003
Battelle ID	Q5732-P	Q5723-P	Q5861-P	Q5884-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/19/08	09/01/08	09/02/08
Extraction Date	01/22/09	01/15/09	01/29/09	01/29/09
Analysis Date	02/03/09	01/25/09	02/20/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.34	57.34	44.99	50.09
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.59	12.81	16.50	14.98
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.35 J	0.47 J	0.33 J	0.3 J
13b(H),17a(H)-20R-Diacholestane	0.22 J	0.35 J	0.2 J	0.17 J
14a(H),17a(H)-20R-methylcholestane	0.73 J	1.05 J	0.87 J	0.6 J
14a(H),17a(H)-20S-Ethylcholestane	0.48 J	0.52 J	0.51 J	0.54 J
14a(H),17a(H)-20R-Ethylcholestane	2.51 J	3.35 J	2.6 J	1.98 J
C23 Tricyclic Terpane	0.3 J	0.46 J	0.22 J	0.22 J
C29 Tricyclic Terpane -22S	U	U	U	0.22 J
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.44 J	U	0.3 J	0.3 J
17a(H)-22,29,30-Trisnorhopane -TM	1.54 J	1.93 J	1.84 J	1.61 J
30-Norhopane	2.46 J	3.09 J	2.77 J	2.46 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.81	5.34	4.24	4.19
30-Homohopane -22S	1.86 J	2.53 J	2.26 J	2.05 J
30-Homohopane -22R	3.3	4.39	4.23	3.28
Surrogate Recoveries (%)				
5b(H)-Cholane	63	71	78	74

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR098-01-SC	08-03-BR099-01-SC	08-03-BR100-01-SC	08-03-KD001-01-SC02
Batch ID	09-0003	09-0003	09-0003	09-0004
Battelle ID	Q5889-P	Q5870-P	Q5871-P	Q5950-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/03/08	09/03/08	09/01/08
Extraction Date	01/29/09	01/29/09	01/29/09	02/03/09
Analysis Date	02/08/09	02/20/09	02/20/09	02/16/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	44.08	44.37	44.04	42.65
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	16.79	16.72	16.77	17.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.25 J	0.29 J	0.29 J	0.3 J
13b(H),17a(H)-20R-Diacholestane	0.18 J	0.2 J	0.18 J	0.12 J
14a(H),17a(H)-20R-methylcholestane	0.74 J	0.69 J	0.81 J	0.59 J
14a(H),17a(H)-20S-Ethylcholestane	0.57 J	0.49 J	0.48 J	0.5 J
14a(H),17a(H)-20R-Ethylcholestane	2.9	2.67 J	2.79	2.02 J
C23 Tricyclic Terpane	0.2 J	0.23 J	0.18 J	0.21 J
C29 Tricyclic Terpane -22S	0.05 J	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.22 J	0.22 J	0.27 J	0.22 J
17a(H)-22,29,30-Trisnorhopane -TM	1.59 J	1.69 J	1.71 J	1.75 J
30-Norhopane	2.35 J	2.5 J	2.43 J	2.61 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.99	3.92	3.61	4.01
30-Homohopane -22S	1.96 J	1.94 J	1.86 J	2.24 J
30-Homohopane -22R	3.06	3.89	3.49	3.19
Surrogate Recoveries (%)				
5b(H)-Cholane	70	80	79	82

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD002-01-SC02	08-03-KD002-01-SC24	08-03-KD002-01-SC46	08-03-KD002-01-SC68
Batch ID	09-0002	09-0002	09-0002	09-0002
Battelle ID	Q5774-P	Q5775-P	Q5776-P	Q5777-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	01/22/09	01/22/09	01/22/09	01/22/09
Analysis Date	02/04/09	02/04/09	02/04/09	02/04/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.09	43.73	39.07	37.88
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.56	16.93	18.39	18.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.24 J	0.21 J	0.23 J	0.25 J
13b(H),17a(H)-20R-Diacholestane	U	0.1 J	0.11 J	U
14a(H),17a(H)-20R-methylcholestane	0.28 J	0.45 J	0.52 J	0.51 J
14a(H),17a(H)-20S-Ethylcholestane	0.39 J	0.35 J	0.47 J	0.35 J
14a(H),17a(H)-20R-Ethylcholestane	1.76 J	1.9 J	2.11 J	2.34 J
C23 Tricyclic Terpane	U	0.19 J	0.21 J	0.2 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.34 J	1.55 J	1.78 J	1.79 J
30-Norhopane	1.97 J	2.28 J	2.63	2.43 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.23	3.31	4.05	3.99
30-Homohopane -22S	1.46 J	1.78 J	2.22 J	1.74 J
30-Homohopane -22R	2.92 J	2.46 J	3.01	2.94
Surrogate Recoveries (%)				
5b(H)-Cholane	77	80	85	77

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD003-01-SC-02	08-03-KD004-01-SC02	08-03-KD005-01-SC02	08-03-KD005-01-SC1012
Batch ID	09-0004	09-0004	09-0004	09-0004
Battelle ID	Q5947-P	Q5936-P	Q5941-P	Q5940-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	02/03/09	02/03/09
Analysis Date	02/16/09	02/15/09	02/16/09	02/16/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.89	42.73	29.06	34.57
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	17.16	21.37	19.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.19 J	0.23 J	1.86 J	0.56 J
13b(H),17a(H)-20R-Diacholestane	0.11 J	0.14 J	1.07 J	0.33 J
14a(H),17a(H)-20R-methylcholestane	0.48 J	0.51 J	2.5	1.02 J
14a(H),17a(H)-20S-Ethylcholestane	0.49 J	0.42 J	3	0.95 J
14a(H),17a(H)-20R-Ethylcholestane	2.02 J	2.09 J	10.29	3.42
C23 Tricyclic Terpane	0.13 J	0.19 J	1.99 J	0.46 J
C29 Tricyclic Terpane -22S	0.15 J	U	0.8 J	0.16 J
C29 Tricyclic Terpane -22R	U	U	0.86 J	0.15 J
18a(H)-22,29,30-Trisnorneohopane -TS	0.34 J	U	1.8 J	0.78 J
17a(H)-22,29,30-Trisnorhopane -TM	1.51 J	1.65 J	5.88	2.31 J
30-Norhopane	2.36 J	2.18 J	11.71	4.1
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.88	3.6	20.33	6.81
30-Homohopane -22S	1.9 J	1.78 J	9.5	3.37
30-Homohopane -22R	3.18	3.2	8.12	4.49
Surrogate Recoveries (%)				
5b(H)-Cholane	86	88	87	85

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-SC24	08-03-KD005-01-SC46	08-03-KD005-01-SC68	08-03-KD005-01-SC810
Batch ID	09-0004	09-0004	09-0002	09-0004
Battelle ID	Q5942-P	Q5943-P	Q5785-P	Q5939-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/03/09	02/03/09	01/22/09	02/03/09
Analysis Date	02/16/09	02/16/09	02/04/09	02/15/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	36.14	34.39	35.54	35.7
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.11	19.80	19.33	19.25
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	1.36 J	1.08 J	0.92 J	0.66 J
13b(H),17a(H)-20R-Diacholestane	0.88 J	0.6 J	0.5 J	0.39 J
14a(H),17a(H)-20R-methylcholestane	1.83 J	1.56 J	3.85	1.02 J
14a(H),17a(H)-20S-Ethylcholestane	1.89 J	1.73 J	1.67 J	1.03 J
14a(H),17a(H)-20R-Ethylcholestane	5.86	5.13	16.75	3.57
C23 Tricyclic Terpane	1.58 J	1.03 J	1.38 J	0.78 J
C29 Tricyclic Terpane -22S	0.42 J	0.33 J	0.48 J	0.41 J
C29 Tricyclic Terpane -22R	0.38 J	0.31 J	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	1.27 J	1.17 J	1.06 J	0.7 J
17a(H)-22,29,30-Trisnorhopane -TM	3.93	3.74	3.88	2.67
30-Norhopane	7.06	6.7	6.62	4.65
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	12.9	12.03	11.5	7.78
30-Homohopane -22S	6.41	5.7	5.05	3.88
30-Homohopane -22R	7.17	6.82	5.62	5.1
Surrogate Recoveries (%)				
5b(H)-Cholane	83	80	81	87

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF001-01-SC	08-03-KF003-01-SC	08-03-KF005-01-SC	08-03-KF007-01-SC
Batch ID	09-0001	09-0002	09-0003	09-0001
Battelle ID	Q5704-P	Q5821-P	Q5826-P	Q5705-P
Sample Type	SA	SA	SA	SA
Collection Date	08/21/08	08/29/08	08/31/08	08/22/08
Extraction Date	01/15/09	01/22/09	01/29/09	01/15/09
Analysis Date	01/24/09	02/04/09	02/08/09	01/24/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.91	43.9	48.42	31.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.99	16.88	15.45	20.67
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.16 J	0.26 J	0.33 J	0.14 J
13b(H),17a(H)-20R-Diacholestane	0.11 J	0.19 J	0.22 J	0.1 J
14a(H),17a(H)-20R-methylcholestane	0.27 J	0.46 J	0.92 J	0.24 J
14a(H),17a(H)-20S-Ethylcholestane	0.2 J	0.39 J	0.66 J	0.2 J
14a(H),17a(H)-20R-Ethylcholestane	0.86 J	2.11 J	3.36	1.02 J
C23 Tricyclic Terpane	U	U	0.29 J	U
C29 Tricyclic Terpane -22S	U	U	0.18 J	U
C29 Tricyclic Terpane -22R	U	U	0.25 J	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	0.52 J	U
17a(H)-22,29,30-Trisnorhopane -TM	1.21 J	1.41 J	2.2 J	1.22 J
30-Norhopane	1.83 J	2.46 J	3.2	1.49 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.34 J	3.37	5.02	2.17 J
30-Homohopane -22S	1.45 J	1.89 J	2.73 J	1.14 J
30-Homohopane -22R	2.15 J	2.43 J	3.84	1.8 J
Surrogate Recoveries (%)				
5b(H)-Cholane	75	75	70	74

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF009-01-SC	08-03-KF011-01-SC	08-03-KF013-01-SC	08-03-KF015-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0003
Battelle ID	Q5710-P	Q5708-P	Q5694-P	Q5824-P
Sample Type	SA	SA	SA	SA
Collection Date	08/24/08	08/21/08	08/23/08	08/31/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/29/09
Analysis Date	01/25/09	01/25/09	01/24/09	02/08/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	37.74	38.25	36.78	24.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.72	18.50	18.92	22.71
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.16 J	0.17 J	0.16 J	U
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	0.23 J	0.19 J	0.36 J	0.12 J
14a(H),17a(H)-20S-Ethylcholestane	0.21 J	0.23 J	0.23 J	U
14a(H),17a(H)-20R-Ethylcholestane	1.14 J	0.86 J	1.27 J	0.43 J
C23 Tricyclic Terpane	U	U	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.63 J	0.83 J	0.79 J	0.29 J
30-Norhopane	1.09 J	1.45 J	1.27 J	0.37 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	1.88 J	2.14 J	1.96 J	0.74 J
30-Homohopane -22S	1.02 J	1.23 J	0.87 J	0.39 J
30-Homohopane -22R	1.61 J	1.79 J	1.72 J	0.6 J
Surrogate Recoveries (%)				
5b(H)-Cholane	70	72	77	69

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF017-01-SC	08-03-KF019-01-SC	08-03-KF021-01-SC	08-03-KF023-01-SC
Batch ID	09-0001	09-0002	09-0001	09-0001
Battelle ID	Q5678-P	Q5811-P	Q5664-P	Q5669-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/28/08	08/27/08	08/27/08
Extraction Date	01/15/09	01/22/09	01/15/09	01/15/09
Analysis Date	01/24/09	02/04/09	01/24/09	01/24/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	48.56	20.45	56.24	47.49
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.48	23.93	13.12	15.75
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.28 J	0.1 J	0.38 J	0.22 J
13b(H),17a(H)-20R-Diacholestane	0.17 J	U	0.19 J	0.17 J
14a(H),17a(H)-20R-methylcholestane	0.54 J	0.16 J	0.82 J	0.5 J
14a(H),17a(H)-20S-Ethylcholestane	0.42 J	0.22 J	0.49 J	0.42 J
14a(H),17a(H)-20R-Ethylcholestane	1.71 J	0.71 J	2.96 J	1.94 J
C23 Tricyclic Terpane	U	U	0.27 J	0.16 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.21 J	1.39 J	2.15 J	1.58 J
30-Norhopane	2.1 J	1.66 J	3.45 J	2.16 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.16	2.09	5.3	3.56
30-Homohopane -22S	1.68 J	1.38 J	2.41 J	2.15 J
30-Homohopane -22R	2.44 J	2.01	4.64	3.18
Surrogate Recoveries (%)				
5b(H)-Cholane	73	83	85	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-SC	08-03-KR001-01-SC	08-03-KR007-01-SC	08-03-KR008-01-SC
Batch ID	09-0002	09-0001	09-0001	09-0004
Battelle ID	Q5806-P	Q5662-P	Q5682-P	Q5973-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	01/22/09	01/15/09	01/15/09	02/03/09
Analysis Date	02/04/09	01/24/09	01/24/09	02/16/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	47.43	44.27	45.56	32.06
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	15.88	16.68	16.38	20.48
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.22 J	0.32 J	0.28 J	0.13 J
13b(H),17a(H)-20R-Diacholestane	0.1 J	0.15 J	0.1 J	0.06 J
14a(H),17a(H)-20R-methylcholestane	0.43 J	0.53 J	0.39 J	0.24 J
14a(H),17a(H)-20S-Ethylcholestane	0.34 J	0.5 J	0.36 J	0.18 J
14a(H),17a(H)-20R-Ethylcholestane	1.39 J	1.85 J	1.77 J	0.96 J
C23 Tricyclic Terpane	0.29 J	0.23 J	0.22 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.49 J	1.54 J	1.29 J	0.75 J
30-Norhopane	1.91 J	2.23 J	2.11 J	1.1 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.26	3.52	3.16	2.04 J
30-Homohopane -22S	1.55 J	1.8 J	1.4 J	0.89 J
30-Homohopane -22R	2.43 J	3.04	2.86	1.49 J
Surrogate Recoveries (%)				
5b(H)-Cholane	81	87	80	88

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR009-01-SC	08-03-KR016-01-SC	08-03-KR019-01-SC	08-03-KR034-01-SC
Batch ID	09-0004	09-0001	09-0004	09-0001
Battelle ID	Q5978-P	Q5687-P	Q5983-P	Q5697-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/03/09	01/15/09	02/03/09	01/15/09
Analysis Date	02/16/09	01/24/09	02/16/09	01/24/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	29.83	38.36	48.67	39.3
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	21.08	18.49	15.36	18.22
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.11 J	0.18 J	0.24 J	0.14 J
13b(H),17a(H)-20R-Diacholestane	0.07 J	0.09 J	0.17 J	0.08 J
14a(H),17a(H)-20R-methylcholestane	0.23 J	0.3 J	0.59 J	0.26 J
14a(H),17a(H)-20S-Ethylcholestane	0.17 J	0.24 J	0.52 J	0.21 J
14a(H),17a(H)-20R-Ethylcholestane	0.63 J	1.2 J	2.02 J	1 J
C23 Tricyclic Terpane	0.18 J	0.11 J	0.23 J	U
C29 Tricyclic Terpane -22S	0.16 J	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	0.2 J	U
17a(H)-22,29,30-Trisnorhopane -TM	0.76 J	0.9 J	1.64 J	0.89 J
30-Norhopane	1.38 J	1.38 J	2.8 J	1.26 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	1.78 J	2.18 J	3.94	2.22 J
30-Homohopane -22S	1.06 J	1.35 J	2.34 J	1.15 J
30-Homohopane -22R	1.64 J	2.09 J	3.47	1.52 J
Surrogate Recoveries (%)				
5b(H)-Cholane	76	76	85	76

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR043-01-SC	08-03-KR045-01-SC	08-03-KR045-02-SC	08-03-KR045-03-SC
Batch ID	09-0001	09-0001	09-0001	09-0001
Battelle ID	Q5699-P	Q5693-P	Q5696-P	Q5695-P
Sample Type	SA	SA	SA	SA
Collection Date	08/22/08	08/23/08	08/23/08	08/23/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/15/09
Analysis Date	01/24/09	01/24/09	01/24/09	01/24/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	39.57	36.7	42.09	37.64
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	18.15	19.09	17.37	18.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.13 J	0.11 J	0.21 J	0.12 J
13b(H),17a(H)-20R-Diacholestane	U	0.09 J	0.12 J	U
14a(H),17a(H)-20R-methylcholestane	0.34 J	0.32 J	0.31 J	0.34 J
14a(H),17a(H)-20S-Ethylcholestane	0.28 J	0.24 J	0.31 J	0.27 J
14a(H),17a(H)-20R-Ethylcholestane	1.17 J	1.01 J	1.29 J	1.04 J
C23 Tricyclic Terpane	U	U	0.15 J	0.13 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.86 J	0.85 J	1.02 J	0.8 J
30-Norhopane	1.58 J	1.23 J	1.76 J	1.27 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.2 J	2.11 J	2.56 J	1.97 J
30-Homohopane -22S	1.12 J	0.95 J	1.08 J	1.28 J
30-Homohopane -22R	2.06 J	2 J	2.22 J	2.16 J
Surrogate Recoveries (%)				
5b(H)-Cholane	75	77	82	78

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR056-01-SC	08-03-KR066-01-SC	08-03-KR083-01-SC	08-03-KR095-01-SC
Batch ID	09-0001	09-0001	09-0001	09-0002
Battelle ID	Q5706-P	Q5707-P	Q5698-P	Q5819-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/22/08	08/22/08	08/29/08
Extraction Date	01/15/09	01/15/09	01/15/09	01/22/09
Analysis Date	01/25/09	01/25/09	01/24/09	02/04/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	37.06	41.67	32.21	45.95
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	19.03	17.60	20.30	16.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.15 J	0.16 J	0.17 J	0.3 J
13b(H),17a(H)-20R-Diacholestane	0.11 J	U	0.1 J	0.11 J
14a(H),17a(H)-20R-methylcholestane	0.3 J	0.32 J	0.27 J	0.61 J
14a(H),17a(H)-20S-Ethylcholestane	0.25 J	0.26 J	0.21 J	0.48 J
14a(H),17a(H)-20R-Ethylcholestane	1.16 J	0.98 J	0.87 J	1.85 J
C23 Tricyclic Terpane	U	U	U	0.29 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.03 J	0.99 J	0.74 J	1.79 J
30-Norhopane	1.46 J	1.37 J	1.03 J	2.53 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.24 J	2.21 J	1.87 J	3.76
30-Homohopane -22S	1.05 J	1.17 J	1.19 J	1.95 J
30-Homohopane -22R	2 J	2.05 J	1.61 J	2.51 J
Surrogate Recoveries (%)				
5b(H)-Cholane	79	77	76	85

Tissue Data

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-BC2	08-03-BD001-01-BC5	08-03-BD004-01-AC	08-03-BD004-01-CC
Batch ID	09-0006	09-0006	09-0006	09-0007
Battelle ID	Q5996-P	Q5999-P	Q5750-P	Q5747-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/21/08	09/21/08	09/21/08
Extraction Date	01/16/09	01/16/09	01/16/09	01/26/09
Analysis Date	01/29/09	01/29/09	01/28/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	77.8	82.8	74.5	75
% Lipid	3.36	1.39	3.64	1.71
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.53	0.99	5.27	1.05
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	U	U
n-Decane	38.65 J	90.18 J	9.14 J	U
n-Undecane	45.74 J	70.51 J	4.57 J	U
n-Dodecane	52.06 J	99.62 J	7.22 J	U
n-Tridecane	68.95 J	76.36 J	10.78 J	U
Isoprenoid RRT 1380	72.84 J	39.56 J	10.97 J	U
n-Tetradecane	114.09 J	135.59 J	21.33 J	67.42 J
Isoprenoid RRT 1470	52.1 J	44.94 J	64.16 J	14.56 J
n-Pentadecane	235.94 J	216.63 J	301.7	77.69 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	66.32 J	113.56 J	40.84 J	71.81 J
n-Heptadecane	81.8 J	353.88 J	847.99	48.71 J
Pristane	290.86 J	69.69 J	10794.12	129.3 J
n-Octadecane	50.2 J	65.05 J	23.53 J	94.71 J
Phytane	22.28 J	24.05 J	5.21 J	16.5 J
n-Nonadecane	40.88 J	88.19 J	41.09 J	43.15 J
n-Eicosane	60.94 J	52.15 J	14.18 J	112.64 J
n-Heneicosane	57.19 J	39.82 J	23.62 J	80.58 J
n-Docosane	113.15 J	103.62 J	28.59 J	212.13 J
n-Tricosane	143.09 J	125.02 J	45.2 J	155 J
n-Tetracosane	147.45 J	133.26 J	31.4 J	295.42 J
n-Pentacosane	149.47 J	84.84 J	46.38 J	252.72 J
n-Hexacosane	148.85 J	133.37 J	27 J	485.35 J
n-Heptacosane	184 J	88.71 J	38.22 J	341.68 J
n-Octacosane	117.33 J	108.58 J	15.14 J	433.13 J
n-Nonacosane	163.85 J	78.89 J	36.32 J	243.06 J
n-Triacontane	86.84 J	84.79 J	9.6 J	310.11 J
n-Hentriacontane	144.97 J	60.53 J	19.71 J	135.1 J
n-Dotriacontane	61.55 J	59.18 J	6.91 J	207.33 J
n-Tritriacontane	53.45 J	27.1 J	9.39 J	58.35 J
n-Tetratriacontane	29.28 J	26.98 J	4.1 J	70.22 J
n-Pentatriacontane	10.29 J	U	26.69 J	15.43 J
n-Hexatriacontane	15.39 J	U	2.28 J	12.94 J
n-Heptatriacontane	U	U	U	U
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	2919.8	2694.65	12567.38	3985.04
TPH	10069.71	37902.29	15777.95	5896.83
Surrogate Recoveries (%)				
5a-androstane	83	72	90	98
n-Tetracosane-d50	80	70	89	101

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-AC	08-03-BF001-01-BC5	08-03-BF003-01-BC5	08-03-BF003-01-WC2
Batch ID	09-0006	09-0006	09-0006	09-0009
Battelle ID	Q5925-P	Q5904-P	Q5882-P	Q5881-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/16/08	09/02/08	09/02/08
Extraction Date	01/16/09	01/16/09	01/16/09	02/11/09
Analysis Date	01/29/09	01/29/09	01/28/09	02/24/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	75.2	83.3	81.2	81.3
% Lipid	4.64	1.02	1.55	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.08	3.41	2.92	2.38
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	U	31.01 J
n-Decane	U	19.62 J	46.6 J	24.31 J
n-Undecane	U	22.43 J	37.62 J	36.12 J
n-Dodecane	U	34.84 J	48.91 J	20.69 J
n-Tridecane	U	31.68 J	38.35 J	29.19 J
Isoprenoid RRT 1380	U	19.51 J	24.33 J	20.12 J
n-Tetradecane	U	51.09 J	56.63 J	54.55 J
Isoprenoid RRT 1470	U	24.98 J	39.58 J	182.92 J
n-Pentadecane	U	139.57 J	98.76 J	64.45 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	U	46.18 J	64.95 J	42.95 J
n-Heptadecane	172.11	123.14 J	142.66 J	89.04 J
Pristane	5452.64	52.96 J	63.77 J	62.25 J
n-Octadecane	U	28.08 J	53.89 J	60.05 J
Phytane	U	6.47 J	9.91 J	15.35 J
n-Nonadecane	U	23.17 J	38.41 J	35 J
n-Eicosane	U	20.46 J	29.19 J	29.2 J
n-Heneicosane	U	22.95 J	29.48 J	109.01 J
n-Docosane	47.12 J	35.99 J	45.54 J	200.26 J
n-Tricosane	98.21 J	41.58 J	55.56 J	181.33 J
n-Tetracosane	108.61 J	40.15 J	42.07 J	193.82 J
n-Pentacosane	57.5 J	37.05 J	40.98 J	232.93 J
n-Hexacosane	58.84 J	40.32 J	39.88 J	189.15 J
n-Heptacosane	56.37 J	38.54 J	43.67 J	343.22
n-Octacosane	37.36 J	29.54 J	29.26 J	181.01 J
n-Nonacosane	30.26 J	30.6 J	35.17 J	265.85
n-Triacontane	21.4 J	21.2 J	22.01 J	136.54 J
n-Hentriacontane	30.08 J	24.19 J	28.19 J	214.1 J
n-Dotriacontane	24.04 J	12.82 J	12.61 J	118.4 J
n-Tritriacontane	24.75 J	11.48 J	12.12 J	82.85 J
n-Tetratriacontane	28.98 J	7.48 J	6.8 J	127.2 J
n-Pentatriacontane	49.8 J	5.25 J	3.75 J	792.11
n-Hexatriacontane	5.61 J	2.99 J	U	60.47 J
n-Heptatriacontane	6.96 J	U	U	19.47 J
n-Octatriacontane	5.01 J	U	U	49.5 J
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	27.01 J
Total SHC	6315.65	1046.31	1240.65	4321.43
TPH	38356.28	12220.98	10571.71	63752.15

Surrogate Recoveries (%)

5a-androstane	77	87	88	94
n-Tetracosane-d50	74	86	86	91

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-BC5	08-03-BF005-01-CC	08-03-BF007-01-BC5	08-03-BF011-01-AC
Batch ID	09-0006	09-0007	09-0008	09-0006
Battelle ID	Q5724-P	Q5725-P	Q5901-P	Q5919-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/16/08	09/14/08
Extraction Date	01/16/09	01/26/09	02/04/09	01/16/09
Analysis Date	01/28/09	02/06/09	02/13/09	01/29/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	83.3	69.9	83.1	73.6
% Lipid	1.23	3.54	1.23	6.72
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.42	6.13	3.51	5.38
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	27.27 J	U
n-Decane	16.38 J	U	152.06 J	18.48 J
n-Undecane	9.75 J	U	24.2 J	7.82 J
n-Dodecane	24.72 J	U	40.25 J	10.45 J
n-Tridecane	20.7 J	U	26.71 J	15.63 J
Isoprenoid RRT 1380	20.79 J	U	10.35 J	9.31 J
n-Tetradecane	39.16 J	11.92 J	37.16 J	35.99 J
Isoprenoid RRT 1470	20.51 J	18.68 J	43.26 J	92.09 J
n-Pentadecane	91 J	21.29 J	89.92 J	110.85
Norpristane (1650)	U	U	U	U
n-Hexadecane	35.3 J	22.17 J	52.93 J	31.86 J
n-Heptadecane	101.09 J	9.43 J	155.84 J	210.42
Pristane	52.98 J	17.35 J	37.3 J	8739.06
n-Octadecane	22.47 J	14.81 J	42.37 J	23.92 J
Phytane	6.73 J	4.46 J	8.36 J	7.58 J
n-Nonadecane	27.6 J	7.97 J	50.77 J	15.67 J
n-Eicosane	20.37 J	15.76 J	37.87 J	20.73 J
n-Heneicosane	31.94 J	25.6 J	20.68 J	25.76 J
n-Docosane	44.59 J	36.22 J	92 J	37.56 J
n-Tricosane	65.89 J	52.55 J	32.92 J	48.05 J
n-Tetracosane	53.85 J	73.87 J	58.9 J	46.67 J
n-Pentacosane	60.73 J	124.47	34.52 J	45.96 J
n-Hexacosane	52.98 J	153.55	67.47 J	41.2 J
n-Heptacosane	64.36 J	170.97	47.12 J	34.92 J
n-Octacosane	42.75 J	147.65	57.23 J	32.34 J
n-Nonacosane	54.27 J	146.93	40.07 J	33.29 J
n-Triacontane	33.86 J	119.18	98.08 J	25.82 J
n-Hentriacontane	44.14 J	113.51	43.94 J	21.75 J
n-Dotriacontane	23.04 J	99.51	85.12 J	17.35 J
n-Tritriacontane	19.98 J	71.48 J	26.63 J	8.43 J
n-Tetratriacontane	9.85 J	45.19 J	60.38 J	10.98 J
n-Pentatriacontane	6.28 J	36.61 J	17.46 J	42.46 J
n-Hexatriacontane	4 J	13.08 J	35.84 J	5.02 J
n-Heptatriacontane	U	7.03 J	12.16 J	U
n-Octatriacontane	U	3.76 J	18.14 J	U
n-Nonatriacontane	U	U	3.65 J	U
n-Tetracontane	U	U	5.26 J	U
Total SHC	1122.06	1585	1694.19	9827.42
TPH	4687.91	881.45	8042.69	12111.64
Surrogate Recoveries (%)				
5a-androstane	84	89	91	71
n-Tetracosane-d50	83	91	87	69

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-BC5	08-03-BF011-01-CC	08-03-BF013-01-AC	08-03-BF013-01-CC
Batch ID	09-0008	09-0007	09-0006	09-0007
Battelle ID	Q6033-P	Q6032-P	Q5752-P	Q5911-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/13/08	09/17/08	09/16/08
Extraction Date	02/04/09	01/26/09	01/16/09	01/26/09
Analysis Date	02/13/09	02/12/09	01/28/09	02/25/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	82.1	68.2	75.5	70.4
% Lipid	1.39	3.23	4.39	3.37
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.16	6.46	5.00	4.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	41.37 J	U	U	U
n-Decane	135.61 J	U	15.16 J	U
n-Undecane	36.61 J	U	4.56 J	U
n-Dodecane	46.28 J	U	6.08 J	6.65 J
n-Tridecane	28.46 J	U	10.41 J	3.51 J
Isoprenoid RRT 1380	12.04 J	U	7.16 J	U
n-Tetradecane	47.08 J	8.33 J	24.51 J	28.91 J
Isoprenoid RRT 1470	60.28 J	11.77 J	75.57 J	15.3 J
n-Pentadecane	97.17 J	11.29 J	84.58 J	30.52 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	50.39 J	12.16 J	32.34 J	42.21 J
n-Heptadecane	138.94 J	9.24 J	608.77	13.41 J
Pristane	39.8 J	10.84 J	815.59	9.01 J
n-Octadecane	30.85 J	9.9 J	23.79 J	27.43 J
Phytane	6.38 J	2.18 J	5.31 J	5.38 J
n-Nonadecane	58.25 J	6.59 J	25.7 J	9.22 J
n-Eicosane	20.34 J	8.81 J	18.95 J	20.64 J
n-Heneicosane	18.17 J	21.7 J	20.4 J	25.77 J
n-Docosane	25.37 J	18.18 J	24.93 J	31.91 J
n-Tricosane	48.76 J	29.5 J	39.56 J	30.31 J
n-Tetracosane	38.07 J	21.81 J	31.45 J	38.71 J
n-Pentacosane	47.03 J	38.99 J	42.02 J	49.77 J
n-Hexacosane	47.24 J	43.11 J	29.13 J	71.75 J
n-Heptacosane	58.87 J	63.8 J	35.1 J	97.34 J
n-Octacosane	39.13 J	33.55 J	21.23 J	60.03 J
n-Nonacosane	48.7 J	37.24 J	38.27 J	47.72 J
n-Triacontane	32 J	18.36 J	14.71 J	33.32 J
n-Hentriacontane	44.12 J	25.1 J	23.59 J	37.59 J
n-Dotriacontane	29.59 J	8.73 J	9.99 J	18.31 J
n-Tritriacontane	33.12 J	10.17 J	9.09 J	12.9 J
n-Tetratriacontane	29.49 J	5.3 J	4.51 J	11.4 J
n-Pentatriacontane	32.12 J	35.44 J	24.39 J	32.95 J
n-Hexatriacontane	29.23 J	2.88 J	2.48 J	5.81 J
n-Heptatriacontane	25.82 J	1.88 J	U	3.02 J
n-Octatriacontane	17.55 J	2.78 J	U	5.47 J
n-Nonatriacontane	6.99 J	0.9 J	U	1.63 J
n-Tetracontane	5.2 J	1.48 J	U	2.73 J
Total SHC	1506.42	512.01	2129.33	830.63
TPH	54439.5	5081.66	6217.04	5994.47
Surrogate Recoveries (%)				
5a-androstane	95	96	81	93
n-Tetracosane-d50	92	98	84	94

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF013-02-AC	08-03-BF013-03-AC	08-03-BF015-01-BC2	08-03-BF015-01-BC5
Batch ID	09-0006	09-0006	09-0006	09-0006
Battelle ID	Q5753-P	Q5754-P	Q5719-P	Q5718-P
Sample Type	SA	SA	SA	SA
Collection Date	09/17/08	09/17/08	09/19/08	09/19/08
Extraction Date	01/16/09	01/16/09	01/16/09	01/16/09
Analysis Date	01/28/09	01/28/09	01/28/09	01/28/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	74.5	74.3	78.1	82.7
% Lipid	4.44	4.32	4.41	1.31
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.22	5.23	2.10	2.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	U	U
n-Decane	U	U	24.45 J	19.16 J
n-Undecane	U	U	22.99 J	21.62 J
n-Dodecane	11.53 J	U	30.01 J	38.31 J
n-Tridecane	22.24 J	U	59.59 J	23.46 J
Isoprenoid RRT 1380	8.14 J	U	69.48 J	28.35 J
n-Tetradecane	45.39 J	U	87.05 J	55.57 J
Isoprenoid RRT 1470	84.12 J	U	52.88 J	65.82 J
n-Pentadecane	69.86 J	U	236.45 J	112.31 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	74.55 J	U	39.82 J	51.18 J
n-Heptadecane	184.16	89.62 J	48.02 J	190.31 J
Pristane	1138.12	751.54	268.75	31.09 J
n-Octadecane	54.6 J	U	35.05 J	27.76 J
Phytane	10.11 J	U	13.2 J	5.01 J
n-Nonadecane	22.91 J	U	28.15 J	35.62 J
n-Eicosane	36.11 J	U	43.96 J	16.72 J
n-Heneicosane	23.72 J	U	72.09 J	21.26 J
n-Docosane	35.72 J	U	91.23 J	35.49 J
n-Tricosane	54.48 J	116.5	141.97 J	53.54 J
n-Tetracosane	42.72 J	157.82	99.42 J	40.8 J
n-Pentacosane	47.28 J	60.63 J	145.6 J	40.09 J
n-Hexacosane	31.37 J	68.09 J	95.19 J	38.37 J
n-Heptacosane	36.1 J	48.59 J	183.6 J	42.98 J
n-Octacosane	20.07 J	33.79 J	67.64 J	28.28 J
n-Nonacosane	30.63 J	26.85 J	148.57 J	32.9 J
n-Triacontane	13.21 J	18.89 J	42.79 J	21.28 J
n-Hentriacontane	18.98 J	27.18 J	135.91 J	27.8 J
n-Dotriacontane	9.88 J	16.23 J	26.21 J	12.98 J
n-Tritriacontane	7.4 J	28.31 J	47.69 J	12.77 J
n-Tetratriacontane	4.83 J	29.49 J	10.1 J	8.11 J
n-Pentatriacontane	32.1 J	36.9 J	11.07 J	U
n-Hexatriacontane	U	U	6.8 J	U
n-Heptatriacontane	U	U	U	U
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	2170.33	1510.43	2385.73	1138.94
TPH	6979.56	32449.45	6500.66	13623.85

Surrogate Recoveries (%)

5a-androstane	70	79	87	88
n-Tetracosane-d50	68	77	87	86

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-BC5	08-03-BF017-01-WC2	08-03-BF021-01-WC2	08-03-BF023-01-CC
Batch ID	09-0008	09-0009	09-0009	09-0007
Battelle ID	Q6017-P	Q6021-P	Q6024-P	Q5759-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/12/08	09/13/08	09/17/08
Extraction Date	02/04/09	02/11/09	02/11/09	01/26/09
Analysis Date	02/13/09	02/25/09	02/25/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	80.7	78.69	86.9	73
% Lipid	1.73	1.75	2.69	3.97
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.92	1.27	0.98	5.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	23.85 J	67.67 J	60.79 J	U
n-Decane	199.39 ME	31.62 J	103.12 J	U
n-Undecane	17.91 J	243.72 J	81.41 J	U
n-Dodecane	33.98 J	31.32 J	77.8 J	U
n-Tridecane	20.58 J	75.54 J	92.02 J	U
Isoprenoid RRT 1380	9.07 J	28.27 J	64.98 J	U
n-Tetradecane	33.4 J	78.92 J	226.73 J	13.61 J
Isoprenoid RRT 1470	88.63 J	203.52 J	485.77 J	36.62 J
n-Pentadecane	73.48 J	84.26 J	241.97 J	17.93 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	29.26 J	111.72 J	156.18 J	16.84 J
n-Heptadecane	116.28 J	61.98 J	169.77 J	9.38 J
Pristane	30.8 J	93.96 J	62.99 J	83.46 J
n-Octadecane	16.82 J	206.66 J	88.22 J	16.06 J
Phytane	3.46 J	54.71 J	21.69 J	3.28 J
n-Nonadecane	40.17 J	45.19 J	47.74 J	10.73 J
n-Eicosane	27.71 J	396.43 J	46.51 J	14.12 J
n-Heneicosane	8.15 J	77.96 J	117.12 J	28.16 J
n-Docosane	13.95 J	660.03	186.87 J	25.8 J
n-Tricosane	30.46 J	169.37 J	318.61 J	40.03 J
n-Tetracosane	25.89 J	898.26	285.99 J	43.18 J
n-Pentacosane	29.43 J	247.75 J	527.2 J	77.22 J
n-Hexacosane	26.66 J	1023.75	338.39 J	84.58 J
n-Heptacosane	31.35 J	386.85 J	866.29	114.95
n-Octacosane	18.77 J	1014.17	295.43 J	77.57 J
n-Nonacosane	23.02 J	343.92 J	605.08	89.01 J
n-Triacontane	13.22 J	945.22	236.71 J	51.52 J
n-Hentriacontane	19.17 J	274.12 J	526.68 J	62.71 J
n-Dotriacontane	7.26 J	869.49	212.11 J	36.62 J
n-Tritriacontane	6.08 J	114.68 J	189.05 J	30.55 J
n-Tetratriacontane	3.5 J	637.97	210.46 J	15.12 J
n-Pentatriacontane	2.13 J	666.51	1513.68	24.73 J
n-Hexatriacontane	U	426.68 J	111.58 J	2.77 J
n-Heptatriacontane	U	U	18.49 J	1.07 J
n-Octatriacontane	U	252.24 J	81.16 J	U
n-Nonatriacontane	U	U	13.25 J	U
n-Tetracontane	U	113.12 J	40.16 J	U
Total SHC	1023.83	10937.58	8722	1027.62
TPH	12466.02	116866.92	129760.79	808.78
Surrogate Recoveries (%)				
5a-androstane	92	90	86	90
n-Tetracosane-d50	88	87	85	92

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-BC2	08-03-BF025-01-CC	08-03-BR005-01-BC5	08-03-BR038-01-AC
Batch ID	09-0008	09-0007	09-0008	09-0006
Battelle ID	Q5763-P	Q5761-P	Q5745-P	Q5720-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/21/08	09/19/08
Extraction Date	02/04/09	01/26/09	02/04/09	01/16/09
Analysis Date	02/12/09	02/06/09	02/12/09	01/28/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	79	72.6	80.6	76
% Lipid	3.53	3.4	1.73	4.5
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.33	5.52	4.21	4.82
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	20.8 J	U	17.46 J	U
n-Decane	34.62 J	U	31.6 J	7.38 J
n-Undecane	24.34 J	U	21.62 J	4.9 J
n-Dodecane	40.26 J	U	37.4 J	4.93 J
n-Tridecane	87.31 J	U	30.44 J	10.81 J
Isoprenoid RRT 1380	79.35 J	U	2.82 J	14.66 J
n-Tetradecane	85.14 J	22.89 J	38.84 J	22.57 J
Isoprenoid RRT 1470	758.66	34.52 J	107.7 J	6.34 J
n-Pentadecane	278.6	26.12 J	101.8 J	62.29 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	31.88 J	37.78 J	42.56 J	25.03 J
n-Heptadecane	50.17 J	13.8 J	141.37	204.05
Pristane	470.18	204.09	30.56 J	350.14
n-Octadecane	26.71 J	23.73 J	27.24 J	15.72 J
Phytane	12.27 J	3.71 J	4.82 J	4.48 J
n-Nonadecane	28.83 J	10.8 J	42.11 J	11.25 J
n-Eicosane	25.55 J	17.23 J	17.78 J	11.49 J
n-Heneicosane	42.57 J	30.55 J	12.13 J	18.36 J
n-Docosane	68.28 J	22.31 J	42.01 J	27.16 J
n-Tricosane	92.86 J	32.27 J	22.11 J	47.59 J
n-Tetracosane	55.68 J	25.54 J	26.07 J	29.59 J
n-Pentacosane	112.41 J	42.02 J	27.44 J	36.16 J
n-Hexacosane	56.82 J	38.05 J	28.51 J	20.01 J
n-Heptacosane	158.3 J	60.36 J	36.11 J	25.18 J
n-Octacosane	47.72 J	32.1 J	35.63 J	14.53 J
n-Nonacosane	134.84 J	49.41 J	33.07 J	20.06 J
n-Triacontane	64.75 J	22.41 J	47.69 J	9.02 J
n-Hentriacontane	133.93 J	33.75 J	31.28 J	13.86 J
n-Dotriacontane	50.5 J	14.99 J	38.13 J	5.46 J
n-Tritriacontane	55.62 J	14.64 J	16.51 J	5.66 J
n-Tetratriacontane	31.16 J	5.85 J	26.4 J	2.79 J
n-Pentatriacontane	20.47 J	12.31 J	11.77 J	15.14 J
n-Hexatriacontane	20.93 J	1.27 J	19.38 J	U
n-Heptatriacontane	8.19 J	U	9 J	U
n-Octatriacontane	12.42 J	U	14.17 J	U
n-Nonatriacontane	4.3 J	U	3.71 J	U
n-Tetracontane	6.43 J	U	6.66 J	U
Total SHC	3232.85	832.5	1183.9	1046.61
TPH	1759.5	1448.82	34832.06	3148.32
Surrogate Recoveries (%)				
5a-androstane	97	95	97	84
n-Tetracosane-d50	94	97	94	85

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR038-01-BC2	08-03-BR038-01-BC5	08-03-BR043-01-CC	08-03-BR080-01-AC
Batch ID	09-0008	09-0008	09-0007	09-0006
Battelle ID	Q5767-P	Q5768-P	Q6026-P	Q5736-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/14/08	09/20/08
Extraction Date	02/04/09	02/04/09	01/26/09	01/16/09
Analysis Date	02/12/09	02/12/09	02/12/09	01/28/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	77.6	81	71.9	74.9
% Lipid	3.41	1.33	3.17	4.68
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.50	1.95	5.70	5.07
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	23.13 J	55.06 J	U	U
n-Decane	97.95 J	58.56 J	U	11.85 J
n-Undecane	21.4 J	30.05 J	U	3.92 J
n-Dodecane	26.4 J	55.07 J	4.18 J	5.18 J
n-Tridecane	61.2 J	33.22 J	1.86 J	18.86 J
Isoprenoid RRT 1380	73.42 J	13.52 J	U	9.6 J
n-Tetradecane	75 J	55.59 J	15.89 J	19.11 J
Isoprenoid RRT 1470	837.3	143.67 J	19.45 J	5.13 J
n-Pentadecane	271.45	108.69 J	19.96 J	66.99 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	31.31 J	62.64 J	18.32 J	24.53 J
n-Heptadecane	45.06 J	188.96 J	12.58 J	276.66
Pristane	285.75	35.9 J	9.29 J	2960.54
n-Octadecane	26.22 J	44.8 J	16.05 J	18.26 J
Phytane	10.44 J	7.12 J	3.55 J	4.87 J
n-Nonadecane	22.9 J	67.14 J	9.1 J	16.59 J
n-Eicosane	25.3 J	27.25 J	12.59 J	16.99 J
n-Heneicosane	39.58 J	26.7 J	23.43 J	25.99 J
n-Docosane	67.92 J	100.56 J	19.45 J	32.08 J
n-Tricosane	85.75 J	57.05 J	25.72 J	55.7 J
n-Tetracosane	56.64 J	58.25 J	23.66 J	40.79 J
n-Pentacosane	103.71 J	77.46 J	45.07 J	59.56 J
n-Hexacosane	64.01 J	82.33 J	50.37 J	34.17 J
n-Heptacosane	138.33 J	93.43 J	75.64 J	44.11 J
n-Octacosane	55.36 J	83.7 J	41.21 J	21.04 J
n-Nonacosane	116.7 J	80.09 J	47.65 J	39.1 J
n-Triacontane	64.76 J	60.36 J	22.64 J	14.68 J
n-Hentriacontane	116.85 J	72.5 J	31.3 J	22.33 J
n-Dotriacontane	51.12 J	102.61 J	12.98 J	11.46 J
n-Tritriacontane	48.05 J	46.33 J	14.51 J	12.1 J
n-Tetratriacontane	30.34 J	72.12 J	8.7 J	7.22 J
n-Pentatriacontane	17.85 J	33.31 J	60.38 J	34.29 J
n-Hexatriacontane	17.55 J	48.66 J	4.31 J	3.72 J
n-Heptatriacontane	8.74 J	20.74 J	2.97 J	U
n-Octatriacontane	10.85 J	30.57 J	4.7 J	U
n-Nonatriacontane	2.68 J	11.97 J	1.66 J	U
n-Tetracontane	4.91 J	11.5 J	2.61 J	U
Total SHC	3035.93	2157.48	661.78	3917.42
TPH	1947.71	12403.83	5383.48	8236.92
Surrogate Recoveries (%)				
5a-androstane	103	100	91	81
n-Tetracosane-d50	99	96	93	83

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR080-01-BC5	08-03-BR080-01-CC	08-03-BR086-01-WC2	08-03-BR087-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5722-P	Q5721-P	Q5878-P	Q5863-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/19/08	09/02/08	09/02/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/12/09	02/05/09	02/24/09	02/24/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	83	71.6	78.1	79.5
% Lipid	0.94	3.42	1.86	1.73
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.23	5.82	2.31	2.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	33.79 J	19.56 J
n-Decane	U	U	32.53 J	27.78 J
n-Undecane	U	U	44.39 J	39.08 J
n-Dodecane	U	U	25.26 J	20.59 J
n-Tridecane	U	U	34.2 J	32.62 J
Isoprenoid RRT 1380	11.49 J	U	16.93 J	14.74 J
n-Tetradecane	15.77 J	13.59 J	59.16 J	55.61 J
Isoprenoid RRT 1470	39.99 J	16.03 J	181.85 J	154.14 J
n-Pentadecane	45.59 J	18.8 J	75.45 J	63.96 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	46.01 J	16.64 J	37.47 J	46.11 J
n-Heptadecane	101.35 J	10.21 J	58.73 J	40.52 J
Pristane	31.34 J	35.18 J	21.06 J	46.13 J
n-Octadecane	42.01 J	17.2 J	36.98 J	51.6 J
Phytane	12.18 J	2.95 J	8.25 J	9.54 J
n-Nonadecane	46.46 J	8.87 J	26.58 J	20.02 J
n-Eicosane	31.36 J	18.65 J	37.45 J	55.16 J
n-Heneicosane	23.55 J	22.55 J	63.09 J	49.36 J
n-Docosane	120.92 J	25.73 J	77.38 J	106.24 J
n-Tricosane	19.83 J	30.61 J	138.37 J	124.08 J
n-Tetracosane	61.02 J	34.88 J	88.99 J	133.24 J
n-Pentacosane	60.42 J	47.45 J	208.96 J	183.47 J
n-Hexacosane	115.27 J	61.01 J	99.02 J	146.76 J
n-Heptacosane	81.88 J	67.39 J	344.03	308.95
n-Octacosane	115.19 J	52.73 J	80.56 J	136.85 J
n-Nonacosane	74.81 J	46.98 J	252.18	227.4 J
n-Triacontane	138.71 J	36.73 J	48.72 J	112.35 J
n-Hentriacontane	71.26 J	31.5 J	233.72 J	194.41 J
n-Dotriacontane	110.9 J	28.82 J	38.32 J	99.66 J
n-Tritriacontane	44.01 J	19.79 J	83.93 J	67.48 J
n-Tetratriacontane	79.44 J	21.06 J	U	92.96 J
n-Pentatriacontane	32.07 J	24.13 J	622.05	557.81
n-Hexatriacontane	57 J	6.07 J	U	52.21 J
n-Heptatriacontane	19.53 J	U	U	U
n-Octatriacontane	47.89 J	U	U	U
n-Nonatriacontane	15.04 J	U	U	U
n-Tetracontane	29.25 J	U	U	U
Total SHC	1741.54	715.55	3109.4	3290.39
TPH	93124.12	8014.59	61461.58	58076.53
Surrogate Recoveries (%)				
5a-androstane	89	88	92	86
n-Tetracosane-d50	90	91	89	84

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR093-01-BC5	08-03-BR093-01-WC2	08-03-BR098-01-BC5	08-03-BR098-01-WC2
Batch ID	09-0008	09-0009	09-0008	09-0009
Battelle ID	Q5887-P	Q5885-P	Q5890-P	Q5891-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/02/08	09/02/08	09/02/08
Extraction Date	02/04/09	02/11/09	02/04/09	02/11/09
Analysis Date	02/13/09	02/24/09	02/13/09	02/24/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	84.2	78.4	82.3	80
% Lipid	1.04	1.95	0.4	2.05
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.27	1.33	3.19	2.66
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	24.68 J	66.2 J	88.12 J	23.79 J
n-Decane	117.33 J	41.39 J	416.22	26.98 J
n-Undecane	21.95 J	68.07 J	40.09 J	41.07 J
n-Dodecane	36.96 J	32.49 J	58.7 J	21.89 J
n-Tridecane	22.67 J	52.87 J	36.41 J	34.81 J
Isoprenoid RRT 1380	8.86 J	19.36 J	13.57 J	20.62 J
n-Tetradecane	31.73 J	89 J	88.19 J	62.17 J
Isoprenoid RRT 1470	32.7 J	173.28 J	46.05 J	198.42 J
n-Pentadecane	71.39 J	85.88 J	136.43 J	61.75 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	37.09 J	62.59 J	111.6 J	36.52 J
n-Heptadecane	92.49 J	76.96 J	184.05	78.22 J
Pristane	35.86 J	77.74 J	52.37 J	56.46 J
n-Octadecane	30.14 J	76.64 J	96.31 J	45.94 J
Phytane	6.06 J	15.97 J	16.95 J	10.83 J
n-Nonadecane	35.4 J	32.38 J	69.17 J	23.31 J
n-Eicosane	18.72 J	85.02 J	90.08 J	57.35 J
n-Heneicosane	15.27 J	56.41 J	36.83 J	39.65 J
n-Docosane	59.02 J	150.29 J	190.59	96.71 J
n-Tricosane	30.95 J	137.1 J	59.38 J	109.55 J
n-Tetracosane	30.24 J	199.79 J	123.56 J	135.43 J
n-Pentacosane	32.44 J	211.78 J	88.53 J	188.42 J
n-Hexacosane	32.8 J	234.28 J	137.8 J	158.08 J
n-Heptacosane	42.43 J	361.79 J	100.34 J	311.23
n-Octacosane	45.06 J	240.34 J	110.23 J	160.42 J
n-Nonacosane	41.88 J	275.25 J	102.92 J	248.17
n-Triacontane	58.86 J	228.92 J	85.08 J	127.32 J
n-Hentriacontane	38.51 J	242.69 J	82.4 J	209.24 J
n-Dotriacontane	48.79 J	218.36 J	137.7 J	110.54 J
n-Tritriacontane	21.71 J	92.49 J	44.59 J	77.29 J
n-Tetratriacontane	33.53 J	210.84 J	80.32 J	126.8 J
n-Pentatriacontane	13.85 J	666.98	27.17 J	658.3
n-Hexatriacontane	20.27 J	144.89 J	44.25 J	71.08 J
n-Heptatriacontane	10.23 J	U	18.92 J	19.23 J
n-Octatriacontane	11.28 J	105.9 J	26.74 J	58.48 J
n-Nonatriacontane	U	U	U	U
n-Tetracontane	4.63 J	58.65 J	U	31.71 J
Total SHC	1215.78	4892.59	3041.66	3737.78
TPH	382.68	96258.12	12452.53	55356.26
Surrogate Recoveries (%)				
5a-androstane	87	91	23 N	93
n-Tetracosane-d50	83	88	23 N	90

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR099-01-AC	08-03-BR099-01-WC2	08-03-BR100-01-CC	08-03-BR100-01-WC2
Batch ID	09-0006	09-0009	09-0007	09-0009
Battelle ID	Q5869-P	Q5873-P	Q5866-P	Q5867-P
Sample Type	SA	SA	SA	SA
Collection Date	09/03/08	09/03/08	09/03/08	09/03/08
Extraction Date	01/16/09	02/11/09	01/26/09	02/11/09
Analysis Date	01/28/09	02/24/09	02/11/09	02/24/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	78.3	81.4	71.7	79.6
% Lipid	4.18	1.82	3.97	1.32
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.44	1.84	5.73	2.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	34.26 J	U	39.82 J
n-Decane	51.12 J	35.87 J	U	38.49 J
n-Undecane	18.27 J	39.99 J	U	76.88 J
n-Dodecane	20.36 J	25.24 J	3.75 J	26.07 J
n-Tridecane	28.82 J	33.16 J	3.81 J	26.88 J
Isoprenoid RRT 1380	21.68 J	17.47 J	3.65 J	15.54 J
n-Tetradecane	38.74 J	60.19 J	12.79 J	54.26 J
Isoprenoid RRT 1470	67.13 J	142.55 J	17.52 J	119.17 J
n-Pentadecane	103.4 J	55.45 J	18.82 J	66.89 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	55.94 J	42.91 J	18.83 J	60.22 J
n-Heptadecane	373.56	81.65 J	12.47 J	98.67 J
Pristane	2908.52	48.52 J	13.06 J	61.66 J
n-Octadecane	37.17 J	54.3 J	18.49 J	65.7 J
Phytane	12.94 J	12.16 J	3.05 J	14.57 J
n-Nonadecane	33.15 J	32.37 J	9.23 J	28.28 J
n-Eicosane	40.18 J	63.63 J	12.71 J	74.53 J
n-Heneicosane	29.39 J	80.2 J	26.23 J	63 J
n-Docosane	51.43 J	145.45 J	19.92 J	128.22 J
n-Tricosane	77.51 J	158.2 J	27.11 J	131.14 J
n-Tetracosane	55.95 J	135.33 J	19.39 J	157.38 J
n-Pentacosane	47.4 J	159.93 J	31.07 J	182.84 J
n-Hexacosane	58.51 J	140.44 J	27.87 J	189.28 J
n-Heptacosane	48.96 J	246.04 J	44.12 J	281.46
n-Octacosane	47.06 J	132.46 J	23.63 J	198.92 J
n-Nonacosane	56.68 J	214.79 J	30.82 J	234.39 J
n-Triacontane	36.75 J	106.2 J	17.84 J	184 J
n-Hentriacontane	34.77 J	171.29 J	22.88 J	198.5 J
n-Dotriacontane	24.79 J	100.86 J	9.66 J	158.55 J
n-Tritriacontane	13.34 J	61.46 J	11.89 J	69.26 J
n-Tetratriacontane	13.6 J	101.79 J	7.2 J	148.75 J
n-Pentatriacontane	15.12 J	514.99	20 J	720.53
n-Hexatriacontane	6.67 J	58.6 J	3.46 J	81.06 J
n-Heptatriacontane	U	U	2.3 J	U
n-Octatriacontane	U	43.02 J	3.54 J	56.83 J
n-Nonatriacontane	U	U	1.43 J	U
n-Tetracontane	U	22.24 J	1.78 J	35.34 J
Total SHC	4428.91	3373.01	500.32	4087.08
TPH	9906.28	3396.02	5323.47	3992.51
Surrogate Recoveries (%)				
5a-androstane	69	87	96	52
n-Tetracosane-d50	71	85	98	50

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF001, BF011, and	BF003, BF013, and	BF005, BF015, and	BF007 and BF017
Client ID	BF021 composite	BF023 composite	BF025 composite	composite
Batch ID	09-0010	09-0010	09-0010	09-0010
Battelle ID	Q6098-P	Q6099-P	Q6100-P	Q6101-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/02/08	09/18/08	09/12/08
Extraction Date	02/18/09	02/18/09	02/18/09	02/18/09
Analysis Date	02/27/09	02/27/09	03/04/09	03/04/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	95.3	94.7	94.4	95
% Lipid	0.16	0.36	0.19	0.16
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.85	2.08	1.70	1.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	28.47 J	42.44 J	53.06 J	39.22 J
n-Decane	277.35 J	135.21 J	167.19 J	129.25 J
n-Undecane	8.6 J	17.54 J	14.89 J	17.35 J
n-Dodecane	46.46 J	123.55 J	84.45 J	96.12 J
n-Tridecane	29.22 J	73.89 J	45.99 J	34.43 J
Isoprenoid RRT 1380	40.58 J	58.71 J	55.16 J	65.26 J
n-Tetradecane	79.45 J	157 J	124.79 J	122.43 J
Isoprenoid RRT 1470	79.39 J	140.4 J	129.93 J	105.73 J
n-Pentadecane	146.8 J	215.81 J	181.44 J	178.75 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	62.75 J	53.11 J	54.24 J	52.73 J
n-Heptadecane	150.95 J	116.37 J	150.78 J	133.31 J
Pristane	65639.5 D	138233.43 D	64919.32 D	99001.96
n-Octadecane	83.65 J	86.49 J	57.54 J	60.56 J
Phytane	45.96 J	41.58 J	31.69 J	33.76 J
n-Nonadecane	40.77 J	58.49 J	51.96 J	42.25 J
n-Eicosane	112.08 J	120.84 J	53 J	52.68 J
n-Heneicosane	47.5 J	75.6 J	59.27 J	55.73 J
n-Docosane	198.71 J	201.65 J	84.04 J	97.08 J
n-Tricosane	97.6 J	146.25 J	114.59 J	133.18 J
n-Tetracosane	260.45 J	289.7	110.75 J	140.68 J
n-Pentacosane	104 J	227.36 J	123.88 J	140.04 J
n-Hexacosane	302.29	406	137.11 J	175.71 J
n-Heptacosane	150.76 J	288.14	209.72 J	244.55 J
n-Octacosane	287.12 J	385.51	126.48 J	156.17 J
n-Nonacosane	123.21 J	244.82 J	137.55 J	155.68 J
n-Triacontane	255.58 J	335.96	104.3 J	132.66 J
n-Hentriacontane	124.81 J	212.88 J	152.3 J	162.99 J
n-Dotriacontane	211.39 J	266.79	95.99 J	126.62 J
n-Tritriacontane	54.15 J	96.35 J	59.04 J	70.36 J
n-Tetratriacontane	146.39 J	184.29 J	72.95 J	78.54 J
n-Pentatriacontane	33.72 J	74.41 J	35.82 J	44.44 J
n-Hexatriacontane	94.72 J	118.84 J	45.36 J	56.47 J
n-Heptatriacontane	25.28 J	50.42 J	25.82 J	32.75 J
n-Octatriacontane	67.6 J	86.46 J	36.01 J	46.76 J
n-Nonatriacontane	17.75 J	36.67 J	20.83 J	29.39 J
n-Tetracontane	44.37 J	53.45 J	25.2 J	39.15 J
Total SHC	69519.38	143456.41	67952.44	102284.74
TPH	120324.42	361137.08	140149.79	113292.35
Surrogate Recoveries (%)				
5a-androstane	74	73	81	79
n-Tetracosane-d50	75	73	80	80

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019			
Client ID	composite	08-03-KD002-01-CC	08-03-KD002-01-WC2	08-03-KD005-01-BC5
Batch ID	09-0010	09-0007	09-0009	09-0008
Battelle ID	Q6102-P	Q5860-P	Q5857-P	Q5848-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/18/09	01/26/09	02/11/09	02/04/09
Analysis Date	03/04/09	02/11/09	02/24/09	02/12/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	94.2	72	81.82	82.26
% Lipid	0.21	3.73	1.56	1.98
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.75	5.79	1.63	0.64
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	51.55 J	U	31.91 J	117.3 J
n-Decane	449.25 ME	U	48.73 J	278.26 J
n-Undecane	15.02 J	U	33.8 J	52.32 J
n-Dodecane	125.05 J	7.66 J	22.43 J	56 J
n-Tridecane	36.67 J	7.74 J	27.36 J	39.85 J
Isoprenoid RRT 1380	59.2 J	4.83 J	32.16 J	24.57 J
n-Tetradecane	126.89 J	35.04 J	58.93 J	109.1 J
Isoprenoid RRT 1470	149.52 J	33.21 J	158.7 J	41.48 J
n-Pentadecane	158.34 J	35.87 J	71.07 J	152.07 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	43.4 J	82.35 J	37.46 J	124.54 J
n-Heptadecane	145.63 J	20.96 J	610.88	287.53 J
Pristane	22615.19 D	13350.02	23.66 J	144.13 J
n-Octadecane	70.18 J	39.72 J	43.25 J	108.74 J
Phytane	32.43 J	4.73 J	11.58 J	18.54 J
n-Nonadecane	41.05 J	11.26 J	8.85 J	116.72 J
n-Eicosane	81.07 J	20.57 J	71.63 J	492.11 J
n-Heneicosane	59.88 J	27.01 J	64.53 J	51.42 J
n-Docosane	138.63 J	24.06 J	95.12 J	252.18 J
n-Tricosane	146.94 J	36.85 J	150.07 J	107.55 J
n-Tetracosane	220.9 J	24.41 J	102.57 J	131.92 J
n-Pentacosane	211.99 J	45.55 J	199.68 J	97.63 J
n-Hexacosane	299.08 J	35.19 J	112.92 J	141.41 J
n-Heptacosane	328.47	57.16 J	322 J	128.23 J
n-Octacosane	277.59 J	30.81 J	125.14 J	195.71 J
n-Nonacosane	229.2 J	43.83 J	281.54 J	114.98 J
n-Triacontane	221.44 J	24 J	82.19 J	260.71 J
n-Hentriacontane	191.04 J	34.8 J	275.12 J	111.46 J
n-Dotriacontane	152.65 J	17.95 J	69.48 J	226.48 J
n-Tritriacontane	66.56 J	19.75 J	106.79 J	71.24 J
n-Tetratriacontane	85.74 J	11.92 J	67.4 J	147.14 J
n-Pentatriacontane	35.26 J	48.51 J	760.76	48.97 J
n-Hexatriacontane	47.73 J	6.4 J	49.97 J	82.4 J
n-Heptatriacontane	23.15 J	4.62 J	U	25.75 J
n-Octatriacontane	35.35 J	5.54 J	U	32.67 J
n-Nonatriacontane	15.73 J	2.29 J	U	U
n-Tetracontane	23.56 J	2.79 J	U	U
Total SHC	27011.33	14157.4	4157.68	4391.11
TPH	116246.82	19754.75	30603.6	179512.31
Surrogate Recoveries (%)				
5a-androstane	77	96	81	96
n-Tetracosane-d50	77	98	78	92

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-CC	08-03-KD005-01-WC2	08-03-KF001-01-AC	08-03-KF005-01-WC2
Batch ID	09-0007	09-0009	09-0006	09-0009
Battelle ID	Q5849-P	Q5845-P	Q5954-P	Q5831-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	08/21/08	08/31/08
Extraction Date	01/26/09	02/11/09	01/16/09	02/11/09
Analysis Date	02/11/09	02/24/09	01/29/09	02/24/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	69.5	81.4	75.3	76.5
% Lipid	4.67	2.02	7.38	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	6.27	1.69	1.50	2.69
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	36.14 J	U	31.34 J
n-Decane	U	42.03 J	U	27.28 J
n-Undecane	U	53 J	50.57 J	59 J
n-Dodecane	8.95 J	34.82 J	50.86 J	27.39 J
n-Tridecane	10.44 J	43.92 J	47.63 J	45.37 J
Isoprenoid RRT 1380	5.46 J	32.55 J	28.13 J	46.38 J
n-Tetradecane	33.11 J	79.65 J	100.27 J	75.53 J
Isoprenoid RRT 1470	30.69 J	175.62 J	34.57 J	158.07 J
n-Pentadecane	31.52 J	87.44 J	217.79 J	68.63 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	85.87 J	45.33 J	124.41 J	50.44 J
n-Heptadecane	20.33 J	695.85	997.34	209.25
Pristane	10819.11 D	46.78 J	1061.78	110.4 J
n-Octadecane	42.63 J	54.25 J	126.22 J	65.96 J
Phytane	5.13 J	19.48 J	42.77 J	14.19 J
n-Nonadecane	11.95 J	34.93 J	60.11 J	30.68 J
n-Eicosane	23.4 J	74.9 J	144.49 J	107.84 J
n-Heneicosane	27.45 J	69.84 J	54.62 J	55.5 J
n-Docosane	26.86 J	135.25 J	250.11 J	190.65 J
n-Tricosane	36.49 J	168.87 J	114.99 J	157.1 J
n-Tetracosane	27.89 J	166.84 J	297.48 J	263.12
n-Pentacosane	44.96 J	251.01 J	102.38 J	251.89
n-Hexacosane	42 J	191.28 J	340.67 J	307.71
n-Heptacosane	58.28 J	363.68	150.26 J	415.01
n-Octacosane	33.36 J	178.81 J	311.23 J	293.03
n-Nonacosane	44.14 J	259.72 J	479.8	314.23
n-Triacontane	24.73 J	208.91 J	283.53 J	239.11
n-Hentriacontane	36.79 J	253.61 J	310.35 J	282.23
n-Dotriacontane	18.56 J	144.28 J	207.05 J	182.19 J
n-Tritriacontane	23.1 J	110.26 J	108.29 J	111.03 J
n-Tetratriacontane	14.35 J	198.38 J	108.55 J	167.61 J
n-Pentatriacontane	27.09 J	766.32	52.12 J	549.64
n-Hexatriacontane	8.26 J	111.02 J	51.16 J	85.71 J
n-Heptatriacontane	7.15 J	U	18.89 J	30.43 J
n-Octatriacontane	7.32 J	U	16.01 J	68.32 J
n-Nonatriacontane	4.74 J	U	U	U
n-Tetracontane	5.11 J	U	U	33.13 J
Total SHC	11647.22	5134.77	6344.43	5125.39
TPH	21534.8	118454.93	33723.87	13987.14
Surrogate Recoveries (%)				
5a-androstane	95	95	74	87
n-Tetracosane-d50	96	92	73	84

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF013-01-WC2	08-03-KF021-01-CC	08-03-KF023-01-CC	08-03-KF025-01-CC
Batch ID	09-0009	09-0007	09-0007	09-0007
Battelle ID	Q5961-P	Q5786-P	Q5670-P	Q5787-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/27/08	08/27/08	08/27/08
Extraction Date	02/11/09	01/26/09	01/26/09	01/26/09
Analysis Date	02/24/09	02/06/09	02/05/09	02/06/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	79.9	75.9	74.2	78.2
% Lipid	1.34	3.84	3.07	2.56
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.09	4.90	5.44	4.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	35.42 J	U	U	U
n-Decane	35.49 J	U	6.74 J	U
n-Undecane	97.28 J	U	14.81 J	U
n-Dodecane	26.03 J	U	11.09 J	U
n-Tridecane	32.77 J	U	11.02 J	U
Isoprenoid RRT 1380	13.4 J	U	U	U
n-Tetradecane	56.67 J	19.93 J	20.9 J	10.83 J
Isoprenoid RRT 1470	111.46 J	34.66 J	26.83 J	13.83 J
n-Pentadecane	68.98 J	27.04 J	43.73 J	15.45 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	62.3 J	33.48 J	22.02 J	20.5 J
n-Heptadecane	142 J	19.77 J	25.19 J	16.77 J
Pristane	93.34 J	9305.46	16.74 J	10.83 J
n-Octadecane	64.03 J	25.62 J	23.8 J	19.8 J
Phytane	14.42 J	3.81 J	4.98 J	3.39 J
n-Nonadecane	29.92 J	12.59 J	8.39 J	11.61 J
n-Eicosane	81.73 J	20.83 J	16.68 J	18.45 J
n-Heneicosane	42.92 J	35.06 J	27.87 J	36.51 J
n-Docosane	134.83 J	31.92 J	28.61 J	31.76 J
n-Tricosane	109.61 J	50.15 J	40.15 J	52.65 J
n-Tetracosane	184.43 J	39.31 J	42.24 J	47.59 J
n-Pentacosane	157.76 J	63.31 J	64.55 J	85.08 J
n-Hexacosane	216.76 J	62.71 J	83.06 J	89.29 J
n-Heptacosane	256.38 J	85.35 J	91.65 J	116.25 J
n-Octacosane	207.22 J	54.72 J	80.48 J	83.38 J
n-Nonacosane	192.23 J	63.73 J	68.58 J	97.63 J
n-Triacontane	202.14 J	41.4 J	67.46 J	76.77 J
n-Hentriacontane	173.57 J	50.93 J	51.92 J	75.95 J
n-Dotriacontane	202.07 J	26.4 J	53.86 J	48.91 J
n-Tritriacontane	62.73 J	26.4 J	34.84 J	40.18 J
n-Tetratriacontane	173.83 J	11.07 J	33.42 J	19.36 J
n-Pentatriacontane	474.64	9.01 J	99.38	41.61 J
n-Hexatriacontane	112.36 J	U	14.94 J	3.86 J
n-Heptatriacontane	U	U	U	1.95 J
n-Octatriacontane	72.24 J	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	30.01 J	U	U	U
Total SHC	3970.97	10154.66	1135.93	1090.19
TPH	28018.55	11752.88	6338.25	2070
Surrogate Recoveries (%)				
5a-androstane	82	94	87	97
n-Tetracosane-d50	78	96	89	100

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2	08-03-KR001-01-CC	08-03-KR007-01-BC5	08-03-KR008-01-BC5
Batch ID	09-0009	09-0007	09-0008	09-0008
Battelle ID	Q5805-P	Q5675-P	Q5689-P	Q5974-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	02/11/09	01/26/09	02/04/09	02/04/09
Analysis Date	02/25/09	02/05/09	02/12/09	02/13/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	80.3	73.2	85	82.3
% Lipid	1.57	3.46	2.33	1.52
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.26	5.48	0.36	1.49
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	47.08 J	U	244.83 J	64.94 J
n-Decane	26.51 J	U	210.36 J	161.26 J
n-Undecane	37.67 J	U	306 J	24.74 J
n-Dodecane	20.21 J	U	76.95 J	38.35 J
n-Tridecane	25.75 J	U	52.65 J	26.61 J
Isoprenoid RRT 1380	17.72 J	U	42.9 J	11.46 J
n-Tetradecane	51.42 J	19.14 J	145.49 J	45.83 J
Isoprenoid RRT 1470	144.47 J	39.75 J	66.85 J	84.62 J
n-Pentadecane	62.91 J	24.09 J	136.2 J	84.89 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	43.06 J	39.95 J	145.12 J	43.38 J
n-Heptadecane	84.71 J	16.62 J	238.24 J	141.2 J
Pristane	176.6 J	6142.01	266.14 J	100.22 J
n-Octadecane	72.83 J	27.94 J	213.31 J	36.31 J
Phytane	13.47 J	3.75 J	50.05 J	7.95 J
n-Nonadecane	22.7 J	13.95 J	74.67 J	53.81 J
n-Eicosane	154.36 J	19.74 J	291.44 J	9.88 J
n-Heneicosane	39.25 J	34.91 J	71.84 J	23.82 J
n-Docosane	264.41	30.22 J	587.47 J	82.82 J
n-Tricosane	114.22 J	46.29 J	131.12 J	10.49 J
n-Tetracosane	367.45	40.3 J	593.5 J	55.4 J
n-Pentacosane	189.69 J	63.64 J	207.59 J	58.06 J
n-Hexacosane	420.51	71.06 J	719.57 J	63.41 J
n-Heptacosane	303.92	85.71 J	200.73 J	69.51 J
n-Octacosane	403.08	58.75 J	774.22 J	63.42 J
n-Nonacosane	236.98 J	62.35 J	187.4 J	60.43 J
n-Triacontane	381.28	37.96 J	785.02 J	85.96 J
n-Hentriacontane	203.75 J	44.93 J	149.92 J	53.53 J
n-Dotriacontane	352.98	26.54 J	603.29 J	59.93 J
n-Tritriacontane	80.23 J	26.73 J	86.89 J	26.45 J
n-Tetratriacontane	314.99	13.68 J	333.86 J	41.01 J
n-Pentatriacontane	548.16	28.03 J	59.93 J	13.76 J
n-Hexatriacontane	218.77 J	4.65 J	195.65 J	16.62 J
n-Heptatriacontane	U	2.61 J	47.37 J	5.15 J
n-Octatriacontane	163.07 J	U	123.11 J	U
n-Nonatriacontane	U	U	29.25 J	U
n-Tetracontane	105.7 J	U	65.53 J	U
Total SHC	5709.91	7025.3	8514.46	1725.22
TPH	4718.83	7971.05	4881.12	50426.38

Surrogate Recoveries (%)

5a-androstane	69	91	97	95
n-Tetracosane-d50	67	93	93	91

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR008-01-CC	08-03-KR009-01-BC5	08-03-KR009-01-WC2	08-03-KR016-01-CC
Batch ID	09-0007	09-0008	09-0009	09-0007
Battelle ID	Q5976-P	Q5981-P	Q5980-P	Q5683-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/30/08
Extraction Date	01/26/09	02/04/09	02/11/09	01/26/09
Analysis Date	02/12/09	02/13/09	02/25/09	02/05/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	73.9	83.54	79.5	74.6
% Lipid	2.35	1.2	1.46	2.23
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.47	1.04	1.46	5.24
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	73.89 J	61.58 J	U
n-Decane	U	131.29 J	29.7 J	U
n-Undecane	U	37.76 J	61.74 J	U
n-Dodecane	5.79 J	46.09 J	25.18 J	6.11 J
n-Tridecane	2.45 J	39.8 J	25.06 J	4.65 J
Isoprenoid RRT 1380	U	21.86 J	12.22 J	U
n-Tetradecane	19.77 J	69.91 J	58.97 J	24.22 J
Isoprenoid RRT 1470	15.67 J	47.19 J	86.45 J	18.83 J
n-Pentadecane	24.68 J	179.42 J	65.55 J	27.62 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	25.28 J	72.11 J	49.38 J	41.71 J
n-Heptadecane	15.39 J	259.38 J	54.85 J	13.62 J
Pristane	5365.05	55.38 J	146.41 J	2117.48
n-Octadecane	21.14 J	58.09 J	66.23 J	20.85 J
Phytane	3.53 J	11.32 J	15.89 J	2.64 J
n-Nonadecane	10.08 J	92.12 J	31.83 J	7.48 J
n-Eicosane	18.66 J	42.44 J	116.1 J	14.29 J
n-Heneicosane	30.79 J	33.46 J	51.16 J	22.1 J
n-Docosane	26.67 J	126.94 J	211.96 J	18.17 J
n-Tricosane	36.02 J	61.56 J	139.39 J	33.51 J
n-Tetracosane	36.79 J	71.63 J	279.95 J	31.15 J
n-Pentacosane	55.21 J	74.63 J	155.81 J	55.62 J
n-Hexacosane	64.29 J	99.93 J	314.71 J	65.1 J
n-Heptacosane	78.68 J	92.66 J	248.39 J	80.74 J
n-Octacosane	52.19 J	89.32 J	321.57 J	57.21 J
n-Nonacosane	51.26 J	86.62 J	221.11 J	58.73 J
n-Triacontane	32.57 J	139.29 J	305.41 J	38.75 J
n-Hentriacontane	33.12 J	73.65 J	191.19 J	43.39 J
n-Dotriacontane	16.45 J	111.92 J	284.94 J	26.89 J
n-Tritriacontane	14.76 J	41.91 J	78.24 J	22.09 J
n-Tetratriacontane	11.81 J	68.36 J	231.74 J	14.43 J
n-Pentatriacontane	68.43 J	23.5 J	383.31	52.18 J
n-Hexatriacontane	7.29 J	35.55 J	148.06 J	7.97 J
n-Heptatriacontane	5.39 J	9.97 J	U	U
n-Octatriacontane	8.2 J	U	89.14 J	U
n-Nonatriacontane	4.07 J	U	U	U
n-Tetracontane	5.76 J	U	37.86 J	U
Total SHC	6167.24	2478.95	4601.08	2927.53
TPH	11739.33	48233.41	87952.08	9476.48
Surrogate Recoveries (%)				
5a-androstane	78	97	93	89
n-Tetracosane-d50	79	94	89	90

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-BC5	08-03-KR019-01-CC	08-03-KR019-02-WC2	08-03-KR034-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5990-P	Q5823-P	Q5987-P	Q5968-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/13/09	02/06/09	02/25/09	02/25/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	87.72	77.8	78.72	82.35
% Lipid	0.86	2.07	0.99	1.33
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	0.51	4.64	1.37	1.01
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	183.54 J	U	62.51 J	88.15 J
n-Decane	464.42 J	U	34.63 J	48.95 J
n-Undecane	87.09 J	U	47 J	103.77 J
n-Dodecane	85.14 J	U	26.19 J	38.61 J
n-Tridecane	55.19 J	U	35.27 J	51.42 J
Isoprenoid RRT 1380	37.16 J	U	15.1 J	25.57 J
n-Tetradecane	168.54 J	21.83 J	72.39 J	114.29 J
Isoprenoid RRT 1470	107.83 J	16.42 J	101.14 J	156.84 J
n-Pentadecane	229.58 J	26.98 J	69.93 J	122.82 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	170.89 J	21.22 J	40.87 J	72.26 J
n-Heptadecane	294.29 J	15.93 J	61.18 J	211.61 J
Pristane	154.04 J	26.74 J	39.61 J	128.27 J
n-Octadecane	168.52 J	18.03 J	34.86 J	77.62 J
Phytane	29.83 J	3.58 J	11.82 J	23.51 J
n-Nonadecane	126.04 J	10.09 J	28.18 J	45.8 J
n-Eicosane	162.76 J	15.02 J	32.48 J	103.68 J
n-Heneicosane	86.83 J	29.97 J	47.96 J	73.18 J
n-Docosane	563.57 J	27.99 J	69.23 J	195.16 J
n-Tricosane	180.72 J	42.5 J	131.78 J	185.17 J
n-Tetracosane	322.01 J	33.84 J	83.13 J	270 J
n-Pentacosane	243.36 J	56.9 J	144 J	237.35 J
n-Hexacosane	401.39 J	54.5 J	94.22 J	320.08 J
n-Heptacosane	311.13 J	73.24 J	222.97 J	383.24 J
n-Octacosane	419.18 J	45.34 J	79.97 J	360.55 J
n-Nonacosane	282.25 J	57.9 J	170.86 J	333.28 J
n-Triacontane	578.12 J	51.18 J	51.98 J	378.79 J
n-Hentriacontane	228.62 J	48.75 J	158.08 J	283.16 J
n-Dotriacontane	432.58 J	26.91 J	42.76 J	405.23 J
n-Tritriacontane	132.26 J	19.83 J	63.16 J	112.39 J
n-Tetratriacontane	255.79 J	9.64 J	31.21 J	362.39 J
n-Pentatriacontane	79.19 J	38.19 J	308.25 J	632.61
n-Hexatriacontane	124.11 J	1.73 J	U	261.08 J
n-Heptatriacontane	43.6 J	U	U	U
n-Octatriacontane	42.66 J	U	U	182.65 J
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	87.09 J
Total SHC	7252.23	794.25	2412.72	6476.57
TPH	92206.97	884.76	88048.42	133005.98

Surrogate Recoveries (%)

5a-androstane	71	90	93	91
n-Tetracosane-d50	68	92	89	87

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR045-01-WC2	08-03-KR095-01-BC2	KF001 and KF021 composite	KF003, KF013 and KF023 composite
Batch ID	09-0009	09-0008	09-0010	09-0010
Battelle ID	Q5972-P	Q5815-P	Q6103-P	Q6104-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/29/08	08/21/08	08/23/08
Extraction Date	02/11/09	02/04/09	02/18/09	02/18/09
Analysis Date	02/25/09	02/12/09	03/04/09	03/04/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	80.4	80	94.95	94
% Lipid	1.62	2.56	0.71	0.53
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.69	0.56	0.43	0.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	45.62 J	142.17 J	182.89 J	146.74 J
n-Decane	26.47 J	187.06 J	625.04 J	426.65 J
n-Undecane	20.65 J	66.27 J	55.21 J	36.09 J
n-Dodecane	25.15 J	69.61 J	88.99 J	62.73 J
n-Tridecane	32.31 J	125.75 J	130.57 J	91.69 J
Isoprenoid RRT 1380	18.14 J	93.07 J	81.26 J	73.11 J
n-Tetradecane	65.32 J	230.42 J	204.63 J	137.17 J
Isoprenoid RRT 1470	120.78 J	1164.21	181.17 J	107.49 J
n-Pentadecane	67.89 J	382.11 J	500.6 J	487.95 J
Norpristane (1650)	U	U	U	U
n-Hexadecane	43.95 J	139.48 J	171.91 J	79.71 J
n-Heptadecane	220.65 J	112.98 J	642.83 J	260.41 J
Pristane	31.1 J	1848.24	184313.07 D	81890.21 D
n-Octadecane	39.91 J	145.89 J	306.73 J	115.25 J
Phytane	12.49 J	37.63 J	116.92 J	45.77 J
n-Nonadecane	30.83 J	65.53 J	267.1 J	118.66 J
n-Eicosane	34.06 J	158.72 J	277.97 J	98.96 J
n-Heneicosane	55.06 J	130.24 J	292.37 J	143.57 J
n-Docosane	74.91 J	391.02 J	542.81 J	165.63 J
n-Tricosane	140.65 J	229.72 J	686.04 J	245.05 J
n-Tetracosane	86.63 J	236.69 J	900.32 J	274.52 J
n-Pentacosane	164.32 J	246.87 J	1041.33 J	382.54 J
n-Hexacosane	88.97 J	241.71 J	1355.63	462.78 J
n-Heptacosane	266.15 J	326.98 J	1633.96	630.68
n-Octacosane	78.7 J	242.63 J	1761.69	531.82 J
n-Nonacosane	221.96 J	288.52 J	1782.96	556.22 J
n-Triacontane	46.32 J	352.69 J	1761.74	514.62 J
n-Hentriacontane	178.16 J	278.87 J	1847.46	560.57 J
n-Dotriacontane	30.92 J	290.89 J	1429.14	403.8 J
n-Tritriacontane	68.64 J	133.04 J	1021.36 J	308.54 J
n-Tetratriacontane	U	184.58 J	881.04 J	315.26 J
n-Pentatriacontane	453.1	66.64 J	755.53 J	255.37 J
n-Hexatriacontane	U	114.19 J	592.01 J	227.87 J
n-Heptatriacontane	U	35.58 J	454.92 J	165.31 J
n-Octatriacontane	U	47.74 J	480.11 J	206.06 J
n-Nonatriacontane	U	U	315.76 J	117 J
n-Tetracontane	U	18.4 J	311.12 J	160.29 J
Total SHC	2789.81	8826.14	207994.19	90806.09
TPH	71375.61	118566.74	888355.95	560512.94
Surrogate Recoveries (%)				
5a-androstane	93	101	77	81
n-Tetracosane-d50	89	98	77	80

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	KF005, KF015 and KF025 composite	KF007 and KF017 composite	KF009 and KF019 composite
Client ID			
Batch ID	09-0010	09-0010	09-0010
Battelle ID	Q6105-P	Q6106-P	Q6107-P
Sample Type	SA	SA	SA
Collection Date	08/27/08	08/22/08	08/23/08
Extraction Date	02/18/09	02/18/09	02/18/09
Analysis Date	03/04/09	03/05/09	03/05/09
Analytical Instrument	FID	FID	FID
% Moisture	95.2	95.19	97
% Lipid	0.34	0.67	0.5
Matrix	TISSUE	TISSUE	TISSUE
Sample Size	0.46	0.48	0.35
Size Unit-Basis	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	133.3 J	115.73 J	289.06 J
n-Decane	1849.36 ME	2060.65 ME	933.91 J
n-Undecane	54.74 J	41.81 J	111.69 J
n-Dodecane	54.69 J	56.23 J	143.78 J
n-Tridecane	107.48 J	83.98 J	295.84 J
Isoprenoid RRT 1380	58.49 J	85.02 J	114.64 J
n-Tetradecane	150.77 J	148.53 J	404.59 J
Isoprenoid RRT 1470	138.81 J	116.13 J	293.36 J
n-Pentadecane	376.1 J	437.85 J	1178.08 J
Norpristane (1650)	U	U	U
n-Hexadecane	114.57 J	129.7 J	210.72 J
n-Heptadecane	698.55 J	354.95 J	819.22 J
Pristane	217964.6	109787.33 D	423909.2
n-Octadecane	261.14 J	224.47 J	341.01 J
Phytane	60.26 J	74.95 J	109.38 J
n-Nonadecane	187.32 J	116.51 J	255.26 J
n-Eicosane	197.14 J	243.52 J	292.32 J
n-Heneicosane	210.97 J	191.92 J	344.65 J
n-Docosane	341.24 J	481.28 J	565.91 J
n-Tricosane	326.04 J	403.1 J	751.42 J
n-Tetracosane	395.02 J	715.2 J	985.76 J
n-Pentacosane	401.85 J	581.82 J	1287.11 J
n-Hexacosane	625 J	987.84 J	1616.37
n-Heptacosane	877.91 J	881.53 J	1895.82
n-Octacosane	695.52 J	928.28 J	1677.35
n-Nonacosane	595.23 J	660.9 J	1683.3
n-Triacontane	648.5 J	731.86 J	1465.31 J
n-Hentriacontane	666.26 J	562.48 J	1530.64 J
n-Dotriacontane	556.75 J	560.7 J	1122.78 J
n-Tritriacontane	347.59 J	256.54 J	804.82 J
n-Tetratriacontane	385.11 J	331.86 J	810.08 J
n-Pentatriacontane	244.5 J	189.63 J	618.58 J
n-Hexatriacontane	230.3 J	196.58 J	563.3 J
n-Heptatriacontane	160.78 J	128.16 J	474.7 J
n-Octatriacontane	208.8 J	158.53 J	538.86 J
n-Nonatriacontane	112.06 J	82.2 J	375.1 J
n-Tetracontane	121.93 J	107.87 J	420.75 J
Total SHC	230558.68	123215.64	449234.67
TPH	291325.12	457494.92	599056.75
Surrogate Recoveries (%)			
5a-androstane	79	82	73
n-Tetracosane-d50	79	82	72

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-BC2	08-03-BD001-01-BC5	08-03-BD004-01-AC	08-03-BD004-01-CC
Batch ID	09-0006	09-0006	09-0043	09-0007
Battelle ID	Q5996-P	Q5999-P	Q5750-P1	Q5747-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/21/08	09/21/08	09/21/08
Extraction Date	01/16/09	01/16/09	03/19/09	01/26/09
Analysis Date	02/21/09	02/21/09	03/31/09	02/26/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.8	82.8	74.5	75
% Lipid	3.36	1.39	4.09	1.71
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.53	0.99	5.09	1.05
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	8.03 B	10.47 B	17.65	10.41
C1-Naphthalenes	6.29	2.92 J	2.18	4.51
C2-Naphthalenes	7.53	2.56 J	4.67	4.38
C3-Naphthalenes	7.1	1.83 J	2.1	2.56
C4-Naphthalenes	6.03	2.1 J	U	2.11 J
Acenaphthylene	0.14 J	0.14 J	0.23 J	U
Acenaphthene	0.29 J	0.38 J	U	U
Biphenyl	1.58 J	0.98 J	0.47 J	1.45 J
Fluorene	2.09 J	0.86 J	0.94 J	0.8 J
C1-Fluorenes	4.15	2.01 J	U	3.23
C2-Fluorenes	7.79	5.01 J	U	U
C3-Fluorenes	U	U	U	U
Anthracene	0.3 J	0.28 J	U	0.39 J
Phenanthrene	6.06	3.53 J	0.92 J	5.49
C1-Phenanthrenes/Anthracenes	8.7	2.63 J	U	5.72
C2-Phenanthrenes/Anthracenes	16.1	4.51 J	2.03	11.41
C3-Phenanthrenes/Anthracenes	5.77	1.92 J	1 J	5.69
C4-Phenanthrenes/Anthracenes	4.19	1.58 J	1.81	1.7 J
Dibenzothiophene	0.76 J	0.39 J	0.26 J	0.7 J
C1-Dibenzothiophenes	2.74 J	1.04 J	U	1.45 J
C2-Dibenzothiophenes	3.82	1.78 J	1.54	4.49
C3-Dibenzothiophenes	3.43	1.45 J	1.57	3.92
Fluoranthene	3.72	2.48 J	0.41 J	5.64
Pyrene	4.2 B	3.91 J	0.51 J	9.81
C1-Fluoranthenes/Pyrenes	5.38	1.84 J	U	4.1
C2-Fluoranthenes/Pyrenes	3.82	1.64 J	U	2.48 J
C3-Fluoranthenes/Pyrenes	2.01 J	U	U	U
Benzo(a)anthracene	0.49 J	0.44 J	U	1.11 J
Chrysene	2.57 J	1.35 J	0.43 J	1.97 J
C1-Chrysenes	1.85 J	0.89 J	0.8 J	0.75 J
C2-Chrysenes	3.61	2.93 J	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.79 J	0.53 J	U	0.72 J
Benzo(k)fluoranthene	0.41 J	0.41 J	U	0.71 J
Benzo(e)pyrene	1 J	0.63 J	0.29 J	0.84 J
Benzo(a)pyrene	0.26 J	0.2 J	U	U
Perylene	4.01	1.36 J	0.33 J	0.47 J
Indeno(1,2,3-cd)pyrene	0.26 J	0.25 J	U	0.34 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.83 J	0.4 J	U	0.56 J
Total PAH	138.1	67.63	40.14	99.91
Surrogate Recoveries (%)				
Naphthalene-d8	67	57	61	59
Acenaphthene-d10	87	77	68	73
Phenanthrene-d10	92	81	72	74
Benzo(a)pyrene-d12	100	89	81	92

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-AC	08-03-BF001-01-BC5	08-03-BF003-01-BC5	08-03-BF003-01-WC2
Batch ID	09-0043	09-0043	09-0006	09-0009
Battelle ID	Q5925-P1	Q5904-P1	Q5882-P	Q5881-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/16/08	09/02/08	09/02/08
Extraction Date	03/19/09	03/19/09	01/16/09	02/11/09
Analysis Date	04/01/09	04/01/09	02/21/09	03/01/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	75.2	83.3	81.2	81.3
% Lipid	4.5	0.88	1.55	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.97	3.33	2.92	2.38
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	14.38	2.18 B	3.24 B	5.11
C1-Naphthalenes	2.67	1.52 J	0.99 J	5.2
C2-Naphthalenes	3.84	2.55	1.16 J	7.35
C3-Naphthalenes	2	1.87	0.98 J	6.12
C4-Naphthalenes	U	U	0.9 J	6.26
Acenaphthylene	U	U	0.05 J	U
Acenaphthene	U	U	0.07 J	0.32 J
Biphenyl	0.72 J	0.73 J	0.46 J	2.5
Fluorene	1.02 J	U	0.51 J	2.2
C1-Fluorenes	U	U	0.88 J	3.09
C2-Fluorenes	U	4.59	2.72	7.8
C3-Fluorenes	U	U	U	U
Anthracene	U	U	0.09 J	0.41 J
Phenanthrene	0.95 J	1.14 J	1.78 J	8.15
C1-Phenanthrenes/Anthracenes	U	U	1.96 B	12.12
C2-Phenanthrenes/Anthracenes	3.04	4.09	3.66 B	15.46
C3-Phenanthrenes/Anthracenes	U	2.07	1.51 J	9.46
C4-Phenanthrenes/Anthracenes	1.99	1.5 J	0.93 J	8.91
Dibenzothiophene	0.22 J	U	0.25 J	1.4
C1-Dibenzothiophenes	0.33 J	U	0.81 J	2.46
C2-Dibenzothiophenes	U	U	1.66 J	4.69
C3-Dibenzothiophenes	U	U	1.17 J	3.52
Fluoranthene	0.38 J	0.74 J	2.39 B	10.27
Pyrene	0.58 J	1.24 J	3.35 B	7.82
C1-Fluoranthenes/Pyrenes	U	U	1.36 J	8
C2-Fluoranthenes/Pyrenes	U	U	1.16 J	8.33
C3-Fluoranthenes/Pyrenes	U	U	0.88 J	5.89
Benzo(a)anthracene	U	U	0.45 J	1.1 J
Chrysene	0.75 J	0.7 J	1.31 J	6.71
C1-Chrysenes	1.01 J	U	0.8 J	4.54
C2-Chrysenes	U	U	1.83	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.36 J	U	0.57 J	2.15
Benzo(k)fluoranthene	U	U	0.35 J	0.77 J
Benzo(e)pyrene	0.48 J	0.42 J	0.65 J	3.01
Benzo(a)pyrene	U	U	0.17 J	0.79 J
Perylene	0.74 J	1.37 J	1.91	7.1
Indeno(1,2,3-cd)pyrene	U	U	0.16 J	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	U	0.31 J	U
Total PAH	35.46	26.71	43.43	179.01
Surrogate Recoveries (%)				
Naphthalene-d8	49	62	56	71
Acenaphthene-d10	59	70	75	92
Phenanthrene-d10	65	72	78	95
Benzo(a)pyrene-d12	75	83	86	87

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-BC5	08-03-BF005-01-CC	08-03-BF007-01-BC5	08-03-BF011-01-AC
Batch ID	09-0043	09-0007	09-0043	09-0043
Battelle ID	Q5724-P1	Q5725-P	Q5901-P1	Q5919-P1
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/16/08	09/14/08
Extraction Date	03/19/09	01/26/09	03/19/09	03/19/09
Analysis Date	03/31/09	02/25/09	04/01/09	04/01/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	83.3	69.9	83.1	73.6
% Lipid	1.12	3.54	1.22	5.56
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.36	6.13	1.87	5.30
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	1.8 B	2.17 B	3.26	15.55
C1-Naphthalenes	1.1 J	0.93 B	1.55 J	3.65
C2-Naphthalenes	5.39	11.35	4.21	4.52
C3-Naphthalenes	2.04	1.01	3.08	1.78
C4-Naphthalenes	U	U	4.04	2.23
Acenaphthylene	U	U	U	0.24 J
Acenaphthene	U	U	U	0.32 J
Biphenyl	U	0.35 J	U	1.09
Fluorene	0.5 J	0.35 J	1.07 J	1.73
C1-Fluorenes	U	0.66 J	U	U
C2-Fluorenes	4.39	U	7.7	2.43
C3-Fluorenes	U	U	U	U
Anthracene	U	U	U	U
Phenanthrene	0.91 J	0.96 B	1.76 J	0.98 J
C1-Phenanthrenes/Anthracenes	U	1.49	U	U
C2-Phenanthrenes/Anthracenes	3.93	2.36	5.82	2.01
C3-Phenanthrenes/Anthracenes	U	0.97	3.11	1.61
C4-Phenanthrenes/Anthracenes	1.22 J	0.54 J	1.92 J	1.97
Dibenzothiophene	U	0.15 J	U	0.26 J
C1-Dibenzothiophenes	U	0.34 J	U	0.52 J
C2-Dibenzothiophenes	U	0.79 J	U	U
C3-Dibenzothiophenes	U	0.47 J	U	U
Fluoranthene	0.59 J	0.8 J	1.05 J	0.21 J
Pyrene	0.69 J	1.11 B	1.57 J	0.33 J
C1-Fluoranthenes/Pyrenes	U	0.71 J	U	U
C2-Fluoranthenes/Pyrenes	U	U	U	U
C3-Fluoranthenes/Pyrenes	U	U	U	U
Benzo(a)anthracene	U	0.19 J	U	U
Chrysene	0.83 J	0.42 J	1.22 J	0.31 J
C1-Chrysenes	1.14 J	0.33 J	1.07 J	0.72 J
C2-Chrysenes	U	U	U	3.02
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.2 J	U	0.27 J
Benzo(k)fluoranthene	U	0.12 J	U	U
Benzo(e)pyrene	0.6 J	0.19 J	0.74 J	U
Benzo(a)pyrene	U	U	U	U
Perylene	1.96	0.47 J	1.41 J	U
Indeno(1,2,3-cd)pyrene	U	U	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	0.16 J	U	U
Total PAH	27.09	29.59	44.58	45.75
Surrogate Recoveries (%)				
Naphthalene-d8	64	62	63	57
Acenaphthene-d10	70	76	72	65
Phenanthrene-d10	74	77	74	68
Benzo(a)pyrene-d12	91	93	83	60

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-BC5	08-03-BF011-01-CC	08-03-BF013-01-AC	08-03-BF013-01-CC
Batch ID	09-0043	09-0007	09-0043	09-0007
Battelle ID	Q6033-P1	Q6032-P	Q5752-P1	Q5911-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/13/08	09/17/08	09/16/08
Extraction Date	03/19/09	01/26/09	03/19/09	01/26/09
Analysis Date	04/01/09	02/26/09	03/31/09	02/26/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	82.1	68.2	75.5	70.4
% Lipid	1.26	3.23	3.96	3.37
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.13	6.46	4.89	4.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.49	1.61 B	18.82	2.92 B
C1-Naphthalenes	2.49 J	0.68 J	3.62	0.78 J
C2-Naphthalenes	5.5	8.15	4.29	4.65
C3-Naphthalenes	3.8 J	0.78 J	2.19	0.8 J
C4-Naphthalenes	U	U	1.81	U
Acenaphthylene	U	U	0.29 J	U
Acenaphthene	U	U	U	U
Biphenyl	1.04 J	0.26 J	0.86 J	0.33 J
Fluorene	1.34 J	0.34 J	1.4	0.3 J
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3-Fluorenes	U	U	U	U
Anthracene	U	U	U	U
Phenanthrene	2.3 J	0.86 B	0.96 J	1.17 B
C1-Phenanthrenes/Anthracenes	U	1.12	U	1.33
C2-Phenanthrenes/Anthracenes	7.36	2.32	2.68	2.93
C3-Phenanthrenes/Anthracenes	U	0.74 J	U	0.87 J
C4-Phenanthrenes/Anthracenes	U	0.65 J	U	0.62 J
Dibenzothiophene	U	0.15 J	U	0.17 J
C1-Dibenzothiophenes	U	0.35 J	U	0.43 J
C2-Dibenzothiophenes	U	0.83	U	1.07 J
C3-Dibenzothiophenes	U	U	U	U
Fluoranthene	1.6 J	0.66 J	0.23 J	1.05 J
Pyrene	2.05 J	0.97 B	0.29 J	1.57 B
C1-Fluoranthenes/Pyrenes	U	0.55 J	U	0.82 J
C2-Fluoranthenes/Pyrenes	U	U	U	U
C3-Fluoranthenes/Pyrenes	U	U	U	U
Benzo(a)anthracene	U	0.18 J	U	0.23 J
Chrysene	1.83 J	0.37 J	0.5 J	0.46 J
C1-Chrysenes	U	U	0.85 J	U
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.15 J	U	0.21 J
Benzo(k)fluoranthene	U	0.1 J	U	0.1 J
Benzo(e)pyrene	U	0.14 J	U	0.18 J
Benzo(a)pyrene	U	U	U	U
Perylene	1.56 J	0.54 J	U	0.34 J
Indeno(1,2,3-cd)pyrene	U	0.06 J	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	0.14 J	U	0.16 J
Total PAH	36.36	22.7	38.79	23.49
Surrogate Recoveries (%)				
Naphthalene-d8	59	58	59	61
Acenaphthene-d10	68	78	65	77
Phenanthrene-d10	70	81	70	79
Benzo(a)pyrene-d12	86	95	94	94

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF013-02-AC	08-03-BF013-03-AC	08-03-BF015-01-BC2	08-03-BF015-01-BC5
Batch ID	09-0043	09-0043	09-0006	09-0006
Battelle ID	Q5753-P1	Q5754-P1	Q5719-P	Q5718-P
Sample Type	SA	SA	SA	SA
Collection Date	09/17/08	09/17/08	09/19/08	09/19/08
Extraction Date	03/19/09	03/19/09	01/16/09	01/16/09
Analysis Date	03/31/09	03/31/09	02/20/09	02/20/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	74.5	74.3	78.1	82.7
% Lipid	4.17	4.08	4.41	1.31
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.12	5.17	2.10	2.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	16.98	16.37	6.65 B	3.89 B
C1-Naphthalenes	3.52	3.35	5.63	1.25 J
C2-Naphthalenes	3.69	3.9	7.04	1.43 J
C3-Naphthalenes	1.47	1.39	6.98	1.26 J
C4-Naphthalenes	1.87	1.12	6.42	1.21 J
Acenaphthylene	0.38 J	0.33 J	0.07 J	0.04 J
Acenaphthene	0.35 J	0.36 J	0.25 J	0.19 J
Biphenyl	0.68 J	0.66 J	1.77 J	0.66 J
Fluorene	1.31	0.94 J	2.29 J	0.67 J
C1-Fluorenes	U	U	3.43	0.94 J
C2-Fluorenes	U	U	7.78	3.33
C3-Fluorenes	U	U	U	U
Anthracene	U	U	0.22 J	0.14 J
Phenanthrene	0.79 J	0.86 J	6.02	2.82 B
C1-Phenanthrenes/Anthracenes	U	U	10.37	2.08 B
C2-Phenanthrenes/Anthracenes	U	2.16	18.37	3.98 B
C3-Phenanthrenes/Anthracenes	U	U	7.46	1.97 J
C4-Phenanthrenes/Anthracenes	U	1.15	5.05	1.24 J
Dibenzothiophene	U	0.28 J	0.81 J	0.28 J
C1-Dibenzothiophenes	U	U	2.81	0.71 J
C2-Dibenzothiophenes	U	U	4.7	1.49 J
C3-Dibenzothiophenes	U	U	3.89	1.12 J
Fluoranthene	U	0.31 J	4.53	2.05 B
Pyrene	0.23 J	0.4 J	5.61	3.05 B
C1-Fluoranthenes/Pyrenes	U	U	6.5	1.45 J
C2-Fluoranthenes/Pyrenes	U	U	4.55	1.55 J
C3-Fluoranthenes/Pyrenes	U	U	2.96	0.86 J
Benzo(a)anthracene	U	U	0.64 J	0.32 J
Chrysene	0.49 J	U	3.34	1.35 J
C1-Chrysenes	U	U	2.42 J	0.98 J
C2-Chrysenes	U	U	4.28	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.4 J	1.07 J	0.62 J
Benzo(k)fluoranthene	0.47 J	U	0.43 J	0.25 J
Benzo(e)pyrene	U	U	1.18 J	0.7 J
Benzo(a)pyrene	U	U	0.42 J	0.14 J
Perylene	U	U	5.27	2.65
Indeno(1,2,3-cd)pyrene	U	U	0.35 J	0.15 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	U	0.99 J	0.36 J
Total PAH	32.23	33.98	152.55	47.18
Surrogate Recoveries (%)				
Naphthalene-d8	55	50	65	59
Acenaphthene-d10	64	63	87	81
Phenanthrene-d10	65	68	91	85
Benzo(a)pyrene-d12	74	72	102	96

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-BC5	08-03-BF017-01-WC2	08-03-BF021-01-WC2	08-03-BF023-01-CC
Batch ID	09-0043	09-0009	09-0009	09-0007
Battelle ID	Q6017-P1	Q6021-P	Q6024-P	Q5759-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/12/08	09/13/08	09/17/08
Extraction Date	03/19/09	02/11/09	02/11/09	01/26/09
Analysis Date	04/01/09	03/02/09	03/02/09	02/26/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.7	78.69	86.9	73
% Lipid	1.63	1.75	2.69	3.97
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.41	1.27	0.98	5.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	3.13	6.14	11.33	2.37 B
C1-Naphthalenes	1.16 J	5.72	8.78	0.9 J
C2-Naphthalenes	3.36	9.9	13.14	10.28
C3-Naphthalenes	2.29	6.75	10.5	0.95
C4-Naphthalenes	U	7.96	10.73	U
Acenaphthylene	U	U	0.21 J	U
Acenaphthene	U	0.29 J	0.63 J	U
Biphenyl	0.73 J	2 J	4.37	0.31 J
Fluorene	0.61 J	1.71 J	3.6	0.37 J
C1-Fluorenes	U	10.41	5.12	0.36 J
C2-Fluorenes	8.04	10.36	20.4	U
C3-Fluorenes	U	U	U	U
Anthracene	U	0.39 J	U	U
Phenanthrene	1.16 J	6.85	11.46	1.12 B
C1-Phenanthrenes/Anthracenes	U	9.34	18.08	1.65
C2-Phenanthrenes/Anthracenes	4.15	15.48	30.2	2.25
C3-Phenanthrenes/Anthracenes	U	7.16	15.95	0.96
C4-Phenanthrenes/Anthracenes	U	7.29	14.02	0.67 J
Dibenzothiophene	U	1.05 J	1.16 J	0.18 J
C1-Dibenzothiophenes	U	3.13	U	0.5 J
C2-Dibenzothiophenes	U	4.7	6.59	1.19
C3-Dibenzothiophenes	U	4.16	6.03	0.92 J
Fluoranthene	0.49 J	4.84	10.95	1.05 B
Pyrene	0.48 J	6.15	9.37	1.68 B
C1-Fluoranthenes/Pyrenes	U	7.17	13.27	0.96
C2-Fluoranthenes/Pyrenes	U	7.41	12.91	U
C3-Fluoranthenes/Pyrenes	U	5.68	10.03	U
Benzo(a)anthracene	U	1.14 J	1.56 J	0.26 J
Chrysene	0.97 J	4.69	9.93	0.51 J
C1-Chrysenes	1.01 J	4.24	7.46	0.36 J
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	2.34	4.14	0.32 J
Benzo(k)fluoranthene	U	1.19 J	1.93 J	0.21 J
Benzo(e)pyrene	0.47 J	3.22	6.13	0.22 J
Benzo(a)pyrene	U	0.67 J	1.48 J	U
Perylene	1.16 J	9.86	14.72	0.48 J
Indeno(1,2,3-cd)pyrene	U	0.95 J	1.81 J	0.13 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	2.33	3.91	0.23 J
Total PAH	29.21	182.67	301.9	31.39
Surrogate Recoveries (%)				
Naphthalene-d8	60	85	74	60
Acenaphthene-d10	68	107	96	75
Phenanthrene-d10	71	111	99	76
Benzo(a)pyrene-d12	88	119	90	90

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-BC2	08-03-BF025-01-CC	08-03-BR005-01-BC5	08-03-BR038-01-AC
Batch ID	09-0043	09-0007	09-0043	09-0043
Battelle ID	Q5763-P1	Q5761-P	Q5745-P1	Q5720-P1
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/21/08	09/19/08
Extraction Date	03/19/09	01/26/09	03/19/09	03/19/09
Analysis Date	03/31/09	02/26/09	03/31/09	03/31/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	79	72.6	80.6	76
% Lipid	3.49	3.4	1.75	4.13
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.42	5.52	2.79	4.80
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	6	2.72 B	2.32 B	12.87
C1-Naphthalenes	6.37	1.17 B	1.33 J	2.79
C2-Naphthalenes	28.47	10.61	U	5.09
C3-Naphthalenes	11.21	1.1	U	1.95
C4-Naphthalenes	12.12	1.35	U	U
Acenaphthylene	U	U	U	0.38 J
Acenaphthene	U	U	U	0.39 J
Biphenyl	2.82 J	0.32 J	U	0.62 J
Fluorene	2.21 J	0.39 J	0.49 J	0.85 J
C1-Fluorenes	U	U	U	U
C2-Fluorenes	15.96	U	6.26	U
C3-Fluorenes	U	U	U	U
Anthracene	U	U	U	U
Phenanthrene	6.42	1.44 B	1.09 J	0.9 J
C1-Phenanthrenes/Anthracenes	11.08	1.62	U	U
C2-Phenanthrenes/Anthracenes	20.68	2.34	4.6	2.46
C3-Phenanthrenes/Anthracenes	14.6	0.82 J	2.85	2.66
C4-Phenanthrenes/Anthracenes	7.34	0.62 J	2.69	1.03 J
Dibenzothiophene	0.51 J	0.18 J	U	0.2 J
C1-Dibenzothiophenes	1.98 J	0.5 J	U	U
C2-Dibenzothiophenes	6.65	1.13	U	U
C3-Dibenzothiophenes	5.68	0.81 J	U	U
Fluoranthene	2.35 J	1.13 B	0.48 J	0.51 J
Pyrene	3.41 J	1.92 B	0.77 J	0.67 J
C1-Fluoranthenes/Pyrenes	8.4	1.01	U	U
C2-Fluoranthenes/Pyrenes	5.51	U	U	U
C3-Fluoranthenes/Pyrenes	U	U	U	U
Benzo(a)anthracene	0.89 J	0.26 J	U	U
Chrysene	3.17 J	0.52 J	1.38 J	0.77 J
C1-Chrysenes	3.4 J	0.35 J	0.83 J	1.32
C2-Chrysenes	9.03	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.21 J	U	U
Benzo(k)fluoranthene	U	0.16 J	U	U
Benzo(e)pyrene	1.7 J	0.25 J	0.63 J	U
Benzo(a)pyrene	U	U	U	U
Perylene	5.59	0.57 J	1.49 J	U
Indeno(1,2,3-cd)pyrene	U	0.09 J	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.71 J	0.19 J	U	U
Total PAH	204.26	33.78	27.21	35.46
Surrogate Recoveries (%)				
Naphthalene-d8	63	58	61	57
Acenaphthene-d10	71	72	70	67
Phenanthrene-d10	74	73	73	70
Benzo(a)pyrene-d12	91	87	84	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR038-01-BC2	08-03-BR038-01-BC5	08-03-BR043-01-CC	08-03-BR080-01-AC
Batch ID	09-0043	09-0008	09-0007	09-0043
Battelle ID	Q5767-P1	Q5768-P	Q6026-P	Q5736-P1
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/14/08	09/20/08
Extraction Date	03/19/09	02/04/09	01/26/09	03/19/09
Analysis Date	03/31/09	02/28/09	02/26/09	03/31/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.6	81	71.9	74.9
% Lipid	3.66	1.33	3.17	3.95
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.54	1.95	5.70	5.04
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.24	3.55 B	2.01 B	15.32
C1-Naphthalenes	3.88	1.57 B	0.96 B	2.74
C2-Naphthalenes	54.58	2.17 B	11.32	5.11
C3-Naphthalenes	8.35	1.88 B	0.7 J	2.17
C4-Naphthalenes	8.34	2.15	U	U
Acenaphthylene	U	U	U	0.33 J
Acenaphthene	U	0.18 J	U	U
Biphenyl	2.32 J	0.64 J	0.31 J	0.64 J
Fluorene	2.55 J	0.81 J	0.3 J	1.16
C1-Fluorenes	3.3 J	1.44	U	U
C2-Fluorenes	19.32	6.39	U	U
C3-Fluorenes	U	U	U	U
Anthracene	U	0.09 J	U	U
Phenanthrene	4.65	4.57 B	1.12 B	1.15 B
C1-Phenanthrenes/Anthracenes	10.09	4.9 B	1.52	U
C2-Phenanthrenes/Anthracenes	19.4	6.21 B	2.94	2.33
C3-Phenanthrenes/Anthracenes	8.41	2.51 B	0.98	U
C4-Phenanthrenes/Anthracenes	5.96	1.58 B	0.69 J	1.57
Dibenzothiophene	U	0.52 J	0.17 J	U
C1-Dibenzothiophenes	1.72 J	1.81 B	0.44 J	U
C2-Dibenzothiophenes	6.93	3.06 B	0.88 J	U
C3-Dibenzothiophenes	U	2.43 B	0.66 J	U
Fluoranthene	2.28 J	4.44 B	1.03 B	0.43 J
Pyrene	3.76	6.69 B	1.62 B	0.63 J
C1-Fluoranthenes/Pyrenes	6.29	2.05 B	0.73 J	U
C2-Fluoranthenes/Pyrenes	4.54	1.63	U	U
C3-Fluoranthenes/Pyrenes	U	1.44	U	U
Benzo(a)anthracene	U	0.57 J	0.19 J	U
Chrysene	2.73 J	1.81	0.46 J	0.41 J
C1-Chrysenes	U	1.07 J	0.28 J	0.77 J
C2-Chrysenes	U	2.82	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.71 J	0.18 J	U
Benzo(k)fluoranthene	U	0.36 J	0.11 J	U
Benzo(e)pyrene	1.72 J	0.74 J	0.19 J	U
Benzo(a)pyrene	U	0.18 J	U	U
Perylene	3.81	2.36	0.49 J	U
Indeno(1,2,3-cd)pyrene	U	0.21 J	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	0.47 J	0.17 J	0.34 J
Total PAH	190.17	76.01	30.45	35.1
Surrogate Recoveries (%)				
Naphthalene-d8	59	66	66	53
Acenaphthene-d10	69	83	80	64
Phenanthrene-d10	72	84	81	69
Benzo(a)pyrene-d12	81	101	93	77

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR080-01-BC5	08-03-BR080-01-CC	08-03-BR086-01-WC2	08-03-BR087-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5722-P	Q5721-P	Q5878-P	Q5863-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/19/08	09/02/08	09/02/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/27/09	02/25/09	03/01/09	03/01/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	83	71.6	78.1	79.5
% Lipid	0.94	3.42	1.86	1.73
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.23	5.82	2.31	2.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.22 B	2.4 B	4.71	7.15
C1-Naphthalenes	2.26	0.99 B	4.69	6.08
C2-Naphthalenes	3.3	6.92	6.49	7.65
C3-Naphthalenes	3.15	0.86 J	5.3	5.86
C4-Naphthalenes	3.13	U	5.22	5.75
Acenaphthylene	U	U	0.1 J	U
Acenaphthene	0.32 J	U	0.27 J	0.3 J
Biphenyl	0.93 J	0.28 J	1.78	1.64
Fluorene	1.09 J	0.27 J	1.66	1.29
C1-Fluorenes	2.53	U	2.47	2
C2-Fluorenes	7.81	U	6.54	5.97
C3-Fluorenes	U	U	U	U
Anthracene	0.35 J	U	0.28 J	0.22 J
Phenanthrene	6.61 B	1 B	6.01	5.82
C1-Phenanthrenes/Anthracenes	8.4 B	1.09	10.28	8.66
C2-Phenanthrenes/Anthracenes	10.09 B	2.25	13.01	16.45
C3-Phenanthrenes/Anthracenes	3.17 B	0.72 J	8.09	8.33
C4-Phenanthrenes/Anthracenes	1.93 J	0.67 J	8.41	7.73
Dibenzothiophene	0.84 J	0.18 J	0.82 J	0.61 J
C1-Dibenzothiophenes	2.94 B	0.32 J	2.38	2.44
C2-Dibenzothiophenes	4.72 B	0.94	3.46	4.25
C3-Dibenzothiophenes	3.72 B	0.64 J	3.31	4.41
Fluoranthene	6.27 B	0.81 J	7.34	4.98
Pyrene	9.96 B	1.34 B	5.78	6.06
C1-Fluoranthenes/Pyrenes	3.22	0.75 J	7.52	6.51
C2-Fluoranthenes/Pyrenes	2.79	U	9.35	7.3
C3-Fluoranthenes/Pyrenes	2.2	U	5.95	5.93
Benzo(a)anthracene	0.76 J	0.15 J	0.73 J	0.72 J
Chrysene	2.21	0.38 J	5.63	3.92
C1-Chrysenes	1.38 J	0.23 J	4.03	3.97
C2-Chrysenes	3.96	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.91 J	0.17 J	1.88	1.68
Benzo(k)fluoranthene	0.39 J	0.07 J	0.71 J	0.76 J
Benzo(e)pyrene	1.33 J	0.18 J	2.66	2.18
Benzo(a)pyrene	0.31 J	U	0.58 J	0.57 J
Perylene	3.86	0.44 J	6.23	4.4
Indeno(1,2,3-cd)pyrene	0.31 J	U	U	0.44 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.68 J	0.13 J	U	1.52
Total PAH	113.05	24.18	153.67	153.55
Surrogate Recoveries (%)				
Naphthalene-d8	62	63	74	52
Acenaphthene-d10	78	79	98	65
Phenanthrene-d10	80	79	101	62
Benzo(a)pyrene-d12	93	96	101	61

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR093-01-BC5	08-03-BR093-01-WC2	08-03-BR098-01-BC5	08-03-BR098-01-WC2
Batch ID	09-0043	09-0009	09-0008	09-0009
Battelle ID	Q5887-P1	Q5885-P	Q5890-P	Q5891-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/02/08	09/02/08	09/02/08
Extraction Date	03/19/09	02/11/09	02/04/09	02/11/09
Analysis Date	03/31/09	03/02/09	03/14/09	03/02/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	84.2	78.4	82.3	80
% Lipid	1.03	1.95	0.4	2.05
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.66	1.33	3.19	2.66
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	2.14 B	11.33	U	6.88
C1-Naphthalenes	0.89 J	8.88	U	6.32
C2-Naphthalenes	U	10.2	U	7.51
C3-Naphthalenes	U	7.89	U	6.36
C4-Naphthalenes	U	7.46	U	6.04
Acenaphthylene	U	0.18 J	U	0.17 J
Acenaphthene	U	0.48 J	U	0.34 J
Biphenyl	U	2.69	U	2.13
Fluorene	0.72 J	2.17	3.72	2.37
C1-Fluorenes	U	3.81	11.31	2.91
C2-Fluorenes	6.16	7.79	52.62	7.58
C3-Fluorenes	U	U	U	U
Anthracene	U	0.53 J	U	0.49 J
Phenanthrene	1.27 J	9.33	7.63 B	7.75
C1-Phenanthrenes/Anthracenes	U	13.68	8.75 B	12.71
C2-Phenanthrenes/Anthracenes	4.78	17.39	11.62 B	15.73
C3-Phenanthrenes/Anthracenes	1.64 J	9.9	4.71	10.81
C4-Phenanthrenes/Anthracenes	1.4 J	9.36	2.26	11.77
Dibenzothiophene	U	1.14 J	0.85 B	1.22
C1-Dibenzothiophenes	U	3.39	2.74 B	2.48
C2-Dibenzothiophenes	U	5.36	7.27	3.76
C3-Dibenzothiophenes	U	4.28	4.85	3.37
Fluoranthene	0.68 J	7.95	8.25	10.01
Pyrene	0.61 J	8.77	13.89	6.46
C1-Fluoranthenes/Pyrenes	U	9.3	3.1	9.33
C2-Fluoranthenes/Pyrenes	U	7.55	U	9
C3-Fluoranthenes/Pyrenes	U	5.87	U	6.51
Benzo(a)anthracene	U	1.39 J	0.36 J	1.31
Chrysene	0.77 J	6.48	1.03	7.43
C1-Chrysenes	0.65 J	4.85	0.49 J	4.77
C2-Chrysenes	2.76	U	0.78 J	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	2.78	0.69 J	2.36
Benzo(k)fluoranthene	U	1.37 J	0.59 J	1.2 J
Benzo(e)pyrene	0.73 J	3.96	0.83	3.92
Benzo(a)pyrene	U	0.91 J	0.17 J	0.73 J
Perylene	2.18	6.03	1.96	6.22
Indeno(1,2,3-cd)pyrene	U	U	U	1.21
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	2.44	0.6 J	0.98 J
Total PAH	27.38	206.89	151.07	190.14
Surrogate Recoveries (%)				
Naphthalene-d8	61	71	0 N	70
Acenaphthene-d10	72	90	8 N	90
Phenanthrene-d10	75	91	48	93
Benzo(a)pyrene-d12	82	81	23 N	84

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR099-01-AC	08-03-BR099-01-WC2	08-03-BR100-01-CC	08-03-BR100-01-WC2
Batch ID	09-0043	09-0009	09-0007	09-0009
Battelle ID	Q5869-P1	Q5873-P	Q5866-P	Q5867-P
Sample Type	SA	SA	SA	SA
Collection Date	09/03/08	09/03/08	09/03/08	09/03/08
Extraction Date	03/19/09	02/11/09	01/26/09	02/11/09
Analysis Date	03/31/09	03/01/09	02/26/09	03/17/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	78.3	81.4	71.7	79.6
% Lipid	4.04	1.82	3.97	1.32
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.11	1.84	5.73	2.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	18.42	6.54	2.47 B	10.3
C1-Naphthalenes	2.1	5.95	1.1 B	8.17
C2-Naphthalenes	3.72	7.6	10.22	10.12
C3-Naphthalenes	2.25	5.79	0.98	8.71
C4-Naphthalenes	1.86	6.24	U	8.27
Acenaphthylene	U	0.16 J	U	U
Acenaphthene	U	0.42 J	U	0.46 J
Biphenyl	U	2.4	0.33 J	2.27
Fluorene	1.02 J	2.76	0.31 J	2.78
C1-Fluorenes	U	3.21	0.51 J	1.06 J
C2-Fluorenes	U	6.03	U	7.63
C3-Fluorenes	U	U	U	U
Anthracene	U	0.29 J	U	U
Phenanthrene	1.05 J	9.91	1.17 B	11.92
C1-Phenanthrenes/Anthracenes	U	12.32	1.77	12.76
C2-Phenanthrenes/Anthracenes	2.94	14.47	2.73	18.57
C3-Phenanthrenes/Anthracenes	2.58	8.72	0.97	10.87
C4-Phenanthrenes/Anthracenes	2.43	8.66	0.64 J	11.18
Dibenzothiophene	U	1.35 J	0.2 J	2.14
C1-Dibenzothiophenes	U	2.64	0.46 J	2.92
C2-Dibenzothiophenes	U	4.33	1.03	5.91
C3-Dibenzothiophenes	U	3.96	0.88 J	5.18
Fluoranthene	0.64 J	10.54	1.05 B	9.9
Pyrene	0.91 J	7.96	1.77 B	7.81
C1-Fluoranthenes/Pyrenes	U	8.02	0.88 J	9.13
C2-Fluoranthenes/Pyrenes	U	6.47	U	8.66
C3-Fluoranthenes/Pyrenes	U	5.12	U	4.01
Benzo(a)anthracene	U	1.11 J	0.26 J	1.2
Chrysene	0.62 J	5.89	0.55 J	6.48
C1-Chrysenes	1.01 J	4.41	U	4.23
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	2.46	0.2 J	2.09
Benzo(k)fluoranthene	U	1.04 J	0.14 J	1.04 J
Benzo(e)pyrene	U	3	0.23 J	3.09
Benzo(a)pyrene	U	0.91 J	U	1.06 J
Perylene	U	5.8	0.48 J	51.43
Indeno(1,2,3-cd)pyrene	U	1.06 J	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	1.51	0.17 J	1.59
Total PAH	41.55	179.05	31.5	252.94
Surrogate Recoveries (%)				
Naphthalene-d8	58	76	61	40
Acenaphthene-d10	69	98	76	48
Phenanthrene-d10	74	101	77	52
Benzo(a)pyrene-d12	88	86	92	57

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	BF001, BF011, and BF021 composite	BF003, BF013, and BF023 composite	BF005, BF015, and BF025 composite	BF007 and BF017 composite
Batch ID	09-0010	09-0010	09-0010	09-0010
Battelle ID	Q6098-P	Q6099-P	Q6100-P	Q6101-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/02/08	09/18/08	09/12/08
Extraction Date	02/18/09	02/18/09	02/18/09	02/18/09
Analysis Date	03/06/09	03/06/09	03/06/09	03/06/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	95.3	94.7	94.4	95
% Lipid	0.16	0.36	0.19	0.16
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.85	2.08	1.70	1.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.84 B	8.76 B	5.02 B	7.3 B
C1-Naphthalenes	2.93 B	3.27 B	2.77 B	3.06 B
C2-Naphthalenes	5.26	4.18	4.16	4.29
C3-Naphthalenes	5	3.65	3.78	3.59
C4-Naphthalenes	5.29	3.29	3.82	3.59
Acenaphthylene	0.12 J	U	0.13 J	0.18 J
Acenaphthene	0.35 J	0.22 J	0.21 J	0.24 J
Biphenyl	1.22 J	1.18 J	1.16 J	1.31 J
Fluorene	1.43 B	1.32 B	1.3 J	1.19 J
C1-Fluorenes	7.05	5.66	2.94	3.7
C2-Fluorenes	6.6	7.26	5.08	5.62
C3-Fluorenes	U	U	U	U
Anthracene	0.56 J	0.37 J	0.41 J	0.33 J
Phenanthrene	9.84 B	6.28 B	6.96 B	6.43 B
C1-Phenanthrenes/Anthracenes	5.96	4.92	4.99	5.83
C2-Phenanthrenes/Anthracenes	6.72	6.42	6.6	7.89
C3-Phenanthrenes/Anthracenes	2.45	2.44	2.75	2.67
C4-Phenanthrenes/Anthracenes	1.31 J	1.42	1.2 J	1.39 J
Dibenzothiophene	0.96 J	0.82 J	0.81 J	0.73 J
C1-Dibenzothiophenes	2.18 B	1.92 B	1.93 B	1.91 B
C2-Dibenzothiophenes	4.32 B	4.05 B	4.06 B	4.18 B
C3-Dibenzothiophenes	3.01 B	2.99 B	2.75 B	3.11 B
Fluoranthene	2.87 B	2.45 B	3.81 B	2.89 B
Pyrene	3.26 B	3.81 B	4.45 B	4.22 B
C1-Fluoranthenes/Pyrenes	1.74	1.97	1.68	1.97
C2-Fluoranthenes/Pyrenes	1.07 J	1.75	1.57	1.43 J
C3-Fluoranthenes/Pyrenes	U	1.23 J	U	U
Benzo(a)anthracene	0.29 J	0.43 J	0.39 J	0.33 J
Chrysene	0.95 J	1.04 J	1.45 J	1.22 J
C1-Chrysenes	1.11 J	1.42	1.37 J	1.2 J
C2-Chrysenes	U	4.52	3.38	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.4 J	0.45 J	0.75 J	0.49 J
Benzo(k)fluoranthene	0.27 J	0.38 J	0.4 J	0.48 J
Benzo(e)pyrene	0.4 J	0.46 J	0.63 J	0.55 J
Benzo(a)pyrene	0.13 J	U	0.23 J	U
Perylene	0.8 J	1.14 J	1.38 J	1.44 J
Indeno(1,2,3-cd)pyrene	0.13 J	U	0.25 J	0.23 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.28 J	0.33 J	0.46 J	0.49 J
Total PAH	92.1	91.8	85.03	85.48
Surrogate Recoveries (%)				
Naphthalene-d8	50	52	47	46
Acenaphthene-d10	69	70	62	61
Phenanthrene-d10	73	71	66	63
Benzo(a)pyrene-d12	81	58	74	74

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019			
Client ID	composite	08-03-KD002-01-CC	08-03-KD002-01-WC2	08-03-KD005-01-BC5
Batch ID	09-0010	09-0007	09-0009	09-0008
Battelle ID	Q6102-P	Q5860-P	Q5857-P	Q5848-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/18/09	01/26/09	02/11/09	02/04/09
Analysis Date	03/06/09	02/26/09	03/01/09	02/28/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	94.2	72	81.82	82.26
% Lipid	0.21	3.73	1.56	1.98
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.75	5.79	1.63	0.64
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.84 B	2.4 B	6.93	10.52
C1-Naphthalenes	3.79 B	1.24 B	6.45	3.87 J
C2-Naphthalenes	5.79	18.67	8.7	6.03
C3-Naphthalenes	3.43	1	6.61	4.83
C4-Naphthalenes	3.17	U	7.83	5.18
Acenaphthylene	U	U	U	U
Acenaphthene	U	U	0.3 J	0.35 J
Biphenyl	1.08 J	0.34 J	2.2	1.75 J
Fluorene	1.16 J	0.46 J	1.83	1.9 J
C1-Fluorenes	3.79	0.57 J	2.39	3.27 J
C2-Fluorenes	5.23	U	6.63	15.34
C3-Fluorenes	U	U	U	U
Anthracene	0.28 J	U	0.29 J	0.27 J
Phenanthrene	4.72 B	1.15 B	7.68	10.54
C1-Phenanthrenes/Anthracenes	4.31	1.63	10.4	10.87 B
C2-Phenanthrenes/Anthracenes	6.18	2.9	19.05	12.94
C3-Phenanthrenes/Anthracenes	2.2	0.95	7.74	3.76 J
C4-Phenanthrenes/Anthracenes	1.2 J	0.69 J	6.76	1.99 J
Dibenzothiophene	0.48 J	0.19 J	1.12 J	1.12 J
C1-Dibenzothiophenes	1.42 J	0.49 J	2.53	4.72
C2-Dibenzothiophenes	4.24 B	1.09	3.59	6.65
C3-Dibenzothiophenes	2.99 B	0.81 J	3.1	4.23
Fluoranthene	2.09 B	0.96 B	4.45	9.07
Pyrene	3.16 B	1.6 B	5.57	14.26
C1-Fluoranthenes/Pyrenes	1.8	1.15	6.96	3.56 J
C2-Fluoranthenes/Pyrenes	1.08 J	U	6.14	2.35 J
C3-Fluoranthenes/Pyrenes	U	U	5.14	1.84 J
Benzo(a)anthracene	0.37 J	0.19 J	1.03 J	1.08 J
Chrysene	1.12 J	0.43 J	4.56	2.88 J
C1-Chrysenes	1.25 J	U	4.11	1.54 J
C2-Chrysenes	U	U	U	5.91
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.55 J	U	1.94	1.19 J
Benzo(k)fluoranthene	0.29 J	U	0.82 J	0.87 J
Benzo(e)pyrene	0.61 J	0.2 J	2.47	1.14 J
Benzo(a)pyrene	U	U	0.67 J	0.5 J
Perylene	1.36 J	0.49 J	8.76	1.91 J
Indeno(1,2,3-cd)pyrene	0.23 J	U	0.86 J	0.48 J
Dibenz(a,h)anthracene	U	U	0.76 J	0.49 J
Benzo(g,h,i)perylene	0.52 J	0.16 J	1.65	0.78 J
Total PAH	75.73	39.76	168.02	159.98
Surrogate Recoveries (%)				
Naphthalene-d8	53	60	64	64
Acenaphthene-d10	70	76	84	81
Phenanthrene-d10	74	78	87	83
Benzo(a)pyrene-d12	87	92	98	95

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-CC	08-03-KD005-01-WC2	08-03-KF001-01-AC	08-03-KF005-01-WC2
Batch ID	09-0007	09-0009	09-0006	09-0009
Battelle ID	Q5849-P	Q5845-P	Q5954-P	Q5831-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	08/21/08	08/31/08
Extraction Date	01/26/09	02/11/09	01/16/09	02/11/09
Analysis Date	02/26/09	03/01/09	02/21/09	03/01/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	69.5	81.4	75.3	76.5
% Lipid	4.67	2.02	7.38	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	6.27	1.69	1.50	2.69
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	2.39 B	18.52	14.88	6.92
C1-Naphthalenes	1.42 B	25.16	3.18 J	8.91
C2-Naphthalenes	30.1	24.85	3.16 J	12.37
C3-Naphthalenes	1.51	17.13	2.38 J	9.84
C4-Naphthalenes	1.02	13.13	2.31 J	8.21
Acenaphthylene	U	U	0.2 J	0.12 J
Acenaphthene	U	0.67 J	0.47 J	0.3 J
Biphenyl	0.4 J	2.81	1.41 J	2.22
Fluorene	0.68 J	3.85	3.24 J	2.05
C1-Fluorenes	0.72 J	4.19	7.03	2.63
C2-Fluorenes	U	10.01	4.21	8.22
C3-Fluorenes	U	U	U	U
Anthracene	U	0.25 J	0.22 J	0.44 J
Phenanthrene	1.21 B	15.12	4.96	8.74
C1-Phenanthrenes/Anthracenes	2	18.3	2.74 J	15.04
C2-Phenanthrenes/Anthracenes	3.02	25.33	5.33	17.81
C3-Phenanthrenes/Anthracenes	1.19	14.24	1.81 J	10.84
C4-Phenanthrenes/Anthracenes	0.99	11.56	1.14 J	10.84
Dibenzothiophene	0.2 J	2.81	0.77 J	0.94 J
C1-Dibenzothiophenes	0.65 J	4.41	1.49 J	2.93
C2-Dibenzothiophenes	1.06	5.66	2.23 J	3.99
C3-Dibenzothiophenes	0.9	4.92	2.01 J	3.16
Fluoranthene	0.99 B	8.39	2.78 J	6.73
Pyrene	1.59 B	6.74	4.49 B	5.83
C1-Fluoranthenes/Pyrenes	0.94	12.7	1.44 J	9.94
C2-Fluoranthenes/Pyrenes	U	13.11	1.04 J	16.16
C3-Fluoranthenes/Pyrenes	U	9.56	1.01 J	10.11
Benzo(a)anthracene	0.24 J	1.45 J	0.51 J	1.32
Chrysene	0.47 J	7.13	1.13 J	6.31
C1-Chrysenes	0.43 J	6.37	1.22 J	6.04
C2-Chrysenes	U	U	2.59 J	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.19 J	3.38	0.69 J	2.68
Benzo(k)fluoranthene	0.12 J	1.65 J	0.5 J	1.02 J
Benzo(e)pyrene	0.25 J	4.38	0.5 J	3.51
Benzo(a)pyrene	U	1.23 J	0.31 J	0.63 J
Perylene	0.58 J	11.55	0.25 J	10.23
Indeno(1,2,3-cd)pyrene	U	1.39 J	0.37 J	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.18 J	3.06	0.76 J	U
Total PAH	55.44	315.01	84.76	217.03
Surrogate Recoveries (%)				
Naphthalene-d8	63	66	51	65
Acenaphthene-d10	77	84	79	85
Phenanthrene-d10	77	87	85	89
Benzo(a)pyrene-d12	92	87	92	88

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF013-01-WC2	08-03-KF021-01-CC	08-03-KF023-01-CC	08-03-KF025-01-CC
Batch ID	09-0009	09-0007	09-0007	09-0007
Battelle ID	Q5961-P	Q5786-P	Q5670-P	Q5787-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/27/08	08/27/08	08/27/08
Extraction Date	02/11/09	01/26/09	01/26/09	01/26/09
Analysis Date	03/02/09	02/26/09	02/25/09	02/26/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	79.9	75.9	74.2	78.2
% Lipid	1.34	3.84	3.07	2.56
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.09	4.90	5.44	4.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	7.38	2.92 B	2.68 B	3.22 B
C1-Naphthalenes	5.82	1.51 B	1.26 B	1.47 B
C2-Naphthalenes	6.55	40.74	9.49	11.63
C3-Naphthalenes	4.86	1.68	1.05	1.23
C4-Naphthalenes	4.86 U	U	U	U
Acenaphthylene	0.12 J	U	U	U
Acenaphthene	0.37 J	U	U	U
Biphenyl	1.67	0.4 J	0.37 J	0.4 J
Fluorene	1.5	0.79 J	0.47 J	0.37 J
C1-Fluorenes	2.78	0.71 J	U	U
C2-Fluorenes	5.85	U	U	U
C3-Fluorenes	U	U	U	U
Anthracene	0.42 J	U	U	U
Phenanthrene	5.95	1.45 B	1.69 B	1.7 B
C1-Phenanthrenes/Anthracenes	7.99	2.25	2.09	2
C2-Phenanthrenes/Anthracenes	11.58	4.65	3.35	5.8
C3-Phenanthrenes/Anthracenes	6.34	1.22	1.09	1.16 J
C4-Phenanthrenes/Anthracenes	5.42	0.69 J	0.56 J	0.78 J
Dibenzothiophene	0.67 J	0.22 J	0.25 J	0.24 J
C1-Dibenzothiophenes	2.38	0.81 J	0.56 J	0.56 J
C2-Dibenzothiophenes	3.43	1.14	1.12	1.45
C3-Dibenzothiophenes	2.73	1.12	0.8 J	1.03 J
Fluoranthene	5.2	1.25	1.66	1.42
Pyrene	5.83	1.76 B	1.99 B	2.44
C1-Fluoranthenes/Pyrenes	5.43	1.26	1.04	1.15 J
C2-Fluoranthenes/Pyrenes	6.05	U	U	U
C3-Fluoranthenes/Pyrenes	4.98	U	U	U
Benzo(a)anthracene	0.77 J	0.28 J	0.32 J	0.34 J
Chrysene	4.47	0.58 J	0.79 J	0.73 J
C1-Chrysenes	3.37	0.58 J	0.56 J	0.54 J
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.9	0.28 J	0.33 J	0.26 J
Benzo(k)fluoranthene	1.02 J	0.2 J	0.16 J	0.22 J
Benzo(e)pyrene	2.87	0.25 J	0.31 J	0.36 J
Benzo(a)pyrene	0.54 J	U	0.09 J	0.12 J
Perylene	4.37	0.84 J	0.78 J	0.94 J
Indeno(1,2,3-cd)pyrene	0.95 J	U	U	0.14 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	1.74	0.24 J	0.24 J	0.23 J
Total PAH	138.16	69.82	35.1	41.93
Surrogate Recoveries (%)				
Naphthalene-d8	64	58	61	59
Acenaphthene-d10	82	75	77	73
Phenanthrene-d10	84	76	79	75
Benzo(a)pyrene-d12	76	91	94	89

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2	08-03-KR001-01-CC	08-03-KR007-01-BC5	08-03-KR008-01-BC5
Batch ID	09-0009	09-0007	09-0008	09-0008
Battelle ID	Q5805-P	Q5675-P	Q5689-P	Q5974-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	02/11/09	01/26/09	02/04/09	02/04/09
Analysis Date	03/01/09	02/25/09	02/27/09	02/28/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.3	73.2	85	82.3
% Lipid	1.57	3.46	2.33	1.52
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.26	5.48	0.36	1.49
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	5.35	2.78 B	17.56	4.52 B
C1-Naphthalenes	4.91	1.58 B	6.66 J	1.95 B
C2-Naphthalenes	6.35	22.37	9.02	2.86 B
C3-Naphthalenes	5.02	1.34	7.3 J	2.28 B
C4-Naphthalenes	5.05	1.56	8.93	2.1
Acenaphthylene	0.1 J	U	U	U
Acenaphthene	0.25 J	U	0.86 J	0.18 J
Biphenyl	1.99	0.43 J	3.06 J	0.77 J
Fluorene	1.79	0.65 J	3.02 J	0.89 J
C1-Fluorenes	2.1	U	8.81	1.35 J
C2-Fluorenes	5.14	U	14.88	5.87
C3-Fluorenes	U	U	U	U
Anthracene	0.23 J	U	U	U
Phenanthrene	6.16	1.62 B	16	3.58 B
C1-Phenanthrenes/Anthracenes	7.61	2.18	18.65	4.06 B
C2-Phenanthrenes/Anthracenes	11.92	3.88	25.97	6.44 B
C3-Phenanthrenes/Anthracenes	7.03	1.17	8.42	2.38 B
C4-Phenanthrenes/Anthracenes	6.34	0.6 J	4.94 J	1.26 J
Dibenzothiophene	1.03 J	0.23 J	1.72 J	0.43 J
C1-Dibenzothiophenes	1.83	0.7 J	7.71	1.73 J
C2-Dibenzothiophenes	3.01	1.62	13.18	2.9 B
C3-Dibenzothiophenes	2.3	1.03	11.28	2.27 B
Fluoranthene	4.83	1.5	14.53	3.52 B
Pyrene	4.19	2.18 B	25.13	5.73 B
C1-Fluoranthenes/Pyrenes	6.07	1.48	9.07	2 B
C2-Fluoranthenes/Pyrenes	6.01	U	6.33 J	1.39 J
C3-Fluoranthenes/Pyrenes	4.83	U	U	1.08 J
Benzo(a)anthracene	0.88 J	0.33 J	2.36 J	0.41 J
Chrysene	4.24	0.69 J	5.38 J	1.59 J
C1-Chrysenes	3.45	0.48 J	3.27 J	0.9 J
C2-Chrysenes	U	U	U	2.07
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.64	0.29 J	1.47 J	0.57 J
Benzo(k)fluoranthene	0.71 J	0.19 J	0.89 J	0.27 J
Benzo(e)pyrene	2.12	0.35 J	1.52 J	0.65 J
Benzo(a)pyrene	0.8 J	0.12 J	0.47 J	0.17 J
Perylene	9.41	0.68 J	2.63 J	1.83
Indeno(1,2,3-cd)pyrene	U	0.11 J	U	0.21 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	0.25 J	1.36 J	0.36 J
Total PAH	134.69	52.39	262.38	70.57
Surrogate Recoveries (%)				
Naphthalene-d8	53	62	67	67
Acenaphthene-d10	67	75	85	82
Phenanthrene-d10	69	76	85	83
Benzo(a)pyrene-d12	73	89	101	98

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR008-01-CC	08-03-KR009-01-BC5	08-03-KR009-01-WC2	08-03-KR016-01-CC
Batch ID	09-0007	09-0008	09-0009	09-0007
Battelle ID	Q5976-P	Q5981-P	Q5980-P	Q5683-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/30/08
Extraction Date	01/26/09	02/04/09	02/11/09	01/26/09
Analysis Date	02/26/09	02/28/09	03/02/09	02/25/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	73.9	83.54	79.5	74.6
% Lipid	2.35	1.2	1.46	2.23
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.47	1.04	1.46	5.24
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	2.25 B	6.24 B	5.99	2.24 B
C1-Naphthalenes	0.95 J	2.51 J	6.59	1.27 B
C2-Naphthalenes	10.55	3.1	10.13	27.82
C3-Naphthalenes	0.94 J	3.32	8.49	1.2
C4-Naphthalenes	U	2.88	7.58	U
Acenaphthylene	U	U	0.18 J	U
Acenaphthene	U	0.24 J	0.39 J	U
Biphenyl	0.35 J	1.13 J	2.19	0.34 J
Fluorene	0.38 J	1.26 J	1.79 J	0.62 J
C1-Fluorenes	U	2.15 J	3.03	U
C2-Fluorenes	U	8.96	U	U
C3-Fluorenes	U	U	U	U
Anthracene	U	0.13 J	U	U
Phenanthrene	1.23 B	6.37 B	7.35	0.91 J
C1-Phenanthrenes/Anthracenes	1.59	7.53 B	11.69	1.24
C2-Phenanthrenes/Anthracenes	3.53	11.25 B	15.62	2.99
C3-Phenanthrenes/Anthracenes	1.07	3.47	7.48	0.72 J
C4-Phenanthrenes/Anthracenes	0.67 J	1.89 J	6.26	0.61 J
Dibenzothiophene	0.21 J	0.79 J	0.92 J	U
C1-Dibenzothiophenes	0.52 J	2.72 B	2.93	U
C2-Dibenzothiophenes	1.05	4.67 B	3.83	U
C3-Dibenzothiophenes	0.8 J	3.89 B	2.63	U
Fluoranthene	1.15 B	5.67 B	5.56	0.55 J
Pyrene	1.89 B	9.99 B	4.3	0.75 J
C1-Fluoranthenes/Pyrenes	0.92 J	2.87	6.4	U
C2-Fluoranthenes/Pyrenes	U	2.06 J	6.51	U
C3-Fluoranthenes/Pyrenes	U	1.74 J	5.83	U
Benzo(a)anthracene	0.22 J	0.66 J	0.78 J	U
Chrysene	0.52 J	2.19 J	5.27	0.38 J
C1-Chrysenes	U	1.05 J	4.12	U
C2-Chrysenes	U	2.27 J	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	0.53 J	3.3	0.17 J
Benzo(k)fluoranthene	U	0.49 J	1.22 J	U
Benzo(e)pyrene	0.22 J	0.56 J	4.24	0.23 J
Benzo(a)pyrene	U	U	1.04 J	U
Perylene	0.44 J	1.19 J	4.46	0.52 J
Indeno(1,2,3-cd)pyrene	U	0.19 J	1.79 J	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.14 J	0.46 J	3.06	0.17 J
Total PAH	31.59	106.42	162.95	42.73
Surrogate Recoveries (%)				
Naphthalene-d8	57	69	72	56
Acenaphthene-d10	69	85	89	72
Phenanthrene-d10	70	87	90	75
Benzo(a)pyrene-d12	81	100	62	89

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-BC5	08-03-KR019-01-CC	08-03-KR019-02-WC2	08-03-KR034-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5990-P	Q5823-P	Q5987-P	Q5968-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/28/09	02/26/09	03/02/09	03/02/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	87.72	77.8	78.72	82.35
% Lipid	0.86	2.07	0.99	1.33
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	0.51	4.64	1.37	1.01
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	13.91	2.59 B	5.44	8.27
C1-Naphthalenes	5.56	1.06 J	6.42	6.74
C2-Naphthalenes	8.47	8.72	9.55	11.63
C3-Naphthalenes	7.46	0.7 J	6.2	8.84
C4-Naphthalenes	10.04	U	5.03	8.3
Acenaphthylene	U	U	U	U
Acenaphthene	0.95 J	U	0.29 J	0.46 J
Biphenyl	2.49 J	0.38 J	1.85 J	2.39 J
Fluorene	3.05 J	0.36 J	1.49 J	2.2 J
C1-Fluorenes	5.94	U	2.13	3.66
C2-Fluorenes	16.43	U	U	9.35
C3-Fluorenes	U	U	U	U
Anthracene	0.66 J	U	0.25 J	0.44 J
Phenanthrene	16.74	1.41 B	6.71	8.95
C1-Phenanthrenes/Anthracenes	19.16	1.46	8.41	14.23
C2-Phenanthrenes/Anthracenes	25.18	4.13	12.75	20.77
C3-Phenanthrenes/Anthracenes	8.27	1.2	5.64	8.77
C4-Phenanthrenes/Anthracenes	4.89 J	0.79 J	5.55	9
Dibenzothiophene	1.97 J	0.18 J	0.92 J	1.13 J
C1-Dibenzothiophenes	8.01	0.43 J	2.04	4.33
C2-Dibenzothiophenes	13.2	1.09 J	3.23	6.3
C3-Dibenzothiophenes	9.28	0.85 J	2.94	3.8
Fluoranthene	16.24	1.02 J	2.82	7.7
Pyrene	28.68	1.47 B	4.06	8.06
C1-Fluoranthenes/Pyrenes	7.11	0.86 J	5.22	7.62
C2-Fluoranthenes/Pyrenes	4.83 J	U	7.11	8.17
C3-Fluoranthenes/Pyrenes	U	U	5.54	6.12
Benzo(a)anthracene	1.8 J	0.16 J	0.6 J	1.1 J
Chrysene	5.04 J	0.45 J	3.59	6.6
C1-Chrysenes	2.35 J	U	3.7	5.11
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	1.63 J	0.19 J	1.76 J	2.44 J
Benzo(k)fluoranthene	0.98 J	0.14 J	1.1 J	1.21 J
Benzo(e)pyrene	1.32 J	0.2 J	2.28	3.04
Benzo(a)pyrene	U	U	0.54 J	0.86 J
Perylene	2.38 J	0.49 J	5.26	7.73
Indeno(1,2,3-cd)pyrene	0.54 J	U	1.14 J	1.23 J
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	0.99 J	0.19 J	1.9 J	2.34 J
Total PAH	255.55	30.52	133.46	208.89
Surrogate Recoveries (%)				
Naphthalene-d8	52	60	75	67
Acenaphthene-d10	63	72	94	83
Phenanthrene-d10	64	73	98	85
Benzo(a)pyrene-d12	72	86	110	101

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR045-01-WC2	08-03-KR095-01-BC2	KF001 and KF021 composite	KF003, KF013 and KF023 composite
Batch ID	09-0009	09-0008	09-0010	09-0010
Battelle ID	Q5972-P	Q5815-P	Q6103-P	Q6104-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/29/08	08/21/08	08/23/08
Extraction Date	02/11/09	02/04/09	02/18/09	02/18/09
Analysis Date	03/02/09	02/28/09	03/06/09	03/06/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.4	80	94.95	94
% Lipid	1.62	2.56	0.71	0.53
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.69	0.56	0.43	0.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	6.43	15.56	37.03	9.32 B
C1-Naphthalenes	5.9	11.77	9.96	4.27 B
C2-Naphthalenes	8.33	23.24	15.11	5.69
C3-Naphthalenes	6.63	15.32	11.68	4.43
C4-Naphthalenes	6.82	13.89	12.34	4.49
Acenaphthylene	U	U	0.5 J	0.18 J
Acenaphthene	0.26 J	0.96 J	0.73 J	0.44 J
Biphenyl	2	4.01 J	4.26 J	1.94 J
Fluorene	1.73	4.1 J	4.46 J	1.75 J
C1-Fluorenes	2.59	7.03	11.27	4.46
C2-Fluorenes	5.94	16.11	29.18	9.21
C3-Fluorenes	U	U	U	U
Anthracene	0.23 J	0.66 J	0.51 J	U
Phenanthrene	7	21.29	21.81	10.9
C1-Phenanthrenes/Anthracenes	9.68	27.71	20.24	11.22
C2-Phenanthrenes/Anthracenes	14.08	35.21	26.85	10.75
C3-Phenanthrenes/Anthracenes	7.73	14.29	13.37	4.8
C4-Phenanthrenes/Anthracenes	6.9	9.04	7.96	2.29 J
Dibenzothiophene	1.02 J	2.5 J	4.4 J	2.65 J
C1-Dibenzothiophenes	2.41	9.47	9.33	6.03
C2-Dibenzothiophenes	3.96	13.75	15.82	7.58 B
C3-Dibenzothiophenes	3.19	8.87	17.55	5.5 B
Fluoranthene	5.09	15.34	12.04	5.03 B
Pyrene	5.58	22.54	17.49 B	7.81 B
C1-Fluoranthenes/Pyrenes	5.87	11.58	8.15	3.03
C2-Fluoranthenes/Pyrenes	6.12	8.13	6.75	2.53 J
C3-Fluoranthenes/Pyrenes	4.94	5.96	7.26	U
Benzo(a)anthracene	0.8 J	2 J	1.54 J	0.61 J
Chrysene	5.63	7.02	4.9 J	1.98 J
C1-Chrysenes	3.55	4.1 J	4.98 J	2.18 J
C2-Chrysenes	U	7.33	8.58	4.44
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	2.93	2.38 J	2.85 J	0.97 J
Benzo(k)fluoranthene	1.15 J	1.17 J	2.12 J	0.56 J
Benzo(e)pyrene	3.64	2.33 J	2.27 J	0.97 J
Benzo(a)pyrene	0.77 J	0.57 J	0.66 J	U
Perylene	4.39	6.68	2.97 J	1.5 J
Indeno(1,2,3-cd)pyrene	1.31 J	0.87 J	1.26 J	U
Dibenz(a,h)anthracene	U	0.31 J	U	U
Benzo(g,h,i)perylene	2.55	1.71 J	2.34 J	0.63 J
Total PAH	157.15	354.8	360.52	140.14
Surrogate Recoveries (%)				
Naphthalene-d8	70	66	57	62
Acenaphthene-d10	90	83	73	81
Phenanthrene-d10	93	83	76	83
Benzo(a)pyrene-d12	68	101	83	87

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	KF005, KF015 and KF025 composite		KF007 and KF017 composite		KF009 and KF019 composite	
Client ID						
Batch ID	09-0010		09-0010		09-0010	
Battelle ID	Q6105-P		Q6106-P		Q6107-P	
Sample Type	SA		SA		SA	
Collection Date	08/27/08		08/22/08		08/23/08	
Extraction Date	02/18/09		02/18/09		02/18/09	
Analysis Date	03/06/09		03/06/09		03/07/09	
Analytical Instrument	MS		MS		MS	
% Moisture	95.2		95.19		97	
% Lipid	0.34		0.67		0.5	
Matrix	TISSUE		TISSUE		TISSUE	
Sample Size	0.46		0.48		0.35	
Size Unit-Basis	G_DRY		G_DRY		G_DRY	
Units	UG/KG_DRY		UG/KG_DRY		UG/KG_DRY	
Naphthalene	13.43	B	17.95		23.09	
C1-Naphthalenes	8.41		8.81		11.17	
C2-Naphthalenes	13.24		12.14		14.88	
C3-Naphthalenes	7.94		8.41		10.78	
C4-Naphthalenes	7.72		8.68		11	
Acenaphthylene	U		U		0.54	J
Acenaphthene	U		0.49	J	1.58	J
Biphenyl	3.36	J	3.58	J	5.79	J
Fluorene	2.89	J	3.66	J	5.56	J
C1-Fluorenes	15.1		8.26		10.34	
C2-Fluorenes	12.03		15.22		19.78	
C3-Fluorenes	U		U		U	
Anthracene	U		U		U	
Phenanthrene	12.07		13.69		23.88	
C1-Phenanthrenes/Anthracenes	14.8		14.57		22.3	
C2-Phenanthrenes/Anthracenes	18.07		20.41		24.72	
C3-Phenanthrenes/Anthracenes	6.28		10.86		10.56	
C4-Phenanthrenes/Anthracenes	2.23	J	4.54	J	7.08	J
Dibenzothiophene	3.05	J	4.22	J	5.77	J
C1-Dibenzothiophenes	6.25		8.08		11.73	
C2-Dibenzothiophenes	9.44	B	9.53	B	14.43	
C3-Dibenzothiophenes	6.61		8.43		12.55	
Fluoranthene	5.51	J	5.81	B	10.45	B
Pyrene	9.52	B	7.93	B	19.03	
C1-Fluoranthenes/Pyrenes	5.53	J	4.63	J	7.52	J
C2-Fluoranthenes/Pyrenes	3.97	J	3.22	J	7.09	J
C3-Fluoranthenes/Pyrenes	U		U		6.46	J
Benzo(a)anthracene	0.66	J	0.91	J	1.68	J
Chrysene	3.02	J	2.31	J	5.7	J
C1-Chrysenes	3.36	J	2.57	J	4.3	J
C2-Chrysenes	6.36		6		11.9	
C3-Chrysenes	U		U		U	
C4-Chrysenes	U		U		U	
Benzo(b)fluoranthene	1.47	J	0.93	J	2.16	J
Benzo(k)fluoranthene	U		2.89	J	1.31	J
Benzo(e)pyrene	1.15	J	0.9	J	1.91	J
Benzo(a)pyrene	U		U		U	
Perylene	1.69	J	1.14	J	3.08	J
Indeno(1,2,3-cd)pyrene	0.46	J	0.63	J	1.38	J
Dibenz(a,h)anthracene	U		U		U	
Benzo(g,h,i)perylene	1.07	J	0.77	J	2.18	J
Total PAH	206.69		222.17		333.68	
Surrogate Recoveries (%)						
Naphthalene-d8	54		59		55	
Acenaphthene-d10	70		74		71	
Phenanthrene-d10	72		75		73	
Benzo(a)pyrene-d12	86		88		84	

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD001-01-BC2	08-03-BD001-01-BC5	08-03-BD004-01-AC	08-03-BD004-01-CC
Batch ID	09-0006	09-0006	09-0006	09-0007
Battelle ID	Q5996-P	Q5999-P	Q5750-P	Q5747-P
Sample Type	SA	SA	SA	SA
Collection Date	09/21/08	09/21/08	09/21/08	09/21/08
Extraction Date	01/16/09	01/16/09	01/16/09	01/26/09
Analysis Date	01/28/09	01/28/09	01/27/09	02/06/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.8	82.8	74.5	75
% Lipid	3.36	1.39	3.64	1.71
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.53	0.99	5.27	1.05
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.59 J	U	0.19 J	U
13b(H),17a(H)-20R-Diacholestane	U	U	0.1 J	U
14a(H),17a(H)-20R-methylcholestane	U	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	1.24 J	U	0.41 J	1.06 J
C23 Tricyclic Terpane	U	U	0.16 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	U
30-Norhopane	2.46 J	U	0.83 J	1.26 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	4.51 J	U	1.12 J	2.74 J
30-Homohopane -22S	U	U	0.62 J	U
30-Homohopane -22R	U	U	1.05 J	U
Surrogate Recoveries (%)				
5b(H)-Cholane	86	80	94	90

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-AC	08-03-BF001-01-BC5	08-03-BF003-01-BC5	08-03-BF003-01-WC2
Batch ID	09-0006	09-0006	09-0006	09-0009
Battelle ID	Q5925-P	Q5904-P	Q5882-P	Q5881-P
Sample Type	SA	SA	SA	SA
Collection Date	09/15/08	09/16/08	09/02/08	09/02/08
Extraction Date	01/16/09	01/16/09	01/16/09	02/11/09
Analysis Date	01/28/09	01/27/09	01/27/09	02/22/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	75.2	83.3	81.2	81.3
% Lipid	4.64	1.02	1.55	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.08	3.41	2.92	2.38
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.72 J	0.21 J	U	0.43 J
13b(H),17a(H)-20R-Diacholestane	0.45 J	U	U	0.32 J
14a(H),17a(H)-20R-methylcholestane	U	U	U	0.43 J
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	0.5 J
14a(H),17a(H)-20R-Ethylcholestane	0.55 J	0.32 J	0.39 J	2.95 J
C23 Tricyclic Terpane	0.15 J	U	U	0.41 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	1.25 J
30-Norhopane	0.78 J	U	U	3.01 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.97 J	1.16 J	U	3.77 J
30-Homohopane -22S	0.56 J	U	U	2.55 J
30-Homohopane -22R	1.25 J	0.9 J	U	4.52 J
Surrogate Recoveries (%)				
5b(H)-Cholane	74	98	90	100

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-BC5	08-03-BF005-01-CC	08-03-BF007-01-BC5	08-03-BF011-01-AC
Batch ID	09-0006	09-0007	09-0008	09-0006
Battelle ID	Q5724-P	Q5725-P	Q5901-P	Q5919-P
Sample Type	SA	SA	SA	SA
Collection Date	09/20/08	09/20/08	09/16/08	09/14/08
Extraction Date	01/16/09	01/26/09	02/04/09	01/16/09
Analysis Date	01/27/09	02/06/09	02/14/09	01/27/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	83.3	69.9	83.1	73.6
% Lipid	1.23	3.54	1.23	6.72
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.42	6.13	3.51	5.38
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.18 J	0.11 J	0.2 J	0.21 J
13b(H),17a(H)-20R-Diacholestane	U	0.07 J	U	U
14a(H),17a(H)-20R-methylcholestane	U	0.15 J	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	0.2 J	U	U
14a(H),17a(H)-20R-Ethylcholestane	U	0.51 J	U	0.21 J
C23 Tricyclic Terpane	0.28 J	0.09 J	U	0.27 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	U
30-Norhopane	U	0.67 J	0.81 J	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.88 J	1.11 J	1.1 J	0.97 J
30-Homohopane -22S	U	0.67 J	1.09 J	U
30-Homohopane -22R	U	1.06 J	0.94 J	U
Surrogate Recoveries (%)				
5b(H)-Cholane	97	91	69	75

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-BC5	08-03-BF011-01-CC	08-03-BF013-01-AC	08-03-BF013-01-CC
Batch ID	09-0008	09-0007	09-0006	09-0007
Battelle ID	Q6033-P	Q6032-P	Q5752-P	Q5911-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/13/08	09/17/08	09/16/08
Extraction Date	02/04/09	01/26/09	01/16/09	01/26/09
Analysis Date	02/15/09	02/07/09	01/27/09	02/07/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	82.1	68.2	75.5	70.4
% Lipid	1.39	3.23	4.39	3.37
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.16	6.46	5.00	4.60
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.2 J	0.12 J	0.14 J	U
13b(H),17a(H)-20R-Diacholestane	U	U	0.15 J	U
14a(H),17a(H)-20R-methylcholestane	U	0.15 J	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	0.12 J	U	U
14a(H),17a(H)-20R-Ethylcholestane	0.31 J	0.28 J	0.33 J	0.45 J
C23 Tricyclic Terpane	U	U	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	U
30-Norhopane	U	0.67 J	0.55 J	1.03 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.93 J	1.14 J	1.06 J	1.64 J
30-Homohopane -22S	1.61 J	0.91 J	U	U
30-Homohopane -22R	1.4 J	1.68 J	U	1.29 J
Surrogate Recoveries (%)				
5b(H)-Cholane	76	83	89	91

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF013-02-AC	08-03-BF013-03-AC	08-03-BF015-01-BC2	08-03-BF015-01-BC5
Batch ID	09-0006	09-0006	09-0006	09-0006
Battelle ID	Q5753-P	Q5754-P	Q5719-P	Q5718-P
Sample Type	SA	SA	SA	SA
Collection Date	09/17/08	09/17/08	09/19/08	09/19/08
Extraction Date	01/16/09	01/16/09	01/16/09	01/16/09
Analysis Date	01/27/09	01/27/09	01/27/09	01/27/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	74.5	74.3	78.1	82.7
% Lipid	4.44	4.32	4.41	1.31
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.22	5.23	2.10	2.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	U	1.01 J	0.45 J	U
13b(H),17a(H)-20R-Diacholestane	U	0.52 J	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	0.67 J	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	0.34 J	0.47 J	1.61 J	U
C23 Tricyclic Terpane	U	U	0.54 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	1.25 J	U
30-Norhopane	U	U	2.04 J	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.68 J	0.73 J	3.68 J	U
30-Homohopane -22S	U	U	2.21 J	U
30-Homohopane -22R	U	U	2.93 J	U
Surrogate Recoveries (%)				
5b(H)-Cholane	77	74	97	97

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF017-01-BC5	08-03-BF017-01-WC2	08-03-BF021-01-WC2	08-03-BF023-01-CC
Batch ID	09-0008	09-0009	09-0009	09-0007
Battelle ID	Q6017-P	Q6021-P	Q6024-P	Q5759-P
Sample Type	SA	SA	SA	SA
Collection Date	09/12/08	09/12/08	09/13/08	09/17/08
Extraction Date	02/04/09	02/11/09	02/11/09	01/26/09
Analysis Date	02/15/09	02/22/09	02/22/09	02/06/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.7	78.69	86.9	73
% Lipid	1.73	1.75	2.69	3.97
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.92	1.27	0.98	5.63
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.18 J	0.7 J	0.93 J	0.13 J
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	0.85 J	U
14a(H),17a(H)-20R-Ethylcholestane	0.27 J	2.45 J	2.68 J	0.35 J
C23 Tricyclic Terpane	U	0.67 J	0.99 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	41.6	U
30-Norhopane	0.41 J	4.29 J	4.27 J	0.79 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.87 J	7.2 J	8.26 J	0.97 J
30-Homohopane -22S	0.95 J	4.11 J	6.19 J	0.66 J
30-Homohopane -22R	0.89 J	6.08 J	9.43 J	1.01 J
Surrogate Recoveries (%)				
5b(H)-Cholane	78	105	88	84

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF025-01-BC2	08-03-BF025-01-CC	08-03-BR005-01-BC5	08-03-BR038-01-AC
Batch ID	09-0008	09-0007	09-0008	09-0006
Battelle ID	Q5763-P	Q5761-P	Q5745-P	Q5720-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/21/08	09/19/08
Extraction Date	02/04/09	01/26/09	02/04/09	01/16/09
Analysis Date	02/14/09	02/07/09	02/14/09	01/27/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	79	72.6	80.6	76
% Lipid	3.53	3.4	1.73	4.5
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.33	5.52	4.21	4.82
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.38 J	0.24 J	U	U
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	0.46 J	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	0.15 J	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	1.19 J	0.3 J	U	U
C23 Tricyclic Terpane	0.17 J	U	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.07 J	U	U	U
30-Norhopane	1.75 J	0.58 J	U	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.78 J	0.98 J	0.72 J	U
30-Homohopane -22S	1.37 J	0.74 J	U	U
30-Homohopane -22R	2.95 J	0.87 J	U	U
Surrogate Recoveries (%)				
5b(H)-Cholane	80	81	63	95

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR038-01-BC2	08-03-BR038-01-BC5	08-03-BR043-01-CC	08-03-BR080-01-AC
Batch ID	09-0008	09-0008	09-0007	09-0006
Battelle ID	Q5767-P	Q5768-P	Q6026-P	Q5736-P
Sample Type	SA	SA	SA	SA
Collection Date	09/18/08	09/18/08	09/14/08	09/20/08
Extraction Date	02/04/09	02/04/09	01/26/09	01/16/09
Analysis Date	02/14/09	02/14/09	02/07/09	01/27/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.6	81	71.9	74.9
% Lipid	3.41	1.33	3.17	4.68
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.50	1.95	5.70	5.07
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.43 J	U	0.21 J	0.17 J
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	0.12 J	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	1.45 J	U	0.39 J	0.76 J
C23 Tricyclic Terpane	U	0.45 J	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.73 J	U	0.5 J	U
30-Norhopane	2.27 J	U	0.9 J	0.75 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.78 J	1.31 J	1.21 J	1.39 J
30-Homohopane -22S	2.26 J	U	0.87 J	0.59 J
30-Homohopane -22R	3.42 J	U	1.63 J	0.93 J
Surrogate Recoveries (%)				
5b(H)-Cholane	78	78	88	90

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR080-01-BC5	08-03-BR080-01-CC	08-03-BR086-01-WC2	08-03-BR087-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5722-P	Q5721-P	Q5878-P	Q5863-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/19/08	09/02/08	09/02/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/14/09	02/06/09	02/21/09	02/21/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	83	71.6	78.1	79.5
% Lipid	0.94	3.42	1.86	1.73
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.23	5.82	2.31	2.32
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	U	0.16 J	0.44 J	0.33 J
13b(H),17a(H)-20R-Diacholestane	U	U	U	0.3 J
14a(H),17a(H)-20R-methylcholestane	U	U	0.57 J	0.48 J
14a(H),17a(H)-20S-Ethylcholestane	U	U	0.57 J	0.53 J
14a(H),17a(H)-20R-Ethylcholestane	U	0.46 J	1.13 J	1.73 J
C23 Tricyclic Terpane	U	U	0.56 J	0.59 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	1.54 J	U
30-Norhopane	U	0.65 J	1.83 J	2.24 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	U	1.05 J	3.03 J	4.03 J
30-Homohopane -22S	4.17 J	0.39 J	1.45 J	U
30-Homohopane -22R	U	1.01 J	3.33 J	3.09 J
Surrogate Recoveries (%)				
5b(H)-Cholane	80	87	103	101

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR093-01-BC5	08-03-BR093-01-WC2	08-03-BR098-01-BC5	08-03-BR098-01-WC2
Batch ID	09-0008	09-0009	09-0008	09-0009
Battelle ID	Q5887-P	Q5885-P	Q5890-P	Q5891-P
Sample Type	SA	SA	SA	SA
Collection Date	09/02/08	09/02/08	09/02/08	09/02/08
Extraction Date	02/04/09	02/11/09	02/04/09	02/11/09
Analysis Date	02/14/09	02/22/09	02/14/09	02/22/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	84.2	78.4	82.3	80
% Lipid	1.04	1.95	0.4	2.05
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	3.27	1.33	3.19	2.66
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.28 J	0.7 J	U	0.35 J
13b(H),17a(H)-20R-Diacholestane	U	U	U	0.25 J
14a(H),17a(H)-20R-methylcholestane	U	U	U	0.34 J
14a(H),17a(H)-20S-Ethylcholestane	U	0.74 J	U	0.35 J
14a(H),17a(H)-20R-Ethylcholestane	U	1.93 J	U	2.14 J
C23 Tricyclic Terpane	U	0.73 J	U	0.62 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	1.69 J	U	1.03 J
30-Norhopane	U	3.52 J	U	2.37 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	0.85 J	4.33 J	U	3.25 J
30-Homohopane -22S	3.08 J	3.6 J	U	2.23 J
30-Homohopane -22R	1.04 J	4.69 J	U	3.75 J
Surrogate Recoveries (%)				
5b(H)-Cholane	69	111	22 N	110

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR099-01-AC	08-03-BR099-01-WC2	08-03-BR100-01-CC	08-03-BR100-01-WC2
Batch ID	09-0006	09-0009	09-0007	09-0009
Battelle ID	Q5869-P	Q5873-P	Q5866-P	Q5867-P
Sample Type	SA	SA	SA	SA
Collection Date	09/03/08	09/03/08	09/03/08	09/03/08
Extraction Date	01/16/09	02/11/09	01/26/09	02/11/09
Analysis Date	01/27/09	02/21/09	02/07/09	02/21/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	78.3	81.4	71.7	79.6
% Lipid	4.18	1.82	3.97	1.32
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.44	1.84	5.73	2.29
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.37 J	0.48 J	0.17 J	0.69 J
13b(H),17a(H)-20R-Diacholestane	0.29 J	U	U	0.33 J
14a(H),17a(H)-20R-methylcholestane	U	U	U	0.56 J
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	0.41 J
14a(H),17a(H)-20R-Ethylcholestane	0.53 J	2.44 J	0.48 J	2.84 J
C23 Tricyclic Terpane	0.37 J	0.76 J	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	1.71 J
30-Norhopane	1.11 J	2.68 J	0.8 J	3.59 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	1.24 J	3.94 J	1.17 J	4.67 J
30-Homohopane -22S	U	2.88 J	1.12 J	1.74 J
30-Homohopane -22R	U	3.8 J	1.38 J	4.41 J
Surrogate Recoveries (%)				
5b(H)-Cholane	75	101	79	56

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF001, BF011, and	BF003, BF013, and	BF005, BF015, and	BF007 and BF017
Client ID	BF021 composite	BF023 composite	BF025 composite	composite
Batch ID	09-0010	09-0010	09-0010	09-0010
Battelle ID	Q6098-P	Q6099-P	Q6100-P	Q6101-P
Sample Type	SA	SA	SA	SA
Collection Date	09/13/08	09/02/08	09/18/08	09/12/08
Extraction Date	02/18/09	02/18/09	02/18/09	02/18/09
Analysis Date	03/04/09	03/04/09	03/04/09	03/04/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	95.3	94.7	94.4	95
% Lipid	0.16	0.36	0.19	0.16
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.85	2.08	1.70	1.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.91 J	3.04 J	0.96 J	1.5 J
13b(H),17a(H)-20R-Diacholestane	0.56 J	1.97 J	0.75 J	0.76 J
14a(H),17a(H)-20R-methylcholestane	0.73 J	1.79 J	0.85 J	0.95 J
14a(H),17a(H)-20S-Ethylcholestane	0.74 J	1.87 J	0.81 J	0.67 J
14a(H),17a(H)-20R-Ethylcholestane	1.53 J	3.24 J	1.52 J	1.47 J
C23 Tricyclic Terpane	0.77 J	1.08 J	0.81 J	0.98 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	0.85 J	2.24 J	1.27 J	1.06 J
17a(H)-22,29,30-Trisnorhopane -TM	U	1.98 J	1.18 J	U
30-Norhopane	2.39 J	5.55 J	4.92 J	3.75 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	4.41 J	9.61 J	5.83 J	4.27 J
30-Homohopane -22S	1.78 J	4.6 J	3.48 J	2.94 J
30-Homohopane -22R	1.24 J	3.51 J	1.94 J	2.42 J
Surrogate Recoveries (%)				
5b(H)-Cholane	80	89	80	79

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019			
Client ID	composite	08-03-KD002-01-CC	08-03-KD002-01-WC2	08-03-KD005-01-BC5
Batch ID	09-0010	09-0007	09-0009	09-0008
Battelle ID	Q6102-P	Q5860-P	Q5857-P	Q5848-P
Sample Type	SA	SA	SA	SA
Collection Date	09/19/08	09/01/08	09/01/08	09/01/08
Extraction Date	02/18/09	01/26/09	02/11/09	02/04/09
Analysis Date	03/04/09	02/07/09	02/21/09	02/14/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	94.2	72	81.82	82.26
% Lipid	0.21	3.73	1.56	1.98
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.75	5.79	1.63	0.64
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.67 J	0.16 J	0.73 J	U
13b(H),17a(H)-20R-Diacholestane	0.5 J	0.1 J	0.32 J	U
14a(H),17a(H)-20R-methylcholestane	0.57 J	0.17 J	U	U
14a(H),17a(H)-20S-Ethylcholestane	0.46 J	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	1.13 J	0.53 J	1.79 J	U
C23 Tricyclic Terpane	0.57 J	U	0.51 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	0.5 J	U	U
30-Norhopane	2.29 J	0.81 J	2.8 J	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.3 J	1.19 J	3.52 J	U
30-Homohopane -22S	1.6 J	0.58 J	3.48 J	U
30-Homohopane -22R	1.96 J	1.17 J	5.4 J	U
Surrogate Recoveries (%)				
5b(H)-Cholane	76	92	104	81

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KD005-01-CC	08-03-KD005-01-WC2	08-03-KF001-01-AC	08-03-KF005-01-WC2
Batch ID	09-0007	09-0009	09-0006	09-0009
Battelle ID	Q5849-P	Q5845-P	Q5954-P	Q5831-P
Sample Type	SA	SA	SA	SA
Collection Date	09/01/08	09/01/08	08/21/08	08/31/08
Extraction Date	01/26/09	02/11/09	01/16/09	02/11/09
Analysis Date	02/07/09	02/21/09	01/28/09	02/21/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	69.5	81.4	75.3	76.5
% Lipid	4.67	2.02	7.38	1.82
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	6.27	1.69	1.50	2.69
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.13 J	0.83 J	0.83 J	0.43 J
13b(H),17a(H)-20R-Diacholestane	0.08 J	0.42 J	U	0.37 J
14a(H),17a(H)-20R-methylcholestane	0.14 J	0.7 J	0.99 J	0.55 J
14a(H),17a(H)-20S-Ethylcholestane	0.09 J	0.62 J	U	U
14a(H),17a(H)-20R-Ethylcholestane	0.36 J	3.65 J	1.9 J	1.98 J
C23 Tricyclic Terpane	0.12 J	0.87 J	U	0.72 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.43 J	2.67 J	U	1.62 J
30-Norhopane	0.73 J	3.52 J	5.66 J	2.21 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	1.05 J	6.31 J	7.3 J	5.33 J
30-Homohopane -22S	0.91 J	3.01 J	4.66 J	3.67 J
30-Homohopane -22R	1.06 J	6.17 J	4.49 J	4.35 J
Surrogate Recoveries (%)				
5b(H)-Cholane	91	102	78	119

Battelle
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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF013-01-WC2	08-03-KF021-01-CC	08-03-KF023-01-CC	08-03-KF025-01-CC
Batch ID	09-0009	09-0007	09-0007	09-0007
Battelle ID	Q5961-P	Q5786-P	Q5670-P	Q5787-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/27/08	08/27/08	08/27/08
Extraction Date	02/11/09	01/26/09	01/26/09	01/26/09
Analysis Date	02/22/09	02/07/09	02/06/09	02/07/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	79.9	75.9	74.2	78.2
% Lipid	1.34	3.84	3.07	2.56
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.09	4.90	5.44	4.46
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.42 J	0.14 J	U	0.26 J
13b(H),17a(H)-20R-Diacholestane	0.29 J	U	U	U
14a(H),17a(H)-20R-methylcholestane	0.35 J	0.15 J	U	0.35 J
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	0.28 J
14a(H),17a(H)-20R-Ethylcholestane	1.42 J	0.39 J	0.71 J	1.04 J
C23 Tricyclic Terpane	0.3 J	U	0.18 J	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	1.38 J	U	0.83 J	1.25 J
30-Norhopane	2.63 J	0.6 J	0.95 J	2.74 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	4.65 J	1.32 J	1.97 J	4.21 J
30-Homohopane -22S	1.84 J	0.91 J	0.42 J	1.44 J
30-Homohopane -22R	3.89 J	1.89 J	1.65 J	3.85 J
Surrogate Recoveries (%)				
5b(H)-Cholane	93	95	89	99

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2	08-03-KR001-01-CC	08-03-KR007-01-BC5	08-03-KR008-01-BC5
Batch ID	09-0009	09-0007	09-0008	09-0008
Battelle ID	Q5805-P	Q5675-P	Q5689-P	Q5974-P
Sample Type	SA	SA	SA	SA
Collection Date	08/27/08	08/27/08	08/30/08	08/30/08
Extraction Date	02/11/09	01/26/09	02/04/09	02/04/09
Analysis Date	02/21/09	02/06/09	02/13/09	02/15/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.3	73.2	85	82.3
% Lipid	1.57	3.46	2.33	1.52
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	2.26	5.48	0.36	1.49
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.51 J	0.17 J	U	U
13b(H),17a(H)-20R-Diacholestane	0.29 J	0.16 J	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	1.55 J	0.18 J	U	U
C23 Tricyclic Terpane	U	0.29 J	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	0.51 J	U	U
30-Norhopane	2.23 J	0.76 J	U	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.89 J	1.03 J	U	U
30-Homohopane -22S	2.5 J	0.54 J	U	U
30-Homohopane -22R	3.7 J	1.5 J	U	U
Surrogate Recoveries (%)				
5b(H)-Cholane	94	83	76	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR008-01-CC	08-03-KR009-01-BC5	08-03-KR009-01-WC2	08-03-KR016-01-CC
Batch ID	09-0007	09-0008	09-0009	09-0007
Battelle ID	Q5976-P	Q5981-P	Q5980-P	Q5683-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/30/08
Extraction Date	01/26/09	02/04/09	02/11/09	01/26/09
Analysis Date	02/07/09	02/15/09	02/22/09	02/06/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	73.9	83.54	79.5	74.6
% Lipid	2.35	1.2	1.46	2.23
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	5.47	1.04	1.46	5.24
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.13 J	U	U	0.18 J
13b(H),17a(H)-20R-Diacholestane	0.1 J	U	U	U
14a(H),17a(H)-20R-methylcholestane	0.11 J	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	0.24 J	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	0.43 J	U	1.73 J	0.5 J
C23 Tricyclic Terpane	0.19 J	U	0.79 J	0.11 J
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	0.7 J	U	U	0.75 J
30-Norhopane	1.4 J	2.36 J	2.97 J	0.78 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	2.18 J	2.73 J	5.48 J	1.36 J
30-Homohopane -22S	1.26 J	U	2.35 J	1.08 J
30-Homohopane -22R	1.93 J	U	5.09 J	1.5 J
Surrogate Recoveries (%)				
5b(H)-Cholane	66	74	104	95

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-BC5	08-03-KR019-01-CC	08-03-KR019-02-WC2	08-03-KR034-01-WC2
Batch ID	09-0008	09-0007	09-0009	09-0009
Battelle ID	Q5990-P	Q5823-P	Q5987-P	Q5968-P
Sample Type	SA	SA	SA	SA
Collection Date	08/30/08	08/30/08	08/30/08	08/23/08
Extraction Date	02/04/09	01/26/09	02/11/09	02/11/09
Analysis Date	02/15/09	02/07/09	02/22/09	02/22/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	87.72	77.8	78.72	82.35
% Lipid	0.86	2.07	0.99	1.33
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	0.51	4.64	1.37	1.01
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	U	0.25 J	U	0.92 J
13b(H),17a(H)-20R-Diacholestane	U	U	U	0.42 J
14a(H),17a(H)-20R-methylcholestane	U	0.27 J	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	0.39 J	U	U
14a(H),17a(H)-20R-Ethylcholestane	U	0.91 J	1.3 J	2.34 J
C23 Tricyclic Terpane	U	0.32 J	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	1.4 J	U	U
30-Norhopane	6.53 J	2.93 J	1.7 J	4.29 J
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	U	4.1 J	4.43 J	6.08 J
30-Homohopane -22S	U	2.68 J	3.64 J	3.21 J
30-Homohopane -22R	U	4.5 J	3.4 J	4.98 J
Surrogate Recoveries (%)				
5b(H)-Cholane	56	86	101	104

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR045-01-WC2	08-03-KR095-01-BC2	KF001 and KF021 composite	KF003, KF013 and KF023 composite
Batch ID	09-0009	09-0008	09-0010	09-0010
Battelle ID	Q5972-P	Q5815-P	Q6103-P	Q6104-P
Sample Type	SA	SA	SA	SA
Collection Date	08/23/08	08/29/08	08/21/08	08/23/08
Extraction Date	02/11/09	02/04/09	02/18/09	02/18/09
Analysis Date	02/22/09	02/14/09	03/04/09	03/04/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	80.4	80	94.95	94
% Lipid	1.62	2.56	0.71	0.53
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	1.69	0.56	0.43	0.92
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	0.42 J	U	17.2 J	7.02 J
13b(H),17a(H)-20R-Diacholestane	0.2 J	U	10.8 J	4.22 J
14a(H),17a(H)-20R-methylcholestane	0.29 J	U	13.7 J	5.38 J
14a(H),17a(H)-20S-Ethylcholestane	0.32 J	U	15.25 J	5.66 J
14a(H),17a(H)-20R-Ethylcholestane	1.69 J	0.87 J	24.34 J	9.69 J
C23 Tricyclic Terpane	0.68 J	U	9.1 J	2.91 J
C29 Tricyclic Terpane -22S	U	U	4.63 J	1.17 J
C29 Tricyclic Terpane -22R	U	U	4.4 J	1.35 J
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	25.23 J	9.4 J
17a(H)-22,29,30-Trisnorhopane -TM	1.76 J	U	23.28 J	7.6 J
30-Norhopane	2.41 J	4.35 J	100.44	33.95
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	3.76 J	3.54 J	106.08	37.27
30-Homohopane -22S	1.4 J	U	60.28	21.28 J
30-Homohopane -22R	2.41 J	U	44.72 J	16.56 J
Surrogate Recoveries (%)				
5b(H)-Cholane	102	77	87	89

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	KF005, KF015 and KF025 composite	KF007 and KF017 composite	KF009 and KF019 composite
Client ID			
Batch ID	09-0010	09-0010	09-0010
Battelle ID	Q6105-P	Q6106-P	Q6107-P
Sample Type	SA	SA	SA
Collection Date	08/27/08	08/22/08	08/23/08
Extraction Date	02/18/09	02/18/09	02/18/09
Analysis Date	03/04/09	03/04/09	03/04/09
Analytical Instrument	MS	MS	MS
% Moisture	95.2	95.19	97
% Lipid	0.34	0.67	0.5
Matrix	TISSUE	TISSUE	TISSUE
Sample Size	0.46	0.48	0.35
Size Unit-Basis	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	5.43 J	6.19 J	13.74 J
13b(H),17a(H)-20R-Diacholestane	3.46 J	4.38 J	8.34 J
14a(H),17a(H)-20R-methylcholestane	4.47 J	4.52 J	12.96 J
14a(H),17a(H)-20S-Ethylcholestane	5.73 J	6.41 J	11.84 J
14a(H),17a(H)-20R-Ethylcholestane	7.11 J	9.23 J	17.69 J
C23 Tricyclic Terpane	2.81 J	2.64 J	7.18 J
C29 Tricyclic Terpane -22S	U	U	U
C29 Tricyclic Terpane -22R	U	U	6.19 J
18a(H)-22,29,30-Trisnorneohopane -TS	7.21 J	10.58 J	22.13 J
17a(H)-22,29,30-Trisnorhopane -TM	7.89 J	7.17 J	18.46 J
30-Norhopane	25.07 J	37.37 J	81.95
18a(H) & 18b(H)-Oleananes	U	U	U
Hopane	28.32 J	41.83 J	86.55
30-Homohopane -22S	20.88 J	20.7 J	46.44 J
30-Homohopane -22R	16.03 J	14.81 J	36.78 J
Surrogate Recoveries (%)			
5b(H)-Cholane	83	82	83

APPENDIX C

Quality Control Data

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Metals Quality Control Data

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Table 16. Quality Assurance and Quality Control Data for Sediment Metal and Total Organic Carbon (TOC) Analyses.

Results for the Standard Reference Material (SRM) #2709, San Joaquin Soil certified by the National Institute of Standards and Technology (NIST) and the Marine Sediment Certified Reference Material (CRM) MESS-3, certified by the National Research Council of Canada (NRC).

Reference Material	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)
SRM #2709	0.39	7.55	17.3	971	0.37	134	34.6	3.57	-	538	19.3	1.50	103	-
This Study	0.41	7.49	17.0	965	0.38	133	34.3	3.54	-	534	18.9	1.53	104	-
	0.41	7.55	17.0	964	0.37	134	34.9	3.51	-	543	18.9	1.49	105	-
	0.39	7.47	17.6	973	0.37	133	35.2	3.41	-	536	19.0	1.53	107	-
	0.44	7.49	17.2	964	0.37	131	34.8	3.49	-	543	18.9	1.50	105	-
	0.42	7.46	17.4	971	0.37	128	34.1	3.53	-	538	18.8	1.53	106	-
														-
SRM #2709	0.41	7.50	17.7	968	0.38	130	34.6	3.50	1.40	538	18.9	1.57	106	1.2*
NIST Certified Values	± 0.03	± 0.06	± 0.8	± 40	± 0.01	± 4	± 0.7	± 0.11	± 0.08	± 17	± 0.5	± 0.08	± 3	-
CRM MESS-3	-	-	-	-	-	-	-	-	0.095	-	-	-	-	2.03
This Study	-	-	-	-	-	-	-	-	0.096	-	-	-	-	2.03
	-	-	-	-	-	-	-	-	0.093	-	-	-	-	2.06
	-	-	-	-	-	-	-	-	0.090	-	-	-	-	2.01
	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-
	-	-	-	-	-	-	-	-	0.086	-	-	-	-	-
CRM MESS-3	0.18	8.59	21.2	-	0.24	105	33.9	4.34	0.091	324	21.1	0.72	159	2*
NRC Certified Values	± 0.02	± 0.23	± 1.1	-	± 0.01	± 4	± 1.6	± 0.11	± 0.009	± 12	± 0.7	± 0.05	± 8	-

Method Detection Limits (MDLs).

	Ag (µg/g)	Al (%)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)	TOC (%)
Method Detection Limit	0.003	0.01	0.02	0.01	0.001	1.0	0.5	0.01	0.001	2	0.002	0.02	0.5	0.03

Percent Spike Recovery.

	Ag	Al	As	Ba	Cd	Cr	Cu	Fe	Hg*	Mn	Pb	Se*	Zn
Mean	93.0	99.5	100.5	98.8	91.0	102.3	96.5	100.7	85.2	96.6	96.9	82.5	98.1
Standard Deviation	1.2	4.9	2.5	3.4	0.4	3.4	2.9	4.9	4.0	1.9	5.8	1.4	2.7
(n =)	6	6	6	6	6	6	6	6	18	6	6	6	6

* Final concentrations are corrected for percent spike recovery.

Estimate of Analytical Precision as Percent Relative Standard Deviation (RSD) of Lab Duplicates.

	Ag	Al	As	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Se	Zn	TOC
08-03-BR100-01-SC	0.0	0.5	2.2	2.3	5.2	1.4	1.3	0.0	5.2	0.9	4.7	2.6	0.8	2.5
08-03-KR008-01-SC	0.0	0.4	2.0	1.7	0.0	2.4	4.9	2.2	3.1	1.1	4.1	7.2	2.4	3.0
08-03-KR066-01-SC	0.0	0.2	2.3	1.7	0.0	1.7	0.7	0.6	4.4	0.5	1.4	1.4	0.7	1.2
08-03-KD005-01-SC1012	5.7	0.5	0.7	0.4	3.4	0.5	0.5	0.2	3.8	0.9	2.7	2.7	0.7	3.0

Percent RSD = (standard deviation / mean) X 100.

Table 16. Quality Assurance and Quality Control Data for Sediment Metal and Total Organic Carbon (TOC) Analyses.

Estimate of Sampling Station Variability as Percent Relative Standard Deviation (RSD) of Field Triplicates.

	Ag	Al	As	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Se	Zn	TOC
08-03-BF005-01,02,03-SC	9.1	1.1	7.1	0.9	3.8	2.1	3.9	0.8	11.5	0.6	2.0	16.8	1.9	10.5
08-03-KR045-01,02,03-SC	5.4	5.9	2.7	2.8	10.8	5.2	5.8	7.0	4.4	2.6	4.3	6.4	9.2	10.2

Percent RSD = (standard deviation / mean) X 100.

Environmental Studies in the Chukchi Sea

Table 7. Quality Assurance and Quality Control Data for Organism Metal Analyses.

Results for the Standard Reference Materials (SRMs) Mussel Tissue #2976 and Oyster Tissue #1566b certified by the National Institute of Standards and Technology (NIST).

Reference Material	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)
SRM #2976	0.015	14.0	0.6	0.81	0.41	4.1	174	0.064	32.8	1.10	1.79	142
This Study	0.014	13.9	0.6	0.78	0.54	4.1	169	0.062	33.6	1.08	1.79	138
	0.016	13.7	0.6	0.79	0.56	3.9	171	0.064	34.2	1.19	1.96	148
SRM #2976	0.011*	13.3	-	0.82	0.50*	4.02	171.0	0.061	33*	1.19	1.80	137
NIST Certified Values	± 0.005	± 1.8	-	± 0.16	± 0.16	± 0.33	± 4.9	± 0.0036	± 2	± 0.18	± 0.15	± 13
SRM #1566b	0.662	8.07	8.4	2.43	0.36	72.5	209	0.038	18.4	0.304	1.94	1444
This Study	0.668	7.80	8.5	2.47	0.33	70.9	210	0.037	18.4	0.314	2.15	1429
	0.670	7.89	8.5	2.42	0.34	72.1	200	0.036	18.4	0.317	2.08	1417
SRM #1566b	0.666	7.65	8.6*	2.48	-	71.6	205.8	0.0371	18.5	0.308	2.06	1424
NIST Certified Values	± 0.009	± 0.65	± 0.3	± 0.08	-	± 1.6	± 6.8	± 0.0013	± 0.2	± 0.009	± 0.15	± 46

* Reference Value, not Certified.

Method Detection Limits (MDLs).

	Ag (µg/g)	As (µg/g)	Ba (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Fe (µg/g)	Hg (µg/g)	Mn (µg/g)	Pb (µg/g)	Se (µg/g)	Zn (µg/g)
Method Detection Limit	0.004	0.012	0.01	0.001	0.01	0.7	2.5	0.001	1.1	0.001	0.03	0.4

Percent Spike Recovery.

	Ag	As	Ba	Cd	Cr	Cu	Fe	Hg**	Mn	Pb	Se	Zn
Mean	99.2	106.8	99.9	103.3	91.3	96.5	104.5	63.9	93.5	96.3	106.5	102.5
Standard Deviation	5.6	11.4	5.7	4.7	1.3	2.0	2.9	6.1	2.0	4.9	7.1	1.9
(n =)	6	6	6	6	6	6	6	17	6	6	6	6

**Final concentrations are corrected for percent spike recovery.

Estimate of Precision as Percent Relative Standard Deviation (RSD) of Lab Duplicates.

	Ag	As	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Se	Zn
08-03-BR038-01-AC	1.3	2.1	2.3	1.0	4.3	0.5	2.2	6.7	2.5	3.7	7.8	0.6
08-03-BS001-01-BC5	0.0	2.3	2.9	1.4	2.8	1.8	1.9	1.7	0.6	1.2	0.7	0.9
08-03-BF011-01-CC	2.0	0.8	0.0	0.5	4.6	1.3	1.3	0.0	1.2	1.1	4.4	0.1
08-03-KF025-01-WC2	4.6	1.1	1.7	0.1	3.6	2.0	2.2	4.0	1.7	0.7	1.4	2.6
BF009 and BF019 composite	3.3	2.9	5.0	3.0	1.6	9.0	1.7	0.0	5.5	0.5	4.7	2.4

Percent RSD = (standard deviation / mean) X 100

Estimate of Sampling Station Variability as Percent Relative Standard Deviation (RSD) of Field Triplicates.

	Ag	As	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Se	Zn
08-03-BF013-01,02,03-AC	16.7	4.4	10.5	6.4	14.5	4.6	21.1	5.1	8.0	15.8	4.5	1.4

Percent RSD = (standard deviation / mean) X 100.

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Hydrocarbon Quality Control Data

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0001	09-0002	09-0003	09-0004
Battelle ID	BM702PB-P	BM706PB-P	BM710PB-P	BM714PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/15/09	01/22/09	01/29/09	02/03/09
Extraction Date	01/15/09	01/22/09	01/29/09	02/03/09
Analysis Date	01/22/09	02/04/09	02/05/09	02/13/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	42.11	43.91	43.91	43.27
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.44	16.81	16.76	16.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	U	U
n-Decane	U	U	U	U
n-Undecane	U	U	U	U
n-Dodecane	U	U	U	U
n-Tridecane	U	U	U	U
Isoprenoid RRT 1380	U	U	U	U
n-Tetradecane	U	U	U	U
Isoprenoid RRT 1470	U	U	U	U
n-Pentadecane	U	U	U	U
Norpristane (1650)	U	U	U	U
n-Hexadecane	U	U	U	U
n-Heptadecane	U	U	U	U
Pristane	U	U	U	U
n-Octadecane	U	U	U	U
Phytane	U	U	U	U
n-Nonadecane	U	U	U	U
n-Eicosane	U	U	U	U
n-Heneicosane	U	U	U	U
n-Docosane	U	U	U	U
n-Tricosane	U	U	U	U
n-Tetracosane	U	U	U	U
n-Pentacosane	U	U	U	U
n-Hexacosane	U	U	U	U
n-Heptacosane	U	U	U	U
n-Octacosane	U	U	U	U
n-Nonacosane	U	U	U	U
n-Triacontane	U	U	U	U
n-Hentriacontane	U	U	U	U
n-Dotriacontane	U	U	U	U
n-Tritriacontane	U	U	U	U
n-Tetratriacontane	U	U	U	U
n-Pentatriacontane	U	U	U	U
n-Hexatriacontane	U	U	U	U
n-Heptatriacontane	U	U	U	U
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	U	U	U	U
TPH	U	U	U	U
Surrogate Recoveries (%)				
5a-androstane	76	78	88	91
n-Tetracosane-d50	79	85	89	92

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	Laboratory Control				Laboratory Control			
Client ID	Sample				Sample			
Batch ID	09-0001				09-0002			
Battelle ID	BM703LCS-P				BM707LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/15/09				01/22/09			
Extraction Date	01/15/09				01/22/09			
Analysis Date	01/22/09				02/02/09			
Analytical Instrument	FID				FID			
% Moisture	42.11				43.91			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	17.49				16.86			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	1815.75	2858.78	64	N	1929.59	2965.60	65	N
n-Decane	2097.96	2858.78	73		2234.33	2965.60	75	
n-Undecane	2474.97	2858.78	87		2630	2965.60	89	
n-Dodecane	2504.82	2858.78	88		2663.12	2965.60	90	
n-Tridecane	2534.45	2858.78	89		2694.32	2965.60	91	
Isoprenoid RRT 1380	U				U			
n-Tetradecane	2601.29	2858.78	91		2757.19	2965.60	93	
Isoprenoid RRT 1470	U				U			
n-Pentadecane	2634.61	2858.78	92		2788.1	2965.60	94	
Norpristane (1650)	U				U			
n-Hexadecane	2735.02	2858.78	96		2880.21	2965.60	97	
n-Heptadecane	2769.05	2858.78	97		2898.27	2965.60	98	
Pristane	2702.8	2858.78	95		2812.1	2965.60	95	
n-Octadecane	2777.17	2858.78	97		2891.9	2965.60	98	
Phytane	2748.57	2858.78	96		2847.09	2965.60	96	
n-Nonadecane	2877.28	2858.78	101		2985.75	2965.60	101	
n-Eicosane	2890.26	2858.78	101		2995.04	2965.60	101	
n-Heneicosane	2848.64	2858.78	100		2948.84	2965.60	99	
n-Docosane	2939.77	2858.78	103		3044.28	2965.60	103	
n-Tricosane	2861.7	2858.78	100		2965.25	2965.60	100	
n-Tetracosane	2842.62	2858.78	99		2950.24	2965.60	99	
n-Pentacosane	2834.88	2858.78	99		2951.05	2965.60	100	
n-Hexacosane	2822.92	2858.78	99		2950.69	2965.60	99	
n-Heptacosane	2809.99	2858.78	98		2952.23	2965.60	100	
n-Octacosane	2766.07	2858.78	97		2924.49	2965.60	99	
n-Nonacosane	2815.74	2858.78	98		2999.27	2965.60	101	
n-Triacontane	2854.18	2858.78	100		3070.61	2965.60	104	
n-Hentriacontane	2748.62	2858.78	96		2987.26	2965.60	101	
n-Dotriacontane	2919.29	2858.78	102		3204.63	2965.60	108	
n-Tritriacontane	2818.15	2858.78	99		3126.37	2965.60	105	
n-Tetratriacontane	2875.64	2858.78	101		3228.06	2965.60	109	
n-Pentatriacontane	2880.24	2858.78	101		3284.71	2965.60	111	
n-Hexatriacontane	2664.68	2858.78	93		3099.07	2965.60	105	
n-Heptatriacontane	2685.31	2858.78	94		3215.73	2965.60	108	
n-Octatriacontane	2751.63	2858.78	96		3424.96	2965.60	115	
n-Nonatriacontane	2488.1	2858.78	87		3256.14	2965.60	110	
n-Tetracontane	2482.4	2858.78	87		3493.64	2965.60	118	
Total SHC	91874.57				100084.53			
TPH	U				U			

Surrogate Recoveries (%)

5a-androstane	80	91
n-Tetracosane-d50	83	92

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	Laboratory Control				Laboratory Control			
Client ID	Sample				Sample			
Batch ID	09-0003				09-0004			
Battelle ID	BM711LCS-P				BM715LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/29/09				02/03/09			
Extraction Date	01/29/09				02/03/09			
Analysis Date	02/05/09				02/13/09			
Analytical Instrument	FID				FID			
% Moisture	43.91				43.27			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	16.73				17.06			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	2133.29	2988.64	71		2052.27	2930.83	70	
n-Decane	2536.11	2988.64	85		2539.88	2930.83	87	
n-Undecane	2750.27	2988.64	92		2795.33	2930.83	95	
n-Dodecane	2744.02	2988.64	92		2796.99	2930.83	95	
n-Tridecane	2729.15	2988.64	91		2791.68	2930.83	95	
Isoprenoid RRT 1380	U				U			
n-Tetradecane	2791.26	2988.64	93		2870.59	2930.83	98	
Isoprenoid RRT 1470	U				U			
n-Pentadecane	2812.63	2988.64	94		2907.04	2930.83	99	
Norpristane (1650)	U				U			
n-Hexadecane	2873.26	2988.64	96		2970.12	2930.83	101	
n-Heptadecane	2896.44	2988.64	97		2982.66	2930.83	102	
Pristane	2791.45	2988.64	93		2875.34	2930.83	98	
n-Octadecane	2871.11	2988.64	96		2944.15	2930.83	100	
Phytane	2829.68	2988.64	95		2903.17	2930.83	99	
n-Nonadecane	2943.19	2988.64	98		3011.24	2930.83	103	
n-Eicosane	2935.94	2988.64	98		2992.94	2930.83	102	
n-Heneicosane	2901.29	2988.64	97		2953.12	2930.83	101	
n-Docosane	3007.08	2988.64	101		3055.73	2930.83	104	
n-Tricosane	2919.2	2988.64	98		2962.81	2930.83	101	
n-Tetracosane	2909.37	2988.64	97		2946.94	2930.83	101	
n-Pentacosane	2901.02	2988.64	97		2937.88	2930.83	100	
n-Hexacosane	2893.82	2988.64	97		2932.22	2930.83	100	
n-Heptacosane	2924.88	2988.64	98		2966.38	2930.83	101	
n-Octacosane	2827.04	2988.64	95		2876.38	2930.83	98	
n-Nonacosane	2836.04	2988.64	95		2894.94	2930.83	99	
n-Triacontane	2896.92	2988.64	97		2969.48	2930.83	101	
n-Hentriacontane	2873.07	2988.64	96		2961.88	2930.83	101	
n-Dotriacontane	2953.66	2988.64	99		3059.57	2930.83	104	
n-Tritriacontane	2849.29	2988.64	95		2958.64	2930.83	101	
n-Tetratriacontane	2899.62	2988.64	97		3011.09	2930.83	103	
n-Pentatriacontane	2927.74	2988.64	98		3042.67	2930.83	104	
n-Hexatriacontane	2844.29	2988.64	95		2948.52	2930.83	101	
n-Heptatriacontane	2819.99	2988.64	94		2928.12	2930.83	100	
n-Octatriacontane	2962.3	2988.64	99		3069.89	2930.83	105	
n-Nonatriacontane	2785.24	2988.64	93		2903.32	2930.83	99	
n-Tetracontane	2983.02	2988.64	100		3144.18	2930.83	107	
Total SHC	96552.68				98957.16			
TPH	U				U			

Surrogate Recoveries (%)

5a-androstane	94	91
n-Tetracosane-d50	93	88

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0001				09-0002			
Battelle ID	BM748NSC-P				BM805NSC-P			
Sample Type	NSC				NSC			
Collection Date	01/22/09				01/29/09			
Extraction Date	01/22/09				01/29/09			
Analysis Date	01/22/09				02/02/09			
Analytical Instrument	FID				FID			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
n-Nonane	4737.32	4670.06	1.4		4505.58	4670.06	3.5	
n-Decane	4446.85	4951.66	10.2		4540.61	4951.66	8.3	
n-Undecane	4372.08	4506.16	3.0		4638.67	4506.16	2.9	
n-Dodecane	4370.87	4576.43	4.5		4509.62	4576.43	1.5	
n-Tridecane	4033.89	4189.33	3.7		4077.64	4189.33	2.7	
Isoprenoid RRT 1380	981.2	961.81	2.0		1060.24	961.81	10.2	
n-Tetradecane	3847.16	3919.50	1.8		3966.65	3919.50	1.2	
Isoprenoid RRT 1470	1338.73	1532.69	12.7		1218.17	1532.69	20.5	
n-Pentadecane	4108.77	3990.56	3.0		4567.9	3990.56	14.5	
Norpristane (1650)	1069.91	1141.72	6.3		1184.47	1141.72	3.7	
n-Hexadecane	3568.88	3640.11	2.0		3665.26	3640.11	0.7	
n-Heptadecane	2890.88	3078.38	6.1		2991.43	3078.38	2.8	
Pristane	2204.96	2280.61	3.3		2253.86	2280.61	1.2	
n-Octadecane	2634.42	2796.74	5.8		2786.67	2796.74	0.4	
Phytane	1386.2	1659.88	16.5		1390.07	1659.88	16.3	
n-Nonadecane	2709.19	2540.37	6.6		2771.18	2540.37	9.1	
n-Eicosane	2550.92	2502.77	1.9		2757.33	2502.77	10.2	
n-Heneicosane	2288.2	2419.45	5.4		2378.17	2419.45	1.7	
n-Docosane	2186.04	2251.79	2.9		2300.8	2251.79	2.2	
n-Tricosane	1951.89	2050.41	4.8		2018.84	2050.41	1.5	
n-Tetracosane	1866.14	1948.20	4.2		1879.36	1948.20	3.5	
n-Pentacosane	1746.75	1795.70	2.7		1810.76	1795.70	0.8	
n-Hexacosane	1558.14	1639.60	5.0		1617.52	1639.60	1.3	
n-Heptacosane	1176.12	1230.99	4.5		1221.22	1230.99	0.8	
n-Octacosane	853.53	1004.15	15.0		918.21	1004.15	8.6	
n-Nonacosane	703.15	872.21	19.4		817.47	872.21	6.3	
n-Triacontane	652.06	669.33	2.6		718.66	669.33	7.4	
n-Hentriacontane	652.25	606.82	7.5		681.62	606.82	12.3	
n-Dotriacontane	408.17	465.97	12.4		456.73	465.97	2.0	
n-Tritriacontane	401.39	399.05	0.6		436.76	399.05	9.4	
n-Tetratriacontane	375.7	371.75	1.1		398.37	371.75	7.2	
n-Pentatriacontane	369.3	378.11	2.3		425.25	378.11	12.5	
n-Hexatriacontane	227.32 J	235.65	3.5		262.04 J	235.65	11.2	
n-Heptatriacontane	197.81 J	210.06	5.8		233.61 J	210.06	11.2	
n-Octatriacontane	202.54 J	205.75	1.6		246.62 J	205.75	19.9	
n-Nonatriacontane	150.47 J	153.92	2.2		186.07 J	153.92	20.9	
n-Tetracontane	153.39 J	161.64	5.1		189.74 J	161.64	17.4	
Total SHC	69372.59				72083.17			
TPH	499541.27	578973.63	13.7		538370.58	578973.63	7.0	
Surrogate Recoveries (%)								
5a-androstane	110				109			
n-Tetracosane-d50	108				105			

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0003				09-0004			
Battelle ID	BM822NSC-P				BM855NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/05/09				02/13/09			
Extraction Date	02/05/09				02/13/09			
Analysis Date	02/05/09				02/13/09			
Analytical Instrument	FID				FID			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
n-Nonane	5239.62	4670.06	12.2		4845.29	4670.06	3.8	
n-Decane	5856.64	4951.66	18.3		5045.02	4951.66	1.9	
n-Undecane	5509.67	4506.16	22.3		5161.08	4506.16	14.5	
n-Dodecane	5756.56	4576.43	25.8		4832.57	4576.43	5.6	
n-Tridecane	5356.58	4189.33	27.9		4613.85	4189.33	10.1	
Isoprenoid RRT 1380	1172.74	961.81	21.9		1002.29	961.81	4.2	
n-Tetradecane	5035.87	3919.50	28.5		4230.5	3919.50	7.9	
Isoprenoid RRT 1470	1793.55	1532.69	17.0		1677.7	1532.69	9.5	
n-Pentadecane	4971.23	3990.56	24.6		4117.39	3990.56	3.2	
Norpristane (1650)	1430.16	1141.72	25.3		1263.84	1141.72	10.7	
n-Hexadecane	4681.08	3640.11	28.6		3896.82	3640.11	7.1	
n-Heptadecane	3913.15	3078.38	27.1		3462.91	3078.38	12.5	
Pristane	2677.3	2280.61	17.4		2368.91	2280.61	3.9	
n-Octadecane	3541.67	2796.74	26.6		3279.3	2796.74	17.3	
Phytane	1706.59	1659.88	2.8		1451.26	1659.88	12.6	
n-Nonadecane	3164.41	2540.37	24.6		2690.18	2540.37	5.9	
n-Eicosane	2896.2	2502.77	15.7		2496.07	2502.77	0.3	
n-Heneicosane	2877.38	2419.45	18.9		2405.19	2419.45	0.6	
n-Docosane	2722.06	2251.79	20.9		2289.06	2251.79	1.7	
n-Tricosane	2406.66	2050.41	17.4		2046.94	2050.41	0.2	
n-Tetracosane	2307.5	1948.20	18.4		1933.01	1948.20	0.8	
n-Pentacosane	1988.63	1795.70	10.7		1682.18	1795.70	6.3	
n-Hexacosane	1834.06	1639.60	11.9		1583.83	1639.60	3.4	
n-Heptacosane	1442.55	1230.99	17.2		1180.17	1230.99	4.1	
n-Octacosane	1241.64	1004.15	23.7		983.68	1004.15	2.0	
n-Nonacosane	930.43	872.21	6.7		708.43	872.21	18.8	
n-Triacontane	803.06	669.33	20.0		606.3	669.33	9.4	
n-Hentriacontane	692.2	606.82	14.1		541.07	606.82	10.8	
n-Dotriacontane	536.87	465.97	15.2		438.32	465.97	5.9	
n-Tritriacontane	506.79	399.05	27.0		340.72	399.05	14.6	
n-Tetratriacontane	421.48	371.75	13.4		317.88	371.75	14.5	
n-Pentatriacontane	421.71	378.11	11.5		306.58	378.11	18.9	
n-Hexatriacontane	284.83 J	235.65	20.9		229.14 J	235.65	2.8	
n-Heptatriacontane	222.44 J	210.06	5.9		207.09 J	210.06	1.4	
n-Octatriacontane	241.84 J	205.75	17.5		216.01 J	205.75	5.0	
n-Nonatriacontane	176.33 J	153.92	14.6		150.94 J	153.92	1.9	
n-Tetracontane	203.87 J	161.64	26.1		185.61 J	161.64	14.8	
Total SHC	86965.35				74787.13			
TPH	654474.02	578973.63	13.0		504365.66	578973.63	12.9	

Surrogate Recoveries (%)

5a-androstane	119	106
n-Tetracosane-d50	111	100

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-01-SC		
Batch ID	09-0002	09-0002		
Battelle ID	Q5726-P	Q5726DUP-P		
Sample Type	SA	QADU		
Collection Date	09/20/08	09/20/08		
Extraction Date	01/22/09	01/22/09		
Analysis Date	02/02/09	02/02/09		
Analytical Instrument	FID	FID		
% Moisture	45.72	46.41		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	16.35	16.08		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	12.14 J	15.42 J	NA	
n-Decane	18.26 J	21.28 J	NA	
n-Undecane	25.31 J	29.85 J	NA	
n-Dodecane	27.69 J	32.07 J	NA	
n-Tridecane	31.95 J	36.76 J	NA	
Isoprenoid RRT 1380	9.66 J	9.83 J	NA	
n-Tetradecane	37.5 J	41.76 J	NA	
Isoprenoid RRT 1470	19.77 J	21.84 J	NA	
n-Pentadecane	49.08 J	52.56 J	NA	
Norpristane (1650)	10.67 J	13.03 J	NA	
n-Hexadecane	38.99 J	42.69 J	NA	
n-Heptadecane	46.1 J	49.41 J	NA	
Pristane	35.76 J	38.05 J	NA	
n-Octadecane	41.87 J	44.53 J	NA	
Phytane	13.69 J	16.13 J	NA	
n-Nonadecane	52.59 J	56.76 J	NA	
n-Eicosane	52.61 J	54.28 J	NA	
n-Heneicosane	87.31	91.18	4.3	
n-Docosane	81.8	83.18	1.7	
n-Tricosane	174.75	181.7	3.9	
n-Tetracosane	89.54	88.89	0.7	
n-Pentacosane	215.41	220.64	2.4	
n-Hexacosane	87.22	81.95	6.2	
n-Heptacosane	310.53	321.74	3.5	
n-Octacosane	71.93	66.44 J	7.9	
n-Nonacosane	228.16	236.8	3.7	
n-Triacontane	60.98 J	57.99 J	NA	
n-Hentriacontane	183.12	196.62	7.1	
n-Dotriacontane	36.21 J	28.2 J	NA	
n-Tritriacontane	74.62	79.16	5.9	
n-Tetratriacontane	20.68 J	18.2 J	NA	
n-Pentatriacontane	16.12 J	18.19 J	NA	
n-Hexatriacontane	10.01 J	7.42 J	NA	
n-Heptatriacontane	4.73 J	3.63 J	NA	
n-Octatriacontane	7.32 J	5.38 J	NA	
n-Nonatriacontane	2.01 J	2.65 J	NA	
n-Tetracontane	3.88 J	3.82 J	NA	
Total SHC	2289.97	2370.03	NA	
TPH	4712.99	4098.74	13.9	
Surrogate Recoveries (%)				
5a-androstane	81	80		
n-Tetracosane-d50	83	80		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF015-01-SC	08-03-KF015-01-SC		
Batch ID	09-0003	09-0003		
Battelle ID	Q5824-P	Q5824DUP-P		
Sample Type	SA	QADU		
Collection Date	08/31/08	08/31/08		
Extraction Date	01/29/09	01/29/09		
Analysis Date	02/06/09	02/06/09		
Analytical Instrument	FID	FID		
% Moisture	24.64	25.82		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	22.71	22.25		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	2.96 J	2.82 J	NA	
n-Decane	6.14 J	7.84 J	NA	
n-Undecane	19 J	10.63 J	NA	
n-Dodecane	5.34 J	5.22 J	NA	
n-Tridecane	5.22 J	5.57 J	NA	
Isoprenoid RRT 1380	1.36 J	1.49 J	NA	
n-Tetradecane	7.46 J	7.83 J	NA	
Isoprenoid RRT 1470	2.83 J	3.15 J	NA	
n-Pentadecane	9.55 J	9.75 J	NA	
Norpristane (1650)	1.45 J	1.61 J	NA	
n-Hexadecane	6.25 J	6.38 J	NA	
n-Heptadecane	6.46 J	7.07 J	NA	
Pristane	7.17 J	8.42 J	NA	
n-Octadecane	5.89 J	7 J	NA	
Phytane	1.81 J	1.9 J	NA	
n-Nonadecane	6.76 J	8.58 J	NA	
n-Eicosane	7.29 J	8.91 J	NA	
n-Heneicosane	11.8 J	15.22 J	NA	
n-Docosane	11.24 J	14.08 J	NA	
n-Tricosane	25.23 J	31.22 J	NA	
n-Tetracosane	13.23 J	16.59 J	NA	
n-Pentacosane	30.79 J	40.07 J	NA	
n-Hexacosane	14.91 J	18.82 J	NA	
n-Heptacosane	47.58 J	56.17	16.6	
n-Octacosane	12.38 J	13.66 J	NA	
n-Nonacosane	34.32 J	38.97 J	NA	
n-Triacontane	9.03 J	8.1 J	NA	
n-Hentriacontane	26.05 J	29.28 J	NA	
n-Dotriacontane	7.08 J	4.33 J	NA	
n-Tritriacontane	9.57 J	11.32 J	NA	
n-Tetratriacontane	4.86 J	1.77 J	NA	
n-Pentatriacontane	2.27 J	2.8 J	NA	
n-Hexatriacontane	4.08 J	0.99 J	NA	
n-Heptatriacontane	0.76 J	0.85 J	NA	
n-Octatriacontane	3.22 J	1.22 J	NA	
n-Nonatriacontane	U	U	NA	
n-Tetracontane	U	U	NA	
Total SHC	371.34 J	409.63 J	NA	
TPH	461.06	487.16	5.5	

Surrogate Recoveries (%)

5a-androstane	86	89
n-Tetracosane-d50	86	89

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02	08-03-BD005-01-SC02		
Batch ID	09-0004	09-0004		
Battelle ID	Q5932-P	Q5932DUP-P		
Sample Type	SA	QADU		
Collection Date	09/15/08	09/15/08		
Extraction Date	02/03/09	02/03/09		
Analysis Date	02/13/09	02/14/09		
Analytical Instrument	FID	FID		
% Moisture	47.95	47.81		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	15.59	15.64		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	34.18 J	38.72 J	NA	
n-Decane	223.14 ME	61.54 J	113.5	n
n-Undecane	56.15 J	60.38 J	NA	
n-Dodecane	49.54 J	55.72 J	NA	
n-Tridecane	53.53 J	57.16 J	NA	
Isoprenoid RRT 1380	14.98 J	16.44 J	NA	
n-Tetradecane	57.57 J	60.84 J	NA	
Isoprenoid RRT 1470	36.99 J	42.68 J	NA	
n-Pentadecane	67.62 J	76.34	12.1	
Norpristane (1650)	21.42 J	20.21 J	NA	
n-Hexadecane	57.96 J	58.54 J	NA	
n-Heptadecane	68.8 J	67.11 J	NA	
Pristane	53.58 J	52.97 J	NA	
n-Octadecane	62.54 J	58.96 J	NA	
Phytane	31.7 J	28.83 J	NA	
n-Nonadecane	77.36	72.9	5.9	
n-Eicosane	75.46	84.62	11.4	
n-Heneicosane	113.96	105.43	7.8	
n-Docosane	107.34	101.73	5.4	
n-Tricosane	227.57	209.75	8.1	
n-Tetracosane	117.82	117.38	0.4	
n-Pentacosane	292.8	280.93	4.1	
n-Hexacosane	122.19	116.33	4.9	
n-Heptacosane	445.31	401.77	10.3	
n-Octacosane	87.83	94.35	7.2	
n-Nonacosane	305.79	281.38	8.3	
n-Triacontane	50.04 J	60.13 J	NA	
n-Hentriacontane	240.53	216.32	10.6	
n-Dotriacontane	47.95 J	188.49	118.9	n
n-Tritriacontane	94.6	113.95	18.6	
n-Tetratriacontane	19.06 J	31.79 J	NA	
n-Pentatriacontane	33.26 J	70.23	71.4	n
n-Hexatriacontane	11.08 J	16.5 J	NA	
n-Heptatriacontane	8.73 J	9.48 J	NA	
n-Octatriacontane	7.57 J	10.53 J	NA	
n-Nonatriacontane	4.77 J	5.27 J	NA	
n-Tetracontane	4.79 J	5.88 J	NA	
Total SHC	3385.51	3351.58	1.0	
TPH	19950.02	20371.66	2.1	
Surrogate Recoveries (%)				
5a-androstane	87	91		
n-Tetracosane-d50	85	88		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR001-01-SC	08-03-KR001-01-SC			
Batch ID	09-0001	09-0001			
Battelle ID	Q5662-P	Q5662MS-P			
Sample Type	SA	MS			
Collection Date	08/27/08	08/27/08			
Extraction Date	01/15/09	01/15/09			
Analysis Date	01/23/09	01/23/09			
Analytical Instrument	FID	FID			
% Moisture	44.27	44.26			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	16.68	8.82			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	11.57 J	3753.08	5668.93	66	N
n-Decane	16.16 J	4209.53	5668.93	74	
n-Undecane	21.16 J	4903.6	5668.93	86	
n-Dodecane	23.34 J	4943.38	5668.93	87	
n-Tridecane	27.98 J	5028	5668.93	88	
Isoprenoid RRT 1380	7.26 J	21.89 J			
n-Tetradecane	28.59 J	5185.07	5668.93	91	
Isoprenoid RRT 1470	13.58 J	23.26 J			
n-Pentadecane	36.44 J	5289.98	5668.93	93	
Norpristane (1650)	9.28 J	11.45 J			
n-Hexadecane	30.29 J	5492.34	5668.93	96	
n-Heptadecane	39.26 J	5573.01	5668.93	98	
Pristane	28.36 J	5420.5	5668.93	95	
n-Octadecane	33.04 J	5571.37	5668.93	98	
Phytane	10.26 J	5490.36	5668.93	97	
n-Nonadecane	45.47 J	5787.86	5668.93	101	
n-Eicosane	43.21 J	5805.48	5668.93	102	
n-Heneicosane	80.86	5761.09	5668.93	100	
n-Docosane	78.35	5933.95	5668.93	103	
n-Tricosane	174.63	5892.64	5668.93	101	
n-Tetracosane	94.02	5755.32	5668.93	100	
n-Pentacosane	237.84	5912.33	5668.93	100	
n-Hexacosane	90.48	5716.42	5668.93	99	
n-Heptacosane	368.11	6014.34	5668.93	100	
n-Octacosane	63.41 J	5577.01	5668.93	97	
n-Nonacosane	251.67	5894.86	5668.93	100	
n-Triacontane	44.31 J	5726.56	5668.93	100	
n-Hentriacontane	192.41	5708.02	5668.93	97	
n-Dotriacontane	21.85 J	5817.8	5668.93	102	
n-Tritriacontane	72.35	5682.84	5668.93	99	
n-Tetratriacontane	8.03 J	5681.22	5668.93	100	
n-Pentatriacontane	11.72 J	5657.5	5668.93	100	
n-Hexatriacontane	2.43 J	5166.86	5668.93	91	
n-Heptatriacontane	1.5 J	5159.27	5668.93	91	
n-Octatriacontane	1.36 J	5245.98	5668.93	93	
n-Nonatriacontane	U	4718.28	5668.93	83	
n-Tetracontane	U	4747.93	5668.93	84	
Total SHC	2220.58	184280.38			
TPH	4406.49	187921.96			

Surrogate Recoveries (%)

5a-androstane	73	77
n-Tetracosane-d50	74	78

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-02-SC	08-03-BF005-02-SC			
Batch ID	09-0002	09-0002			
Battelle ID	Q5727-P	Q5727MS-P			
Sample Type	SA	MS			
Collection Date	09/20/08	09/20/08			
Extraction Date	01/22/09	01/22/09			
Analysis Date	02/02/09	02/03/09			
Analytical Instrument	FID	FID			
% Moisture	44.34	42.8			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	16.78	8.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	13.57 J	3525.95	5780.35	61	N
n-Decane	20.73 J	4128.52	5780.35	71	
n-Undecane	26.6 J	4892.96	5780.35	84	
n-Dodecane	27.82 J	4978.58	5780.35	86	
n-Tridecane	31.42 J	5079.77	5780.35	87	
Isoprenoid RRT 1380	8.72 J	22.96 J			
n-Tetradecane	35.54 J	5258.5	5780.35	90	
Isoprenoid RRT 1470	17.72 J	26.07 J			
n-Pentadecane	44.93 J	5371.87	5780.35	92	
Norpristane (1650)	10.72 J	14.09 J			
n-Hexadecane	37.06 J	5582.68	5780.35	96	
n-Heptadecane	44.43 J	5658.71	5780.35	97	
Pristane	33.13 J	5469.74	5780.35	94	
n-Octadecane	39.19 J	5665.66	5780.35	97	
Phytane	13.3 J	5553.78	5780.35	96	
n-Nonadecane	51.93 J	5865.58	5780.35	101	
n-Eicosane	48.18 J	5874.62	5780.35	101	
n-Heneicosane	86.35	5819.22	5780.35	99	
n-Docosane	75.21	5990.21	5780.35	102	
n-Tricosane	172.38	5934.67	5780.35	100	
n-Tetracosane	78.59	5811.57	5780.35	99	
n-Pentacosane	203.16	5946.34	5780.35	99	
n-Hexacosane	73.8	5798.52	5780.35	99	
n-Heptacosane	297.5	6032.52	5780.35	99	
n-Octacosane	52.34 J	5724.35	5780.35	98	
n-Nonacosane	223.29	6040.32	5780.35	101	
n-Triacontane	40.63 J	5982.15	5780.35	103	
n-Hentriacontane	184.88	5959.61	5780.35	100	
n-Dotriacontane	19.06 J	6203.94	5780.35	107	
n-Tritriacontane	74.02	6101.18	5780.35	104	
n-Tetratriacontane	8.74 J	6182.97	5780.35	107	
n-Pentatriacontane	16.19 J	6252.87	5780.35	108	
n-Hexatriacontane	3.46 J	5848.86	5780.35	101	
n-Heptatriacontane	3.49 J	6024.11	5780.35	104	
n-Octatriacontane	2.96 J	6372.6	5780.35	110	
n-Nonatriacontane	2.15 J	6037.8	5780.35	104	
n-Tetracontane	2.11 J	6440.1	5780.35	111	
Total SHC	2125.3	193473.95			
TPH	3606.85	197344.45			
Surrogate Recoveries (%)					
5a-androstane	87	84			
n-Tetracosane-d50	89	85			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF005-01-SC	08-03-KF005-01-SC			
Batch ID	09-0003	09-0003			
Battelle ID	Q5826-P	Q5826MS-P			
Sample Type	SA	MS			
Collection Date	08/31/08	08/31/08			
Extraction Date	01/29/09	01/29/09			
Analysis Date	02/06/09	02/06/09			
Analytical Instrument	FID	FID			
% Moisture	48.42	49.11			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	15.45	7.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	17.42 J	4507.54	6535.95	69	N
n-Decane	29.59 J	5550.97	6535.95	84	
n-Undecane	36.09 J	6122.48	6535.95	93	
n-Dodecane	35.86 J	6155.89	6535.95	94	
n-Tridecane	40.17 J	6180.96	6535.95	94	
Isoprenoid RRT 1380	9.8 J	28.36 J			
n-Tetradecane	43.6 J	6380.61	6535.95	97	
Isoprenoid RRT 1470	21.55 J	28.94 J			
n-Pentadecane	53.71 J	6484.92	6535.95	98	
Norpristane (1650)	11.51 J	14.66 J			
n-Hexadecane	42.55 J	6624.5	6535.95	101	
n-Heptadecane	51.27 J	6667.79	6535.95	101	
Pristane	39.33 J	6425.21	6535.95	98	
n-Octadecane	43.21 J	6596	6535.95	100	
Phytane	13.16 J	6476.92	6535.95	99	
n-Nonadecane	56.19 J	6756.62	6535.95	103	
n-Eicosane	53.68 J	6724.23	6535.95	102	
n-Heneicosane	96.48	6679.16	6535.95	101	
n-Docosane	86.57	6895.96	6535.95	104	
n-Tricosane	200.1	6816.95	6535.95	101	
n-Tetracosane	96.04	6686.81	6535.95	101	
n-Pentacosane	255.17	6841.98	6535.95	101	
n-Hexacosane	97.75	6642.89	6535.95	100	
n-Heptacosane	397.76	7060	6535.95	102	
n-Octacosane	70.26 J	6465.45	6535.95	98	
n-Nonacosane	280.02	6726.19	6535.95	99	
n-Triacontane	36.45 J	6583.66	6535.95	100	
n-Hentriacontane	221.31	6754.63	6535.95	100	
n-Dotriacontane	23.97 J	6700.98	6535.95	102	
n-Tritriacontane	83.81	6528.25	6535.95	99	
n-Tetratriacontane	8.84 J	6537.45	6535.95	100	
n-Pentatriacontane	15.4 J	6585.96	6535.95	101	
n-Hexatriacontane	3.75 J	6346.53	6535.95	97	
n-Heptatriacontane	3.28 J	6247.36	6535.95	96	
n-Octatriacontane	3.17 J	6530.46	6535.95	100	
n-Nonatriacontane	48.71 J	6184.77	6535.95	94	
n-Tetracontane	36.67 J	6712.71	6535.95	102	
Total SHC	2664.2	220254.75			
TPH	14225.96	243982.75			

Surrogate Recoveries (%)

5a-androstane	91	90
n-Tetracosane-d50	89	88

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC24	08-03-BD005-01-SC24			
Batch ID	09-0004	09-0004			
Battelle ID	Q5933-P	Q5933MS-P			
Sample Type	SA	MS			
Collection Date	09/15/08	09/15/08			
Extraction Date	02/03/09	02/03/09			
Analysis Date	02/14/09	02/14/09			
Analytical Instrument	FID	FID			
% Moisture	47.87	47.63			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	15.63	7.82			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	29.8 J	4092.16	6393.86	64	N
n-Decane	51.34 J	5221.51	6393.86	81	
n-Undecane	53.77 J	5758.48	6393.86	89	
n-Dodecane	50.97 J	5793.56	6393.86	90	
n-Tridecane	55.22 J	5849.14	6393.86	91	
Isoprenoid RRT 1380	14.55 J	29.07 J			
n-Tetradecane	58.04 J	6088.21	6393.86	94	
Isoprenoid RRT 1470	29.94 J	35.71 J			
n-Pentadecane	68.89 J	6248.98	6393.86	97	
Norpristane (1650)	20.09 J	21.11 J			
n-Hexadecane	58.66 J	6416.34	6393.86	99	
n-Heptadecane	69.61 J	6484.61	6393.86	100	
Pristane	49.69 J	6230.19	6393.86	97	
n-Octadecane	59.57 J	6413.17	6393.86	99	
Phytane	24.43 J	6284.2	6393.86	98	
n-Nonadecane	74.02	6567.97	6393.86	102	
n-Eicosane	71.28	6522.49	6393.86	101	
n-Heneicosane	114.06	6477.67	6393.86	100	
n-Docosane	108.67	6686.93	6393.86	103	
n-Tricosane	233.73	6612.97	6393.86	100	
n-Tetracosane	126.54	6474.09	6393.86	99	
n-Pentacosane	311.48	6636.74	6393.86	99	
n-Hexacosane	130.33	6426.32	6393.86	98	
n-Heptacosane	472.14	6859.71	6393.86	100	
n-Octacosane	98.15	6252.85	6393.86	96	
n-Nonacosane	328.51	6524.53	6393.86	97	
n-Triacontane	54.93 J	6355.31	6393.86	99	
n-Hentriacontane	257.17	6556.83	6393.86	99	
n-Dotriacontane	39.41 J	6472.63	6393.86	101	
n-Tritriacontane	94.74	6318.53	6393.86	97	
n-Tetratriacontane	15.73 J	6301.58	6393.86	98	
n-Pentatriacontane	22.74 J	6354.04	6393.86	99	
n-Hexatriacontane	8.45 J	6127.53	6393.86	96	
n-Heptatriacontane	6.03 J	6036.07	6393.86	94	
n-Octatriacontane	5.62 J	6293.99	6393.86	98	
n-Nonatriacontane	3.18 J	5875.68	6393.86	92	
n-Tetracontane	3.15 J	6251.51	6393.86	98	
Total SHC	3274.63	211952.41			
TPH	19513.94	237894.85			

Surrogate Recoveries (%)

5a-androstane	86	98
n-Tetracosane-d50	83	95

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0001	09-0002	09-0003	09-0004
Battelle ID	BM702PB-P	BM706PB-P	BM710PB-P	BM714PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/15/09	01/22/09	01/29/09	02/03/09
Extraction Date	01/15/09	01/22/09	01/29/09	02/03/09
Analysis Date	02/07/09	02/09/09	02/18/09	02/22/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	42.11	43.91	43.91	43.27
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.44	16.81	16.76	16.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	0.43 J	0.51 J	0.35 J	0.26 J
C1-Naphthalenes	0.12 J	0.19 J	0.1 J	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes	U	U	U	U
C4-Naphthalenes	U	U	U	U
Acenaphthylene	U	U	U	U
Acenaphthene	U	U	U	U
Biphenyl	U	U	0.06 J	U
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3-Fluorenes	U	U	U	U
Anthracene	U	U	U	U
Phenanthrene	U	U	0.07 J	U
C1-Phenanthrenes/Anthracenes	U	U	U	U
C2-Phenanthrenes/Anthracenes	U	U	U	U
C3-Phenanthrenes/Anthracenes	U	U	U	U
C4-Phenanthrenes/Anthracenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3-Dibenzothiophenes	U	U	U	U
Fluoranthene	U	U	U	U
Pyrene	U	U	0.01 J	U
C1-Fluoranthenes/Pyrenes	U	U	U	U
C2-Fluoranthenes/Pyrenes	U	U	U	U
C3-Fluoranthenes/Pyrenes	U	U	U	U
Benzo(a)anthracene	U	U	U	U
Chrysene	U	U	U	U
C1-Chrysenes	U	U	U	U
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	U	U	U	U
Benzo(k)fluoranthene	U	U	U	U
Benzo(e)pyrene	U	U	U	U
Benzo(a)pyrene	U	U	U	U
Perylene	U	U	U	U
Indeno(1,2,3-cd)pyrene	U	U	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	U	U	U
Total PAH	0.55	0.7	0.59	0.26
Surrogate Recoveries (%)				
Naphthalene-d8	71	62	69	72
Acenaphthene-d10	78	68	80	87
Phenanthrene-d10	79	69	81	92
Benzo(a)pyrene-d12	41	55	67	50

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	Laboratory Control				Laboratory Control			
Client ID	Sample				Sample			
Batch ID	09-0001				09-0002			
Battelle ID	BM703LCS-P				BM707LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/15/09				01/22/09			
Extraction Date	01/15/09				01/22/09			
Analysis Date	02/07/09				03/14/09			
Analytical Instrument	MS				MS			
% Moisture	42.11				43.91			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	17.49				16.86			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	61.79	57.22	108		77.16	59.35	130	
C1-Naphthalenes	U				U			
C2-Naphthalenes	U				U			
C3-Naphthalenes	U				U			
C4-Naphthalenes	U				U			
Acenaphthylene	58.7	57.20	103		61.06	59.34	103	
Acenaphthene	59.72	57.22	104		69.59	59.36	117	
Biphenyl	61.63	57.35	107		73.45	59.49	123	
Fluorene	60.78	57.20	106		72.49	59.33	122	
C1-Fluorenes	U				U			
C2-Fluorenes	U				U			
C3-Fluorenes	U				U			
Anthracene	61.21	57.22	107		64	59.36	108	
Phenanthrene	61.46	57.21	107		62.48	59.34	105	
C1-Phenanthrenes/Anthracenes	U				U			
C2-Phenanthrenes/Anthracenes	U				U			
C3-Phenanthrenes/Anthracenes	U				U			
C4-Phenanthrenes/Anthracenes	U				U			
Dibenzothiophene	60.2	57.37	105		65.12	59.51	109	
C1-Dibenzothiophenes	U				U			
C2-Dibenzothiophenes	U				U			
C3-Dibenzothiophenes	U				U			
Fluoranthene	69.24	57.21	121		63.03	59.35	106	
Pyrene	66.31	57.19	116		62.64	59.33	106	
C1-Fluoranthenes/Pyrenes	U				U			
C2-Fluoranthenes/Pyrenes	U				U			
C3-Fluoranthenes/Pyrenes	U				U			
Benzo(a)anthracene	63.29	57.19	111		64.61	59.33	109	
Chrysene	58.95	57.20	103		55.65	59.33	94	
C1-Chrysenes	U				U			
C2-Chrysenes	U				U			
C3-Chrysenes	U				U			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	56.18	57.21	98		66.2	59.35	112	
Benzo(k)fluoranthene	55.56	57.21	97		65.85	59.35	111	
Benzo(e)pyrene	64.21	57.28	112		68.13	59.42	115	
Benzo(a)pyrene	59.46	57.20	104		67.94	59.34	114	
Perylene	56.61	57.39	99		66.59	59.54	112	
Indeno(1,2,3-cd)pyrene	52.1	57.21	91		76.93	59.35	130	
Dibenz(a,h)anthracene	42.26	57.21	74		75.53	59.35	127	
Benzo(g,h,i)perylene	59.15	57.20	103		77.03	59.34	130	
Total PAH	1188.81				1355.48			
Surrogate Recoveries (%)								
Naphthalene-d8	74				57			
Acenaphthene-d10	82				64			
Phenanthrene-d10	85				79			
Benzo(a)pyrene-d12	81				79			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	Laboratory Control				Laboratory Control			
Client ID	Sample				Sample			
Batch ID	09-0003				09-0004			
Battelle ID	BM711LCS-P				BM715LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/29/09				02/03/09			
Extraction Date	01/29/09				02/03/09			
Analysis Date	03/14/09				03/15/09			
Analytical Instrument	MS				MS			
% Moisture	43.91				43.27			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	16.73				17.06			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	65.93	59.81	110		68.73	58.66	117	
C1-Naphthalenes	U				U			
C2-Naphthalenes	U				U			
C3-Naphthalenes	U				U			
C4-Naphthalenes	U				U			
Acenaphthylene	54.8	59.80	92		63.35	58.64	108	
Acenaphthene	60.38	59.82	101		65.87	58.66	112	
Biphenyl	64.44	59.95	107		72.88	58.79	124	
Fluorene	64.64	59.79	108		70.21	58.64	120	
C1-Fluorenes	U				U			
C2-Fluorenes	U				U			
C3-Fluorenes	U				U			
Anthracene	61.15	59.82	102		69.43	58.66	118	
Phenanthrene	57.84	59.81	97		68.15	58.65	116	
C1-Phenanthrenes/Anthracenes	U				U			
C2-Phenanthrenes/Anthracenes	U				U			
C3-Phenanthrenes/Anthracenes	U				U			
C4-Phenanthrenes/Anthracenes	U				U			
Dibenzothiophene	61.18	59.98	102		71	58.82	121	
C1-Dibenzothiophenes	U				U			
C2-Dibenzothiophenes	U				U			
C3-Dibenzothiophenes	U				U			
Fluoranthene	58.79	59.81	98		74.85	58.65	128	
Pyrene	57.98	59.79	97		71.85	58.63	123	
C1-Fluoranthenes/Pyrenes	U				U			
C2-Fluoranthenes/Pyrenes	U				U			
C3-Fluoranthenes/Pyrenes	U				U			
Benzo(a)anthracene	58.82	59.79	98		71.78	58.63	122	
Chrysene	52.18	59.79	87		64.14	58.64	109	
C1-Chrysenes	U				U			
C2-Chrysenes	U				U			
C3-Chrysenes	U				U			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	56.2	59.81	94		67.24	58.65	115	
Benzo(k)fluoranthene	55.77	59.81	93		64.22	58.65	109	
Benzo(e)pyrene	57.56	59.89	96		66.25	58.73	113	
Benzo(a)pyrene	60.41	59.80	101		67.1	58.65	114	
Perylene	59.39	60.00	99		64.08	58.84	109	
Indeno(1,2,3-cd)pyrene	65.66	59.81	110		72.37	58.65	123	
Dibenz(a,h)anthracene	65.79	59.81	110		72.23	58.65	123	
Benzo(g,h,i)perylene	64.32	59.80	108		70.49	58.64	120	
Total PAH	1203.23				1376.22			
Surrogate Recoveries (%)								
Naphthalene-d8	75				63			
Acenaphthene-d10	82				68			
Phenanthrene-d10	96				72			
Benzo(a)pyrene-d12	107				81			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	090106-03: NIST 1944				090106-03: NIST 1944			
Batch ID	09-0001				09-0002			
Battelle ID	BM704SRM-P				BM708SRM-P			
Sample Type	SRM				SRM			
Collection Date	01/15/09				01/22/09			
Extraction Date	01/15/09				01/22/09			
Analysis Date	03/14/09				03/14/09			
Analytical Instrument	MS				MS			
% Moisture	1.3				1.3			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	1.93				1.87			
Size Unit-Basis	G_DRY	Certified	Actual		G_DRY	Certified	Actual	
Units	UG/KG_DRY	Value	%Difference	Qualifier	UG/KG_DRY	Value	%Difference	Qualifier
Naphthalene	1013.47	1650	38.6	N	1288.31	1650	21.9	
C1-Naphthalenes	546.06				688.69			
C2-Naphthalenes	1362.89				1424.63			
C3-Naphthalenes	1685.02				1671.63			
C4-Naphthalenes	1753.65				1801.58			
Acenaphthylene	1186.82				515.23			
Acenaphthene	287.12				298.55			
Biphenyl	200.72				180.8			
Fluorene	345.02				335.53			
C1-Fluorenes	437.12				428.3			
C2-Fluorenes	1114.18				759.65			
C3-Fluorenes	3032.5				999.02			
Anthracene	982.95	1770	44.5	N	929.1	1770	47.5	N
Phenanthrene	5298.43	5270	0.5		5348.4	5270	1.5	
C1-Phenanthrenes/Anthracenes	5356.33				5526.65			
C2-Phenanthrenes/Anthracenes	5890.45				6265.76			
C3-Phenanthrenes/Anthracenes	3585.82				4162.32			
C4-Phenanthrenes/Anthracenes	1687.62				2954.02			
Dibenzothiophene	769.48				668.24			
C1-Dibenzothiophenes	1694.47				1487.13			
C2-Dibenzothiophenes	3065.48				2714.55			
C3-Dibenzothiophenes	2149.11				2190.18			
Fluoranthene	8469.02	8920	5.1		9038.26	8920	1.3	
Pyrene	8213.7	9700	15.3		8987.13	9700	7.3	
C1-Fluoranthenes/Pyrenes	5890.97				6486.71			
C2-Fluoranthenes/Pyrenes	4432.34				2691.6			
C3-Fluoranthenes/Pyrenes	1991.45				1201.75			
Benzo(a)anthracene	3472.23	4720	26.4		3371.19	4720	28.6	
Chrysene	4881.59	5900	17.3		4306.99	5900	27	
C1-Chrysenes	3100.93				3098.05			
C2-Chrysenes	1655.46				1579.02			
C3-Chrysenes	808.87				919.79			
C4-Chrysenes	333.04				355.05			
Benzo(b)fluoranthene	3673.08	3870	5.1		3208.71	3870	17.1	
Benzo(k)fluoranthene	3618.41	4390	17.6		3004.19	4390	31.6	
Benzo(e)pyrene	3188.08				3033.49			
Benzo(a)pyrene	513.22	4300	88.1	N	1581.83	4300	63.2	N
Perylene	318.3	1170	72.8	N	555.5	1170	52.5	N
Indeno(1,2,3-cd)pyrene	3024.91	2780	8.8		2339.14	2780	15.9	
Dibenz(a,h)anthracene	731.16	759	3.7		546.48	759	28	
Benzo(g,h,i)perylene	2841.95	2840	0.1		2056.02	2840	27.6	
Total PAH	104603.42				100999.17			

Surrogate Recoveries (%)

Naphthalene-d8	63				62			
Acenaphthene-d10	69				70			
Phenanthrene-d10	80				80			
Benzo(a)pyrene-d12	10	N			33	N		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	090106-03: NIST 1944				090106-03: NIST 1944			
Batch ID	09-0003				09-0004			
Battelle ID	BM712SRM-P				BM716SRM-P			
Sample Type	SRM				SRM			
Collection Date	01/29/09				02/03/09			
Extraction Date	01/29/09				02/03/09			
Analysis Date	03/14/09				02/22/09			
Analytical Instrument	MS				MS			
% Moisture	1.3				1.3			
% Lipid	NA				NA			
Matrix	SEDIMENT				SEDIMENT			
Sample Size	1.92				1.90			
Size Unit-Basis	G_DRY	Certified	Actual		G_DRY	Certified	Actual	
Units	UG/KG_DRY	Value	%Difference	Qualifier	UG/KG_DRY	Value	%Difference	Qualifier
Naphthalene	1240.82	1650	24.8		1237.5	1650	25	
C1-Naphthalenes	648.94				569.06			
C2-Naphthalenes	1381.76				1160.14			
C3-Naphthalenes	1724.9				1449.96			
C4-Naphthalenes	1827.56				1493.87			
Acenaphthylene	488.12				276.74			
Acenaphthene	287.78				267.19			
Biphenyl	197.88				196.38			
Fluorene	345.65				332.64			
C1-Fluorenes	447.28				388.39			
C2-Fluorenes	676.52				710.74			
C3-Fluorenes	843.22				748.11			
Anthracene	861.14	1770	51.3	N	633.45	1770	64.2	N
Phenanthrene	4901.33	5270	7		5146.59	5270	2.3	
C1-Phenanthrenes/Anthracenes	4712.68				5238.37			
C2-Phenanthrenes/Anthracenes	5610.79				5655.92			
C3-Phenanthrenes/Anthracenes	3422.11				3568.57			
C4-Phenanthrenes/Anthracenes	1463.53				1539.14			
Dibenzothiophene	726.05				583.89			
C1-Dibenzothiophenes	1562.73				1236.86			
C2-Dibenzothiophenes	2651.16				2234.43			
C3-Dibenzothiophenes	1931.13				1767.92			
Fluoranthene	7358.1	8920	17.5		9705.22	8920	8.8	
Pyrene	7091.31	9700	26.9		9955.18	9700	2.6	
C1-Fluoranthenes/Pyrenes	5379.06				6639.03			
C2-Fluoranthenes/Pyrenes	2205.94				2717.53			
C3-Fluoranthenes/Pyrenes	1061.29				1195.67			
Benzo(a)anthracene	3907.44	4720	17.2		3248.26	4720	31.2	
Chrysene	4959.63	5900	15.9		4487.38	5900	23.9	
C1-Chrysenes	3625				2720.9			
C2-Chrysenes	1828.2				1351.4			
C3-Chrysenes	944.35				564.44			
C4-Chrysenes	415.74				270.95			
Benzo(b)fluoranthene	4085.57	3870	5.6		6690.99	3870	72.9	N
Benzo(k)fluoranthene	3726.86	4390	15.1		6969.25	4390	58.8	N
Benzo(e)pyrene	3454.09				6160.87			
Benzo(a)pyrene	2112.15	4300	50.9	N	3434.2	4300	20.1	
Perylene	722.83	1170	38.2	N	1093.74	1170	6.5	
Indeno(1,2,3-cd)pyrene	3432.21	2780	23.5		4127.22	2780	48.5	N
Dibenz(a,h)anthracene	780.83	759	2.9		885.62	759	16.7	
Benzo(g,h,i)perylene	3169	2840	11.6		3691.85	2840	30	
Total PAH	98212.68				112345.56			

Surrogate Recoveries (%)

Naphthalene-d8	65	56	
Acenaphthene-d10	76	70	
Phenanthrene-d10	87	79	
Benzo(a)pyrene-d12	51	33	N

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0001				09-0002			
Battelle ID	BM705NSC-P				BM709NSC-P			
Sample Type	NSC				NSC			
Collection Date	01/21/09				01/29/09			
Extraction Date	01/21/09				01/29/09			
Analysis Date	02/07/09				02/09/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
Naphthalene	737.81	740.29	0.3		782.38	740.29	5.7	
C1-Naphthalenes	1442.26	1516.04	4.9		1504.1	1516.04	0.8	
C2-Naphthalenes	1821.23	2000.10	8.9		1890.18	2000.10	5.5	
C3-Naphthalenes	1419.89	1526.96	7.0		1473.8	1526.96	3.5	
C4-Naphthalenes	766.49	898.03	14.6		776.15	898.03	13.6	
Acenaphthylene	10.17				8.64			
Acenaphthene	13.84	14.50	4.6		14.13	14.50	2.6	
Biphenyl	216.15	220.82	2.1		220.29	220.82	0.2	
Fluorene	104.36	92.51	12.8		108.71	92.51	17.5	
C1-Fluorenes	219.7	227.01	3.2		226.71	227.01	0.1	
C2-Fluorenes	343.34	367.09	6.5		344.66	367.09	6.1	
C3-Fluorenes	294.12	326.32	9.9		303.01	326.32	7.1	
Anthracene	4.01				4.69			
Phenanthrene	274.42	249.49	10.0		287.98	249.49	15.4	
C1-Phenanthrenes/Anthracenes	569.34	549.17	3.7		592.46	549.17	7.9	
C2-Phenanthrenes/Anthracenes	626.17	642.72	2.6		652.3	642.72	1.5	
C3-Phenanthrenes/Anthracenes	454.4	446.11	1.9		463.88	446.11	4.0	
C4-Phenanthrenes/Anthracenes	159.56	180.02	11.4		161.07	180.02	10.5	
Dibenzothiophene	227.63	210.35	8.2		239.26	210.35	13.7	
C1-Dibenzothiophenes	419.74	409.03	2.6		435.46	409.03	6.5	
C2-Dibenzothiophenes	557.95	551.46	1.2		577.54	551.46	4.7	
C3-Dibenzothiophenes	444.4	471.36	5.7		456.86	471.36	3.1	
Fluoranthene	5.15				5.3			
Pyrene	16.64	12.99	28.1		15.93	12.99	22.6	
C1-Fluoranthenes/Pyrenes	87.02	70.92	22.7		90.37	70.92	27.4	
C2-Fluoranthenes/Pyrenes	144.79	117.89	22.8		149.42	117.89	26.7	
C3-Fluoranthenes/Pyrenes	156.41	137.25	14.0		157.22	137.25	14.6	
Benzo(a)anthracene	4.85				5.75			
Chrysene	50.24	47.18	6.5		54.06	47.18	14.6	
C1-Chrysenes	82.82	78.82	5.1		87.86	78.82	11.5	
C2-Chrysenes	99.61	102.67	3.0		107.74	102.67	4.9	
C3-Chrysenes	84.46	85.36	1.1		86.89	85.36	1.8	
C4-Chrysenes	62.57	61.99	0.9		61.13	61.99	1.4	
Benzo(b)fluoranthene	4.87	6.08	19.9		5.45	6.08	10.4	
Benzo(k)fluoranthene	U				U			
Benzo(e)pyrene	10.88	12.88	15.5		11.65	12.88	9.5	
Benzo(a)pyrene	1.32 J				1.48 J			
Perylene	U				U			
Indeno(1,2,3-cd)pyrene	U				U			
Dibenz(a,h)anthracene	1.01 J				1.16 J			
Benzo(g,h,i)perylene	3.02	3.44	12.2		3.27	3.44	4.9	
Total PAH	11942.64				12368.94			
Surrogate Recoveries (%)								
Naphthalene-d8	97				85			
Acenaphthene-d10	103				92			
Phenanthrene-d10	101				88			
Benzo(a)pyrene-d12	116				101			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0003				09-0004			
Battelle ID	BM713NSC-P				BM717NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/05/09				02/13/09			
Extraction Date	02/05/09				02/13/09			
Analysis Date	02/18/09				02/22/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
Naphthalene	740.06	740.29	0.0		715.77	740.29	3.3	
C1-Naphthalenes	1422.53	1516.04	6.2		1339.44	1516.04	11.6	
C2-Naphthalenes	1812.73	2000.10	9.4		1709.59	2000.10	14.5	
C3-Naphthalenes	1345.74	1526.96	11.9		1283.7	1526.96	15.9	
C4-Naphthalenes	736.01	898.03	18.0		693.39	898.03	22.8	
Acenaphthylene	U				5.48			
Acenaphthene	14.15	14.50	2.4		12.99	14.50	10.4	
Biphenyl	211.12	220.82	4.4		197.89	220.82	10.4	
Fluorene	102.62	92.51	10.9		96.57	92.51	4.4	
C1-Fluorenes	218.72	227.01	3.7		206.49	227.01	9.0	
C2-Fluorenes	324.06	367.09	11.7		314.04	367.09	14.5	
C3-Fluorenes	283.38	326.32	13.2		279.09	326.32	14.5	
Anthracene	3.06				2.72			
Phenanthrene	280.86	249.49	12.6		263.27	249.49	5.5	
C1-Phenanthrenes/Anthracenes	595.76	549.17	8.5		563.96	549.17	2.7	
C2-Phenanthrenes/Anthracenes	661.39	642.72	2.9		629.43	642.72	2.1	
C3-Phenanthrenes/Anthracenes	452.01	446.11	1.3		432.15	446.11	3.1	
C4-Phenanthrenes/Anthracenes	158.22	180.02	12.1		149.17	180.02	17.1	
Dibenzothiophene	224.22	210.35	6.6		209.52	210.35	0.4	
C1-Dibenzothiophenes	416.48	409.03	1.8		392.67	409.03	4.0	
C2-Dibenzothiophenes	558.81	551.46	1.3		527.01	551.46	4.4	
C3-Dibenzothiophenes	438.35	471.36	7.0		417.25	471.36	11.5	
Fluoranthene	5.26				5.05			
Pyrene	16.43	12.99	26.5		14.79	12.99	13.9	
C1-Fluoranthenes/Pyrenes	86.2	70.92	21.5		80.94	70.92	14.1	
C2-Fluoranthenes/Pyrenes	145.6	117.89	23.5		138.22	117.89	17.2	
C3-Fluoranthenes/Pyrenes	152.79	137.25	11.3		146.36	137.25	6.6	
Benzo(a)anthracene	5.56				5.17			
Chrysene	51.45	47.18	9.1		50.36	47.18	6.7	
C1-Chrysenes	79.64	78.82	1.0		76.56	78.82	2.9	
C2-Chrysenes	101.55	102.67	1.1		98.42	102.67	4.1	
C3-Chrysenes	78.85	85.36	7.6		74.68	85.36	12.5	
C4-Chrysenes	54.05	61.99	12.8		55.08	61.99	11.1	
Benzo(b)fluoranthene	4.9	6.08	19.4		4.6	6.08	24.3	
Benzo(k)fluoranthene	0.84 J				U			
Benzo(e)pyrene	10.73	12.88	16.7		9.81	12.88	23.8	
Benzo(a)pyrene	1.59 J				1.03 J			
Perylene	0.73 J				U			
Indeno(1,2,3-cd)pyrene	U				U			
Dibenz(a,h)anthracene	0.97 J				0.97 J			
Benzo(g,h,i)perylene	2.99	3.44	13.1		2.85	3.44	17.2	
Total PAH	11800.41				11206.48			
Surrogate Recoveries (%)								
Naphthalene-d8	88				97			
Acenaphthene-d10	96				109			
Phenanthrene-d10	90				104			
Benzo(a)pyrene-d12	103				121 N			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope			
Client ID	Crude			
Batch ID	09-0004			
Battelle ID	BM908NSC-P			
Sample Type	NSC			
Collection Date	03/12/09			
Extraction Date	03/12/09			
Analysis Date	03/15/09			
Analytical Instrument	MS			
% Moisture	NA			
% Lipid	NA			
Matrix	OIL			
Sample Size	5.05			
Size Unit-Basis	MG_OIL			
Units	MG/KG_OIL		Target	% Difference Qualifier
Naphthalene	791.03		740.29	6.9
C1-Naphthalenes	1522.94		1516.04	0.5
C2-Naphthalenes	2064.03		2000.10	3.2
C3-Naphthalenes	1577.66		1526.96	3.3
C4-Naphthalenes	909.18		898.03	1.2
Acenaphthylene	6.15			
Acenaphthene	18.52		14.50	27.7
Biphenyl	232.05		220.82	5.1
Fluorene	99.14		92.51	7.2
C1-Fluorenes	257.74		227.01	13.5
C2-Fluorenes	381.6		367.09	4.0
C3-Fluorenes	350.57		326.32	7.4
Anthracene		U		
Phenanthrene	298.49		249.49	19.6
C1-Phenanthrenes/Anthracenes	661.06		549.17	20.4
C2-Phenanthrenes/Anthracenes	781.57		642.72	21.6
C3-Phenanthrenes/Anthracenes	550.19		446.11	23.3
C4-Phenanthrenes/Anthracenes	211.84		180.02	17.7
Dibenzothiophene	256.57		210.35	22.0
C1-Dibenzothiophenes	488.28		409.03	19.4
C2-Dibenzothiophenes	708.52		551.46	28.5
C3-Dibenzothiophenes	580.87		471.36	23.2
Fluoranthene	4.89			
Pyrene	13.92		12.99	7.2
C1-Fluoranthenes/Pyrenes	89.96		70.92	26.8
C2-Fluoranthenes/Pyrenes	150.75		117.89	27.9
C3-Fluoranthenes/Pyrenes	170.62		137.25	24.3
Benzo(a)anthracene	5.71			
Chrysene	51.84		47.18	9.9
C1-Chrysenes	87.35		78.82	10.8
C2-Chrysenes	109.01		102.67	6.2
C3-Chrysenes	97.83		85.36	14.6
C4-Chrysenes	66.55		61.99	7.4
Benzo(b)fluoranthene	6.29		6.08	3.5
Benzo(k)fluoranthene		U		
Benzo(e)pyrene	11.36		12.88	11.8
Benzo(a)pyrene	0.74	J		
Perylene		U		
Indeno(1,2,3-cd)pyrene		U		
Dibenz(a,h)anthracene	0.93	J		
Benzo(g,h,i)perylene	3		3.44	12.8
Total PAH	13618.75			

Surrogate Recoveries (%)

Naphthalene-d8	78
Acenaphthene-d10	86
Phenanthrene-d10	85
Benzo(a)pyrene-d12	104

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-01-SC		
Batch ID	09-0002	09-0002		
Battelle ID	Q5726-P	Q5726DUP-P		
Sample Type	SA	QADU		
Collection Date	09/20/08	09/20/08		
Extraction Date	01/22/09	01/22/09		
Analysis Date	02/09/09	02/09/09		
Analytical Instrument	MS	MS		
% Moisture	45.72	46.41		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	16.35	16.08		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	12.31	13.46	8.9	
C1-Naphthalenes	27.09	28.69	5.7	
C2-Naphthalenes	36.79	38.2	3.8	
C3-Naphthalenes	27.86	27.9	0.1	
C4-Naphthalenes	15.9	15.48	2.7	
Acenaphthylene	U	U	NA	
Acenaphthene	0.49 J	0.42 J	NA	
Biphenyl	5.07	5.32	4.8	
Fluorene	3.55	3.44	3.1	
C1-Fluorenes	5.28	4.66	12.5	
C2-Fluorenes	8.59	6.82	23.0	
C3-Fluorenes	U	U	NA	
Anthracene	0.66	0.65	1.5	
Phenanthrene	21.17	21.33	0.8	
C1-Phenanthrenes/Anthracenes	30.86	30.23	2.1	
C2-Phenanthrenes/Anthracenes	26.23	26.67	1.7	
C3-Phenanthrenes/Anthracenes	14.86	15.36	3.3	
C4-Phenanthrenes/Anthracenes	11.75	12.12	3.1	
Dibenzothiophene	2.56	2.59	1.2	
C1-Dibenzothiophenes	5.56	5.51	0.9	
C2-Dibenzothiophenes	5.6	5.79	3.3	
C3-Dibenzothiophenes	3.64	3.74	2.7	
Fluoranthene	4.37	4.07	7.1	
Pyrene	5.44	5.45	0.2	
C1-Fluoranthenes/Pyrenes	15.18	14.9	1.9	
C2-Fluoranthenes/Pyrenes	13.04	12.87	1.3	
C3-Fluoranthenes/Pyrenes	8.39	8.76	4.3	
Benzo(a)anthracene	1.76	1.66	5.8	
Chrysene	7.73	7.88	1.9	
C1-Chrysenes	8.09	8.05	0.5	
C2-Chrysenes	6.46	6.44	0.3	
C3-Chrysenes	4.04	4.18	3.4	
C4-Chrysenes	U	U	NA	
Benzo(b)fluoranthene	5	4.91	1.8	
Benzo(k)fluoranthene	1.2 J	0.86 J	NA	
Benzo(e)pyrene	5.41	5.15	4.9	
Benzo(a)pyrene	1.25	1.07	15.5	
Perylene	19.84	19.6	1.2	
Indeno(1,2,3-cd)pyrene	1.25	0.97	25.2	
Dibenz(a,h)anthracene	0.54 J	0.54 J	NA	
Benzo(g,h,i)perylene	3.76	3.62	3.8	
Total PAH	378.57	379.36	0.2	
Surrogate Recoveries (%)				
Naphthalene-d8	60	60		
Acenaphthene-d10	68	68		
Phenanthrene-d10	73	71		
Benzo(a)pyrene-d12	66	64		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF015-01-SC	08-03-KF015-01-SC		
Batch ID	09-0003	09-0003		
Battelle ID	Q5824-P	Q5824DUP-P		
Sample Type	SA	QADU		
Collection Date	08/31/08	08/31/08		
Extraction Date	01/29/09	01/29/09		
Analysis Date	02/18/09	02/18/09		
Analytical Instrument	MS	MS		
% Moisture	24.64	25.82		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	22.71	22.25		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	1.88	1.94	3.1	
C1-Naphthalenes	3.26	3.49	6.8	
C2-Naphthalenes	4.43	4.73	6.6	
C3-Naphthalenes	3.08	3.4	9.9	
C4-Naphthalenes	1.79	2.35	27.1	
Acenaphthylene	0.02 J	0.01 J	NA	
Acenaphthene	0.07 J	0.09 J	NA	
Biphenyl	0.75	0.81	7.7	
Fluorene	0.52	0.55	5.6	
C1-Fluorenes	0.72	0.73	1.4	
C2-Fluorenes	1.14	1.14	0.0	
C3-Fluorenes	U	U	NA	
Anthracene	0.05 J	0.07 J	NA	
Phenanthrene	2.79	2.88	3.2	
C1-Phenanthrenes/Anthracenes	3.82	3.93	2.8	
C2-Phenanthrenes/Anthracenes	3.48	3.63	4.2	
C3-Phenanthrenes/Anthracenes	1.71	1.83	6.8	
C4-Phenanthrenes/Anthracenes	1.21	1.48	20.1	
Dibenzothiophene	0.35 J	0.36 J	NA	
C1-Dibenzothiophenes	0.75	0.7	6.9	
C2-Dibenzothiophenes	0.72	0.73	1.4	
C3-Dibenzothiophenes	0.46	0.45 J	2.2	
Fluoranthene	0.49	0.53	7.8	
Pyrene	0.65	0.64	1.6	
C1-Fluoranthenes/Pyrenes	1.73	1.75	1.1	
C2-Fluoranthenes/Pyrenes	1.49	1.48	0.7	
C3-Fluoranthenes/Pyrenes	1.1	1.09	0.9	
Benzo(a)anthracene	0.18 J	0.21 J	NA	
Chrysene	0.96	0.96	0.0	
C1-Chrysenes	0.95	0.95	0.0	
C2-Chrysenes	0.88	0.86	2.3	
C3-Chrysenes	0.57	0.57	0.0	
C4-Chrysenes	U	U	NA	
Benzo(b)fluoranthene	0.46	0.55	17.8	
Benzo(k)fluoranthene	0.12 J	0.12 J	NA	
Benzo(e)pyrene	0.54	0.61	12.2	
Benzo(a)pyrene	0.13 J	0.12 J	NA	
Perylene	3.35	3.92	15.7	
Indeno(1,2,3-cd)pyrene	0.09 J	0.1 J	NA	
Dibenz(a,h)anthracene	0.06 J	0.05 J	NA	
Benzo(g,h,i)perylene	0.4 J	0.43 J	NA	
Total PAH	47.15	50.24	6.3	
Surrogate Recoveries (%)				
Naphthalene-d8	56	58		
Acenaphthene-d10	69	70		
Phenanthrene-d10	72	74		
Benzo(a)pyrene-d12	74	71		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02	08-03-BD005-01-SC02		
Batch ID	09-0004	09-0004		
Battelle ID	Q5932-P	Q5932DUP-P		
Sample Type	SA	QADU		
Collection Date	09/15/08	09/15/08		
Extraction Date	02/03/09	02/03/09		
Analysis Date	02/22/09	02/22/09		
Analytical Instrument	MS	MS		
% Moisture	47.95	47.81		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	15.59	15.64		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	41.27	44.9	8.4	
C1-Naphthalenes	56.41	68.12	18.8	
C2-Naphthalenes	59.65	66.69	11.1	
C3-Naphthalenes	41.83	44.6	6.4	
C4-Naphthalenes	26.04	26.66	2.4	
Acenaphthylene	U	0.18 J	NA	
Acenaphthene	1.27	1.31	3.1	
Biphenyl	9.22	9.44	2.4	
Fluorene	8.17	8.85	8.0	
C1-Fluorenes	11.07	11.44	3.3	
C2-Fluorenes	14.96	16.39	9.1	
C3-Fluorenes	11.29	14.75	26.6	
Anthracene	0.84	0.94	11.2	
Phenanthrene	29.18	29.43	0.9	
C1-Phenanthrenes/Anthracenes	42.52	42.81	0.7	
C2-Phenanthrenes/Anthracenes	40.42	46.46	13.9	
C3-Phenanthrenes/Anthracenes	23.45	30.35	25.7	
C4-Phenanthrenes/Anthracenes	16.94	22.73	29.2	
Dibenzothiophene	4.14	4.07	1.7	
C1-Dibenzothiophenes	8.32	8.24	1.0	
C2-Dibenzothiophenes	9.03	9.05	0.2	
C3-Dibenzothiophenes	5.87	5.99	2.0	
Fluoranthene	6.49	6.62	2.0	
Pyrene	8.55	8.47	0.9	
C1-Fluoranthenes/Pyrenes	27.35	37.5	31.3	N
C2-Fluoranthenes/Pyrenes	25.58	35.37	32.1	N
C3-Fluoranthenes/Pyrenes	16.24	20.62	23.8	
Benzo(a)anthracene	2.49	2.59	3.9	
Chrysene	9.99	9.3	7.2	
C1-Chrysenes	11.07	10.44	5.9	
C2-Chrysenes	9.98	9.26	7.5	
C3-Chrysenes	5.22	4.75	9.4	
C4-Chrysenes	2.1	1.79	15.9	
Benzo(b)fluoranthene	7.67	7.92	3.2	
Benzo(k)fluoranthene	2.12	2.18	2.8	
Benzo(e)pyrene	8.46	8.45	0.1	
Benzo(a)pyrene	1.94	1.93	0.5	
Perylene	32.29	27.37	16.5	
Indeno(1,2,3-cd)pyrene	1.96	1.66	16.6	
Dibenz(a,h)anthracene	0.95	0.72	27.5	
Benzo(g,h,i)perylene	7.3	5.94	20.5	
Total PAH	649.64	716.28	9.8	
Surrogate Recoveries (%)				
Naphthalene-d8	62	60		
Acenaphthene-d10	78	75		
Phenanthrene-d10	86	83		
Benzo(a)pyrene-d12	73	60		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR001-01-SC	08-03-KR001-01-SC			
Batch ID	09-0001	09-0001			
Battelle ID	Q5662-P	Q5662MS-P			
Sample Type	SA	MS			
Collection Date	08/27/08	08/27/08			
Extraction Date	01/15/09	01/15/09			
Analysis Date	03/14/09	03/14/09			
Analytical Instrument	MS	MS			
% Moisture	44.27	44.26			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	16.68	8.82			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	7.67	128.62	113.46	107	
C1-Naphthalenes	17.45	175.68			
C2-Naphthalenes	26.38	103.81			
C3-Naphthalenes	18.83	94.77			
C4-Naphthalenes	11.54	17.6			
Acenaphthylene	0.11 J	112.79	113.43	99	
Acenaphthene	0.28 J	115.21	113.46	101	
Biphenyl	3.8	130.72	113.72	112	
Fluorene	1.87	120.08	113.42	104	
C1-Fluorenes	3.53	3.81			
C2-Fluorenes	5.44	6.13			
C3-Fluorenes	5.19	4.76			
Anthracene	0.48 J	118.84	113.46	104	
Phenanthrene	14.16	131.23	113.44	103	
C1-Phenanthrenes/Anthracenes	20.87	113.4			
C2-Phenanthrenes/Anthracenes	19.48	116.56			
C3-Phenanthrenes/Anthracenes	11.01	15.68			
C4-Phenanthrenes/Anthracenes	9.29	12.49			
Dibenzothiophene	1.6	119.79	113.76	104	
C1-Dibenzothiophenes	3.5	4.63			
C2-Dibenzothiophenes	3.8	8.44			
C3-Dibenzothiophenes	2.67	3.08			
Fluoranthene	2.73	129.79	113.45	112	
Pyrene	3.29	129.24	113.41	111	
C1-Fluoranthenes/Pyrenes	8.99	10.56			
C2-Fluoranthenes/Pyrenes	7.87	10.2			
C3-Fluoranthenes/Pyrenes	5.31	6.68			
Benzo(a)anthracene	0.95	115.19	113.41	101	
Chrysene	4.3	105.82	113.42	90	
C1-Chrysenes	4.5	5.91			
C2-Chrysenes	3.96	5.89			
C3-Chrysenes	2.39	4.18			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	4.28	135.87	113.45	116	
Benzo(k)fluoranthene	0.6 J	122.15	113.45	107	
Benzo(e)pyrene	3.8	129.84	113.59	111	
Benzo(a)pyrene	0.66	117.55	113.44	103	
Perylene	17.51	138.28	113.81	106	
Indeno(1,2,3-cd)pyrene	0.62	123.13	113.45	108	
Dibenz(a,h)anthracene	0.34 J	95.8	113.45	84	
Benzo(g,h,i)perylene	1.49	108.53	113.43	94	
Total PAH	262.54	3152.73			

Surrogate Recoveries (%)

Naphthalene-d8	57	64
Acenaphthene-d10	64	70
Phenanthrene-d10	69	77
Benzo(a)pyrene-d12	49	71

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-02-SC	08-03-BF005-02-SC			
Batch ID	09-0002	09-0002			
Battelle ID	Q5727-P	Q5727MS-P			
Sample Type	SA	MS			
Collection Date	09/20/08	09/20/08			
Extraction Date	01/22/09	01/22/09			
Analysis Date	02/09/09	02/09/09			
Analytical Instrument	MS	MS			
% Moisture	44.34	42.8			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	16.78	8.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	11.94	137.7	115.69	109	
C1-Naphthalenes	25.79	176.89			
C2-Naphthalenes	34.83	97.16			
C3-Naphthalenes	26.22	88.67			
C4-Naphthalenes	15.36	14.53			
Acenaphthylene	U	115.1	115.66	100	
Acenaphthene	0.51 J	119.99	115.69	103	
Biphenyl	4.88	128.4	115.95	107	
Fluorene	3.34	125.24	115.65	105	
C1-Fluorenes	4.7	4.29			
C2-Fluorenes	7.65	7.46			
C3-Fluorenes	U	U			
Anthracene	0.49 J	116.1	115.69	100	
Phenanthrene	20.78	142.17	115.67	105	
C1-Phenanthrenes/Anthracenes	29.48	112.2			
C2-Phenanthrenes/Anthracenes	25.59	100.23			
C3-Phenanthrenes/Anthracenes	14.51	12.71			
C4-Phenanthrenes/Anthracenes	11.26	9.59			
Dibenzothiophene	2.54	126.28	116.00	107	
C1-Dibenzothiophenes	5.33	4.78			
C2-Dibenzothiophenes	5.54	8.78			
C3-Dibenzothiophenes	3.48	3.49			
Fluoranthene	4.12	145.31	115.68	122	
Pyrene	5.15	143.72	115.64	120	
C1-Fluoranthenes/Pyrenes	15.57	12.63			
C2-Fluoranthenes/Pyrenes	12.82	10.61			
C3-Fluoranthenes/Pyrenes	8.54	7.26			
Benzo(a)anthracene	1.55	129.46	115.64	111	
Chrysene	7.52	127.8	115.65	104	
C1-Chrysenes	7.48	6.87			
C2-Chrysenes	6.42	5.99			
C3-Chrysenes	3.79	4.78			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	4.55	127.96	115.68	107	
Benzo(k)fluoranthene	0.93 J	129	115.68	111	
Benzo(e)pyrene	4.88	136.46	115.83	114	
Benzo(a)pyrene	0.99	122.21	115.66	105	
Perylene	18.2	136.91	116.05	102	
Indeno(1,2,3-cd)pyrene	0.72	124.33	115.68	107	
Dibenz(a,h)anthracene	0.42 J	118.8	115.68	102	
Benzo(g,h,i)perylene	3.32	130.84	115.66	110	
Total PAH	361.19	3272.7			

Surrogate Recoveries (%)

Naphthalene-d8	62	64
Acenaphthene-d10	69	72
Phenanthrene-d10	75	76
Benzo(a)pyrene-d12	71	73

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF005-01-SC	08-03-KF005-01-SC			
Batch ID	09-0003	09-0003			
Battelle ID	Q5826-P	Q5826MS-P			
Sample Type	SA	MS			
Collection Date	08/31/08	08/31/08			
Extraction Date	01/29/09	01/29/09			
Analysis Date	03/14/09	03/14/09			
Analytical Instrument	MS	MS			
% Moisture	48.42	49.11			
% Lipid	NA	NA			
Matrix	SEDIMENT	SEDIMENT			
Sample Size	15.45	7.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	13.85	162.74	130.81	114	
C1-Naphthalenes	32.01	224.43			
C2-Naphthalenes	45.81	131.72			
C3-Naphthalenes	32	115.28			
C4-Naphthalenes	18.86	20.59			
Acenaphthylene	0.1 J	140.23	130.78	107	
Acenaphthene	0.52 J	143.76	130.82	109	
Biphenyl	5.99	163.53	131.11	120	
Fluorene	3.11	153.61	130.76	115	
C1-Fluorenes	6.08	6.25			
C2-Fluorenes	9.58	9.27			
C3-Fluorenes	8.07	8.21			
Anthracene	0.75	146.76	130.82	112	
Phenanthrene	23.49	170.58	130.79	112	
C1-Phenanthrenes/Anthracenes	35.97	144.78			
C2-Phenanthrenes/Anthracenes	33.24	145.5			
C3-Phenanthrenes/Anthracenes	19.26	18.41			
C4-Phenanthrenes/Anthracenes	15.68	14.78			
Dibenzothiophene	2.86	152.45	131.16	114	
C1-Dibenzothiophenes	6.05	6.39			
C2-Dibenzothiophenes	7.09	12.42			
C3-Dibenzothiophenes	4.66	4.27			
Fluoranthene	4.52	162.74	130.80	121	
Pyrene	5.56	162.06	130.76	120	
C1-Fluoranthenes/Pyrenes	16.59	15.76			
C2-Fluoranthenes/Pyrenes	14.81	14.86			
C3-Fluoranthenes/Pyrenes	10.26	9.37			
Benzo(a)anthracene	2.01	155.19	130.75	117	
Chrysene	7.91	144.9	130.76	105	
C1-Chrysenes	9.15	8.99			
C2-Chrysenes	7.79	7.55			
C3-Chrysenes	5.06	5.17			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	5.65	160.35	130.80	118	
Benzo(k)fluoranthene	0.86 J	151.54	130.80	115	
Benzo(e)pyrene	5.69	159.3	130.97	117	
Benzo(a)pyrene	1.27	149.08	130.78	113	
Perylene	23.27	170.86	131.22	112	
Indeno(1,2,3-cd)pyrene	1.29	168.82	130.80	128	
Dibenz(a,h)anthracene	0.66 J	150.9	130.80	115	
Benzo(g,h,i)perylene	3.99	159.73	130.78	119	
Total PAH	451.37	4053.13			
Surrogate Recoveries (%)					
Naphthalene-d8	58	60			
Acenaphthene-d10	68	66			
Phenanthrene-d10	72	71			
Benzo(a)pyrene-d12	70	73			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC24		08-03-BD005-01-SC24			
Batch ID	09-0004		09-0004			
Battelle ID	Q5933-P		Q5933MS-P			
Sample Type	SA		MS			
Collection Date	09/15/08		09/15/08			
Extraction Date	02/03/09		02/03/09			
Analysis Date	02/22/09		03/15/09			
Analytical Instrument	MS		MS			
% Moisture	47.87		47.63			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	15.63		7.82			
Size Unit-Basis	G_DRY		G_DRY			
Units	UG/KG_DRY		UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	21.46		161.21	127.97	109	
C1-Naphthalenes	41.51		227.33			
C2-Naphthalenes	54.37		144.47			
C3-Naphthalenes	40.71		125.06			
C4-Naphthalenes	25.2		28.38			
Acenaphthylene		U	133.12	127.93	104	
Acenaphthene	1.19		138.94	127.97	108	
Biphenyl	7.99		160.64	128.26	119	
Fluorene	7.39		149.81	127.92	111	
C1-Fluorenes	10.61		10.82			
C2-Fluorenes	14.55		14.74			
C3-Fluorenes	13.13		12.78			
Anthracene	0.76		136.64	127.97	106	
Phenanthrene	28.56		168.2	127.95	109	
C1-Phenanthrenes/Anthracenes	42.93		151.51			
C2-Phenanthrenes/Anthracenes	36.95		149.02			
C3-Phenanthrenes/Anthracenes	20.83		24.37			
C4-Phenanthrenes/Anthracenes	14.05		16.28			
Dibenzothiophene	3.14		125.19	128.31	95	
C1-Dibenzothiophenes	6.87		7.92			
C2-Dibenzothiophenes	7.06		12.21			
C3-Dibenzothiophenes	4.63		6.25			
Fluoranthene	6.29		159.25	127.95	120	
Pyrene	8.24		157.64	127.92	117	
C1-Fluoranthenes/Pyrenes	21.87		23.01			
C2-Fluoranthenes/Pyrenes	18.84		21			
C3-Fluoranthenes/Pyrenes	12.63		14.25			
Benzo(a)anthracene	1.51		109.28	127.91	84	
Chrysene	7.64		98.86	127.92	71	
C1-Chrysenes	7.64		8.93			
C2-Chrysenes	6.1		7.54			
C3-Chrysenes	3.1		4.69			
C4-Chrysenes		U	U			
Benzo(b)fluoranthene	9.71		221.26	127.95	165	N
Benzo(k)fluoranthene	1.87		167.84	127.95	130	
Benzo(e)pyrene	10.4		199.27	128.12	147	N
Benzo(a)pyrene	1.77		140.38	127.94	108	
Perylene	36.11		193.49	128.36	123	
Indeno(1,2,3-cd)pyrene	1.27		132.27	127.95	102	
Dibenz(a,h)anthracene	0.62	J	51.18	127.96	40	N
Benzo(g,h,i)perylene	4.35		97.76	127.93	73	
Total PAH	563.85		3912.79			
Surrogate Recoveries (%)						
Naphthalene-d8	55		65			
Acenaphthene-d10	71		70			
Phenanthrene-d10	75		72			
Benzo(a)pyrene-d12	36	N	44			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0001	09-0002	09-0003	09-0004
Battelle ID	BM702PB-P	BM706PB-P	BM710PB-P	BM714PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/15/09	01/22/09	01/29/09	02/03/09
Extraction Date	01/15/09	01/22/09	01/29/09	02/03/09
Analysis Date	01/23/09	02/04/09	02/07/09	02/15/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	42.11	43.91	43.91	43.27
% Lipid	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
Sample Size	17.44	16.81	16.76	16.81
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	U	U	U	U
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	U	U	U	U
C23 Tricyclic Terpane	U	U	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	U
30-Norhopane	U	U	U	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	U	U	U	U
30-Homohopane -22S	U	U	U	U
30-Homohopane -22R	U	U	U	U
Surrogate Recoveries (%)				
5b(H)-Cholane	78	78	76	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0001				09-0002			
Battelle ID	BM747NSC-P				BM804NSC-P			
Sample Type	NSC				NSC			
Collection Date	01/21/09				01/29/09			
Extraction Date	01/21/09				01/29/09			
Analysis Date	01/23/09				02/04/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
13b(H),17a(H)-20S-Diacholestane	46.88	44.18	6.1		44.27	44.18	0.2	
13b(H),17a(H)-20R-Diacholestane	26.73	25.52	4.7		27.03	25.52	5.9	
14a(H),17a(H)-20R-methylcholestane	32.07	33.94	5.5		30.5	33.94	10.1	
14a(H),17a(H)-20S-Ethylcholestane	38.5	35.93	7.2		33.81	35.93	5.9	
14a(H),17a(H)-20R-Ethylcholestane	37.85	39.17	3.4		35.43	39.17	9.5	
C23 Tricyclic Terpane	50.03	47.76	4.8		49.9	47.76	4.5	
C29 Tricyclic Terpane -22S	15.67	14.70	6.6		14.53	14.70	1.2	
C29 Tricyclic Terpane -22R	14.93	14.64	2.0		14.23	14.64	2.8	
18a(H)-22,29,30-Trisnorneohopane -TS	17.66	15.96	10.7		17.37	15.96	8.8	
17a(H)-22,29,30-Trisnorhopane -TM	28.04	24.82	13.0		27.52	24.82	10.9	
30-Norhopane	69.33	69.58	0.4		67.09	69.58	3.6	
18a(H) & 18b(H)-Oleananes	U				U			
Hopane	118.75	120.14	1.2		118.52	120.14	1.3	
30-Homohopane -22S	61.15	59.93	2.0		57.42	59.93	4.2	
30-Homohopane -22R	44.01	39.69	10.9		40.19	39.69	1.3	

Surrogate Recoveries (%)

5b(H)-Cholane	97				95			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0003				09-0004			
Battelle ID	BM821NSC-P				BM854NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/05/09				02/13/09			
Extraction Date	02/05/09				02/13/09			
Analysis Date	02/08/09				02/15/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
13b(H),17a(H)-20S-Diacholestane	44.44	44.18	0.6		46.34	44.18	4.9	
13b(H),17a(H)-20R-Diacholestane	26.59	25.52	4.2		26.28	25.52	3.0	
14a(H),17a(H)-20R-methylcholestane	33.67	33.94	0.8		28.51	33.94	16.0	
14a(H),17a(H)-20S-Ethylcholestane	37.16	35.93	3.4		34.61	35.93	3.7	
14a(H),17a(H)-20R-Ethylcholestane	37.46	39.17	4.4		34.37	39.17	12.3	
C23 Tricyclic Terpane	50.23	47.76	5.2		50.22	47.76	5.2	
C29 Tricyclic Terpane -22S	15.36	14.70	4.5		15.15	14.70	3.1	
C29 Tricyclic Terpane -22R	15.51	14.64	5.9		15	14.64	2.5	
18a(H)-22,29,30-Trisnorneohopane -TS	18.9	15.96	18.4		16.45	15.96	3.1	
17a(H)-22,29,30-Trisnorhopane -TM	25.4	24.82	2.3		26.92	24.82	8.5	
30-Norhopane	70.17	69.58	0.8		66.63	69.58	4.2	
18a(H) & 18b(H)-Oleananes	U				U			
Hopane	120.6	120.14	0.4		115.85	120.14	3.6	
30-Homohopane -22S	58.91	59.93	1.7		57.43	59.93	4.2	
30-Homohopane -22R	41.8	39.69	5.3		40.9	39.69	3.0	
Surrogate Recoveries (%)								
5b(H)-Cholane	89				98			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF005-01-SC	08-03-BF005-01-SC		
Batch ID	09-0002	09-0002		
Battelle ID	Q5726-P	Q5726DUP-P		
Sample Type	SA	QADU		
Collection Date	09/20/08	09/20/08		
Extraction Date	01/22/09	01/22/09		
Analysis Date	02/05/09	02/05/09		
Analytical Instrument	MS	MS		
% Moisture	45.72	46.41		
% Lipid	NA	NA		
Matrix	SEDIMENT	SEDIMENT		
Sample Size	16.35	16.08		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	0.36 J	0.43 J	NA	
13b(H),17a(H)-20R-Diacholestane	0.19 J	0.24 J	NA	
14a(H),17a(H)-20R-methylcholestane	1.51 J	2.39 J	NA	
14a(H),17a(H)-20S-Ethylcholestane	0.71 J	0.71 J	NA	
14a(H),17a(H)-20R-Ethylcholestane	5.02	11.84	80.9	n
C23 Tricyclic Terpane	0.42 J	0.25 J	NA	
C29 Tricyclic Terpane -22S	U	U	NA	
C29 Tricyclic Terpane -22R	U	U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	0.37 J	U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	2.09 J	2.58 J	NA	
30-Norhopane	3	3.35	11.0	
18a(H) & 18b(H)-Oleananes	U	U	NA	
Hopane	4.85	5.17	6.4	
30-Homohopane -22S	2.39 J	2.26 J	NA	
30-Homohopane -22R	5	4.73	5.5	
Surrogate Recoveries (%)				
5b(H)-Cholane	78	77		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF015-01-SC		08-03-KF015-01-SC			
Batch ID	09-0003		09-0003			
Battelle ID	Q5824-P		Q5824DUP-P			
Sample Type	SA		QADU			
Collection Date	08/31/08		8/31/2008			
Extraction Date	01/29/09		1/29/2009			
Analysis Date	02/08/09		2/8/2009			
Analytical Instrument	MS		MS			
% Moisture	24.64		25.82			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	22.71		22.25			
Size Unit-Basis	G_DRY		G_DRY			
Units	UG/KG_DRY		UG/KG_DRY		RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane		U		U	NA	
13b(H),17a(H)-20R-Diacholestane		U		U	NA	
14a(H),17a(H)-20R-methylcholestane	0.12	J		U	NA	
14a(H),17a(H)-20S-Ethylcholestane		U		U	NA	
14a(H),17a(H)-20R-Ethylcholestane	0.43	J	0.41	J	NA	
C23 Tricyclic Terpane		U		U	NA	
C29 Tricyclic Terpane -22S		U		U	NA	
C29 Tricyclic Terpane -22R		U		U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS		U		U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	0.29	J	0.44	J	NA	
30-Norhopane	0.37	J	0.42	J	NA	
18a(H) & 18b(H)-Oleananes		U		U	NA	
Hopane	0.74	J	0.83	J	NA	
30-Homohopane -22S	0.39	J	0.53	J	NA	
30-Homohopane -22R	0.6	J	0.85	J	NA	
Surrogate Recoveries (%)						
5b(H)-Cholane	69		73			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-SC02		08-03-BD005-01-SC02			
Batch ID	09-0004		09-0004			
Battelle ID	Q5932-P		Q5932DUP-P			
Sample Type	SA		QADU			
Collection Date	09/15/08		9/15/2008			
Extraction Date	02/03/09		2/3/2009			
Analysis Date	02/15/09		2/15/2009			
Analytical Instrument	MS		MS			
% Moisture	47.95		47.81			
% Lipid	NA		NA			
Matrix	SEDIMENT		SEDIMENT			
Sample Size	15.59		15.64			
Size Unit-Basis	G_DRY		G_DRY			
Units	UG/KG_DRY		UG/KG_DRY		RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	1.28	J	1.21	J	NA	
13b(H),17a(H)-20R-Diacholestane	0.71	J	0.55	J	NA	
14a(H),17a(H)-20R-methylcholestane	1.6	J	1.62	J	NA	
14a(H),17a(H)-20S-Ethylcholestane	1.34	J	1.36	J	NA	
14a(H),17a(H)-20R-Ethylcholestane	4.75		4.73		0.4	
C23 Tricyclic Terpane	1.45	J	1.28	J	NA	
C29 Tricyclic Terpane -22S	0.73	J	0.71	J	NA	
C29 Tricyclic Terpane -22R	0.55	J	0.52	J	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	1.12	J	1.23	J	NA	
17a(H)-22,29,30-Trisnorhopane -TM	3.28		3.6		9.3	
30-Norhopane	6.04		5.44		10.5	
18a(H) & 18b(H)-Oleananes		U		U	NA	
Hopane	11.1		10.48		5.7	
30-Homohopane -22S	4.83		4.68		3.2	
30-Homohopane -22R	9.68		16.5		52.1	N
Surrogate Recoveries (%)						
5b(H)-Cholane	95		97			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0006	09-0007	09-0008	09-0009
Battelle ID	BM722PB-P	BM726PB-P	BM730PB-P	BM734PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/16/09	01/26/09	02/04/09	02/11/09
Extraction Date	01/16/09	01/26/09	02/04/09	02/11/09
Analysis Date	01/28/09	02/05/09	02/11/09	02/25/09
Analytical Instrument	FID	FID	FID	FID
% Moisture	77.56	73.12	82.22	80.02
% Lipid	NA	NA	NA	NA
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.51	5.49	3.71	4.09
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
n-Nonane	U	U	U	U
n-Decane	U	U	U	U
n-Undecane	U	U	U	U
n-Dodecane	U	U	U	U
n-Tridecane	U	U	U	U
Isoprenoid RRT 1380	U	U	U	U
n-Tetradecane	U	U	U	U
Isoprenoid RRT 1470	U	U	U	U
n-Pentadecane	U	U	U	U
Norpristane (1650)	U	U	U	U
n-Hexadecane	U	U	U	U
n-Heptadecane	U	U	U	U
Pristane	U	U	U	U
n-Octadecane	U	U	U	U
Phytane	U	U	U	U
n-Nonadecane	U	U	U	U
n-Eicosane	U	U	U	U
n-Heneicosane	U	U	U	U
n-Docosane	U	U	U	U
n-Tricosane	U	U	U	U
n-Tetracosane	U	U	U	U
n-Pentacosane	U	U	U	U
n-Hexacosane	U	U	U	U
n-Heptacosane	U	U	U	U
n-Octacosane	U	U	U	U
n-Nonacosane	U	U	U	U
n-Triacontane	U	U	U	U
n-Hentriacontane	U	U	U	U
n-Dotriacontane	U	U	U	U
n-Tritriacontane	U	U	U	U
n-Tetratriacontane	U	U	U	U
n-Pentatriacontane	U	U	U	U
n-Hexatriacontane	U	U	U	U
n-Heptatriacontane	U	U	U	U
n-Octatriacontane	U	U	U	U
n-Nonatriacontane	U	U	U	U
n-Tetracontane	U	U	U	U
Total SHC	U	U	U	U
TPH	U	U	U	U
Surrogate Recoveries (%)				
5a-androstane	80	87	93	81
n-Tetracosane-d50	84	94	93	80

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank
Batch ID	09-0010
Battelle ID	BM738PB-P
Sample Type	PB
Collection Date	02/18/09
Extraction Date	02/18/09
Analysis Date	02/26/09
Analytical Instrument	FID
% Moisture	95.13
% Lipid	NA
Matrix	TISSUE
Sample Size	1.00
Size Unit-Basis	G_DRY
Units	UG/KG_DRY
n-Nonane	U
n-Decane	U
n-Undecane	U
n-Dodecane	U
n-Tridecane	U
Isoprenoid RRT 1380	U
n-Tetradecane	U
Isoprenoid RRT 1470	U
n-Pentadecane	U
Norpristane (1650)	U
n-Hexadecane	U
n-Heptadecane	U
Pristane	U
n-Octadecane	U
Phytane	U
n-Nonadecane	U
n-Eicosane	U
n-Heneicosane	U
n-Docosane	U
n-Tricosane	U
n-Tetracosane	U
n-Pentacosane	U
n-Hexacosane	U
n-Heptacosane	U
n-Octacosane	U
n-Nonacosane	U
n-Triacontane	U
n-Hentriacontane	U
n-Dotriacontane	U
n-Tritriacontane	U
n-Tetratriacontane	U
n-Pentatriacontane	U
n-Hexatriacontane	U
n-Heptatriacontane	U
n-Octatriacontane	U
n-Nonatriacontane	U
n-Tetracontane	U
Total SHC	U
TPH	8562.92

Surrogate Recoveries (%)

5a-androstane	84
n-Tetracosane-d50	90

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia				080610-01: Tilapia			
Batch ID	09-0006				09-0007			
Battelle ID	BM723LCS-P				BM727LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/16/09				01/26/09			
Extraction Date	01/16/09				01/26/09			
Analysis Date	01/28/09				02/05/09			
Analytical Instrument	FID				FID			
% Moisture	78.57				78.57			
% Lipid	NA				2.28			
Matrix	TISSUE				TISSUE			
Sample Size	4.43				4.40			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	5040.09	11286.68	45	N	5172.91	11363.64	46	N
n-Decane	7851	11286.68	70		7272.76	11363.64	64	N
n-Undecane	9599	11286.68	85		9488.3	11363.64	83	
n-Dodecane	10140.11	11286.68	90		10043.76	11363.64	88	
n-Tridecane	10448.92	11286.68	93		10439.5	11363.64	92	
Isoprenoid RRT 1380	U				U			
n-Tetradecane	10953.77	11286.68	97		10859.73	11363.64	96	
Isoprenoid RRT 1470	U				U			
n-Pentadecane	11212.57	11286.68	99		11161.87	11363.64	98	
Norpristane (1650)	U				U			
n-Hexadecane	11466	11286.68	102		11530.89	11363.64	101	
n-Heptadecane	11570.03	11286.68	103		11653.85	11363.64	103	
Pristane	11102.14	11286.68	98		11187.77	11363.64	98	
n-Octadecane	11452.21	11286.68	101		11582.2	11363.64	102	
Phytane	11258.86	11286.68	100		11320.11	11363.64	100	
n-Nonadecane	11741.16	11286.68	104		11954.01	11363.64	105	
n-Eicosane	11714.15	11286.68	104		11976.9	11363.64	105	
n-Heneicosane	11580.16	11286.68	103		11780.43	11363.64	104	
n-Docosane	12001.06	11286.68	106		12187.52	11363.64	107	
n-Tricosane	11652.06	11286.68	103		11837.11	11363.64	104	
n-Tetracosane	11638.67	11286.68	103		11808.28	11363.64	104	
n-Pentacosane	11599.35	11286.68	103		11782.11	11363.64	104	
n-Hexacosane	11577.04	11286.68	103		11800.66	11363.64	104	
n-Heptacosane	11717.51	11286.68	104		11757.81	11363.64	103	
n-Octacosane	11335.56	11286.68	100		11643.25	11363.64	102	
n-Nonacosane	11400.86	11286.68	101		11905.14	11363.64	105	
n-Triacontane	11622.92	11286.68	103		12123.67	11363.64	107	
n-Hentriacontane	11562.82	11286.68	102		11743.91	11363.64	103	
n-Dotriacontane	11860.38	11286.68	105		12524.89	11363.64	110	
n-Tritriacontane	11415.12	11286.68	101		12118.5	11363.64	107	
n-Tetratriacontane	11584.43	11286.68	103		12423.37	11363.64	109	
n-Pentatriacontane	11647.02	11286.68	103		12490.71	11363.64	110	
n-Hexatriacontane	11286.24	11286.68	100		11619.83	11363.64	102	
n-Heptatriacontane	11135.31	11286.68	99		11724.82	11363.64	103	
n-Octatriacontane	11634.11	11286.68	103		11997.27	11363.64	106	
n-Nonatriacontane	10991.79	11286.68	97		10632.69	11363.64	94	
n-Tetracontane	11822.81	11286.68	105		10162.15	11363.64	89	
Total SHC	376615.23				381708.68			
TPH	U				U			

Surrogate Recoveries (%)

5a-androstane	77	91
n-Tetracosane-d50	76	91

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia				080610-01: Tilapia			
Batch ID	09-0008				09-0009			
Battelle ID	BM731LCS-P				BM735LCS-P			
Sample Type	LCS				LCS			
Collection Date	02/04/09				02/11/09			
Extraction Date	02/04/09				02/11/09			
Analysis Date	02/12/09				02/25/09			
Analytical Instrument	FID				FID			
% Moisture	78.57				78.57			
% Lipid	2.35				2.08			
Matrix	TISSUE				TISSUE			
Sample Size	4.37				4.41			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	6022.34	11441.65	53	N	5708.46	11337.87	50	N
n-Decane	8800.76	11441.65	77		8394.76	11337.87	74	
n-Undecane	10651	11441.65	93		9998.25	11337.87	88	
n-Dodecane	11191.65	11441.65	98		10477.79	11337.87	92	
n-Tridecane	11450.46	11441.65	100		10820.15	11337.87	95	
Isoprenoid RRT 1380	U				U			
n-Tetradecane	11855.41	11441.65	104		11321.59	11337.87	100	
Isoprenoid RRT 1470	U				U			
n-Pentadecane	12020.16	11441.65	105		11634.35	11337.87	103	
Norpristane (1650)	U				U			
n-Hexadecane	12183.99	11441.65	106		11872.09	11337.87	105	
n-Heptadecane	12207.27	11441.65	107		11956.26	11337.87	105	
Pristane	11637.91	11441.65	102		11417.74	11337.87	101	
n-Octadecane	11945.53	11441.65	104		11816.71	11337.87	104	
Phytane	11692.02	11441.65	102		11525.57	11337.87	102	
n-Nonadecane	12151.63	11441.65	106		12059.13	11337.87	106	
n-Eicosane	12068.77	11441.65	105		12043.36	11337.87	106	
n-Heneicosane	11876.37	11441.65	104		11857.55	11337.87	105	
n-Docosane	12318.9	11441.65	108		12325.75	11337.87	109	
n-Tricosane	11885.4	11441.65	104		11890.87	11337.87	105	
n-Tetracosane	11865.63	11441.65	104		11909.79	11337.87	105	
n-Pentacosane	11793.18	11441.65	103		11794.04	11337.87	104	
n-Hexacosane	11794.56	11441.65	103		11822.8	11337.87	104	
n-Heptacosane	11880.02	11441.65	104		11838.87	11337.87	104	
n-Octacosane	11514.93	11441.65	101		11496.86	11337.87	101	
n-Nonacosane	11551.61	11441.65	101		11427.52	11337.87	101	
n-Triacontane	11791.93	11441.65	103		11688.62	11337.87	103	
n-Hentriacontane	11726.54	11441.65	102		11483.45	11337.87	101	
n-Dotriacontane	12059.44	11441.65	105		11859.55	11337.87	105	
n-Tritriacontane	11596.87	11441.65	101		11275.81	11337.87	99	
n-Tetratriacontane	11789.46	11441.65	103		11537.88	11337.87	102	
n-Pentatriacontane	11860.35	11441.65	104		11500.6	11337.87	101	
n-Hexatriacontane	11518.78	11441.65	101		11256.41	11337.87	99	
n-Heptatriacontane	11405.82	11441.65	100		11090.87	11337.87	98	
n-Octatriacontane	12042.24	11441.65	105		11720.94	11337.87	103	
n-Nonatriacontane	11530.77	11441.65	101		11089.07	11337.87	98	
n-Tetracontane	12807.17	11441.65	112		12037.2	11337.87	106	
Total SHC	392488.87				383950.66			
TPH	U				U			

Surrogate Recoveries (%)

5a-androstane	89	82
n-Tetracosane-d50	85	80

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia			
Batch ID	09-0010			
Battelle ID	BM739LCS-P			
Sample Type	LCS			
Collection Date	02/18/09			
Extraction Date	02/18/09			
Analysis Date	02/26/09			
Analytical Instrument	FID			
% Moisture	78.57			
% Lipid	2.1			
Matrix	TISSUE			
Sample Size	4.45			
Size Unit-Basis	G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	5091.37	11235.96	45	N
n-Decane	7466.4	11235.96	66	N
n-Undecane	9779.92	11235.96	87	
n-Dodecane	10369.73	11235.96	92	
n-Tridecane	10768.83	11235.96	96	
Isoprenoid RRT 1380	U			
n-Tetradecane	11173.72	11235.96	99	
Isoprenoid RRT 1470	U			
n-Pentadecane	11409.5	11235.96	102	
Norpristane (1650)	U			
n-Hexadecane	11743.38	11235.96	105	
n-Heptadecane	11808.29	11235.96	105	
Pristane	11379.15	11235.96	101	
n-Octadecane	11698.26	11235.96	104	
Phytane	11446.68	11235.96	102	
n-Nonadecane	12013.69	11235.96	107	
n-Eicosane	12025.48	11235.96	107	
n-Heneicosane	11818.1	11235.96	105	
n-Docosane	12196.15	11235.96	109	
n-Tricosane	11820.15	11235.96	105	
n-Tetracosane	11773.65	11235.96	105	
n-Pentacosane	11713.08	11235.96	104	
n-Hexacosane	11689.48	11235.96	104	
n-Heptacosane	11626.62	11235.96	103	
n-Octacosane	11509.2	11235.96	102	
n-Nonacosane	11745.65	11235.96	105	
n-Triacontane	11972.27	11235.96	107	
n-Hentriacontane	11585.67	11235.96	103	
n-Dotriacontane	12349.53	11235.96	110	
n-Tritriacontane	11936.55	11235.96	106	
n-Tetratriacontane	12274.47	11235.96	109	
n-Pentatriacontane	12379.82	11235.96	110	
n-Hexatriacontane	11651.6	11235.96	104	
n-Heptatriacontane	11997.5	11235.96	107	
n-Octatriacontane	12757.87	11235.96	114	
n-Nonatriacontane	12185.02	11235.96	108	
n-Tetracontane	13248.06	11235.96	118	
Total SHC	388404.84			
TPH	U			

Surrogate Recoveries (%)

5a-androstane	82
n-Tetracosane-d50	82

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope			GV73: North Slope		
Client ID	Crude			Crude		
Batch ID	09-0006			09-0007		
Battelle ID	BM764NSC-P			BM729NSC-P		
Sample Type	NSC			NSC		
Collection Date	01/26/09			02/03/09		
Extraction Date	01/26/09			02/03/09		
Analysis Date	01/28/09			02/05/09		
Analytical Instrument	FID			FID		
% Moisture	NA			NA		
% Lipid	NA			NA		
Matrix	OIL			OIL		
Sample Size	5.05			5.05		
Size Unit-Basis	MG_OIL			MG_OIL		
Units	MG/KG_OIL	Target	% Difference Qualifier	MG/KG_OIL	Target	% Difference Qualifier
n-Nonane	4187.33	4670.06	10.3	4735.66	4670.06	1.4
n-Decane	4777.4	4951.66	3.5	4413.8	4951.66	10.9
n-Undecane	4829.24	4506.16	7.2	4815.25	4506.16	6.9
n-Dodecane	4496.7	4576.43	1.7	4687.78	4576.43	2.4
n-Tridecane	4368.74	4189.33	4.3	4034.83	4189.33	3.7
Isoprenoid RRT 1380	970.35	961.81	0.9	915.76	961.81	4.8
n-Tetradecane	4058.39	3919.50	3.5	3907.89	3919.50	0.3
Isoprenoid RRT 1470	1553.04	1532.69	1.3	1224.26	1532.69	20.1
n-Pentadecane	3958.4	3990.56	0.8	4390.81	3990.56	10.0
Norpristane (1650)	1229.22	1141.72	7.7	1154.92	1141.72	1.2
n-Hexadecane	3684.88	3640.11	1.2	3680	3640.11	1.1
n-Heptadecane	3334.58	3078.38	8.3	3035.23	3078.38	1.4
Pristane	2242.11	2280.61	1.7	2340.95	2280.61	2.6
n-Octadecane	3150.2	2796.74	12.6	2785.13	2796.74	0.4
Phytane	1406.59	1659.88	15.3	1428.76	1659.88	13.9
n-Nonadecane	2759.21	2540.37	8.6	2820.45	2540.37	11.0
n-Eicosane	2600.77	2502.77	3.9	2763.56	2502.77	10.4
n-Heneicosane	2363.52	2419.45	2.3	2410.46	2419.45	0.4
n-Docosane	2321.99	2251.79	3.1	2320.06	2251.79	3.0
n-Tricosane	2095.47	2050.41	2.2	2017.5	2050.41	1.6
n-Tetracosane	1990.94	1948.20	2.2	1901.71	1948.20	2.4
n-Pentacosane	1709.87	1795.70	4.8	1844.43	1795.70	2.7
n-Hexacosane	1579.19	1639.60	3.7	1616.23	1639.60	1.4
n-Heptacosane	1205.34	1230.99	2.1	1197.32	1230.99	2.7
n-Octacosane	1011.53	1004.15	0.7	937.31	1004.15	6.7
n-Nonacosane	756.6	872.21	13.3	779.37	872.21	10.6
n-Triacontane	682.99	669.33	2.0	687.62	669.33	2.7
n-Hentriacontane	571.87	606.82	5.8	679.39	606.82	12.0
n-Dotriacontane	434.31	465.97	6.8	454.51	465.97	2.5
n-Tritriacontane	449.71	399.05	12.7	428.88	399.05	7.5
n-Tetratriacontane	366.24	371.75	1.5	379.27	371.75	2.0
n-Pentatriacontane	332.3	378.11	12.1	429.43	378.11	13.6
n-Hexatriacontane	225.23 J	235.65	4.4	256.14 J	235.65	8.7
n-Heptatriacontane	207.91 J	210.06	1.0	221.15 J	210.06	5.3
n-Octatriacontane	220.72 J	205.75	7.3	212.86 J	205.75	3.5
n-Nonatriacontane	166.13 J	153.92	7.9	161.97 J	153.92	5.2
n-Tetracontane	177.09 J	161.64	9.6	165.59 J	161.64	2.4
Total SHC	72476.1			72236.24		
TPH	504221.04	578973.63	12.9	484206.89	578973.63	16.4
Surrogate Recoveries (%)						
5a-androstane	108			107		
n-Tetracosane-d50	104			105		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope			GV73: North Slope		
Client ID	Crude			Crude		
Batch ID	09-0008			09-0009		
Battelle ID	BM733NSC-P			BM737NSC-P		
Sample Type	NSC			NSC		
Collection Date	02/11/09			02/17/09		
Extraction Date	02/11/09			02/17/09		
Analysis Date	02/11/09			02/25/09		
Analytical Instrument	FID			FID		
% Moisture	NA			NA		
% Lipid	NA			NA		
Matrix	OIL			OIL		
Sample Size	5.05			5.05		
Size Unit-Basis	MG_OIL			MG_OIL		
Units	MG/KG_OIL	Target	% Difference Qualifier	MG/KG_OIL	Target	% Difference Qualifier
n-Nonane	5251.56	4670.06	12.5	5336.96	4670.06	14.3
n-Decane	5333.39	4951.66	7.7	4957.92	4951.66	0.1
n-Undecane	5074.9	4506.16	12.6	4914.51	4506.16	9.1
n-Dodecane	4778.26	4576.43	4.4	4813.28	4576.43	5.2
n-Tridecane	4519.58	4189.33	7.9	4505.25	4189.33	7.5
Isoprenoid RRT 1380	981.37	961.81	2.0	932.89	961.81	3.0
n-Tetradecane	4457.67	3919.50	13.7	4277.32	3919.50	9.1
Isoprenoid RRT 1470	1540.59	1532.69	0.5	1563.19	1532.69	2.0
n-Pentadecane	4480.43	3990.56	12.3	4108.53	3990.56	3.0
Norpristane (1650)	1420.65	1141.72	24.4	1253.7	1141.72	9.8
n-Hexadecane	4075.88	3640.11	12.0	3993.01	3640.11	9.7
n-Heptadecane	3429.45	3078.38	11.4	3473.71	3078.38	12.8
Pristane	2338.58	2280.61	2.5	2285.67	2280.61	0.2
n-Octadecane	3251.01	2796.74	16.2	3100.46	2796.74	10.9
Phytane	1471.43	1659.88	11.4	1411.23	1659.88	15.0
n-Nonadecane	2783.45	2540.37	9.6	2760.91	2540.37	8.7
n-Eicosane	2564.98	2502.77	2.5	2562.83	2502.77	2.4
n-Heneicosane	2513.49	2419.45	3.9	2463.35	2419.45	1.8
n-Docosane	2348.27	2251.79	4.3	2353.91	2251.79	4.5
n-Tricosane	2106.99	2050.41	2.8	2102.31	2050.41	2.5
n-Tetracosane	2003.39	1948.20	2.8	1963.97	1948.20	0.8
n-Pentacosane	1739.52	1795.70	3.1	1742.4	1795.70	3.0
n-Hexacosane	1592.47	1639.60	2.9	1597.56	1639.60	2.6
n-Heptacosane	1275.08	1230.99	3.6	1232.33	1230.99	0.1
n-Octacosane	1041.67	1004.15	3.7	1069.91	1004.15	6.5
n-Nonacosane	782.08	872.21	10.3	818.8	872.21	6.1
n-Triacontane	691.29	669.33	3.3	663.3	669.33	0.9
n-Hentriacontane	580.57	606.82	4.3	595.07	606.82	1.9
n-Dotriacontane	482.92	465.97	3.6	454.04	465.97	2.6
n-Tritriacontane	407.56	399.05	2.1	348.73	399.05	12.6
n-Tetratriacontane	373.89	371.75	0.6	341.17	371.75	8.2
n-Pentatriacontane	382.01	378.11	1.0	354.38	378.11	6.3
n-Hexatriacontane	249.04 J	235.65	5.7	240.78 J	235.65	2.2
n-Heptatriacontane	223.24 J	210.06	6.3	211.86 J	210.06	0.9
n-Octatriacontane	241.31 J	205.75	17.3	228.47 J	205.75	11.0
n-Nonatriacontane	172.87 J	153.92	12.3	173.81 J	153.92	12.9
n-Tetracontane	187.84 J	161.64	16.2	193.03 J	161.64	19.4
Total SHC	77148.68			75400.55		
TPH	539320.98	578973.63	6.8	503245.87	578973.63	13.1

Surrogate Recoveries (%)

5a-androstane	113	108
n-Tetracosane-d50	107	103

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope		
Client ID	Crude		
Batch ID	09-0010		
Battelle ID	BM741NSC-P		
Sample Type	NSC		
Collection Date	02/26/09		
Extraction Date	02/26/09		
Analysis Date	02/26/09		
Analytical Instrument	FID		
% Moisture	NA		
% Lipid	NA		
Matrix	OIL		
Sample Size	5.05		
Size Unit-Basis	MG_OIL		
Units	MG/KG_OIL	Target	% Difference Qualifier
n-Nonane	4415.08	4670.06	5.5
n-Decane	4498.46	4951.66	9.2
n-Undecane	4433.21	4506.16	1.6
n-Dodecane	4419.96	4576.43	3.4
n-Tridecane	3947.89	4189.33	5.8
Isoprenoid RRT 1380	1006.88	961.81	4.7
n-Tetradecane	3887.04	3919.50	0.8
Isoprenoid RRT 1470	1155.87	1532.69	24.6
n-Pentadecane	4340.89	3990.56	8.8
Norpristane (1650)	1023.47	1141.72	10.4
n-Hexadecane	3445.24	3640.11	5.4
n-Heptadecane	2949.2	3078.38	4.2
Pristane	2227.88	2280.61	2.3
n-Octadecane	2778.76	2796.74	0.6
Phytane	1375.82	1659.88	17.1
n-Nonadecane	2679.37	2540.37	5.5
n-Eicosane	2695.51	2502.77	7.7
n-Heneicosane	2303.08	2419.45	4.8
n-Docosane	2310.29	2251.79	2.6
n-Tricosane	1947.91	2050.41	5.0
n-Tetracosane	1834.35	1948.20	5.8
n-Pentacosane	1760.31	1795.70	2.0
n-Hexacosane	1547.76	1639.60	5.6
n-Heptacosane	1185.06	1230.99	3.7
n-Octacosane	906.93	1004.15	9.7
n-Nonacosane	791.28	872.21	9.3
n-Triacontane	670.4	669.33	0.2
n-Hentriacontane	672.24	606.82	10.8
n-Dotriacontane	432.06	465.97	7.3
n-Tritriacontane	414.41	399.05	3.8
n-Tetratriacontane	383.84	371.75	3.3
n-Pentatriacontane	367.66	378.11	2.8
n-Hexatriacontane	249.78 J	235.65	6.0
n-Heptatriacontane	221.7 J	210.06	5.5
n-Octatriacontane	238.11 J	205.75	15.7
n-Nonatriacontane	160.34 J	153.92	4.2
n-Tetracontane	179.62 J	161.64	11.1
Total SHC	69857.66		
TPH	491442.28	578973.63	15.1

Surrogate Recoveries (%)

5a-androstane	109
n-Tetracosane-d50	106

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-AC	08-03-BD005-01-AC		
Batch ID	09-0006	09-0006		
Battelle ID	Q5925-P	Q5925DUP-P		
Sample Type	SA	QADU		
Collection Date	09/15/08	09/15/08		
Extraction Date	01/16/09	01/16/09		
Analysis Date	01/29/09	01/29/09		
Analytical Instrument	FID	FID		
% Moisture	75.2	75.2		
% Lipid	4.64	5.24		
Matrix	TISSUE	TISSUE		
Sample Size	5.08	5.06		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	U	U	NA	
n-Decane	U	U	NA	
n-Undecane	U	U	NA	
n-Dodecane	U	U	NA	
n-Tridecane	U	U	NA	
Isoprenoid RRT 1380	U	U	NA	
n-Tetradecane	U	U	NA	
Isoprenoid RRT 1470	U	U	NA	
n-Pentadecane	U	U	NA	
Norpristane (1650)	U	U	NA	
n-Hexadecane	U	U	NA	
n-Heptadecane	172.11	181.99	5.6	
Pristane	5452.64	5292.1	3.0	
n-Octadecane	U	U	NA	
Phytane	U	U	NA	
n-Nonadecane	U	U	NA	
n-Eicosane	U	U	NA	
n-Heneicosane	U	U	NA	
n-Docosane	47.12 J	23.31 J	NA	
n-Tricosane	98.21 J	49.34 J	NA	
n-Tetracosane	108.61 J	37.93 J	NA	
n-Pentacosane	57.5 J	44.71 J	NA	
n-Hexacosane	58.84 J	30.22 J	NA	
n-Heptacosane	56.37 J	39.86 J	NA	
n-Octacosane	37.36 J	21.5 J	NA	
n-Nonacosane	30.26 J	34.05 J	NA	
n-Triacontane	21.4 J	18.01 J	NA	
n-Hentriacontane	30.08 J	55.63 J	NA	
n-Dotriacontane	24.04 J	13.02 J	NA	
n-Tritriacontane	24.75 J	16.65 J	NA	
n-Tetratriacontane	28.98 J	8.57 J	NA	
n-Pentatriacontane	49.8 J	43.42 J	NA	
n-Hexatriacontane	5.61 J	4.7 J	NA	
n-Heptatriacontane	6.96 J	3.84 J	NA	
n-Octatriacontane	5.01 J	4.31 J	NA	
n-Nonatriacontane	U	U	NA	
n-Tetracontane	U	U	NA	
Total SHC	6315.65	5923.16	6.4	
TPH	38356.28	11626.2	107.0	N

Surrogate Recoveries (%)

5a-androstane	77	71
n-Tetracosane-d50	74	69

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-CC	08-03-BF011-01-CC		
Batch ID	09-0007	09-0007		
Battelle ID	Q6032-P	Q6032DUP-P		
Sample Type	SA	QADU		
Collection Date	09/13/08	09/13/08		
Extraction Date	01/26/09	01/26/09		
Analysis Date	02/12/09	02/12/09		
Analytical Instrument	FID	FID		
% Moisture	68.2	68		
% Lipid	3.23	3.43		
Matrix	TISSUE	TISSUE		
Sample Size	6.46	6.64		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	U	U	NA	
n-Decane	U	U	NA	
n-Undecane	U	U	NA	
n-Dodecane	U	U	NA	
n-Tridecane	U	U	NA	
Isoprenoid RRT 1380	U	U	NA	
n-Tetradecane	8.33 J	8.52 J	NA	
Isoprenoid RRT 1470	11.77 J	11.31 J	NA	
n-Pentadecane	11.29 J	11.04 J	NA	
Norpristane (1650)	U	U	NA	
n-Hexadecane	12.16 J	12.13 J	NA	
n-Heptadecane	9.24 J	8.85 J	NA	
Pristane	10.84 J	10.46 J	NA	
n-Octadecane	9.9 J	10.5 J	NA	
Phytane	2.18 J	2.05 J	NA	
n-Nonadecane	6.59 J	6.36 J	NA	
n-Eicosane	8.81 J	8.54 J	NA	
n-Heneicosane	21.7 J	22.65 J	NA	
n-Docosane	18.18 J	20.33 J	NA	
n-Tricosane	29.5 J	35.38 J	NA	
n-Tetracosane	21.81 J	31.93 J	NA	
n-Pentacosane	38.99 J	59.57 J	NA	
n-Hexacosane	43.11 J	66.01 J	NA	
n-Heptacosane	63.8 J	84.35	27.7	
n-Octacosane	33.55 J	57.68 J	NA	
n-Nonacosane	37.24 J	61.51 J	NA	
n-Triacontane	18.36 J	39.45 J	NA	
n-Hentriacontane	25.1 J	46.51 J	NA	
n-Dotriacontane	8.73 J	28.52 J	NA	
n-Tritriacontane	10.17 J	31.12 J	NA	
n-Tetratriacontane	5.3 J	17.56 J	NA	
n-Pentatriacontane	35.44 J	31.88 J	NA	
n-Hexatriacontane	2.88 J	9.59 J	NA	
n-Heptatriacontane	1.88 J	7.65 J	NA	
n-Octatriacontane	2.78 J	6.58 J	NA	
n-Nonatriacontane	0.9 J	3.38 J	NA	
n-Tetracontane	1.48 J	3.47 J	NA	
Total SHC	512.01 J	754.88 J	NA	
TPH	3495.46	2904.01	18.5	
Surrogate Recoveries (%)				
5a-androstane	96	94		
n-Tetracosane-d50	98	96		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR086-01-WC2	08-03-BR086-01-WC2		
Batch ID	09-0009	09-0009		
Battelle ID	Q5878-P	Q5878DUP-P		
Sample Type	SA	QADU		
Collection Date	09/02/08	09/02/08		
Extraction Date	02/11/09	02/11/09		
Analysis Date	02/24/09	02/24/09		
Analytical Instrument	FID	FID		
% Moisture	78.1	78.1		
% Lipid	1.86	1.93		
Matrix	TISSUE	TISSUE		
Sample Size	2.31	2.31		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	33.79 J	34.07 J	NA	
n-Decane	32.53 J	33.13 J	NA	
n-Undecane	44.39 J	43.25 J	NA	
n-Dodecane	25.26 J	25.2 J	NA	
n-Tridecane	34.2 J	35.66 J	NA	
Isoprenoid RRT 1380	16.93 J	17.9 J	NA	
n-Tetradecane	59.16 J	60.11 J	NA	
Isoprenoid RRT 1470	181.85 J	183.67 J	NA	
n-Pentadecane	75.45 J	76.59 J	NA	
Norpristane (1650)	U	U	NA	
n-Hexadecane	37.47 J	35.1 J	NA	
n-Heptadecane	58.73 J	58.31 J	NA	
Pristane	21.06 J	20.52 J	NA	
n-Octadecane	36.98 J	36.09 J	NA	
Phytane	8.25 J	9.32 J	NA	
n-Nonadecane	26.58 J	25.07 J	NA	
n-Eicosane	37.45 J	49.09 J	NA	
n-Heneicosane	63.09 J	58.23 J	NA	
n-Docosane	77.38 J	77.34 J	NA	
n-Tricosane	138.37 J	129.47 J	NA	
n-Tetracosane	88.99 J	93.94 J	NA	
n-Pentacosane	208.96 J	200.14 J	NA	
n-Hexacosane	99.02 J	102.72 J	NA	
n-Heptacosane	344.03	341.95	0.6	
n-Octacosane	80.56 J	87.27 J	NA	
n-Nonacosane	252.18	241.73 J	4.2	
n-Triacontane	48.72 J	62.43 J	NA	
n-Hentriacontane	233.72 J	232.17 J	NA	
n-Dotriacontane	38.32 J	58.75 J	NA	
n-Tritriacontane	83.93 J	83.1 J	NA	
n-Tetratriacontane	U	U	NA	
n-Pentatriacontane	622.05	621.58	0.1	
n-Hexatriacontane	U	U	NA	
n-Heptatriacontane	U	U	NA	
n-Octatriacontane	U	U	NA	
n-Nonatriacontane	U	U	NA	
n-Tetracontane	U	U	NA	
Total SHC	3109.4	3133.9	NA	
TPH	61461.58	61242.27	0.4	

Surrogate Recoveries (%)

5a-androstane	92	88
n-Tetracosane-d50	89	85

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019 composite	BF009 and BF019 composite		
Client ID				
Batch ID	09-0010	09-0010		
Battelle ID	Q6102-P	Q6102DUP-P		
Sample Type	SA	QADU		
Collection Date	09/19/08	09/19/08		
Extraction Date	02/18/09	02/18/09		
Analysis Date	03/04/09	03/04/09		
Analytical Instrument	FID	FID		
% Moisture	94.2	94.2		
% Lipid	0.21	0.23		
Matrix	TISSUE	TISSUE		
Sample Size	1.75	0.89		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
n-Nonane	51.55 J	54.39 J	NA	
n-Decane	449.25 ME	946.73 ME	71.3	N
n-Undecane	15.02 J	16.45 J	NA	
n-Dodecane	125.05 J	107.42 J	NA	
n-Tridecane	36.67 J	33.49 J	NA	
Isoprenoid RRT 1380	59.2 J	55.95 J	NA	
n-Tetradecane	126.89 J	140.11 J	NA	
Isoprenoid RRT 1470	149.52 J	131.01 J	NA	
n-Pentadecane	158.34 J	158.95 J	NA	
Norpristane (1650)	U	U	NA	
n-Hexadecane	43.4 J	53.44 J	NA	
n-Heptadecane	145.63 J	148.24 J	NA	
Pristane	22615.19 D	109475.03	131.5	N
n-Octadecane	70.18 J	64.24 J	NA	
Phytane	32.43 J	28.19 J	NA	
n-Nonadecane	41.05 J	47.83 J	NA	
n-Eicosane	81.07 J	67.64 J	NA	
n-Heneicosane	59.88 J	106.53 J	NA	
n-Docosane	138.63 J	169.18 J	NA	
n-Tricosane	146.94 J	312.72 J	NA	
n-Tetracosane	220.9 J	407.81 J	NA	
n-Pentacosane	211.99 J	644.13	101.0	N
n-Hexacosane	299.08 J	716.98	82.3	N
n-Heptacosane	328.47	878.83	91.2	N
n-Octacosane	277.59 J	673.86	83.3	N
n-Nonacosane	229.2 J	674.42	98.5	N
n-Triacontane	221.44 J	465.97 J	NA	
n-Hentriacontane	191.04 J	434.16 J	NA	
n-Dotriacontane	152.65 J	240.61 J	NA	
n-Tritriacontane	66.56 J	141.97 J	NA	
n-Tetratriacontane	85.74 J	98.25 J	NA	
n-Pentatriacontane	35.26 J	69.92 J	NA	
n-Hexatriacontane	47.73 J	60.85 J	NA	
n-Heptatriacontane	23.15 J	53.02 J	NA	
n-Octatriacontane	35.35 J	52.71 J	NA	
n-Nonatriacontane	15.73 J	36.99 J	NA	
n-Tetracontane	23.56 J	39.25 J	NA	
Total SHC	27011.33	117807.27	125.4	N
TPH	116246.82	132502.98	13.1	
Surrogate Recoveries (%)				
5a-androstane	77	79		
n-Tetracosane-d50	77	79		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD004-01-AC	08-03-BD004-01-AC			
Batch ID	09-0006	09-0006			
Battelle ID	Q5750-P	Q5750MS-P			
Sample Type	SA	MS			
Collection Date	09/21/08	09/21/08			
Extraction Date	01/16/09	01/16/09			
Analysis Date	01/28/09	01/28/09			
Analytical Instrument	FID	FID			
% Moisture	74.5	74.5			
% Lipid	3.64	4.73			
Matrix	TISSUE	TISSUE			
Sample Size	5.27	2.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	U	6664.79	18867.92	35	N
n-Decane	9.14 J	11257.85	18867.92	60	N
n-Undecane	4.57 J	14169.68	18867.92	75	
n-Dodecane	7.22 J	15469.54	18867.92	82	
n-Tridecane	10.78 J	16297.56	18867.92	86	
Isoprenoid RRT 1380	10.97 J	U			
n-Tetradecane	21.33 J	17373.58	18867.92	92	
Isoprenoid RRT 1470	64.16 J	77.84 J			
n-Pentadecane	301.7	18257.65	18867.92	95	
Norpristane (1650)	U	U			
n-Hexadecane	40.84 J	18585.28	18867.92	98	
n-Heptadecane	847.99	19523.85	18867.92	99	
Pristane	10794.12	27766.18	18867.92	90	
n-Octadecane	23.53 J	18738.31	18867.92	99	
Phytane	5.21 J	18479.07	18867.92	98	
n-Nonadecane	41.09 J	19271.59	18867.92	102	
n-Eicosane	14.18 J	19224.4	18867.92	102	
n-Heneicosane	23.62 J	19017.35	18867.92	101	
n-Docosane	28.59 J	19703.45	18867.92	104	
n-Tricosane	45.2 J	19129.59	18867.92	101	
n-Tetracosane	31.4 J	19081.11	18867.92	101	
n-Pentacosane	46.38 J	19034.37	18867.92	101	
n-Hexacosane	27 J	18988.09	18867.92	100	
n-Heptacosane	38.22 J	19270.81	18867.92	102	
n-Octacosane	15.14 J	18595.44	18867.92	98	
n-Nonacosane	36.32 J	18678.78	18867.92	99	
n-Triacontane	9.6 J	19093.05	18867.92	101	
n-Hentriacontane	19.71 J	19021.85	18867.92	101	
n-Dotriacontane	6.91 J	19503.8	18867.92	103	
n-Tritriacontane	9.39 J	18775.97	18867.92	99	
n-Tetratriacontane	4.1 J	19008.74	18867.92	101	
n-Pentatriacontane	26.69 J	19109.61	18867.92	101	
n-Hexatriacontane	2.28 J	18425.6	18867.92	98	
n-Heptatriacontane	U	18134.75	18867.92	96	
n-Octatriacontane	U	18887.4	18867.92	100	
n-Nonatriacontane	U	17760.38	18867.92	94	
n-Tetracontane	U	19145.54	18867.92	101	
Total SHC	12567.38	619522.85			
TPH	15777.95	621893.94			

Surrogate Recoveries (%)

5a-androstane	90	83
n-Tetracosane-d50	89	81

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD004-01-AC					
Batch ID	09-0006					
Battelle ID	Q5750MSD-P					
Sample Type	MSD					
Collection Date	09/21/08					
Extraction Date	01/16/09					
Analysis Date	01/28/09					
Analytical Instrument	FID					
% Moisture	74.5					
% Lipid	5.1					
Matrix	TISSUE					
Sample Size	2.7					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
n-Nonane	6683.76	18518.52	36	N	2.8	
n-Decane	11112.48	18518.52	60	N	0.0	
n-Undecane	14332.41	18518.52	77		2.6	
n-Dodecane	15592.74	18518.52	84		2.4	
n-Tridecane	16376.45	18518.52	88		2.3	
Isoprenoid RRT 1380	U					
n-Tetradecane	17427.27	18518.52	94		2.2	
Isoprenoid RRT 1470	80.49 J					
n-Pentadecane	18246.74	18518.52	97		2.1	
Norpristane (1650)	U					
n-Hexadecane	18609.36	18518.52	100		2.0	
n-Heptadecane	19614.63	18518.52	101		2.0	
Pristane	27937.73	18518.52	93		3.3	
n-Octadecane	18725.61	18518.52	101		2.0	
Phytane	18466.95	18518.52	100		2.0	
n-Nonadecane	19241.53	18518.52	104		1.9	
n-Eicosane	19184.73	18518.52	104		1.9	
n-Heneicosane	18983.84	18518.52	102		1.0	
n-Docosane	19665.07	18518.52	106		1.9	
n-Tricosane	19092.53	18518.52	103		2.0	
n-Tetracosane	19039.91	18518.52	103		2.0	
n-Pentacosane	18994.32	18518.52	102		1.0	
n-Hexacosane	18943.64	18518.52	102		2.0	
n-Heptacosane	19160.74	18518.52	103		1.0	
n-Octacosane	18521.2	18518.52	100		2.0	
n-Nonacosane	18582.34	18518.52	100		1.0	
n-Triacontane	18975.77	18518.52	102		1.0	
n-Hentriacontane	18827.21	18518.52	102		1.0	
n-Dotriacontane	19337.08	18518.52	104		1.0	
n-Tritriacontane	18628.01	18518.52	101		2.0	
n-Tetratriacontane	18879.86	18518.52	102		1.0	
n-Pentatriacontane	19018.5	18518.52	103		2.0	
n-Hexatriacontane	18348.82	18518.52	99		1.0	
n-Heptatriacontane	18089.5	18518.52	98		2.1	
n-Octatriacontane	18861.86	18518.52	102		2.0	
n-Nonatriacontane	17757.71	18518.52	96		2.1	
n-Tetracontane	19078.35	18518.52	103		2.0	
Total SHC	618419.14					
TPH	625607.95					

Surrogate Recoveries (%)

5a-androstane	85
n-Tetracosane-d50	84

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-CC	08-03-KR019-01-CC			
Batch ID	09-0007	09-0007			
Battelle ID	Q5823-P	Q5823MS-P			
Sample Type	SA	MS			
Collection Date	08/30/08	08/30/08			
Extraction Date	01/26/09	01/26/09			
Analysis Date	02/06/09	02/11/09			
Analytical Instrument	FID	FID			
% Moisture	77.8	77.8			
% Lipid	2.07	2.06			
Matrix	TISSUE	TISSUE			
Sample Size	4.64	3.05			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	U	5988.97	16393.44	37	N
n-Decane	U	8374.76	16393.44	51	N
n-Undecane	U	11197.19	16393.44	68	N
n-Dodecane	U	12546.94	16393.44	77	
n-Tridecane	U	13640.17	16393.44	83	
Isoprenoid RRT 1380	U	51.51 J			
n-Tetradecane	21.83 J	14599.14	16393.44	89	
Isoprenoid RRT 1470	16.42 J	31.53 J			
n-Pentadecane	26.98 J	15135.89	16393.44	92	
Norpristane (1650)	U	9.49 J			
n-Hexadecane	21.22 J	15847.09	16393.44	97	
n-Heptadecane	15.93 J	16034.96	16393.44	98	
Pristane	26.74 J	15583.62	16393.44	95	
n-Octadecane	18.03 J	16002.87	16393.44	98	
Phytane	3.58 J	15774.04	16393.44	96	
n-Nonadecane	10.09 J	16508.46	16393.44	101	
n-Eicosane	15.02 J	16528.04	16393.44	101	
n-Heneicosane	29.97 J	16286.32	16393.44	99	
n-Docosane	27.99 J	16779.86	16393.44	102	
n-Tricosane	42.5 J	16332.12	16393.44	99	
n-Tetracosane	33.84 J	16224.84	16393.44	99	
n-Pentacosane	56.9 J	16211.39	16393.44	99	
n-Hexacosane	54.5 J	16160.43	16393.44	98	
n-Heptacosane	73.24 J	16115.13	16393.44	98	
n-Octacosane	45.34 J	15888.6	16393.44	97	
n-Nonacosane	57.9 J	16189.16	16393.44	98	
n-Triacontane	51.18 J	16494.45	16393.44	100	
n-Hentriacontane	48.75 J	15922.79	16393.44	97	
n-Dotriacontane	26.91 J	16975.92	16393.44	103	
n-Tritriacontane	19.83 J	16499.98	16393.44	101	
n-Tetratriacontane	9.64 J	16946.41	16393.44	103	
n-Pentatriacontane	38.19 J	17272.68	16393.44	105	
n-Hexatriacontane	1.73 J	16199.5	16393.44	99	
n-Heptatriacontane	U	16759.17	16393.44	102	
n-Octatriacontane	U	17861.79	16393.44	109	
n-Nonatriacontane	U	17078.39	16393.44	104	
n-Tetracontane	U	18496.91	16393.44	113	
Total SHC	794.25 J	526550.51			
TPH	884.76	524180.49			

Surrogate Recoveries (%)

5a-androstane	90	96
n-Tetracosane-d50	92	96

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-CC					
Batch ID	09-0007					
Battelle ID	Q5823MSD-P					
Sample Type	MSD					
Collection Date	08/30/08					
Extraction Date	01/26/09					
Analysis Date	02/11/09					
Analytical Instrument	FID					
% Moisture	77.8					
% Lipid	2.02					
Matrix	TISSUE					
Sample Size	3.21					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
n-Nonane	5996.2	15576.32	38	N	2.7	
n-Decane	8254.16	15576.32	53	N	3.8	
n-Undecane	10921.68	15576.32	70		2.9	
n-Dodecane	12186.26	15576.32	78		1.3	
n-Tridecane	13231.24	15576.32	85		2.4	
Isoprenoid RRT 1380	51.21 J					
n-Tetradecane	14144.98	15576.32	91		2.2	
Isoprenoid RRT 1470	30.57 J					
n-Pentadecane	14632.47	15576.32	94		2.2	
Norpristane (1650)	U					
n-Hexadecane	15273.19	15576.32	98		1.0	
n-Heptadecane	15444.14	15576.32	99		1.0	
Pristane	15014.96	15576.32	96		1.0	
n-Octadecane	15390.57	15576.32	99		1.0	
Phytane	15166.18	15576.32	97		1.0	
n-Nonadecane	15880.4	15576.32	102		1.0	
n-Eicosane	15907.98	15576.32	102		1.0	
n-Heneicosane	15678.29	15576.32	100		1.0	
n-Docosane	16159.91	15576.32	104		1.9	
n-Tricosane	15745.47	15576.32	101		2.0	
n-Tetracosane	15638.48	15576.32	100		1.0	
n-Pentacosane	15632.49	15576.32	100		1.0	
n-Hexacosane	15576.44	15576.32	100		2.0	
n-Heptacosane	15537.92	15576.32	99		1.0	
n-Octacosane	15318.43	15576.32	98		1.0	
n-Nonacosane	15604.44	15576.32	100		2.0	
n-Triacontane	15867.14	15576.32	102		2.0	
n-Hentriacontane	15309.08	15576.32	98		1.0	
n-Dotriacontane	16305.08	15576.32	105		1.9	
n-Tritriacontane	15837.43	15576.32	102		1.0	
n-Tetratriacontane	16246.94	15576.32	104		1.0	
n-Pentatriacontane	16579.99	15576.32	106		0.9	
n-Hexatriacontane	15551.28	15576.32	100		1.0	
n-Heptatriacontane	16105.01	15576.32	103		1.0	
n-Octatriacontane	17207.14	15576.32	110		0.9	
n-Nonatriacontane	16531.69	15576.32	106		1.9	
n-Tetracontane	18085.54	15576.32	116		2.6	
Total SHC	508044.38					
TPH	500959.44					

Surrogate Recoveries (%)

5a-androstane	98
n-Tetracosane-d50	99

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR005-01-BC5	08-03-BR005-01-BC5			
Batch ID	09-0008	09-0008			
Battelle ID	Q5745-P	Q5745MS-P			
Sample Type	SA	MS			
Collection Date	09/21/08	09/21/08			
Extraction Date	02/04/09	02/04/09			
Analysis Date	02/12/09	02/12/09			
Analytical Instrument	FID	FID			
% Moisture	80.6	80.6			
% Lipid	1.73	1.57			
Matrix	TISSUE	TISSUE			
Sample Size	4.21	2.02			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	17.46 J	14352.46	24752.48	58	N
n-Decane	31.6 J	19306.08	24752.48	78	
n-Undecane	21.62 J	22326	24752.48	90	
n-Dodecane	37.4 J	23224.17	24752.48	94	
n-Tridecane	30.44 J	23788.68	24752.48	96	
Isoprenoid RRT 1380	2.82 J	92.23 J			
n-Tetradecane	38.84 J	24816.96	24752.48	100	
Isoprenoid RRT 1470	107.7 J	139.09 J			
n-Pentadecane	101.8 J	25349.62	24752.48	102	
Norpristane (1650)	U	13.52 J			
n-Hexadecane	42.56 J	25842.77	24752.48	104	
n-Heptadecane	141.37	26022.16	24752.48	105	
Pristane	30.56 J	24963.92	24752.48	101	
n-Octadecane	27.24 J	25515.64	24752.48	103	
Phytane	4.82 J	25112.44	24752.48	101	
n-Nonadecane	42.11 J	26049.43	24752.48	105	
n-Eicosane	17.78 J	25827.41	24752.48	104	
n-Heneicosane	12.13 J	25453.85	24752.48	103	
n-Docosane	42.01 J	26409.31	24752.48	107	
n-Tricosane	22.11 J	25528.39	24752.48	103	
n-Tetracosane	26.07 J	25525.3	24752.48	103	
n-Pentacosane	27.44 J	25347.54	24752.48	102	
n-Hexacosane	28.51 J	25330.71	24752.48	102	
n-Heptacosane	36.11 J	25572.8	24752.48	103	
n-Octacosane	35.63 J	24811.5	24752.48	100	
n-Nonacosane	33.07 J	24874.96	24752.48	100	
n-Triacontane	47.69 J	25475.62	24752.48	103	
n-Hentriacontane	31.28 J	25296.88	24752.48	102	
n-Dotriacontane	38.13 J	26079.93	24752.48	105	
n-Tritriacontane	16.51 J	25140.69	24752.48	102	
n-Tetratriacontane	26.4 J	25574.02	24752.48	103	
n-Pentatriacontane	11.77 J	25763.14	24752.48	104	
n-Hexatriacontane	19.38 J	25023.78	24752.48	101	
n-Heptatriacontane	9 J	24818.31	24752.48	100	
n-Octatriacontane	14.17 J	26179.64	24752.48	106	
n-Nonatriacontane	3.71 J	25027.74	24752.48	101	
n-Tetracontane	6.66 J	27429.65	24752.48	111	
Total SHC	1183.9 J	843406.34			
TPH	44901.91	927486.97			

Surrogate Recoveries (%)

5a-androstane	97	96
n-Tetracosane-d50	94	93

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR005-01-BC5					
Batch ID	09-0008					
Battelle ID	Q5745MSD-P					
Sample Type	MSD					
Collection Date	09/21/08					
Extraction Date	02/04/09					
Analysis Date	02/12/09					
Analytical Instrument	FID					
% Moisture	80.6					
% Lipid	1.73					
Matrix	TISSUE					
Sample Size	2.19					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
n-Nonane	13305.46	22831.05	58	N	0.0	
n-Decane	18102.56	22831.05	79		1.3	
n-Undecane	20875.4	22831.05	91		1.1	
n-Dodecane	21662.2	22831.05	95		1.1	
n-Tridecane	22140.37	22831.05	97		1.0	
Isoprenoid RRT 1380	84.94 J					
n-Tetradecane	23068.5	22831.05	101		1.0	
Isoprenoid RRT 1470	137.12 J					
n-Pentadecane	23545.27	22831.05	103		1.0	
Norpristane (1650)	10.54 J					
n-Hexadecane	23961.82	22831.05	105		1.0	
n-Heptadecane	24126.31	22831.05	105		0.0	
Pristane	23134.35	22831.05	101		0.0	
n-Octadecane	23618.11	22831.05	103		0.0	
Phytane	23273.94	22831.05	102		1.0	
n-Nonadecane	24144.67	22831.05	106		0.9	
n-Eicosane	23925.59	22831.05	105		1.0	
n-Heneicosane	23562.41	22831.05	103		0.0	
n-Docosane	24417.5	22831.05	107		0.0	
n-Tricosane	23614.84	22831.05	103		0.0	
n-Tetracosane	23552.64	22831.05	103		0.0	
n-Pentacosane	23424.4	22831.05	102		0.0	
n-Hexacosane	23395.82	22831.05	102		0.0	
n-Heptacosane	23614.88	22831.05	103		0.0	
n-Octacosane	22887.69	22831.05	100		0.0	
n-Nonacosane	22954.92	22831.05	100		0.0	
n-Triacontane	23469.79	22831.05	103		0.0	
n-Hentriacontane	23317.59	22831.05	102		0.0	
n-Dotriacontane	24030.95	22831.05	105		0.0	
n-Tritriacontane	23172.93	22831.05	101		1.0	
n-Tetratriacontane	23558.82	22831.05	103		0.0	
n-Pentatriacontane	23751.8	22831.05	104		0.0	
n-Hexatriacontane	23090.88	22831.05	101		0.0	
n-Heptatriacontane	22895.69	22831.05	100		0.0	
n-Octatriacontane	24127.61	22831.05	106		0.0	
n-Nonatriacontane	22985.79	22831.05	101		0.0	
n-Tetracontane	25200.4	22831.05	110		0.9	
Total SHC	780144.5					
TPH	795711.37					

Surrogate Recoveries (%)

5a-androstane	99
n-Tetracosane-d50	94

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2	08-03-KF025-01-WC2			
Batch ID	09-0009	09-0009			
Battelle ID	Q5805-P	Q5805MS-P			
Sample Type	SA	MS			
Collection Date	08/27/08	08/27/08			
Extraction Date	02/11/09	02/11/09			
Analysis Date	02/25/09	02/25/09			
Analytical Instrument	FID	FID			
% Moisture	80.3	80.3			
% Lipid	1.57	2.06			
Matrix	TISSUE	TISSUE			
Sample Size	2.26	1.23			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	47.08 J	7632.47	40650.41	19	N
n-Decane	26.51 J	15241.62	40650.41	37	N
n-Undecane	37.67 J	21575.29	40650.41	53	N
n-Dodecane	20.21 J	25001.48	40650.41	61	N
n-Tridecane	25.75 J	27441.18	40650.41	67	N
Isoprenoid RRT 1380	17.72 J	116.01 J			
n-Tetradecane	51.42 J	29816.72	40650.41	73	
Isoprenoid RRT 1470	144.47 J	196.65 J			
n-Pentadecane	62.91 J	31138.93	40650.41	76	
Norpristane (1650)	U	31.11 J			
n-Hexadecane	43.06 J	32303.91	40650.41	79	
n-Heptadecane	84.71 J	32803.17	40650.41	80	
Pristane	176.6 J	31709.55	40650.41	78	
n-Octadecane	72.83 J	32565.85	40650.41	80	
Phytane	13.47 J	32081.26	40650.41	79	
n-Nonadecane	22.7 J	33393.19	40650.41	82	
n-Eicosane	154.36 J	33276.76	40650.41	81	
n-Heneicosane	39.25 J	32902.99	40650.41	81	
n-Docosane	264.41	34080.62	40650.41	83	
n-Tricosane	114.22 J	33120.84	40650.41	81	
n-Tetracosane	367.45	32948.03	40650.41	80	
n-Pentacosane	189.69 J	32920.43	40650.41	81	
n-Hexacosane	420.51	32754.44	40650.41	80	
n-Heptacosane	303.92	33253.04	40650.41	81	
n-Octacosane	403.08	31884.88	40650.41	77	
n-Nonacosane	236.98 J	32007.8	40650.41	78	
n-Triacontane	381.28	32427.27	40650.41	79	
n-Hentriacontane	203.75 J	32227.51	40650.41	79	
n-Dotriacontane	352.98	32928.04	40650.41	80	
n-Tritriacontane	80.23 J	31684.29	40650.41	78	
n-Tetratriacontane	314.99	32134.73	40650.41	78	
n-Pentatriacontane	548.16	32925.73	40650.41	80	
n-Hexatriacontane	218.77 J	31437.62	40650.41	77	
n-Heptatriacontane	U	31237.32	40650.41	77	
n-Octatriacontane	163.07 J	33015.16	40650.41	81	
n-Nonatriacontane	U	31699.25	40650.41	78	
n-Tetracontane	105.7 J	35228.59	40650.41	86	
Total SHC	5709.91	1039143.73			
TPH	4718.83	1023580.27			

Surrogate Recoveries (%)

5a-androstane	69	87
n-Tetracosane-d50	67	85

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2						
Batch ID	09-0009						
Battelle ID	Q5805MSD-P						
Sample Type	MSD						
Collection Date	08/27/08						
Extraction Date	02/11/09						
Analysis Date	02/25/09						
Analytical Instrument	FID						
% Moisture	80.3						
% Lipid	2.07						
Matrix	TISSUE						
Sample Size	1.22						
Size Unit-Basis	G_DRY						
Units	UG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier	
n-Nonane	19392.44	40983.61	47	N	84.8	N	
n-Decane	28389.02	40983.61	69	N	60.4	N	
n-Undecane	34114.33	40983.61	83		44.1	N	
n-Dodecane	36164.48	40983.61	88		36.2	N	
n-Tridecane	37766.29	40983.61	92		31.4	N	
Isoprenoid RRT 1380	150.66 J						
n-Tetradecane	40052.39	40983.61	98		29.2		
Isoprenoid RRT 1470	184.81 J						
n-Pentadecane	41276.98	40983.61	101		28.2		
Norpristane (1650)	22.83 J						
n-Hexadecane	42470.34	40983.61	104		27.3		
n-Heptadecane	42717.08	40983.61	104		26.1		
Pristane	41263.82	40983.61	100		24.7		
n-Octadecane	42331.68	40983.61	103		25.1		
Phytane	41709.74	40983.61	102		25.4		
n-Nonadecane	43297.27	40983.61	106		25.5		
n-Eicosane	43217.23	40983.61	105		25.8		
n-Heneicosane	42563.3	40983.61	104		24.9		
n-Docosane	44080.83	40983.61	107		25.3		
n-Tricosane	42792.26	40983.61	104		24.9		
n-Tetracosane	42675.76	40983.61	103		25.1		
n-Pentacosane	42540.06	40983.61	103		23.9		
n-Hexacosane	42397.22	40983.61	102		24.2		
n-Heptacosane	42959.52	40983.61	104		24.9		
n-Octacosane	41342.91	40983.61	100		26.0		
n-Nonacosane	41416.59	40983.61	100		24.7		
n-Triacontane	42150.32	40983.61	102		25.4		
n-Hentriacontane	41766.56	40983.61	101		24.4		
n-Dotriacontane	42765.5	40983.61	103		25.1		
n-Tritriacontane	41014.13	40983.61	100		24.7		
n-Tetratriacontane	41607.32	40983.61	101		25.7		
n-Pentatriacontane	42271.84	40983.61	102		24.2		
n-Hexatriacontane	40615.45	40983.61	99		25.0		
n-Heptatriacontane	40268.64	40983.61	98		24.0		
n-Octatriacontane	42631.37	40983.61	104		24.9		
n-Nonatriacontane	40960.12	40983.61	100		24.7		
n-Tetracontane	45587.79	40983.61	111		25.4		
Total SHC	1378928.88						
TPH	1318433.19						

Surrogate Recoveries (%)

5a-androstane	103
n-Tetracosane-d50	100

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF003, BF013, and BF023 composite	BF003, BF013, and BF023 composite			
Client ID					
Batch ID	09-0010	09-0010			
Battelle ID	Q6099-P	Q6099MS-P			
Sample Type	SA	MS			
Collection Date	09/02/08	09/02/08			
Extraction Date	02/18/09	02/18/09			
Analysis Date	02/27/09	02/27/09			
Analytical Instrument	FID	FID			
% Moisture	94.7	94.7			
% Lipid	0.36	0.35			
Matrix	TISSUE	TISSUE			
Sample Size	2.08	1.04			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
n-Nonane	42.44 J	24103.74	48076.92	50	N
n-Decane	135.21 J	32025.39	48076.92	66	N
n-Undecane	17.54 J	39793.79	48076.92	83	
n-Dodecane	123.55 J	41788.88	48076.92	87	
n-Tridecane	73.89 J	43650.72	48076.92	91	
Isoprenoid RRT 1380	58.71 J	167.26 J			
n-Tetradecane	157 J	45926.14	48076.92	95	
Isoprenoid RRT 1470	140.4 J	185.99 J			
n-Pentadecane	215.81 J	47147.58	48076.92	98	
Norpristane (1650)	U	U			
n-Hexadecane	53.11 J	48806.45	48076.92	101	
n-Heptadecane	116.37 J	46693.21	48076.92	97	
Pristane	138233.43 D	373086.66 E	48076.92	488	n
n-Octadecane	86.49 J	48991.39	48076.92	102	
Phytane	41.58 J	48296.12	48076.92	100	
n-Nonadecane	58.49 J	50358.69	48076.92	105	
n-Eicosane	120.84 J	50391.49	48076.92	105	
n-Heneicosane	75.6 J	49588.06	48076.92	103	
n-Docosane	201.65 J	51155.29	48076.92	106	
n-Tricosane	146.25 J	49756.8	48076.92	103	
n-Tetracosane	289.7	49524.02	48076.92	102	
n-Pentacosane	227.36 J	49433.03	48076.92	102	
n-Hexacosane	406	49342.53	48076.92	102	
n-Heptacosane	288.14	49186.83	48076.92	102	
n-Octacosane	385.51	48537.97	48076.92	100	
n-Nonacosane	244.82 J	49376.56	48076.92	102	
n-Triacontane	335.96	50224.95	48076.92	104	
n-Hentriacontane	212.88 J	48496.77	48076.92	100	
n-Dotriacontane	266.79	51669.87	48076.92	107	
n-Tritriacontane	96.35 J	49984.87	48076.92	104	
n-Tetratriacontane	184.29 J	51424.09	48076.92	107	
n-Pentatriacontane	74.41 J	51989.31	48076.92	108	
n-Hexatriacontane	118.84 J	48991.19	48076.92	102	
n-Heptatriacontane	50.42 J	50582.89	48076.92	105	
n-Octatriacontane	86.46 J	53889.31	48076.92	112	
n-Nonatriacontane	36.67 J	51588.58	48076.92	107	
n-Tetracontane	53.45 J	56292.8	48076.92	117	
Total SHC	143456.41	1952449.22			
TPH	361137.08	1993911.33			
Surrogate Recoveries (%)					
5a-androstane	73	74			
n-Tetracosane-d50	73	74			

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	BF003, BF013, and BF023 composite					
Batch ID	09-0010					
Battelle ID	Q6099MSD-P					
Sample Type	MSD					
Collection Date	09/02/08					
Extraction Date	02/18/09					
Analysis Date	03/04/09					
Analytical Instrument	FID					
% Moisture	94.7					
% Lipid	0.36					
Matrix	TISSUE					
Sample Size	1.04					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY	Target	% Recovery	Qualifier	RPD (%)	Qualifier
n-Nonane	22213.05	48076.92	46	N	8.3	
n-Decane	31134.66	48076.92	64	N	3.1	
n-Undecane	39640.33	48076.92	82		1.2	
n-Dodecane	42427.96	48076.92	88		1.1	
n-Tridecane	44678.19	48076.92	93		2.2	
Isoprenoid RRT 1380	173.47 J					
n-Tetradecane	47064.4	48076.92	98		3.1	
Isoprenoid RRT 1470	187.65 J					
n-Pentadecane	48324.82	48076.92	100		2.0	
Norpristane (1650)	U					
n-Hexadecane	49951.18	48076.92	104		2.9	
n-Heptadecane	48442.48	48076.92	101		4.0	
Pristane	361941.32 E	48076.92	465	n	4.8	
n-Octadecane	49915.78	48076.92	104		1.9	
Phytane	49094.06	48076.92	102		2.0	
n-Nonadecane	51264.89	48076.92	107		1.9	
n-Eicosane	51218.42	48076.92	106		0.9	
n-Heneicosane	50289.86	48076.92	104		1.0	
n-Docosane	51856.44	48076.92	107		0.9	
n-Tricosane	50360.04	48076.92	104		1.0	
n-Tetracosane	50043.02	48076.92	103		1.0	
n-Pentacosane	49919.29	48076.92	103		1.0	
n-Hexacosane	49801.51	48076.92	103		1.0	
n-Heptacosane	49777.78	48076.92	103		1.0	
n-Octacosane	49142.86	48076.92	101		1.0	
n-Nonacosane	50127.54	48076.92	104		1.9	
n-Triacontane	51201.68	48076.92	106		1.9	
n-Hentriacontane	49589.51	48076.92	103		3.0	
n-Dotriacontane	52892.01	48076.92	109		1.9	
n-Tritriacontane	51276.86	48076.92	106		1.9	
n-Tetratriacontane	52755.89	48076.92	109		1.9	
n-Pentatriacontane	53464.92	48076.92	111		2.7	
n-Hexatriacontane	50447.07	48076.92	105		2.9	
n-Heptatriacontane	52254.24	48076.92	109		3.7	
n-Octatriacontane	55912.18	48076.92	116		3.5	
n-Nonatriacontane	53798.66	48076.92	112		4.6	
n-Tetracontane	59102.08	48076.92	123		5.0	
Total SHC	1971686.1					
TPH	2011443.56					

Surrogate Recoveries (%)

5a-androstane	76
n-Tetracosane-d50	75

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0006	09-0007	09-0008	09-0009
Battelle ID	BM722PB-P	BM726PB-P	BM730PB-P	BM734PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/16/09	01/26/09	02/04/09	02/11/09
Extraction Date	01/16/09	01/26/09	02/04/09	02/11/09
Analysis Date	02/20/09	02/25/09	02/27/09	03/01/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.56	73.12	82.22	80.02
% Lipid	NA	NA	NA	NA
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.51	5.49	3.71	4.09
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Naphthalene	2.22	1.2	1.33	0.91
C1-Naphthalenes	0.47 J	0.45 J	0.44 J	0.32 J
C2-Naphthalenes	0.36 J	U	0.62 J	U
C3-Naphthalenes	0.27 J	U	0.58 J	U
C4-Naphthalenes	U	U	U	U
Acenaphthylene	U	U	U	U
Acenaphthene	U	U	0.09 J	U
Biphenyl	0.19 J	0.18 J	0.18 J	U
Fluorene	0.13 J	U	0.23 J	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3-Fluorenes	U	U	U	U
Anthracene	U	U	U	U
Phenanthrene	0.68 J	0.48 J	1.73	U
C1-Phenanthrenes/Anthracenes	0.66 J	U	2.29	U
C2-Phenanthrenes/Anthracenes	0.89 J	U	2.34	U
C3-Phenanthrenes/Anthracenes	0.29 J	U	0.66 J	U
C4-Phenanthrenes/Anthracenes	U	U	0.39 J	U
Dibenzothiophene	0.08 J	U	0.18 J	U
C1-Dibenzothiophenes	0.29 J	U	0.75	U
C2-Dibenzothiophenes	0.45 J	U	1.16	U
C3-Dibenzothiophenes	0.31 J	U	0.79	U
Fluoranthene	0.56 J	0.24 J	1.39	U
Pyrene	0.95 J	0.44 J	2.34	U
C1-Fluoranthenes/Pyrenes	0.23 J	U	0.44 J	U
C2-Fluoranthenes/Pyrenes	U	U	U	U
C3-Fluoranthenes/Pyrenes	U	U	U	U
Benzo(a)anthracene	0.09 J	U	0.12 J	U
Chrysene	0.15 J	0.15 J	0.19 J	U
C1-Chrysenes	U	U	U	U
C2-Chrysenes	U	U	U	U
C3-Chrysenes	U	U	U	U
C4-Chrysenes	U	U	U	U
Benzo(b)fluoranthene	0.07 J	U	U	U
Benzo(k)fluoranthene	0.06 J	U	U	U
Benzo(e)pyrene	U	U	U	U
Benzo(a)pyrene	U	U	U	U
Perylene	U	U	U	U
Indeno(1,2,3-cd)pyrene	U	U	U	U
Dibenz(a,h)anthracene	U	U	U	U
Benzo(g,h,i)perylene	U	U	0.08 J	U
Total PAH	9.4	3.14	18.32	1.23 J
Surrogate Recoveries (%)				
Naphthalene-d8	44	59	64	54
Acenaphthene-d10	61	70	79	67
Phenanthrene-d10	72	73	82	70
Benzo(a)pyrene-d12	86	87	104	86

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank
Batch ID	09-0010	09-0043
Battelle ID	BM738PB-P	BM913PB-P
Sample Type	PB	PB
Collection Date	02/18/09	03/19/09
Extraction Date	02/18/09	03/19/09
Analysis Date	03/05/09	03/30/09
Analytical Instrument	MS	MS
% Moisture	95.13	78.41
% Lipid	NA	NA
Matrix	TISSUE	TISSUE
Sample Size	1.00	4.24
Size Unit-Basis	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY
Naphthalene	3.25	0.56 J
C1-Naphthalenes	1.05 J	U
C2-Naphthalenes	U	U
C3-Naphthalenes	U	U
C4-Naphthalenes	U	U
Acenaphthylene	U	U
Acenaphthene	U	U
Biphenyl	0.57 J	U
Fluorene	0.48 J	U
C1-Fluorenes	U	U
C2-Fluorenes	U	U
C3-Fluorenes	U	U
Anthracene	U	U
Phenanthrene	2.12 J	0.24 J
C1-Phenanthrenes/Anthracenes	U	U
C2-Phenanthrenes/Anthracenes	U	U
C3-Phenanthrenes/Anthracenes	U	U
C4-Phenanthrenes/Anthracenes	U	U
Dibenzothiophene	0.21 J	U
C1-Dibenzothiophenes	0.86 J	U
C2-Dibenzothiophenes	2.04 J	U
C3-Dibenzothiophenes	1.27 J	U
Fluoranthene	2.18 J	U
Pyrene	3.78	U
C1-Fluoranthenes/Pyrenes	U	U
C2-Fluoranthenes/Pyrenes	U	U
C3-Fluoranthenes/Pyrenes	U	U
Benzo(a)anthracene	0.2 J	U
Chrysene	0.87 J	U
C1-Chrysenes	U	U
C2-Chrysenes	U	U
C3-Chrysenes	U	U
C4-Chrysenes	U	U
Benzo(b)fluoranthene	U	U
Benzo(k)fluoranthene	U	U
Benzo(e)pyrene	U	U
Benzo(a)pyrene	U	U
Perylene	U	U
Indeno(1,2,3-cd)pyrene	U	U
Dibenz(a,h)anthracene	U	U
Benzo(g,h,i)perylene	0.19 J	U
Total PAH	19.07 J	0.8

Surrogate Recoveries (%)

Naphthalene-d8	58	63
Acenaphthene-d10	69	70
Phenanthrene-d10	70	73
Benzo(a)pyrene-d12	90	82

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia				080610-01: Tilapia			
Batch ID	09-0006				09-0007			
Battelle ID	BM723LCS-P				BM727LCS-P			
Sample Type	LCS				LCS			
Collection Date	01/16/09				01/26/09			
Extraction Date	01/16/09				01/26/09			
Analysis Date	02/20/09				02/25/09			
Analytical Instrument	MS				MS			
% Moisture	78.57				78.57			
% Lipid	NA				2.28			
Matrix	TISSUE				TISSUE			
Sample Size	4.43				4.40			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	254.55	225.89	113		279.16	227.43	123	
C1-Naphthalenes	U				U			
C2-Naphthalenes	U				U			
C3-Naphthalenes	U				U			
C4-Naphthalenes	U				U			
Acenaphthylene	237.05	225.84	105		256.29	227.38	113	
Acenaphthene	239.11	225.90	106		266.35	227.44	117	
Biphenyl	228.42	226.41	101		288.45	227.95	127	
Fluorene	244.08	225.81	108		276.33	227.35	122	
C1-Fluorenes	U				U			
C2-Fluorenes	U				U			
C3-Fluorenes	U				U			
Anthracene	268.21	225.90	119		286.35	227.44	126	
Phenanthrene	247.54	225.86	110		271.01	227.40	119	
C1-Phenanthrenes/Anthracenes	U				U			
C2-Phenanthrenes/Anthracenes	U				U			
C3-Phenanthrenes/Anthracenes	U				U			
C4-Phenanthrenes/Anthracenes	U				U			
Dibenzothiophene	241.44	226.50	107		288.41	228.05	126	
C1-Dibenzothiophenes	U				U			
C2-Dibenzothiophenes	U				U			
C3-Dibenzothiophenes	U				U			
Fluoranthene	278.74	225.87	123		284.57	227.41	125	
Pyrene	286.51	225.80	127		286.51	227.34	126	
C1-Fluoranthenes/Pyrenes	U				U			
C2-Fluoranthenes/Pyrenes	U				U			
C3-Fluoranthenes/Pyrenes	U				U			
Benzo(a)anthracene	268.08	225.79	119		283.09	227.33	125	
Chrysene	242.11	225.81	107		249.23	227.35	110	
C1-Chrysenes	U				U			
C2-Chrysenes	U				U			
C3-Chrysenes	U				U			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	196.64	225.87	87		231.7	227.41	102	
Benzo(k)fluoranthene	180.87	225.87	80		248.49	227.41	109	
Benzo(e)pyrene	215.22	226.16	95		249.88	227.70	110	
Benzo(a)pyrene	222	225.85	98		261.17	227.39	115	
Perylene	207.92	226.59	92		256.48	228.14	112	
Indeno(1,2,3-cd)pyrene	225.41	225.87	100		287.15	227.41	126	
Dibenz(a,h)anthracene	221.95	225.88	98		281.91	227.42	124	
Benzo(g,h,i)perylene	213.74	225.84	95		261	227.38	115	
Total PAH	4719.59				5393.53			
Surrogate Recoveries (%)								
Naphthalene-d8	54				62			
Acenaphthene-d10	70				70			
Phenanthrene-d10	72				75			
Benzo(a)pyrene-d12	80				87			

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The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia				080610-01: Tilapia			
Batch ID	09-0008				09-0009			
Battelle ID	BM731LCS-P				BM735LCS-P			
Sample Type	LCS				LCS			
Collection Date	02/04/09				02/11/09			
Extraction Date	02/04/09				02/11/09			
Analysis Date	02/27/09				03/01/09			
Analytical Instrument	MS				MS			
% Moisture	78.57				78.57			
% Lipid	2.35				2.08			
Matrix	TISSUE				TISSUE			
Sample Size	4.37				4.41			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	267.96	228.99	117		322.74	226.92	142	N
C1-Naphthalenes	U				U			
C2-Naphthalenes	U				U			
C3-Naphthalenes	U				U			
C4-Naphthalenes	U				U			
Acenaphthylene	242.83	228.94	106		294.57	226.86	130	
Acenaphthene	257.06	229.00	112		301.51	226.93	133	N
Biphenyl	273.38	229.52	119		311.75	227.44	137	N
Fluorene	271.16	228.91	118		308.64	226.84	136	N
C1-Fluorenes	U				U			
C2-Fluorenes	U				U			
C3-Fluorenes	U				U			
Anthracene	273.66	229.00	120		322.06	226.93	142	N
Phenanthrene	263.15	228.96	115		308.59	226.88	136	N
C1-Phenanthrenes/Anthracenes	U				U			
C2-Phenanthrenes/Anthracenes	U				U			
C3-Phenanthrenes/Anthracenes	U				U			
C4-Phenanthrenes/Anthracenes	U				U			
Dibenzothiophene	269.81	229.61	118		308.39	227.53	136	N
C1-Dibenzothiophenes	U				U			
C2-Dibenzothiophenes	U				U			
C3-Dibenzothiophenes	U				U			
Fluoranthene	272.12	228.97	119		375.24	226.89	165	N
Pyrene	276.9	228.90	121		372.66	226.83	164	N
C1-Fluoranthenes/Pyrenes	U				U			
C2-Fluoranthenes/Pyrenes	U				U			
C3-Fluoranthenes/Pyrenes	U				U			
Benzo(a)anthracene	277	228.89	121		353.76	226.81	156	N
Chrysene	240.02	228.91	105		324.91	226.84	143	N
C1-Chrysenes	U				U			
C2-Chrysenes	U				U			
C3-Chrysenes	U				U			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	211.14	228.97	92		287.67	226.89	127	
Benzo(k)fluoranthene	234.67	228.97	102		259.69	226.89	114	
Benzo(e)pyrene	229.65	229.27	100		298.47	227.19	131	N
Benzo(a)pyrene	241.16	228.95	105		292.95	226.87	129	
Perylene	237.13	229.70	103		284.44	227.62	125	
Indeno(1,2,3-cd)pyrene	270.31	228.97	118		294.85	226.89	130	
Dibenz(a,h)anthracene	262.46	228.98	115		290.46	226.90	128	
Benzo(g,h,i)perylene	241.77	228.94	106		293.08	226.86	129	
Total PAH	5113.34				6206.43			

Surrogate Recoveries (%)

Naphthalene-d8	62				51			
Acenaphthene-d10	74				62			
Phenanthrene-d10	81				64			
Benzo(a)pyrene-d12	97				73			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080610-01: Tilapia				080610-01: Tilapia			
Batch ID	09-0010				09-0043			
Battelle ID	BM739LCS-P				BM914LCS-P			
Sample Type	LCS				LCS			
Collection Date	02/18/09				03/19/09			
Extraction Date	02/18/09				03/19/09			
Analysis Date	03/06/09				03/30/09			
Analytical Instrument	MS				MS			
% Moisture	78.57				78.57			
% Lipid	2.1				2.28			
Matrix	TISSUE				TISSUE			
Sample Size	4.45				4.23			
Size Unit-Basis	G_DRY				G_DRY			
Units	UG/KG_DRY	Target	% Recovery	Qualifier	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	254.6	224.88	113		286.52	236.57	121	
C1-Naphthalenes	U				U			
C2-Naphthalenes	U				U			
C3-Naphthalenes	U				U			
C4-Naphthalenes	U				U			
Acenaphthylene	242.68	224.82	108		270.19	236.51	114	
Acenaphthene	243.44	224.89	108		264.06	236.58	112	
Biphenyl	263.74	225.39	117		299.34	237.12	126	
Fluorene	256.94	224.80	114		285.36	236.49	121	
C1-Fluorenes	U				U			
C2-Fluorenes	U				U			
C3-Fluorenes	U				U			
Anthracene	266.08	224.89	118		290.39	236.58	123	
Phenanthrene	249.6	224.84	111		255.41	236.54	108	
C1-Phenanthrenes/Anthracenes	U				U			
C2-Phenanthrenes/Anthracenes	U				U			
C3-Phenanthrenes/Anthracenes	U				U			
C4-Phenanthrenes/Anthracenes	U				U			
Dibenzothiophene	263.23	225.48	117		306.13	237.21	129	
C1-Dibenzothiophenes	U				U			
C2-Dibenzothiophenes	U				U			
C3-Dibenzothiophenes	U				U			
Fluoranthene	260.95	224.85	116		285.13	236.55	121	
Pyrene	265.94	224.79	118		311.55	236.48	132	N
C1-Fluoranthenes/Pyrenes	U				U			
C2-Fluoranthenes/Pyrenes	U				U			
C3-Fluoranthenes/Pyrenes	U				U			
Benzo(a)anthracene	272.42	224.78	121		260.04	236.47	110	
Chrysene	236.15	224.80	105		251.42	236.49	106	
C1-Chrysenes	U				U			
C2-Chrysenes	U				U			
C3-Chrysenes	U				U			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	213.12	224.85	95		215.46	236.55	91	
Benzo(k)fluoranthene	219.8	224.85	98		246.42	236.55	104	
Benzo(e)pyrene	224.38	225.15	100		227.95	236.86	96	
Benzo(a)pyrene	238.46	224.83	106		254.56	236.52	108	
Perylene	233.66	225.57	104		219.95	237.30	93	
Indeno(1,2,3-cd)pyrene	282	224.85	125		296.35	236.55	125	
Dibenz(a,h)anthracene	269.75	224.87	120		307.07	236.56	130	
Benzo(g,h,i)perylene	240.51	224.82	107		227.17	236.51	96	
Total PAH	4997.45				5360.47			

Surrogate Recoveries (%)

Naphthalene-d8	69	67
Acenaphthene-d10	79	72
Phenanthrene-d10	84	76
Benzo(a)pyrene-d12	101	86

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080814-01: NIST 2977				080814-01: NIST 2977			
Batch ID	09-0006				09-0007			
Battelle ID	BM724SRM-P				BM728SRM-P			
Sample Type	SRM				SRM			
Collection Date	01/16/09				01/26/09			
Extraction Date	01/16/09				01/26/09			
Analysis Date	02/20/09				02/25/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				16.12			
Matrix	TISSUE				TISSUE			
Sample Size	2.01				2.01			
Size Unit-Basis	G_DRY	Certified	Actual		G_DRY	Certified	Actual	
Units	UG/KG_DRY	Value	%Difference	Qualifier	UG/KG_DRY	Value	%Difference	Qualifier
Naphthalene	10.59				12.3			
C1-Naphthalenes	8.01				8.65			
C2-Naphthalenes	42.13				45.31			
C3-Naphthalenes	151.38				185.99			
C4-Naphthalenes	208.99				235.82			
Acenaphthylene	1.68 J				2.19 J			
Acenaphthene	2.57				2.68			
Biphenyl	2.43 J				2.75			
Fluorene	8.64	10.24	15.6		8.83	10.24	13.8	
C1-Fluorenes	39.37				40.5			
C2-Fluorenes	139.11				162.62			
C3-Fluorenes	207.23				238.75			
Anthracene	4.1				4.66			
Phenanthrene	41.56	35.1	18.4		41.44	35.1	18.1	
C1-Phenanthrenes/Anthracenes	151.37				162.51			
C2-Phenanthrenes/Anthracenes	401.74				427.52			
C3-Phenanthrenes/Anthracenes	422.31				470.98			
C4-Phenanthrenes/Anthracenes	181.87				214.3			
Dibenzothiophene	25.31				26.42			
C1-Dibenzothiophenes	185.33				202.39			
C2-Dibenzothiophenes	550.8				627.09			
C3-Dibenzothiophenes	604.38				706.92			
Fluoranthene	44.06	38.7	13.9		52.06	38.7	34.5	N
Pyrene	90.83	78.9	15.1		102.14	78.9	29.5	
C1-Fluoranthenes/Pyrenes	94.87				107.69			
C2-Fluoranthenes/Pyrenes	116.16				131.68			
C3-Fluoranthenes/Pyrenes	95.64				118.81			
Benzo(a)anthracene	23.17	20.34	13.9		21.71	20.34	6.7	
Chrysene	90.24				93.23			
C1-Chrysenes	78.39				84.32			
C2-Chrysenes	63.22				66.7			
C3-Chrysenes	35.26				38.3			
C4-Chrysenes	19				U			
Benzo(b)fluoranthene	11.8	11.01	7.2		12.54	11.01	13.9	
Benzo(k)fluoranthene	10.08				9.63			
Benzo(e)pyrene	14.92	13.1	13.9		16.47	13.1	25.7	
Benzo(a)pyrene	3.97	8.35	52.5	N	3.75	8.35	55.1	N
Perylene	1.86 J	3.5	46.9	N	2.26 J	3.5	35.4	N
Indeno(1,2,3-cd)pyrene	2.49 J	4.84	48.6	N	2.95	4.84	39	
Dibenz(a,h)anthracene	1.05 J	1.41	25.5		1.35 J	1.41	4.3	
Benzo(g,h,i)perylene	5.36	9.53	43.8	N	6.42	9.53	32.6	
Total PAH	4193.27				4702.63			
Surrogate Recoveries (%)								
Naphthalene-d8	56				52			
Acenaphthene-d10	76				69			
Phenanthrene-d10	78				76			
Benzo(a)pyrene-d12	84				82			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080814-01: NIST 2977				080814-01: NIST 2977			
Batch ID	09-0008				09-0009			
Battelle ID	BM732SRM-P				BM736SRM-P			
Sample Type	SRM				SRM			
Collection Date	02/04/09				02/11/09			
Extraction Date	02/04/09				02/11/09			
Analysis Date	02/27/09				03/01/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	10.69				9.61			
Matrix	TISSUE				TISSUE			
Sample Size	2.02				2.04			
Size Unit-Basis	G_DRY	Certified	Actual		G_DRY	Certified	Actual	
Units	UG/KG_DRY	Value	%Difference	Qualifier	UG/KG_DRY	Value	%Difference	Qualifier
Naphthalene	10.75				10.47			
C1-Naphthalenes	8.2				8.37			
C2-Naphthalenes	43.03				45.08			
C3-Naphthalenes	153.74				159.43			
C4-Naphthalenes	225.99				232.25			
Acenaphthylene	1.99				2.1			
Acenaphthene	2.71				2.58			
Biphenyl	2.29				2.36			
Fluorene	8.5	10.24	17		8.12	10.24	20.7	
C1-Fluorenes	40.65				36.83			
C2-Fluorenes	147.08				163.73			
C3-Fluorenes	234.31				253.75			
Anthracene	5.03				5.25			
Phenanthrene	39.78	35.1	13.3		37.81	35.1	7.7	
C1-Phenanthrenes/Anthracenes	163.85				153.47			
C2-Phenanthrenes/Anthracenes	408.25				419.69			
C3-Phenanthrenes/Anthracenes	441.41				463.67			
C4-Phenanthrenes/Anthracenes	203.17				205.3			
Dibenzothiophene	25.87				25.39			
C1-Dibenzothiophenes	183.39				193.52			
C2-Dibenzothiophenes	579.63				600.02			
C3-Dibenzothiophenes	624.07				661.63			
Fluoranthene	46.95	38.7	21.3		45.21	38.7	16.8	
Pyrene	94.98	78.9	20.4		94.66	78.9	20	
C1-Fluoranthenes/Pyrenes	107.16				99.19			
C2-Fluoranthenes/Pyrenes	120.93				132.27			
C3-Fluoranthenes/Pyrenes	99.85				109.61			
Benzo(a)anthracene	21.38	20.34	5.1		21.02	20.34	3.3	
Chrysene	87.79				87.24			
C1-Chrysenes	74.21				77.25			
C2-Chrysenes	63.82				62.84			
C3-Chrysenes	35.75				39.61			
C4-Chrysenes	21.61				22.72			
Benzo(b)fluoranthene	11.33	11.01	2.9		12.26	11.01	11.4	
Benzo(k)fluoranthene	9.72				10.93			
Benzo(e)pyrene	15.62	13.1	19.2		16.1	13.1	22.9	
Benzo(a)pyrene	4.24	8.35	49.2	N	4.15	8.35	50.3	N
Perylene	2.39	3.5	31.7		1.98	3.5	43.4	
Indeno(1,2,3-cd)pyrene	2.47	4.84	49	N	2.62	4.84	45.9	
Dibenz(a,h)anthracene	1.21 J	1.41	14.2		1.14 J	1.41	19.1	
Benzo(g,h,i)perylene	5.26	9.53	44.8	N	5.71	9.53	40.1	N
Total PAH	4380.36				4537.33			
Surrogate Recoveries (%)								
Naphthalene-d8	59				65			
Acenaphthene-d10	79				84			
Phenanthrene-d10	84				90			
Benzo(a)pyrene-d12	84				91			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	080814-01: NIST 2977				090123-01: Nist 2977			
Batch ID	09-0010				09-0043			
Battelle ID	BM740SRM-P				BM915SRM-P			
Sample Type	SRM				SRM			
Collection Date	02/18/09				03/19/09			
Extraction Date	02/18/09				03/19/09			
Analysis Date	03/06/09				03/30/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	10.23				8.98			
Matrix	TISSUE				TISSUE			
Sample Size	2.03				1.97			
Size Unit-Basis	G_DRY	Certified	Actual		G_DRY	Certified	Actual	
Units	UG/KG_DRY	Value	%Difference	Qualifier	UG/KG_DRY	Value	%Difference	Qualifier
Naphthalene	9.14				9.07			
C1-Naphthalenes	8.22				8.56			
C2-Naphthalenes	43.55				55.89			
C3-Naphthalenes	158.05				197.71			
C4-Naphthalenes	226.85				269.37			
Acenaphthylene	2.17				2.61 J			
Acenaphthene	2.48				2.06 J			
Biphenyl	2.38				0.93 J			
Fluorene	8.66	10.24	15.4		8.14	10.24	20.5	
C1-Fluorenes	40.63				35.31			
C2-Fluorenes	150.72				145.22			
C3-Fluorenes	229.15				233.12			
Anthracene	5.52				5.73			
Phenanthrene	38.12	35.1	8.6		33.47	35.1	4.6	
C1-Phenanthrenes/Anthracenes	157.3				139.48			
C2-Phenanthrenes/Anthracenes	423.99				395.1			
C3-Phenanthrenes/Anthracenes	458.74				491.37			
C4-Phenanthrenes/Anthracenes	207.57				236.71			
Dibenzothiophene	24.96				22.7			
C1-Dibenzothiophenes	193.1				185.67			
C2-Dibenzothiophenes	606.91				620.83			
C3-Dibenzothiophenes	674.16				807.78			
Fluoranthene	45.78	38.7	18.3		33.04	38.7	14.6	
Pyrene	97.03	78.9	23		69.91	78.9	11.4	
C1-Fluoranthenes/Pyrenes	107.33				84.94			
C2-Fluoranthenes/Pyrenes	130.45				114.4			
C3-Fluoranthenes/Pyrenes	106.38				99.86			
Benzo(a)anthracene	22.45	20.34	10.4		17.4	20.34	14.5	
Chrysene	90.97				71.87			
C1-Chrysenes	77.98				67.63			
C2-Chrysenes	62.42				59.7			
C3-Chrysenes	33.67				44.01			
C4-Chrysenes	U				U			
Benzo(b)fluoranthene	11.79	11.01	7.1		9.53	11.01	13.4	
Benzo(k)fluoranthene	10.93				9.21			
Benzo(e)pyrene	15.52	13.1	18.5		12.49	13.1	4.7	
Benzo(a)pyrene	4.09	8.35	51	N	4.07	8.35	51.3	N
Perylene	1.81	3.5	48.3	N	2.37 J	3.5	32.3	
Indeno(1,2,3-cd)pyrene	2.08	4.84	57	N	2.37 J	4.84	51	N
Dibenz(a,h)anthracene	1.04 J	1.41	26.2		1.03 J	1.41	27	
Benzo(g,h,i)perylene	4.7	9.53	50.7	N	5.8	9.53	39.1	N
Total PAH	4498.79				4616.46			
Surrogate Recoveries (%)								
Naphthalene-d8	60				51			
Acenaphthene-d10	81				71			
Phenanthrene-d10	86				74			
Benzo(a)pyrene-d12	83				81			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0006				09-0007			
Battelle ID	BM725NSC-P				BM812NSC-P			
Sample Type	NSC				NSC			
Collection Date	01/23/09				02/03/09			
Extraction Date	01/23/09				02/03/09			
Analysis Date	02/20/09				02/25/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
Naphthalene	803.3	740.29	8.5		802.49	740.29	8.4	
C1-Naphthalenes	1554.76	1516.04	2.6		1505.43	1516.04	0.7	
C2-Naphthalenes	1985.22	2000.10	0.7		1900.18	2000.10	5.0	
C3-Naphthalenes	1483.26	1526.96	2.9		1420.84	1526.96	6.9	
C4-Naphthalenes	816.31	898.03	9.1		871.19	898.03	3.0	
Acenaphthylene	6.86				U			
Acenaphthene	15.36	14.50	5.9		12.54	14.50	13.5	
Biphenyl	231.17	220.82	4.7		215.56	220.82	2.4	
Fluorene	113.63	92.51	22.8		102.84	92.51	11.2	
C1-Fluorenes	242.1	227.01	6.6		236.56	227.01	4.2	
C2-Fluorenes	363.09	367.09	1.1		363.34	367.09	1.0	
C3-Fluorenes	322.35	326.32	1.2		356.96	326.32	9.4	
Anthracene	3.17				U			
Phenanthrene	305.67	249.49	22.5		284.08	249.49	13.9	
C1-Phenanthrenes/Anthracenes	652.59	549.17	18.8		633.15	549.17	15.3	
C2-Phenanthrenes/Anthracenes	726.32	642.72	13.0		704.7	642.72	9.6	
C3-Phenanthrenes/Anthracenes	497.58	446.11	11.5		506.15	446.11	13.5	
C4-Phenanthrenes/Anthracenes	177.05	180.02	1.6		195.57	180.02	8.6	
Dibenzothiophene	244.47	210.35	16.2		232.59	210.35	10.6	
C1-Dibenzothiophenes	455.75	409.03	11.4		440.47	409.03	7.7	
C2-Dibenzothiophenes	605.67	551.46	9.8		599.85	551.46	8.8	
C3-Dibenzothiophenes	482.15	471.36	2.3		502.9	471.36	6.7	
Fluoranthene	5.37				U			
Pyrene	15.27	12.99	17.6		16.08	12.99	23.8	
C1-Fluoranthenes/Pyrenes	89.67	70.92	26.4		91.97	70.92	29.7	
C2-Fluoranthenes/Pyrenes	152.55	117.89	29.4		158.8	117.89	34.7	N
C3-Fluoranthenes/Pyrenes	171.86	137.25	25.2		177.37	137.25	29.2	
Benzo(a)anthracene	6.86				4.36			
Chrysene	57.33	47.18	21.5		52.12	47.18	10.5	
C1-Chrysenes	87.32	78.82	10.8		82.8	78.82	5.0	
C2-Chrysenes	110.09	102.67	7.2		110.7	102.67	7.8	
C3-Chrysenes	84.64	85.36	0.8		96.62	85.36	13.2	
C4-Chrysenes	61.44	61.99	0.9		62.53	61.99	0.9	
Benzo(b)fluoranthene	5.53	6.08	9.0		5.67	6.08	6.7	
Benzo(k)fluoranthene	0.6 J				U			
Benzo(e)pyrene	11.64	12.88	9.6		11.96	12.88	7.1	
Benzo(a)pyrene	1.27 J				U			
Perylene	0.91 J				U			
Indeno(1,2,3-cd)pyrene	U				U			
Dibenz(a,h)anthracene	0.96 J				1.1 J			
Benzo(g,h,i)perylene	3.27	3.44	4.9		3.03	3.44	11.9	
Total PAH	12954.41				12762.5			
Surrogate Recoveries (%)								
Naphthalene-d8	88				78			
Acenaphthene-d10	95				93			
Phenanthrene-d10	90				92			
Benzo(a)pyrene-d12	102				106			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0008				09-0009			
Battelle ID	BM842NSC-P				BM842NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/10/09				02/10/09			
Extraction Date	02/10/09				02/10/09			
Analysis Date	02/27/09				02/27/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
Naphthalene	751.29	740.29	1.5		751.29	740.29	1.5	
C1-Naphthalenes	1443.76	1516.04	4.8		1443.76	1516.04	4.8	
C2-Naphthalenes	1820.21	2000.10	9.0		1820.21	2000.10	9.0	
C3-Naphthalenes	1363.3	1526.96	10.7		1363.3	1526.96	10.7	
C4-Naphthalenes	802.67	898.03	10.6		802.67	898.03	10.6	
Acenaphthylene	8.64				8.64			
Acenaphthene	14.14	14.50	2.5		14.14	14.50	2.5	
Biphenyl	208.48	220.82	5.6		208.48	220.82	5.6	
Fluorene	105.89	92.51	14.5		105.89	92.51	14.5	
C1-Fluorenes	241.56	227.01	6.4		241.56	227.01	6.4	
C2-Fluorenes	356.77	367.09	2.8		356.77	367.09	2.8	
C3-Fluorenes	327.31	326.32	0.3		327.31	326.32	0.3	
Anthracene	3.82				3.82			
Phenanthrene	264.71	249.49	6.1		264.71	249.49	6.1	
C1-Phenanthrenes/Anthracenes	594.28	549.17	8.2		594.28	549.17	8.2	
C2-Phenanthrenes/Anthracenes	671.77	642.72	4.5		671.77	642.72	4.5	
C3-Phenanthrenes/Anthracenes	487.97	446.11	9.4		487.97	446.11	9.4	
C4-Phenanthrenes/Anthracenes	192.63	180.02	7.0		192.63	180.02	7.0	
Dibenzothiophene	217.48	210.35	3.4		217.48	210.35	3.4	
C1-Dibenzothiophenes	415.09	409.03	1.5		415.09	409.03	1.5	
C2-Dibenzothiophenes	584.63	551.46	6.0		584.63	551.46	6.0	
C3-Dibenzothiophenes	469.12	471.36	0.5		469.12	471.36	0.5	
Fluoranthene	4.49				4.49			
Pyrene	14.72	12.99	13.3		14.72	12.99	13.3	
C1-Fluoranthenes/Pyrenes	88.57	70.92	24.9		88.57	70.92	24.9	
C2-Fluoranthenes/Pyrenes	148.98	117.89	26.4		148.98	117.89	26.4	
C3-Fluoranthenes/Pyrenes	173.9	137.25	26.7		173.9	137.25	26.7	
Benzo(a)anthracene	7				7			
Chrysene	50.49	47.18	7.0		50.49	47.18	7.0	
C1-Chrysenes	80.33	78.82	1.9		80.33	78.82	1.9	
C2-Chrysenes	101.89	102.67	0.8		101.89	102.67	0.8	
C3-Chrysenes	86.29	85.36	1.1		86.29	85.36	1.1	
C4-Chrysenes	64.21	61.99	3.6		64.21	61.99	3.6	
Benzo(b)fluoranthene	5.18	6.08	14.8		5.18	6.08	14.8	
Benzo(k)fluoranthene		U				U		
Benzo(e)pyrene	10.94	12.88	15.1		10.94	12.88	15.1	
Benzo(a)pyrene	1.02 J				1.02 J			
Perylene		U				U		
Indeno(1,2,3-cd)pyrene		U				U		
Dibenz(a,h)anthracene	0.79 J				0.79 J			
Benzo(g,h,i)perylene	2.92	3.44	15.1		2.92	3.44	15.1	
Total PAH	12187.24				12187.24			
Surrogate Recoveries (%)								
Naphthalene-d8	88				88			
Acenaphthene-d10	101				101			
Phenanthrene-d10	103				103			
Benzo(a)pyrene-d12	115				115			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0010				09-0043			
Battelle ID	BM872NSC-P				BM919NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/26/09				03/24/09			
Extraction Date	02/26/09				03/24/09			
Analysis Date	03/05/09				03/31/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				G_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
Naphthalene	794.06	740.29	7.3		772.49	740.29	4.3	
C1-Naphthalenes	1494.72	1516.04	1.4		1749.58	1516.04	15.4	
C2-Naphthalenes	1895.25	2000.10	5.2		2305.08	2000.10	15.2	
C3-Naphthalenes	1410	1526.96	7.7		1739.84	1526.96	13.9	
C4-Naphthalenes	828.93	898.03	7.7		970.78	898.03	8.1	
Acenaphthylene	7.02				6.53			
Acenaphthene	14.25	14.50	1.7		13.42	14.50	7.4	
Biphenyl	219.14	220.82	0.8		211.75	220.82	4.1	
Fluorene	106.25	92.51	14.9		95.85	92.51	3.6	
C1-Fluorenes	246.85	227.01	8.7		235.09	227.01	3.6	
C2-Fluorenes	376.04	367.09	2.4		356.2	367.09	3.0	
C3-Fluorenes	326.45	326.32	0.0		331.63	326.32	1.6	
Anthracene	3.29				U			
Phenanthrene	282.23	249.49	13.1		264.18	249.49	5.9	
C1-Phenanthrenes/Anthracenes	629.88	549.17	14.7		609.74	549.17	11.0	
C2-Phenanthrenes/Anthracenes	702.94	642.72	9.4		722.37	642.72	12.4	
C3-Phenanthrenes/Anthracenes	515.92	446.11	15.6		560.73	446.11	25.7	
C4-Phenanthrenes/Anthracenes	189.88	180.02	5.5		203.41	180.02	13.0	
Dibenzothiophene	229.34	210.35	9.0		229.54	210.35	9.1	
C1-Dibenzothiophenes	439.19	409.03	7.4		479.7	409.03	17.3	
C2-Dibenzothiophenes	614.15	551.46	11.4		656.94	551.46	19.1	
C3-Dibenzothiophenes	497.07	471.36	5.5		611.33	471.36	29.7	
Fluoranthene	5.9				4.19			
Pyrene	14.72	12.99	13.3		12.42	12.99	4.4	
C1-Fluoranthenes/Pyrenes	88.37	70.92	24.6		77.87	70.92	9.8	
C2-Fluoranthenes/Pyrenes	157.92	117.89	34.0	N	146.89	117.89	24.6	
C3-Fluoranthenes/Pyrenes	175.45	137.25	27.8		172.74	137.25	25.9	
Benzo(a)anthracene	6.54				4.58			
Chrysene	54.99	47.18	16.6		46.03	47.18	2.4	
C1-Chrysenes	85.62	78.82	8.6		79.69	78.82	1.1	
C2-Chrysenes	110.53	102.67	7.7		105.53	102.67	2.8	
C3-Chrysenes	90.18	85.36	5.6		109.01	85.36	27.7	
C4-Chrysenes	64.97	61.99	4.8		70.23	61.99	13.3	
Benzo(b)fluoranthene	5.45	6.08	10.4		4.58	6.08	24.7	
Benzo(k)fluoranthene	U				U			
Benzo(e)pyrene	11.76	12.88	8.7		9.52	12.88	26.1	
Benzo(a)pyrene	1.4 J				U			
Perylene	U				U			
Indeno(1,2,3-cd)pyrene	U				U			
Dibenz(a,h)anthracene	0.95 J				1.3 J			
Benzo(g,h,i)perylene	2.75	3.44	20.1		3.28	3.44	4.7	
Total PAH	12700.35				13974.04			
Surrogate Recoveries (%)								
					101			
Naphthalene-d8	80				102			
Acenaphthene-d10	94				89			
Phenanthrene-d10	94				116			
Benzo(a)pyrene-d12	107							

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-CC	08-03-BF011-01-CC		
Batch ID	09-0007	09-0007		
Battelle ID	Q6032-P	Q6032DUP-P		
Sample Type	SA	QADU		
Collection Date	09/13/08	09/13/08		
Extraction Date	01/26/09	01/26/09		
Analysis Date	02/26/09	02/27/09		
Analytical Instrument	MS	MS		
% Moisture	68.2	68		
% Lipid	3.23	3.43		
Matrix	TISSUE	TISSUE		
Sample Size	6.46	6.64		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	1.61 B	1.57 B	2.5	
C1-Naphthalenes	0.68 J	0.63 J	NA	
C2-Naphthalenes	8.15	7.65	6.3	
C3-Naphthalenes	0.78 J	0.67 J	NA	
C4-Naphthalenes	U	U	NA	
Acenaphthylene	U	U	NA	
Acenaphthene	U	U	NA	
Biphenyl	0.26 J	0.27 J	NA	
Fluorene	0.34 J	0.25 J	NA	
C1-Fluorenes	U	U	NA	
C2-Fluorenes	U	U	NA	
C3-Fluorenes	U	U	NA	
Anthracene	U	U	NA	
Phenanthrene	0.86 B	0.91 B	5.6	
C1-Phenanthrenes/Anthracenes	1.12	1.05	6.5	
C2-Phenanthrenes/Anthracenes	2.32	2.18	6.2	
C3-Phenanthrenes/Anthracenes	0.74 J	0.63 J	NA	
C4-Phenanthrenes/Anthracenes	0.65 J	0.58 J	NA	
Dibenzothiophene	0.15 J	0.12 J	NA	
C1-Dibenzothiophenes	0.35 J	0.38 J	NA	
C2-Dibenzothiophenes	0.83	0.75 J	10.1	
C3-Dibenzothiophenes	U	U	NA	
Fluoranthene	0.66 J	0.64 J	NA	
Pyrene	0.97 B	0.99 B	2.0	
C1-Fluoranthenes/Pyrenes	0.55 J	0.5 J	NA	
C2-Fluoranthenes/Pyrenes	U	U	NA	
C3-Fluoranthenes/Pyrenes	U	U	NA	
Benzo(a)anthracene	0.18 J	0.12 J	NA	
Chrysene	0.37 J	0.33 J	NA	
C1-Chrysenes	U	U	NA	
C2-Chrysenes	U	U	NA	
C3-Chrysenes	U	U	NA	
C4-Chrysenes	U	U	NA	
Benzo(b)fluoranthene	0.15 J	0.16 J	NA	
Benzo(k)fluoranthene	0.1 J	0.11 J	NA	
Benzo(e)pyrene	0.14 J	0.14 J	NA	
Benzo(a)pyrene	U	U	NA	
Perylene	0.54 J	0.44 J	NA	
Indeno(1,2,3-cd)pyrene	0.06 J	U	NA	
Dibenz(a,h)anthracene	U	U	NA	
Benzo(g,h,i)perylene	0.14 J	0.12 J	NA	
Total PAH	22.7	21.19	NA	

Surrogate Recoveries (%)

Naphthalene-d8	58	60
Acenaphthene-d10	78	76
Phenanthrene-d10	81	77
Benzo(a)pyrene-d12	95	91

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR086-01-WC2	08-03-BR086-01-WC2		
Batch ID	09-0009	09-0009		
Battelle ID	Q5878-P	Q5878DUP-P		
Sample Type	SA	QADU		
Collection Date	09/02/08	09/02/08		
Extraction Date	02/11/09	02/11/09		
Analysis Date	03/01/09	03/01/09		
Analytical Instrument	MS	MS		
% Moisture	78.1	78.1		
% Lipid	1.86	1.93		
Matrix	TISSUE	TISSUE		
Sample Size	2.31	2.31		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	4.71	5.13	8.5	
C1-Naphthalenes	4.69	5.23	10.9	
C2-Naphthalenes	6.49	7.19	10.2	
C3-Naphthalenes	5.3	5.61	5.7	
C4-Naphthalenes	5.22	6.45	21.1	
Acenaphthylene	0.1 J	0.1 J	NA	
Acenaphthene	0.27 J	0.26 J	NA	
Biphenyl	1.78	1.67	6.4	
Fluorene	1.66	1.74	4.7	
C1-Fluorenes	2.47	2.41	2.5	
C2-Fluorenes	6.54	7.76	17.1	
C3-Fluorenes	U	U	NA	
Anthracene	0.28 J	0.36 J	NA	
Phenanthrene	6.01	6.04	0.5	
C1-Phenanthrenes/Anthracenes	10.28	10.88	5.7	
C2-Phenanthrenes/Anthracenes	13.01	14.25	9.1	
C3-Phenanthrenes/Anthracenes	8.09	9.31	14.0	
C4-Phenanthrenes/Anthracenes	8.41	9.93	16.6	
Dibenzothiophene	0.82 J	0.75 J	NA	
C1-Dibenzothiophenes	2.38	2.4	0.8	
C2-Dibenzothiophenes	3.46	3.55	2.6	
C3-Dibenzothiophenes	3.31	3.35	1.2	
Fluoranthene	7.34	7.81	6.2	
Pyrene	5.78	5.63	2.6	
C1-Fluoranthenes/Pyrenes	7.52	8.89	16.7	
C2-Fluoranthenes/Pyrenes	9.35	11.12	17.3	
C3-Fluoranthenes/Pyrenes	5.95	7.86	27.7	
Benzo(a)anthracene	0.73 J	0.84 J	NA	
Chrysene	5.63	6.17	9.2	
C1-Chrysenes	4.03	4.67	14.7	
C2-Chrysenes	U	U	NA	
C3-Chrysenes	U	U	NA	
C4-Chrysenes	U	U	NA	
Benzo(b)fluoranthene	1.88	2.31	20.5	
Benzo(k)fluoranthene	0.71 J	0.85 J	NA	
Benzo(e)pyrene	2.66	3.1	15.3	
Benzo(a)pyrene	0.58 J	0.67 J	NA	
Perylene	6.23	7.18	14.2	
Indeno(1,2,3-cd)pyrene	U	U	NA	
Dibenz(a,h)anthracene	U	U	NA	
Benzo(g,h,i)perylene	U	U	NA	
Total PAH	153.67	171.47	10.9	
Surrogate Recoveries (%)				
Naphthalene-d8	74	70		
Acenaphthene-d10	98	90		
Phenanthrene-d10	101	94		
Benzo(a)pyrene-d12	101	96		

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019		BF009 and BF019			
Client ID	composite		composite			
Batch ID	09-0010		09-0010			
Battelle ID	Q6102-P		Q6102DUP-P			
Sample Type	SA		QADU			
Collection Date	09/19/08		09/19/08			
Extraction Date	02/18/09		02/18/09			
Analysis Date	03/06/09		03/06/09			
Analytical Instrument	MS		MS			
% Moisture	94.2		94.2			
% Lipid	0.21		0.23			
Matrix	TISSUE		TISSUE			
Sample Size	1.75		0.89			
Size Unit-Basis	G_DRY		G_DRY			
Units	UG/KG_DRY		UG/KG_DRY		RPD	Qualifier
Naphthalene	5.84	B	5.51	B	5.8	
C1-Naphthalenes	3.79	B	2.94	J	25.3	
C2-Naphthalenes	5.79		4.63		22.3	
C3-Naphthalenes	3.43		3.37		1.8	
C4-Naphthalenes	3.17		3.18		0.3	
Acenaphthylene	U		U		NA	
Acenaphthene	U		U		NA	
Biphenyl	1.08	J	1.31	J	NA	
Fluorene	1.16	J	1.03	J	NA	
C1-Fluorenes	3.79		2.69	J	34.0	n
C2-Fluorenes	5.23		5.11		2.3	
C3-Fluorenes	U		U		NA	
Anthracene	0.28	J	0.22	J	NA	
Phenanthrene	4.72	B	4.48	B	5.2	
C1-Phenanthrenes/Anthracenes	4.31		4.07		5.7	
C2-Phenanthrenes/Anthracenes	6.18		6.63		7.0	
C3-Phenanthrenes/Anthracenes	2.2		2.63	J	17.8	
C4-Phenanthrenes/Anthracenes	1.2	J	1.29	J	NA	
Dibenzothiophene	0.48	J	0.52	J	NA	
C1-Dibenzothiophenes	1.42	J	1.9	J	NA	
C2-Dibenzothiophenes	4.24	B	4.61	B	8.4	
C3-Dibenzothiophenes	2.99	B	3.2	B	6.8	
Fluoranthene	2.09	B	2.86	J	31.1	n
Pyrene	3.16	B	4.21	B	28.5	
C1-Fluoranthenes/Pyrenes	1.8		2.1	J	15.4	
C2-Fluoranthenes/Pyrenes	1.08	J	1.84	J	NA	
C3-Fluoranthenes/Pyrenes	U		U		NA	
Benzo(a)anthracene	0.37	J	0.34	J	NA	
Chrysene	1.12	J	1.42	J	NA	
C1-Chrysenes	1.25	J	1.29	J	NA	
C2-Chrysenes	U		U		NA	
C3-Chrysenes	U		U		NA	
C4-Chrysenes	U		U		NA	
Benzo(b)fluoranthene	0.55	J	0.54	J	NA	
Benzo(k)fluoranthene	0.29	J	0.52	J	NA	
Benzo(e)pyrene	0.61	J	0.4	J	NA	
Benzo(a)pyrene	U		U		NA	
Perylene	1.36	J	1.21	J	NA	
Indeno(1,2,3-cd)pyrene	0.23	J	0.42	J	NA	
Dibenz(a,h)anthracene	U		U		NA	
Benzo(g,h,i)perylene	0.52	J	0.46	J	NA	
Total PAH	75.73	B	76.93	J	1.6	
Surrogate Recoveries (%)						
Naphthalene-d8	53		59			
Acenaphthene-d10	70		77			
Phenanthrene-d10	74		81			
Benzo(a)pyrene-d12	87		98			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR038-01-AC	08-03-BR038-01-AC		
Batch ID	09-0043	09-0043		
Battelle ID	Q5720-P1	Q5720DUP-P		
Sample Type	SA	QADU		
Collection Date	09/19/08	09/19/08		
Extraction Date	03/19/09	03/19/09		
Analysis Date	03/31/09	03/31/09		
Analytical Instrument	MS	MS		
% Moisture	76	76		
% Lipid	4.13	4.39		
Matrix	TISSUE	TISSUE		
Sample Size	4.80	4.78		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
Naphthalene	12.87	13.36	3.7	
C1-Naphthalenes	2.79	2.87	2.8	
C2-Naphthalenes	5.09	5.89	14.6	
C3-Naphthalenes	1.95	1.73	12.0	
C4-Naphthalenes	U	U	NA	
Acenaphthylene	0.38 J	0.31 J	NA	
Acenaphthene	0.39 J	0.41 J	NA	
Biphenyl	0.62 J	0.54 J	NA	
Fluorene	0.85 J	1.12	27.4	
C1-Fluorenes	U	0.83 J	NA	
C2-Fluorenes	U	U	NA	
C3-Fluorenes	U	U	NA	
Anthracene	U	U	NA	
Phenanthrene	0.9 J	0.77 J	NA	
C1-Phenanthrenes/Anthracenes	U	U	NA	
C2-Phenanthrenes/Anthracenes	2.46	2.14	13.9	
C3-Phenanthrenes/Anthracenes	2.66	U	90.7	n
C4-Phenanthrenes/Anthracenes	1.03 J	1.06 J	NA	
Dibenzothiophene	0.2 J	0.21 J	NA	
C1-Dibenzothiophenes	U	U	NA	
C2-Dibenzothiophenes	U	U	NA	
C3-Dibenzothiophenes	U	U	NA	
Fluoranthene	0.51 J	0.32 J	NA	
Pyrene	0.67 J	0.6 J	NA	
C1-Fluoranthenes/Pyrenes	U	U	NA	
C2-Fluoranthenes/Pyrenes	U	U	NA	
C3-Fluoranthenes/Pyrenes	U	U	NA	
Benzo(a)anthracene	U	U	NA	
Chrysene	0.77 J	0.63 J	NA	
C1-Chrysenes	1.32	1.19	10.4	
C2-Chrysenes	U	U	NA	
C3-Chrysenes	U	U	NA	
C4-Chrysenes	U	U	NA	
Benzo(b)fluoranthene	U	U	NA	
Benzo(k)fluoranthene	U	U	NA	
Benzo(e)pyrene	U	U	NA	
Benzo(a)pyrene	U	U	NA	
Perylene	U	U	NA	
Indeno(1,2,3-cd)pyrene	U	U	NA	
Dibenz(a,h)anthracene	U	U	NA	
Benzo(g,h,i)perylene	U	U	NA	
Total PAH	35.46	33.98	NA	
Surrogate Recoveries (%)				
	57	56		
Naphthalene-d8	67	68		
Acenaphthene-d10	70	71		
Phenanthrene-d10	80	88		
Benzo(a)pyrene-d12				

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD004-01-AC	08-03-BD004-01-AC			
Batch ID	09-0006	09-0006			
Battelle ID	Q5750-P	Q5750MS-P			
Sample Type	SA	MS			
Collection Date	09/21/08	09/21/08			
Extraction Date	01/16/09	01/16/09			
Analysis Date	02/21/09	02/21/09			
Analytical Instrument	MS	MS			
% Moisture	74.5	74.5			
% Lipid	3.64	4.73			
Matrix	TISSUE	TISSUE			
Sample Size	5.27	2.65			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	17.93	401.47	377.62	102	
C1-Naphthalenes	2.02 B	429.3			
C2-Naphthalenes	1.49 B	200.66			
C3-Naphthalenes	1.34 B	208.54			
C4-Naphthalenes	1.68	2.87			
Acenaphthylene	0.2 J	365.94	377.53	97	
Acenaphthene	0.34 J	369.21	377.64	98	
Biphenyl	0.5 J	353.99	378.49	93	
Fluorene	1.14	390.15	377.49	103	
C1-Fluorenes	0.79 J	1.4 J			
C2-Fluorenes	2.77	3.02			
C3-Fluorenes	U	U			
Anthracene	0.13 J	414.26	377.64	110	
Phenanthrene	1.49 B	385.85	377.57	102	
C1-Phenanthrenes/Anthracenes	1.31 B	297.76			
C2-Phenanthrenes/Anthracenes	2.13 B	287.61			
C3-Phenanthrenes/Anthracenes	0.96 J	2.17			
C4-Phenanthrenes/Anthracenes	0.93 J	1.56 J			
Dibenzothiophene	0.35 J	373.08	378.64	98	
C1-Dibenzothiophenes	0.71 J	1.38 J			
C2-Dibenzothiophenes	1.18 B	15.33			
C3-Dibenzothiophenes	1.2 B	3.74			
Fluoranthene	1.14 B	454.23	377.58	120	
Pyrene	1.49 B	458.95	377.47	121	
C1-Fluoranthenes/Pyrenes	0.73 J	1.69 J			
C2-Fluoranthenes/Pyrenes	U	1.21 J			
C3-Fluoranthenes/Pyrenes	U	U			
Benzo(a)anthracene	0.48 J	425.62	377.45	113	
Chrysene	0.93 J	381.44	377.49	101	
C1-Chrysenes	0.84 J	1.06 J			
C2-Chrysenes	1.93	1.39 J			
C3-Chrysenes	U	U			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	0.66 J	318.99	377.58	84	
Benzo(k)fluoranthene	0.5 J	337.48	377.58	89	
Benzo(e)pyrene	0.41 J	338.74	378.08	89	
Benzo(a)pyrene	0.2 J	346.94	377.55	92	
Perylene	0.48 J	330.77	378.79	87	
Indeno(1,2,3-cd)pyrene	0.31 J	363	377.58	96	
Dibenz(a,h)anthracene	0.12 J	349.42	377.60	93	
Benzo(g,h,i)perylene	0.4 J	341.51	377.53	90	
Total PAH	51.21	8961.73			

Surrogate Recoveries (%)

Naphthalene-d8	55	59
Acenaphthene-d10	81	78
Phenanthrene-d10	86	83
Benzo(a)pyrene-d12	97	95

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD004-01-AC					
Batch ID	09-0006					
Battelle ID	Q5750MSD-P					
Sample Type	MSD					
Collection Date	09/21/08					
Extraction Date	01/16/09					
Analysis Date	02/21/09					
Analytical Instrument	MS					
% Moisture	74.5					
% Lipid	5.1					
Matrix	TISSUE					
Sample Size	2.7					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Naphthalene	392.71		370.63	101		1.0	
C1-Naphthalenes	423.38						
C2-Naphthalenes	193.23						
C3-Naphthalenes	201.83						
C4-Naphthalenes	3.84						
Acenaphthylene	358.73		370.54	97		0.0	
Acenaphthene	363.48		370.65	98		0.0	
Biphenyl	348.8		371.48	94		1.1	
Fluorene	380.43		370.50	102		1.0	
C1-Fluorenes	1.46	J					
C2-Fluorenes		U					
C3-Fluorenes		U					
Anthracene	409.21		370.65	110		0.0	
Phenanthrene	380.34		370.57	102		0.0	
C1-Phenanthrenes/Anthracenes	293.96						
C2-Phenanthrenes/Anthracenes	281.1						
C3-Phenanthrenes/Anthracenes	1.3	J					
C4-Phenanthrenes/Anthracenes	1.19	J					
Dibenzothiophene	369.76		371.63	99		1.0	
C1-Dibenzothiophenes	1.44	J					
C2-Dibenzothiophenes	14.48						
C3-Dibenzothiophenes	3.19						
Fluoranthene	443.39		370.59	119		0.8	
Pyrene	453.19		370.48	122		0.8	
C1-Fluoranthenes/Pyrenes	1.23	J					
C2-Fluoranthenes/Pyrenes	1.05	J					
C3-Fluoranthenes/Pyrenes		U					
Benzo(a)anthracene	413.64		370.46	112		0.9	
Chrysene	377.3		370.50	102		1.0	
C1-Chrysenes	0.89	J					
C2-Chrysenes	2.11						
C3-Chrysenes		U					
C4-Chrysenes		U					
Benzo(b)fluoranthene	310.48		370.59	84		0.0	
Benzo(k)fluoranthene	328.33		370.59	88		1.1	
Benzo(e)pyrene	328.9		371.07	89		0.0	
Benzo(a)pyrene	337.52		370.56	91		1.1	
Perylene	320.03		371.78	86		1.2	
Indeno(1,2,3-cd)pyrene	354		370.59	95		1.0	
Dibenz(a,h)anthracene	343.11		370.61	93		0.0	
Benzo(g,h,i)perylene	335.45		370.54	90		0.0	
Total PAH	8774.48						

Surrogate Recoveries (%)

Naphthalene-d8	61
Acenaphthene-d10	79
Phenanthrene-d10	83
Benzo(a)pyrene-d12	96

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-CC	08-03-KR019-01-CC			
Batch ID	09-0007	09-0007			
Battelle ID	Q5823-P	Q5823MS-P			
Sample Type	SA	MS			
Collection Date	08/30/08	08/30/08			
Extraction Date	01/26/09	01/26/09			
Analysis Date	02/26/09	03/17/09			
Analytical Instrument	MS	MS			
% Moisture	77.8	77.8			
% Lipid	2.07	2.06			
Matrix	TISSUE	TISSUE			
Sample Size	4.64	3.05			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	2.59 B	388.85	328.10	118	
C1-Naphthalenes	1.06 J	480.5			
C2-Naphthalenes	8.72	247			
C3-Naphthalenes	0.7 J	229.45			
C4-Naphthalenes	U	1.75			
Acenaphthylene	U	382.52	328.02	117	
Acenaphthene	U	384.97	328.11	117	
Biphenyl	0.38 J	410.12	328.85	125	
Fluorene	0.36 J	409.28	327.98	125	
C1-Fluorenes	U	0.9 J			
C2-Fluorenes	U	1.25 J			
C3-Fluorenes	U	U			
Anthracene	U	414.71	328.11	126	
Phenanthrene	1.41 B	390.94	328.05	119	
C1-Phenanthrenes/Anthracenes	1.46	U			
C2-Phenanthrenes/Anthracenes	4.13	U			
C3-Phenanthrenes/Anthracenes	1.2	U			
C4-Phenanthrenes/Anthracenes	0.79 J	U			
Dibenzothiophene	0.18 J	413.87	328.98	126	
C1-Dibenzothiophenes	0.43 J	1.12 J			
C2-Dibenzothiophenes	1.09 J	16.78			
C3-Dibenzothiophenes	0.85 J	1.79			
Fluoranthene	1.02 J	416	328.07	126	
Pyrene	1.47 B	415.74	327.97	126	
C1-Fluoranthenes/Pyrenes	0.86 J	1.08 J			
C2-Fluoranthenes/Pyrenes	U	1.45 J			
C3-Fluoranthenes/Pyrenes	U	U			
Benzo(a)anthracene	0.16 J	418.18	327.95	127	
Chrysene	0.45 J	367.42	327.98	112	
C1-Chrysenes	U	0.41 J			
C2-Chrysenes	U	U			
C3-Chrysenes	U	U			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	0.19 J	353.65	328.07	108	
Benzo(k)fluoranthene	0.14 J	332.84	328.07	101	
Benzo(e)pyrene	0.2 J	351.81	328.49	107	
Benzo(a)pyrene	U	369.57	328.03	113	
Perylene	0.49 J	363.26	329.11	110	
Indeno(1,2,3-cd)pyrene	U	416.85	328.07	127	
Dibenz(a,h)anthracene	U	403.7	328.08	123	
Benzo(g,h,i)perylene	0.19 J	363.54	328.02	111	
Total PAH	30.52	8751.3			

Surrogate Recoveries (%)

Naphthalene-d8	60	57
Acenaphthene-d10	72	69
Phenanthrene-d10	73	76
Benzo(a)pyrene-d12	86	93

Battelle
The Business of Innovation

Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KR019-01-CC					
Batch ID	09-0007					
Battelle ID	Q5823MSD-P					
Sample Type	MSD					
Collection Date	08/30/08					
Extraction Date	01/26/09					
Analysis Date	03/17/09					
Analytical Instrument	MS					
% Moisture	77.8					
% Lipid	2.02					
Matrix	TISSUE					
Sample Size	3.21					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Naphthalene	386.2		311.74	123		4.1	
C1-Naphthalenes	471.02						
C2-Naphthalenes	240.81						
C3-Naphthalenes	226.08						
C4-Naphthalenes	1.9						
Acenaphthylene	377.85		311.67	121		3.4	
Acenaphthene	378.08		311.76	121		3.4	
Biphenyl	407.17		312.46	130		3.9	
Fluorene	406.02		311.64	130		3.9	
C1-Fluorenes	0.8	J					
C2-Fluorenes	1.35	J					
C3-Fluorenes		U					
Anthracene	409.84		311.76	131	N	3.9	
Phenanthrene	381.42		311.70	122		2.5	
C1-Phenanthrenes/Anthracenes	294.13						
C2-Phenanthrenes/Anthracenes	299.85						
C3-Phenanthrenes/Anthracenes	1.06	J					
C4-Phenanthrenes/Anthracenes	0.86	J					
Dibenzothiophene	407.09		312.59	130		3.1	
C1-Dibenzothiophenes	0.79	J					
C2-Dibenzothiophenes	15.92						
C3-Dibenzothiophenes	0.96	J					
Fluoranthene	400.61		311.71	128		1.6	
Pyrene	398.4		311.62	127		0.8	
C1-Fluoranthenes/Pyrenes	0.94	J					
C2-Fluoranthenes/Pyrenes	0.96	J					
C3-Fluoranthenes/Pyrenes	0.71	J					
Benzo(a)anthracene	413.25		311.60	133	N	4.6	
Chrysene	359.23		311.64	115		2.6	
C1-Chrysenes	0.4	J					
C2-Chrysenes	1.25	J					
C3-Chrysenes		U					
C4-Chrysenes		U					
Benzo(b)fluoranthene	356.82		311.71	114		5.4	
Benzo(k)fluoranthene	334.74		311.71	107		5.8	
Benzo(e)pyrene	349.98		312.12	112		4.6	
Benzo(a)pyrene	368.47		311.68	118		4.3	
Perylene	362.46		312.71	116		5.3	
Indeno(1,2,3-cd)pyrene	427.18		311.71	137	N	7.6	
Dibenz(a,h)anthracene	398.24		311.73	128		4.0	
Benzo(g,h,i)perylene	363.72		311.67	117		5.3	
Total PAH	9246.56						

Surrogate Recoveries (%)

Naphthalene-d8	59
Acenaphthene-d10	73
Phenanthrene-d10	81
Benzo(a)pyrene-d12	96

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR005-01-BC5	08-03-BR005-01-BC5			
Batch ID	09-0008	09-0008			
Battelle ID	Q5745-P	Q5745MS-P			
Sample Type	SA	MS			
Collection Date	09/21/08	9/21/2008			
Extraction Date	02/04/09	2/4/2009			
Analysis Date	02/27/09	2/27/2009			
Analytical Instrument	MS	MS			
% Moisture	80.6	80.6			
% Lipid	1.73	1.57			
Matrix	TISSUE	TISSUE			
Sample Size	4.21	2.02			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	2.18 B	525.04	495.40	106	
C1-Naphthalenes	1.05 B	450.55			
C2-Naphthalenes	3.95	261.83			
C3-Naphthalenes	1.07 B	19.2			
C4-Naphthalenes	1.22	3.54			
Acenaphthylene	U	465.92	495.27	94	
Acenaphthene	0.12 J	505.12	495.42	102	
Biphenyl	0.43 J	449.44	496.53	90	
Fluorene	0.61 J	552.27	495.22	111	
C1-Fluorenes	0.83	1.55			
C2-Fluorenes	4.11	7.3			
C3-Fluorenes	U	U			
Anthracene	0.11 J	515.04	495.42	104	
Phenanthrene	2.45 B	511.82	495.32	103	
C1-Phenanthrenes/Anthracenes	3.09 B	416.56			
C2-Phenanthrenes/Anthracenes	4.81 B	396.15			
C3-Phenanthrenes/Anthracenes	1.77 B	2.64			
C4-Phenanthrenes/Anthracenes	1.15 B	1.54			
Dibenzothiophene	0.3 J	512.24	496.73	103	
C1-Dibenzothiophenes	1.09 B	1.95			
C2-Dibenzothiophenes	1.97 B	21.85			
C3-Dibenzothiophenes	1.26 B	2.26			
Fluoranthene	2.2 B	623.87	495.35	126	
Pyrene	3.31 B	622.61	495.20	125	
C1-Fluoranthenes/Pyrenes	1.21 B	2.35			
C2-Fluoranthenes/Pyrenes	1.29	2.11			
C3-Fluoranthenes/Pyrenes	1.13	1.47			
Benzo(a)anthracene	0.25 J	589.06	495.17	119	
Chrysene	1.38	540.29	495.22	109	
C1-Chrysenes	0.88	1.17 J			
C2-Chrysenes	2.05	2.61			
C3-Chrysenes	U	U			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	0.52 J	465.54	495.35	94	
Benzo(k)fluoranthene	0.21 J	490.92	495.35	99	
Benzo(e)pyrene	0.57 J	490.56	495.99	99	
Benzo(a)pyrene	0.13 J	485.58	495.30	98	
Perylene	2.29	475.57	496.93	95	
Indeno(1,2,3-cd)pyrene	0.11 J	503.27	495.35	102	
Dibenz(a,h)anthracene	U	487.68	495.37	98	
Benzo(g,h,i)perylene	0.25 J	460.33	495.27	93	
Total PAH	51.35	11868.8			
Surrogate Recoveries (%)					
Naphthalene-d8	59	23 N			
Acenaphthene-d10	76	72			
Phenanthrene-d10	76	82			
Benzo(a)pyrene-d12	89	98			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR005-01-BC5					
Batch ID	09-0008					
Battelle ID	Q5745MSD-P					
Sample Type	MSD					
Collection Date	9/21/2008					
Extraction Date	2/4/2009					
Analysis Date	2/27/2009					
Analytical Instrument	MS					
% Moisture	80.6					
% Lipid	1.73					
Matrix	TISSUE					
Sample Size	2.19					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Naphthalene	471.05		456.94	103		2.9	
C1-Naphthalenes	561.78						
C2-Naphthalenes	248.8						
C3-Naphthalenes	15.68						
C4-Naphthalenes	2.45						
Acenaphthylene	439.98		456.83	96		2.1	
Acenaphthene	455.21		456.96	100		2.0	
Biphenyl	460.7		457.99	100		10.5	
Fluorene	454.59		456.78	99		11.4	
C1-Fluorenes	1.05	J					
C2-Fluorenes	5.29						
C3-Fluorenes		U					
Anthracene	460.93		456.96	101		2.9	
Phenanthrene	454.37		456.87	99		4.0	
C1-Phenanthrenes/Anthracenes	370.45						
C2-Phenanthrenes/Anthracenes	347.59						
C3-Phenanthrenes/Anthracenes	2.09						
C4-Phenanthrenes/Anthracenes	1.08	J					
Dibenzothiophene	459.99		458.17	100		3.0	
C1-Dibenzothiophenes	1.07	J					
C2-Dibenzothiophenes	18.82						
C3-Dibenzothiophenes	1.95						
Fluoranthene	557.84		456.89	122		3.2	
Pyrene	556.21		456.76	121		3.3	
C1-Fluoranthenes/Pyrenes	1.75						
C2-Fluoranthenes/Pyrenes	2.15						
C3-Fluoranthenes/Pyrenes	1.39						
Benzo(a)anthracene	531.58		456.74	116		2.6	
Chrysene	483.8		456.78	106		2.8	
C1-Chrysenes	1.07	J					
C2-Chrysenes	3.06						
C3-Chrysenes		U					
C4-Chrysenes		U					
Benzo(b)fluoranthene	420.33		456.89	92		2.2	
Benzo(k)fluoranthene	441.15		456.89	97		2.0	
Benzo(e)pyrene	450.01		457.49	98		1.0	
Benzo(a)pyrene	441.66		456.85	97		1.0	
Perylene	429.88		458.36	93		2.1	
Indeno(1,2,3-cd)pyrene	448.71		456.89	98		4.0	
Dibenz(a,h)anthracene	444.71		456.92	97		1.0	
Benzo(g,h,i)perylene	422.53		456.83	92		1.1	
Total PAH	10872.75						

Surrogate Recoveries (%)

Naphthalene-d8	66
Acenaphthene-d10	82
Phenanthrene-d10	83
Benzo(a)pyrene-d12	98

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2	08-03-KF025-01-WC2			
Batch ID	09-0009	09-0009			
Battelle ID	Q5805-P	Q5805MS-P			
Sample Type	SA	MS			
Collection Date	08/27/08	8/27/2008			
Extraction Date	02/11/09	2/11/2009			
Analysis Date	03/01/09	3/1/2009			
Analytical Instrument	MS	MS			
% Moisture	80.3	80.3			
% Lipid	1.57	2.06			
Matrix	TISSUE	TISSUE			
Sample Size	2.26	1.23			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	5.35	752.11	813.58	92	
C1-Naphthalenes	4.91	860.17			
C2-Naphthalenes	6.35	393.64			
C3-Naphthalenes	5.02	32.19			
C4-Naphthalenes	5.05	9.08			
Acenaphthylene	0.1 J	699.77	813.37	86	
Acenaphthene	0.25 J	717.19	813.62	88	
Biphenyl	1.99	715.88	815.45	88	
Fluorene	1.79	739.97	813.29	91	
C1-Fluorenes	2.1	3.37			
C2-Fluorenes	5.14	8.6			
C3-Fluorenes	U	U			
Anthracene	0.23 J	724.13	813.62	89	
Phenanthrene	6.16	726.02	813.46	88	
C1-Phenanthrenes/Anthracenes	7.61	591.79			
C2-Phenanthrenes/Anthracenes	11.92	556.25			
C3-Phenanthrenes/Anthracenes	7.03	9.78			
C4-Phenanthrenes/Anthracenes	6.34	9.65			
Dibenzothiophene	1.03 J	726.46	815.77	89	
C1-Dibenzothiophenes	1.83	3.5			
C2-Dibenzothiophenes	3.01	30.73			
C3-Dibenzothiophenes	2.3	3.87			
Fluoranthene	4.83	874.94	813.50	107	
Pyrene	4.19	873.7	813.25	107	
C1-Fluoranthenes/Pyrenes	6.07	9.66			
C2-Fluoranthenes/Pyrenes	6.01	10.9			
C3-Fluoranthenes/Pyrenes	4.83	7.9			
Benzo(a)anthracene	0.88 J	831.19	813.21	102	
Chrysene	4.24	758.2	813.29	93	
C1-Chrysenes	3.45	5.32			
C2-Chrysenes	U	83.35			
C3-Chrysenes	U	U			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	1.64	644.03	813.50	79	
Benzo(k)fluoranthene	0.71 J	715.46	813.50	88	
Benzo(e)pyrene	2.12	743.39	814.55	91	
Benzo(a)pyrene	0.8 J	703.96	813.41	86	
Perylene	9.41	697.4	816.10	84	
Indeno(1,2,3-cd)pyrene	U	622.63	813.50	77	
Dibenz(a,h)anthracene	U	924.04	813.54	114	
Benzo(g,h,i)perylene	U	571.79	813.37	70	
Total PAH	134.69	17392.01			

Surrogate Recoveries (%)

Naphthalene-d8	53	58
Acenaphthene-d10	67	77
Phenanthrene-d10	69	81
Benzo(a)pyrene-d12	73	83

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-KF025-01-WC2					
Batch ID	09-0009					
Battelle ID	Q5805MSD-P					
Sample Type	MSD					
Collection Date	8/27/2008					
Extraction Date	2/11/2009					
Analysis Date	3/1/2009					
Analytical Instrument	MS					
% Moisture	80.3					
% Lipid	2.07					
Matrix	TISSUE					
Sample Size	1.22					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Naphthalene	920.42		820.25	112		19.6	
C1-Naphthalenes	1075.92						
C2-Naphthalenes	487.46						
C3-Naphthalenes	498.73						
C4-Naphthalenes	7.87						
Acenaphthylene	864.73		820.04	105		19.9	
Acenaphthene	890.93		820.29	109		21.3	
Biphenyl	887.42		822.13	108		20.4	
Fluorene	917.77		819.96	112		20.7	
C1-Fluorenes	3.03						
C2-Fluorenes	7.04						
C3-Fluorenes		U					
Anthracene	871.22		820.29	106		17.4	
Phenanthrene	882.17		820.12	107		19.5	
C1-Phenanthrenes/Anthracenes	717.94						
C2-Phenanthrenes/Anthracenes	676.17						
C3-Phenanthrenes/Anthracenes	8.42						
C4-Phenanthrenes/Anthracenes	7.48						
Dibenzothiophene	875.35		822.46	106		17.4	
C1-Dibenzothiophenes	4.33						
C2-Dibenzothiophenes	35.24						
C3-Dibenzothiophenes	3.59						
Fluoranthene	1060.54		820.16	129		18.6	
Pyrene	1067.73		819.92	130		19.4	
C1-Fluoranthenes/Pyrenes	7.49						
C2-Fluoranthenes/Pyrenes	10.28						
C3-Fluoranthenes/Pyrenes	7.28						
Benzo(a)anthracene	1010.76		819.88	123		18.7	
Chrysene	919.32		819.96	112		18.5	
C1-Chrysenes	4.85						
C2-Chrysenes		U					
C3-Chrysenes		U					
C4-Chrysenes		U					
Benzo(b)fluoranthene	817.59		820.16	99		22.5	
Benzo(k)fluoranthene	875.13		820.16	107		19.5	
Benzo(e)pyrene	946		821.23	115		23.3	
Benzo(a)pyrene	862.7		820.08	105		19.9	
Perylene	848.26		822.79	102		19.4	
Indeno(1,2,3-cd)pyrene	809.16		820.16	99		25.0	
Dibenz(a,h)anthracene	1043.92		820.20	127		10.8	
Benzo(g,h,i)perylene	725.36		820.04	88		22.8	
Total PAH	21659.6						

Surrogate Recoveries (%)

Naphthalene-d8	72
Acenaphthene-d10	95
Phenanthrene-d10	102
Benzo(a)pyrene-d12	100

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF003, BF013, and BF023 composite		BF003, BF013, and BF023 composite			
Client ID						
Batch ID	09-0010		09-0010			
Battelle ID	Q6099-P		Q6099MS-P			
Sample Type	SA		MS			
Collection Date	09/02/08		09/02/08			
Extraction Date	02/18/09		02/18/09			
Analysis Date	03/06/09		03/17/09			
Analytical Instrument	MS		MS			
% Moisture	94.7		94.7			
% Lipid	0.36		0.35			
Matrix	TISSUE		TISSUE			
Sample Size	2.08		1.04			
Size Unit-Basis	G_DRY		G_DRY			
Units	UG/KG_DRY		UG/KG_DRY		Target	% Recovery	Qualifier
Naphthalene	8.76	B	969.12		962.21	100	
C1-Naphthalenes	3.27	B	1165.85				
C2-Naphthalenes	4.18		550.8				
C3-Naphthalenes	3.65		565.07				
C4-Naphthalenes	3.29		5.64				
Acenaphthylene	U		904.32		961.97	94	
Acenaphthene	0.22	J	924.41		962.26	96	
Biphenyl	1.18	J	982.73		964.42	102	
Fluorene	1.32	B	989.01		961.88	103	
C1-Fluorenes	5.66		4.72				
C2-Fluorenes	7.26		8.83				
C3-Fluorenes	U		U				
Anthracene	0.37	J	1005.24		962.26	104	
Phenanthrene	6.28	B	970.07		962.07	100	
C1-Phenanthrenes/Anthracenes	4.92		739.89				
C2-Phenanthrenes/Anthracenes	6.42		736.65				
C3-Phenanthrenes/Anthracenes	2.44		3.7				
C4-Phenanthrenes/Anthracenes	1.42		2.61				
Dibenzothiophene	0.82	J	1030.04		964.81	107	
C1-Dibenzothiophenes	1.92	B	2.24	J			
C2-Dibenzothiophenes	4.05	B	43.08				
C3-Dibenzothiophenes	2.99	B	4.83				
Fluoranthene	2.45	B	1004.4		962.12	104	
Pyrene	3.81	B	1004.33		961.83	104	
C1-Fluoranthenes/Pyrenes	1.97		3.36				
C2-Fluoranthenes/Pyrenes	1.75		3.25				
C3-Fluoranthenes/Pyrenes	1.23	J	U				
Benzo(a)anthracene	0.43	J	1026.02		961.78	107	
Chrysene	1.04	J	907.64		961.88	94	
C1-Chrysenes	1.42		2	J			
C2-Chrysenes	4.52		5.95				
C3-Chrysenes	U		U				
C4-Chrysenes	U		U				
Benzo(b)fluoranthene	0.45	J	962.74		962.12	100	
Benzo(k)fluoranthene	0.38	J	913.82		962.12	95	
Benzo(e)pyrene	0.46	J	893.46		963.37	93	
Benzo(a)pyrene	U		929.63		962.02	97	
Perylene	1.14	J	898.73		965.19	93	
Indeno(1,2,3-cd)pyrene	U		850.01		962.12	88	
Dibenz(a,h)anthracene	U		806.79		962.16	84	
Benzo(g,h,i)perylene	0.33	J	699.89		961.97	73	
Total PAH	91.8	B	22520.87				

Surrogate Recoveries (%)

Naphthalene-d8	52	56
Acenaphthene-d10	70	68
Phenanthrene-d10	71	72
Benzo(a)pyrene-d12	58	76

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	BF003, BF013, and BF023 composite					
Batch ID	09-0010					
Battelle ID	Q6099MSD-P					
Sample Type	MSD					
Collection Date	09/02/08					
Extraction Date	02/18/09					
Analysis Date	03/06/09					
Analytical Instrument	MS					
% Moisture	94.7					
% Lipid	0.36					
Matrix	TISSUE					
Sample Size	1.04					
Size Unit-Basis	G_DRY					
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Naphthalene	1163.77		962.21	120		18.2	
C1-Naphthalenes	1193.41						
C2-Naphthalenes	534.74						
C3-Naphthalenes	538.76						
C4-Naphthalenes	4.34						
Acenaphthylene	946.35		961.97	98		4.2	
Acenaphthene	986.43		962.26	102		6.1	
Biphenyl	989.95		964.42	103		1.0	
Fluorene	1005.34		961.88	104		1.0	
C1-Fluorenes	5.76						
C2-Fluorenes	8.41						
C3-Fluorenes		U					
Anthracene	1004.93		962.26	104		0.0	
Phenanthrene	981.53		962.07	101		1.0	
C1-Phenanthrenes/Anthracenes	791.93						
C2-Phenanthrenes/Anthracenes	744.58						
C3-Phenanthrenes/Anthracenes	4.45						
C4-Phenanthrenes/Anthracenes		U					
Dibenzothiophene	992.39		964.81	103		3.8	
C1-Dibenzothiophenes	2.61						
C2-Dibenzothiophenes	38.72						
C3-Dibenzothiophenes	4.52						
Fluoranthene	1198.88		962.12	124		17.5	
Pyrene	1191.74		961.83	124		17.5	
C1-Fluoranthenes/Pyrenes	3.07						
C2-Fluoranthenes/Pyrenes	3.16						
C3-Fluoranthenes/Pyrenes	1.99	J					
Benzo(a)anthracene	1125.35		961.78	117		8.9	
Chrysene	1035.04		961.88	107		12.9	
C1-Chrysenes	1.82	J					
C2-Chrysenes		U					
C3-Chrysenes		U					
C4-Chrysenes		U					
Benzo(b)fluoranthene	969.62		962.12	101		1.0	
Benzo(k)fluoranthene	1008.83		962.12	105		10.0	
Benzo(e)pyrene	985.01		963.37	102		9.2	
Benzo(a)pyrene	986.09		962.02	103		6.0	
Perylene	944.29		965.19	98		5.2	
Indeno(1,2,3-cd)pyrene	897.47		962.12	93		5.5	
Dibenz(a,h)anthracene	891.47		962.16	93		10.2	
Benzo(g,h,i)perylene	782.06		961.97	81		10.4	
Total PAH	23968.81						

Surrogate Recoveries (%)

Naphthalene-d8	52
Acenaphthene-d10	67
Phenanthrene-d10	70
Benzo(a)pyrene-d12	76

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR005-01-BC5	08-03-BR005-01-BC5			
Batch ID	09-0043	09-0043			
Battelle ID	Q5745-P1	Q5745MS-P1			
Sample Type	SA	MS			
Collection Date	09/21/08	09/21/08			
Extraction Date	03/19/09	03/19/09			
Analysis Date	03/31/09	03/31/09			
Analytical Instrument	MS	MS			
% Moisture	80.6	80.6			
% Lipid	1.75	1.93			
Matrix	TISSUE	TISSUE			
Sample Size	2.79	1.4			
Size Unit-Basis	G_DRY	G_DRY			
Units	UG/KG_DRY	UG/KG_DRY	Target	% Recovery	Qualifier
Naphthalene	2.32 B	885.27	714.79	124	
C1-Naphthalenes	1.33 J	1232.35			
C2-Naphthalenes	U	577.01			
C3-Naphthalenes	U	629.25			
C4-Naphthalenes	U	U			
Acenaphthylene	U	869.78	714.61	122	
Acenaphthene	U	827.89	714.82	116	
Biphenyl	U	942.25	716.43	132	N
Fluorene	0.49 J	909.37	714.54	127	
C1-Fluorenes	U	U			
C2-Fluorenes	6.26	U			
C3-Fluorenes	U	U			
Anthracene	U	870.04	714.82	122	
Phenanthrene	1.09 J	816.43	714.68	114	
C1-Phenanthrenes/Anthracenes	U	701.87			
C2-Phenanthrenes/Anthracenes	4.6	722.36			
C3-Phenanthrenes/Anthracenes	2.85	U			
C4-Phenanthrenes/Anthracenes	2.69	2.66 J			
Dibenzothiophene	U	926.75	716.71	129	
C1-Dibenzothiophenes	U	U			
C2-Dibenzothiophenes	U	35.45			
C3-Dibenzothiophenes	U	U			
Fluoranthene	0.48 J	868.05	714.71	121	
Pyrene	0.77 J	932.79	714.50	130	
C1-Fluoranthenes/Pyrenes	U	U			
C2-Fluoranthenes/Pyrenes	U	U			
C3-Fluoranthenes/Pyrenes	U	U			
Benzo(a)anthracene	U	861.56	714.46	121	
Chrysene	1.38 J	822.06	714.54	115	
C1-Chrysenes	0.83 J	U			
C2-Chrysenes	U	U			
C3-Chrysenes	U	U			
C4-Chrysenes	U	U			
Benzo(b)fluoranthene	U	796.18	714.71	111	
Benzo(k)fluoranthene	U	879.54	714.71	123	
Benzo(e)pyrene	0.63 J	776.06	715.64	108	
Benzo(a)pyrene	U	818.31	714.64	115	
Perylene	1.49 J	765.4	717.00	107	
Indeno(1,2,3-cd)pyrene	U	903.69	714.71	126	
Dibenz(a,h)anthracene	U	954.48	714.75	134	N
Benzo(g,h,i)perylene	U	713.75	714.61	100	
Total PAH	27.21	21040.6			

Surrogate Recoveries (%)

Naphthalene-d8	61	66
Acenaphthene-d10	70	72
Phenanthrene-d10	73	75
Benzo(a)pyrene-d12	84	89

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Batch ID	09-0006	09-0007	09-0008	09-0009
Battelle ID	BM722PB-P	BM726PB-P	BM730PB-P	BM734PB-P
Sample Type	PB	PB	PB	PB
Collection Date	01/16/09	01/26/09	02/04/09	02/11/09
Extraction Date	01/16/09	01/26/09	02/04/09	02/11/09
Analysis Date	01/26/09	02/06/09	02/13/09	02/21/09
Analytical Instrument	MS	MS	MS	MS
% Moisture	77.56	73.12	82.22	80.02
% Lipid	NA	NA	NA	NA
Matrix	TISSUE	TISSUE	TISSUE	TISSUE
Sample Size	4.51	5.49	3.71	4.09
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
13b(H),17a(H)-20S-Diacholestane	U	U	U	U
13b(H),17a(H)-20R-Diacholestane	U	U	U	U
14a(H),17a(H)-20R-methylcholestane	U	U	U	U
14a(H),17a(H)-20S-Ethylcholestane	U	U	U	U
14a(H),17a(H)-20R-Ethylcholestane	U	U	U	U
C23 Tricyclic Terpane	U	U	U	U
C29 Tricyclic Terpane -22S	U	U	U	U
C29 Tricyclic Terpane -22R	U	U	U	U
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	U	U
17a(H)-22,29,30-Trisnorhopane -TM	U	U	U	U
30-Norhopane	U	U	U	U
18a(H) & 18b(H)-Oleananes	U	U	U	U
Hopane	U	U	U	U
30-Homohopane -22S	U	U	U	U
30-Homohopane -22R	U	U	U	U
Surrogate Recoveries (%)				
5b(H)-Cholane	94	95	74	84

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	Procedural Blank
Batch ID	09-0010
Battelle ID	BM738PB-P
Sample Type	PB
Collection Date	02/18/09
Extraction Date	02/18/09
Analysis Date	03/03/09
Analytical Instrument	MS
% Moisture	95.13
% Lipid	NA
Matrix	TISSUE
Sample Size	1.00
Size Unit-Basis	G_DRY
Units	UG/KG_DRY

13b(H),17a(H)-20S-Diacholestane	U
13b(H),17a(H)-20R-Diacholestane	U
14a(H),17a(H)-20R-methylcholestane	U
14a(H),17a(H)-20S-Ethylcholestane	U
14a(H),17a(H)-20R-Ethylcholestane	U
C23 Tricyclic Terpane	U
C29 Tricyclic Terpane -22S	U
C29 Tricyclic Terpane -22R	U
18a(H)-22,29,30-Trisnorneohopane -TS	U
17a(H)-22,29,30-Trisnorhopane -TM	U
30-Norhopane	U
18a(H) & 18b(H)-Oleananes	U
Hopane	U
30-Homohopane -22S	U
30-Homohopane -22R	U

Surrogate Recoveries (%)

5b(H)-Cholane	87

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0006				09-0007			
Battelle ID	BM747NSC-P				BM813NSC-P			
Sample Type	NSC				NSC			
Collection Date	01/22/09				02/03/09			
Extraction Date	01/22/09				02/03/09			
Analysis Date	01/23/09				02/06/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
13b(H),17a(H)-20S-Diacholestane	46.88	44.18	6.1		46.24	44.18	4.7	
13b(H),17a(H)-20R-Diacholestane	26.73	25.52	4.7		26.31	25.52	3.1	
14a(H),17a(H)-20R-methylcholestane	32.07	33.94	5.5		32.67	33.94	3.7	
14a(H),17a(H)-20S-Ethylcholestane	38.5	35.93	7.2		37.45	35.93	4.2	
14a(H),17a(H)-20R-Ethylcholestane	37.85	39.17	3.4		38.4	39.17	2.0	
C23 Tricyclic Terpane	50.03	47.76	4.8		51.65	47.76	8.1	
C29 Tricyclic Terpane -22S	15.67	14.70	6.6		16.68	14.70	13.5	
C29 Tricyclic Terpane -22R	14.93	14.64	2.0		16.5	14.64	12.7	
18a(H)-22,29,30-Trisnorneohopane -TS	17.66	15.96	10.7		18.65	15.96	16.9	
17a(H)-22,29,30-Trisnorhopane -TM	28.04	24.82	13.0		25.18	24.82	1.5	
30-Norhopane	69.33	69.58	0.4		70.59	69.58	1.5	
18a(H) & 18b(H)-Oleananes	U				U			
Hopane	118.75	120.14	1.2		120.18	120.14	0.0	
30-Homohopane -22S	61.15	59.93	2.0		60.27	59.93	0.6	
30-Homohopane -22R	44.01	39.69	10.9		44.18	39.69	11.3	

Surrogate Recoveries (%)

5b(H)-Cholane	97				93			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope				GV73: North Slope			
Client ID	Crude				Crude			
Batch ID	09-0008				09-0009			
Battelle ID	BM841NSC-P				BM860NSC-P			
Sample Type	NSC				NSC			
Collection Date	02/11/09				02/17/09			
Extraction Date	02/11/09				02/17/09			
Analysis Date	02/13/09				02/21/09			
Analytical Instrument	MS				MS			
% Moisture	NA				NA			
% Lipid	NA				NA			
Matrix	OIL				OIL			
Sample Size	5.05				5.05			
Size Unit-Basis	MG_OIL				MG_OIL			
Units	MG/KG_OIL	Target	% Difference	Qualifier	MG/KG_OIL	Target	% Difference	Qualifier
13b(H),17a(H)-20S-Diacholestane	48.32	44.18	9.4		46.56	44.18	5.4	
13b(H),17a(H)-20R-Diacholestane	28.76	25.52	12.7		29.14	25.52	14.2	
14a(H),17a(H)-20R-methylcholestane	32.55	33.94	4.1		33.37	33.94	1.7	
14a(H),17a(H)-20S-Ethylcholestane	39.54	35.93	10.0		37.52	35.93	4.4	
14a(H),17a(H)-20R-Ethylcholestane	39.47	39.17	0.8		38.84	39.17	0.8	
C23 Tricyclic Terpane	55.13	47.76	15.4		56	47.76	17.3	
C29 Tricyclic Terpane -22S	16.11	14.70	9.6		17.19	14.70	16.9	
C29 Tricyclic Terpane -22R	15.59	14.64	6.5		16.42	14.64	12.2	
18a(H)-22,29,30-Trisnorneohopane -TS	19.09	15.96	19.6		20.13	15.96	26.1	
17a(H)-22,29,30-Trisnorhopane -TM	30.34	24.82	22.2		30.94	24.82	24.7	
30-Norhopane	72.83	69.58	4.7		75.33	69.58	8.3	
18a(H) & 18b(H)-Oleananes	U				U			
Hopane	127.44	120.14	6.1		134.24	120.14	11.7	
30-Homohopane -22S	62.99	59.93	5.1		66.68	59.93	11.3	
30-Homohopane -22R	45.02	39.69	13.4		48.64	39.69	22.5	

Surrogate Recoveries (%)

5b(H)-Cholane	86				71			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	GV73: North Slope			
Client ID	Crude			
Batch ID	09-0010			
Battelle ID	BM871NSC-P			
Sample Type	NSC			
Collection Date	02/26/09			
Extraction Date	02/26/09			
Analysis Date	03/03/09			
Analytical Instrument	MS			
% Moisture	NA			
% Lipid	NA			
Matrix	OIL			
Sample Size	5.05			
Size Unit-Basis	MG_OIL			
Units	MG/KG_OIL		Target	% Difference Qualifier
13b(H),17a(H)-20S-Diacholestane	42.92		44.18	2.9
13b(H),17a(H)-20R-Diacholestane	25.39		25.52	0.5
14a(H),17a(H)-20R-methylcholestane	32.99		33.94	2.8
14a(H),17a(H)-20S-Ethylcholestane	38.37		35.93	6.8
14a(H),17a(H)-20R-Ethylcholestane	36.55		39.17	6.7
C23 Tricyclic Terpane	48.72		47.76	2.0
C29 Tricyclic Terpane -22S	15.1		14.70	2.7
C29 Tricyclic Terpane -22R	14.77		14.64	0.9
18a(H)-22,29,30-Trisnorneohopane -TS	17.93		15.96	12.3
17a(H)-22,29,30-Trisnorhopane -TM	25.5		24.82	2.7
30-Norhopane	67.06		69.58	3.6
18a(H) & 18b(H)-Oleananes		U		
Hopane	118.47		120.14	1.4
30-Homohopane -22S	56.02		59.93	6.5
30-Homohopane -22R	39.34		39.69	0.9
Surrogate Recoveries (%)				
5b(H)-Cholane	80			

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BD005-01-AC	08-03-BD005-01-AC		
Batch ID	09-0006	09-0006		
Battelle ID	Q5925-P	Q5925DUP-P		
Sample Type	SA	QADU		
Collection Date	09/15/08	09/15/08		
Extraction Date	01/16/09	01/16/09		
Analysis Date	01/28/09	01/28/09		
Analytical Instrument	MS	MS		
% Moisture	75.2	75.2		
% Lipid	4.64	5.24		
Matrix	TISSUE	TISSUE		
Sample Size	5.08	5.06		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	0.72 J	0.28 J	NA	
13b(H),17a(H)-20R-Diacholestane	0.45 J	0.19 J	NA	
14a(H),17a(H)-20R-methylcholestane	U	U	NA	
14a(H),17a(H)-20S-Ethylcholestane	U	U	NA	
14a(H),17a(H)-20R-Ethylcholestane	0.55 J	0.44 J	NA	
C23 Tricyclic Terpane	0.15 J	0.28 J	NA	
C29 Tricyclic Terpane -22S	U	U	NA	
C29 Tricyclic Terpane -22R	U	U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	U	U	NA	
30-Norhopane	0.78 J	0.83 J	NA	
18a(H) & 18b(H)-Oleananes	U	U	NA	
Hopane	0.97 J	1.09 J	NA	
30-Homohopane -22S	0.56 J	0.44 J	NA	
30-Homohopane -22R	1.25 J	0.83 J	NA	
Surrogate Recoveries (%)				
5b(H)-Cholane	74	75		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BF011-01-CC	08-03-BF011-01-CC		
Batch ID	09-0007	09-0007		
Battelle ID	Q6032-P	Q6032DUP-P		
Sample Type	SA	QADU		
Collection Date	39704	39704		
Extraction Date	39839	39839		
Analysis Date	39851	39851		
Analytical Instrument	MS	MS		
% Moisture	68.2	68		
% Lipid	3.23	3.43		
Matrix	TISSUE	TISSUE		
Sample Size	6.46	6.64		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	0.12 J	0.09 J	NA	
13b(H),17a(H)-20R-Diacholestane	U	U	NA	
14a(H),17a(H)-20R-methylcholestane	0.15 J	0.07 J	NA	
14a(H),17a(H)-20S-Ethylcholestane	0.12 J	0.08 J	NA	
14a(H),17a(H)-20R-Ethylcholestane	0.28 J	0.32 J	NA	
C23 Tricyclic Terpane	U	U	NA	
C29 Tricyclic Terpane -22S	U	U	NA	
C29 Tricyclic Terpane -22R	U	U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	U	U	NA	
30-Norhopane	0.67 J	0.73 J	NA	
18a(H) & 18b(H)-Oleananes	U	U	NA	
Hopane	1.14 J	1.1 J	NA	
30-Homohopane -22S	0.91 J	0.74 J	NA	
30-Homohopane -22R	1.68 J	0.95 J	NA	
Surrogate Recoveries (%)				
5b(H)-Cholane	83	89		

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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

Client ID	08-03-BR086-01-WC2	08-03-BR086-01-WC2		
Batch ID	09-0009	09-0009		
Battelle ID	Q5878-P	Q5878DUP-P		
Sample Type	SA	QADU		
Collection Date	39693	39693		
Extraction Date	39855	39855		
Analysis Date	39865	39865		
Analytical Instrument	MS	MS		
% Moisture	78.1	78.1		
% Lipid	1.86	1.93		
Matrix	TISSUE	TISSUE		
Sample Size	2.31	2.31		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	0.44 J	0.45 J	NA	
13b(H),17a(H)-20R-Diacholestane	U	0.29 J	NA	
14a(H),17a(H)-20R-methylcholestane	0.57 J	0.46 J	NA	
14a(H),17a(H)-20S-Ethylcholestane	0.57 J	U	NA	
14a(H),17a(H)-20R-Ethylcholestane	1.13 J	1.88 J	NA	
C23 Tricyclic Terpane	0.56 J	0.46 J	NA	
C29 Tricyclic Terpane -22S	U	U	NA	
C29 Tricyclic Terpane -22R	U	U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	1.54 J	U	NA	
30-Norhopane	1.83 J	2.7 J	NA	
18a(H) & 18b(H)-Oleananes	U	U	NA	
Hopane	3.03 J	3.45 J	NA	
30-Homohopane -22S	1.45 J	2.98 J	NA	
30-Homohopane -22R	3.33 J	3.2 J	NA	
Surrogate Recoveries (%)				
5b(H)-Cholane	103	98		

Battelle
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Project Client: ConocoPhillips Alaska Inc.
Project Name: Environmental Studies in the Chukchi Sea
Project Number: N007366

	BF009 and BF019	BF009 and BF019		
Client ID	composite	composite		
Batch ID	09-0010	09-0010		
Battelle ID	Q6102-P	Q6102DUP-P		
Sample Type	SA	QADU		
Collection Date	39710	39710		
Extraction Date	39862	39862		
Analysis Date	39876	39876		
Analytical Instrument	MS	MS		
% Moisture	94.2	94.2		
% Lipid	0.21	0.23		
Matrix	TISSUE	TISSUE		
Sample Size	1.75	0.89		
Size Unit-Basis	G_DRY	G_DRY		
Units	UG/KG_DRY	UG/KG_DRY	RPD	Qualifier
13b(H),17a(H)-20S-Diacholestane	0.67 J	1.32 J	NA	
13b(H),17a(H)-20R-Diacholestane	0.5 J	0.67 J	NA	
14a(H),17a(H)-20R-methylcholestane	0.57 J	0.38 J	NA	
14a(H),17a(H)-20S-Ethylcholestane	0.46 J	0.46 J	NA	
14a(H),17a(H)-20R-Ethylcholestane	1.13 J	0.98 J	NA	
C23 Tricyclic Terpane	0.57 J	0.95 J	NA	
C29 Tricyclic Terpane -22S	U	U	NA	
C29 Tricyclic Terpane -22R	U	U	NA	
18a(H)-22,29,30-Trisnorneohopane -TS	U	U	NA	
17a(H)-22,29,30-Trisnorhopane -TM	U	U	NA	
30-Norhopane	2.29 J	3.37 J	NA	
18a(H) & 18b(H)-Oleananes	U	U	NA	
Hopane	3.3 J	5.3 J	NA	
30-Homohopane -22S	1.6 J	3.01 J	NA	
30-Homohopane -22R	1.96 J	2.89 J	NA	
Surrogate Recoveries (%)				
5b(H)-Cholane	76	83		

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APPENDIX D

Chemical Characterization Study Plan

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Study Plan

Environmental Studies in the Chukchi Sea 2008: Chemical Characterization

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Shell Exploration & Production
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Service Contract No. 68393.0-SA-AKR

March 2009

TABLE OF CONTENTS

TABLES

FIGURES

1.0. OBJECTIVES AND SCOPE

1.1. Introduction and Objective

ConocoPhillips Alaska, Inc. (CPAI) and Shell Exploration and Production (Shell E&P) submitted bids for lease blocks in Federal waters of the Chukchi Sea in the February 6, 2008 Chukchi Sea Lease Sale 193. CPAI is, on behalf of both CPAI and Shell E&P, managing a scientific field program in two (2) prospect areas, called Klondike/Devils Paw (Klondike) and Burger/Foraker (Burger), where exploratory drilling occurred in 1989 and 1990. The field program will provide baseline (pre-drilling) information on the physical, chemical, biological, and oceanographic environment, including assessment of zooplankton and benthic biological communities, and distribution and concentrations of chemical constituents associated with offshore oil and gas operations (metals and hydrocarbons) in the Klondike and Burger prospect areas.

The objective of the CPAI Chukchi Sea Environmental Studies Program is to develop baseline information about the marine environment in the prospect areas for submission to the Minerals Management Service (MMS). The pre-drilling baseline information will be used as part of an analysis of potential effects of offshore oil and gas activities on the Chukchi Sea marine environment and its resources, particularly valued resource species such as bowhead whales, gray whales, walrus, some ice seals, seabirds, and fishery resources. This analysis will be used in preparation of several regulatory documents, including National Pollution Discharge Elimination System (NPDES) permits, National Environmental Policy Act (NEPA) documents, and Incidental Harassment Authorization (IHA) and Letters of Authorization (LOA) for incidental, unintentional takes of marine mammals. Because area-wide environmental information would substantially enhance the value of the site-specific information that will be developed for the two prospect areas, every effort will be made to coordinate with and collaborate in similar environmental studies in the Chukchi Sea by other lease holders, MMS, and resource trustee agencies, National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS).

1.2. Site Description

The outer continental shelf (OCS) of the Chukchi Sea is the least-developed continental shelf area of the United States. The northeastern Chukchi Sea lies north of 70°N latitude and is covered with sea ice for much of the year. However, it is a biologically rich area with high biological productivity, supported by nutrient inputs from the Bering Sea, upwelling from the Arctic continental slope shelf, and the western Russian Chukchi Sea.

Portions of the Chukchi Sea were offered in lease sales in 1988, 1991, and 2008. Five (5) exploratory wells were drilled, plugged and abandoned between 1989 and 1991. Two (2) wells drilled by Shell Oil Co., Klondike and Burger, showed promising formation geology and potential shows of hydrocarbons, primarily gas and condensate. Both CPAI and Shell E&P were successful bidders in Lease Sale 193; CPAI obtained primary lease blocks around the Klondike prospect, with Shell E&P obtaining primary lease block holdings around the Burger prospect. Lease blocks in other areas of the lease sale 193 area were also selected by both companies, however this baseline studies program focused primarily around the Klondike and Burger prospects. These prospects lie approximately 75 miles offshore of Wainwright, AK, in about 40 to 50 m of water. CPAI and Shell E&P supported the performance of environmental baseline surveys in 2008 and plans are currently underway for a 2009 program around both prospects. A map of the survey area is presented in Figure 1. The study location is described in more detail in the Field Survey Report (Attachment E).

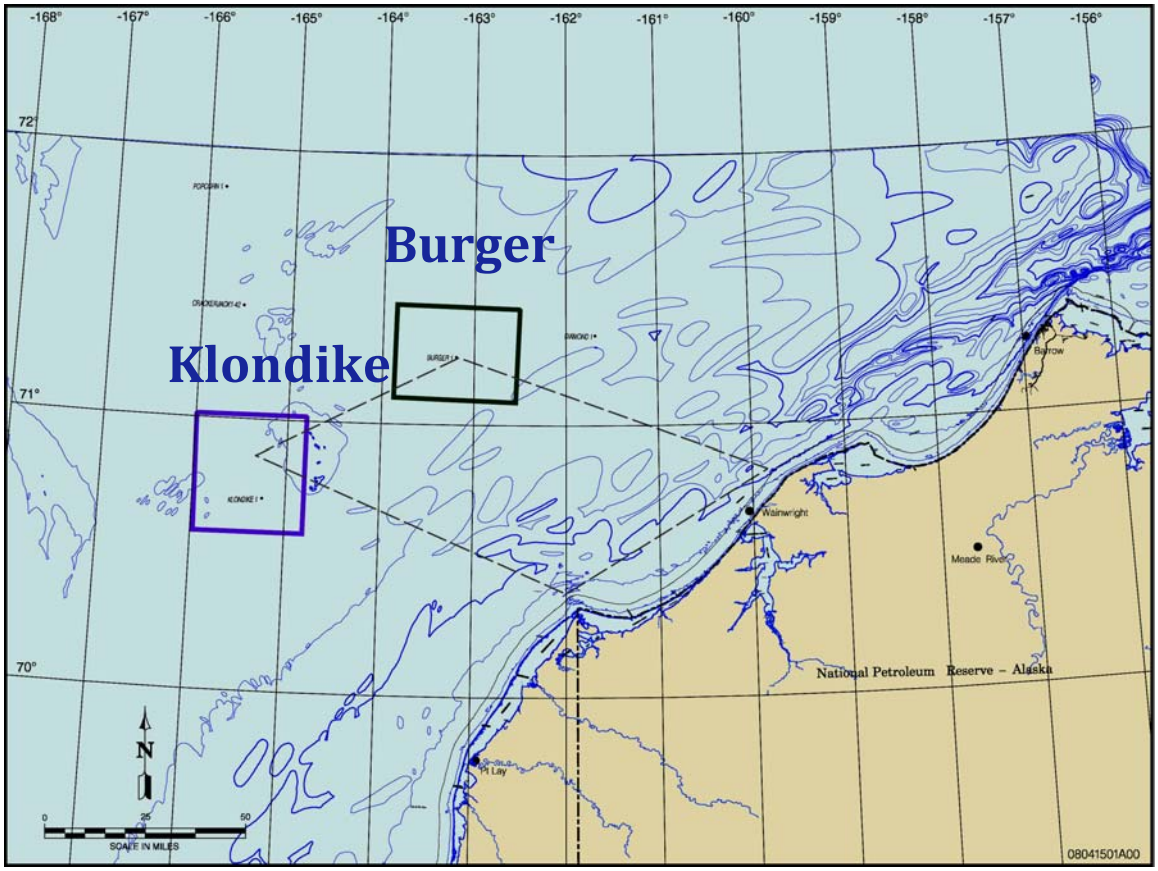

Figure 1. Chukchi Sea Field Survey Area.

1.3. Project Description

The Chukchi Sea OCS where the Klondike and Burger prospects are located is a highly productive marine ecosystem (Dunton et al., 1989; Feder et al., 1989; Moran et al., 2005). Much of the particulate organic carbon (POC), produced primarily by phytoplankton photosynthesis, is exported to the sediments or off the shelf. The POC also supports blooms of zooplankton communities, dominated by calanoid copepods and euphausiids, which are consumed by bowhead whales. POC in sediments support development of a rich benthic fauna that supports benthic feeders, such as walrus, some ice seals, gray whales, and many species of demersal fish, and results in strong benthic/pelagic coupling of nutrients. Sediments in the northeast Chukchi Sea contain high concentrations of organic matter from marine and terrigenous sources. This organic matter tends to sequester metals and hydrocarbons and is ingested by benthic fauna, facilitating bioaccumulation and trophic transfer of these constituents in the Chukchi Sea food web.

Global warming may dramatically change ecosystem dynamics, including the distribution of marine organisms and chemicals in the Chukchi Sea. Environmental changes may contribute to: 1) increased pelagic primary and secondary production during extended open-water conditions in the summer (based on surplus nutrients, currently underutilized); 2) reduced benthic and pelagic biomass in coastal/shelf areas (due to increased river runoff and resulting changes in salinity and turbidity; and 3) increased pelagic grazing and recycling in open-water conditions at the expense of current benthic/pelagic coupling in part of the ice-covered shelf regions (due to increased pelagic consumption versus vertical flux. These

changes may benefit pelagic feeders, such as bowhead whales and some pinnipeds and marine birds, and harm benthic feeders such as walrus, gray whales, and benthic-feeding pinnipeds and fish. It will also affect the trophic transfer and cycling of chemical constituents in the Chukchi Sea food web. Thus, it is important to have pre-exploration/development linked baseline chemical and biological data, in order to characterize and manage any environmental changes that may occur.

Chemical constituents that might be introduced into the Chukchi Sea by oil and gas activities will tend to accumulate in sediments, from which they may pass through the local food web to valued ecosystem components, such as marine mammals and birds. The chemical classes of greatest environmental concern associated with offshore oil and gas development are metals and hydrocarbons (Neff, 1987). There is little published information about the distribution and concentrations of metals and hydrocarbons in sediments, water, and tissues of marine animals on the outer continental shelf of the Chukchi Sea. Most offshore sediments in the Chukchi Sea are composed of soft mud or muddy sand (Naidu et al. 1997). Previous data for 9 metals (Al, Fe, Mn, Cu, Cr, Co, Zn, Ni and V) in sediments from the Chukchi Sea (Naidu et al. 1997) suggest that metal concentrations are at background levels and similar to values observed in the nearby Beaufort Sea (Trefry et al., 2003).

Concentrations of most metals in marine mammal tissues are low (Dehn et al., 2006). A limited amount of data are available on concentrations of hydrocarbons, particularly petroleum hydrocarbons, including polycyclic aromatic hydrocarbons (PAH), in sediments and tissues of marine animals from the Chukchi Sea. This baseline information on metals and hydrocarbons in sediments and food web animals in the Klondike and Burger prospect areas will be valuable in tracing possible pathways of transport of metals and/or hydrocarbons from offshore oil and gas operations through the food web to marine mammals and birds. Other federal and local agencies are collecting tissue samples from marine mammals and using their results in combination with ours will be helpful for better understanding the food web, and the potential impact on other trophic levels.

Selected samples collected during the 2008 field survey will be analyzed for polycyclic aromatic hydrocarbons (PAH), petroleum biomarkers, saturated hydrocarbons (SHC), and metals. The data generated from these analyses will be incorporated into an interpretive report that will integrate the results and information from the laboratory and field activities.

This Study Plan addresses the non-field component of the Chemical Characterization Project, which is part of the Environmental Studies in the Chukchi Sea. The following technical activities will be completed as part of this project.

- Sample Handling
    - Receipt, Homogenization, and Splitting
- Sample Analysis
    - Laboratory Sediment Sample Analysis, for organics and metals.
    - Laboratory Tissue Sample Analysis, organics and metals.
- Reports
    - Draft Report - The draft report will be a comprehensive data and interpretive report that integrates the results and information from the field activities and the data from the laboratory sample analyses.
    - Final Report – The final report will incorporate the comments received from the reviewers of the draft report.

In addition, there will be a meeting in conjunction with the Alaska Marine Science Symposium in January 2009. Project management activities will include regular communication with the Program Team, CPAI, and the submission of monthly progress reports to CPAI.

2.0. METHODS AND TECHNICAL APPROACH

2.1. Field Sample Collection

The numbers and types of samples that were collected differed slightly from the original sample collection plan. The main change was due to the fact that amphipods were not as abundant and could not be collected as widely as planned. However, the field team successfully collected a number of other animals that were not originally in the plan, and the result was that more diverse biota were collected than initially planned. This resulted in even better representation of the ecosystem. A summary of samples collected is provided in Attachment A.

The senior scientists of the Chemical Characterization Project met in November and discussed what samples had been collected and were available for analysis, and developed the analysis plan. This plan was provided to CPAI, and has been incorporated into the scope of work for the project.

Factors that were considered when developing the analytical plan included ensuring (1) good geographic coverage, (2) as good representation of different biota and as much of the ecosystem and food web as possible, and (3) good comparability among stations and between Klondike and Burger. The number of sediment samples to be analyzed was reduced slightly, compared to the original plan, and the number of biota samples was increased; 80 sediment samples and 84 biota samples (including replicates) will be analyzed for target chemicals. Adjustments to the original plan included adding crabs to the analytical plan (to complement the relatively limited number of amphipods; crustaceans), adding polychaete worms to the analytical plan, focusing the clam analysis primarily on one species, and compositing zooplankton from stations that were along the same track line.

Field samples for the project were collected by Battelle and Exponent on behalf of CPAI and Shell E&P, from August 19 to September 22, 2008 in the Chukchi Sea, Alaska. A total of 65 stations were sampled: 34 stations from Burger (Figure 2) and 31 stations from Klondike (Figure 3). Sediment samples were collected from fixed, random, and historical drill sites. Surface sediment samples (~2 cm) were collected at all sampling locations, except those near the historic drill sites. Sediment cores were collected at the former drill sites and sub-sectioned into four to six 2-cm layers. Sample stations and collection methods are described in more detail in the Field Survey Report (Attachment E).

Below is a summary of the samples collected and slated for analysis from the Burger and Klondike study areas. A detailed listing of samples collected for analysis is provided in Attachments A and B.

	Sediment Samples			**Benthic Biota Samples**			**Zooplankton Samples**		
		# of Analyses			# of Analyses			# of Analyses	
	Collected	Planned	Final	Collected	Planned	Final	Collected	Original	Final
Burger	60	44	39	71	17	44	14	6	5
Klondike	59	44	41	51	17	25	12	6	5
TOTALS[1]	119	88	80	122	34	69	26	12	10

[1] Due to insufficient sample mass not all samples will be analyzed for metals. The total number of benthic biota samples for metals analysis is 57. The total number of zooplankton samples for metals analysis is 7.

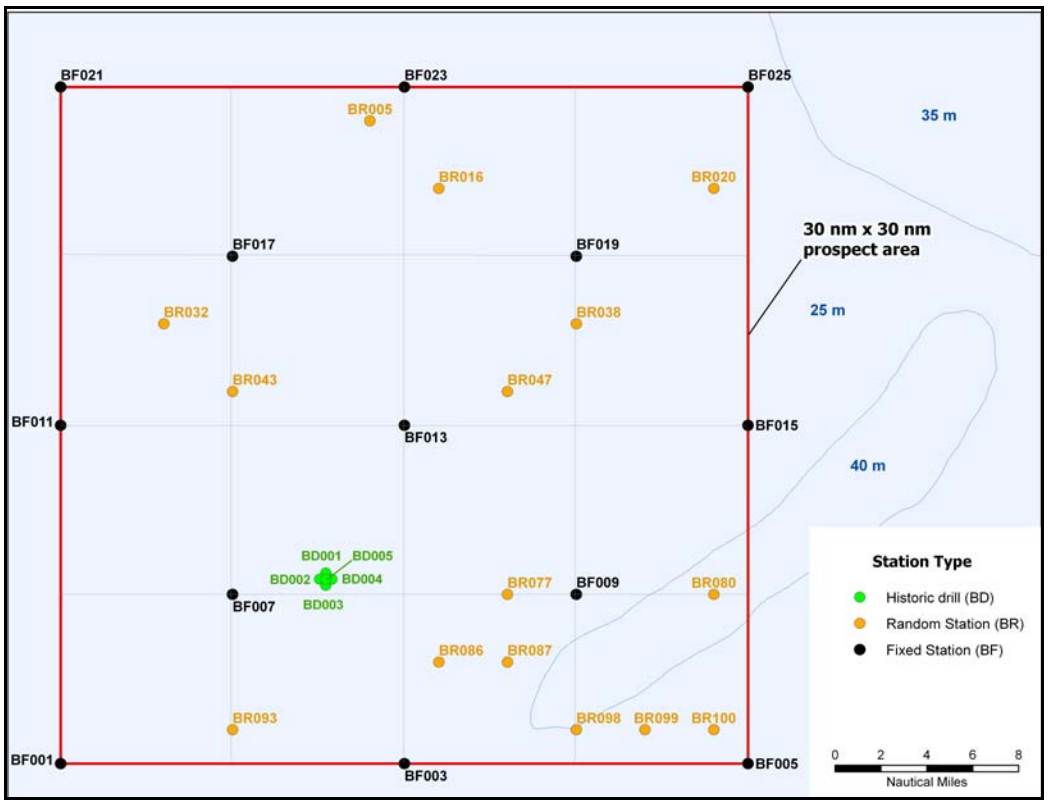

Figure 2. Burger Sampling Stations.

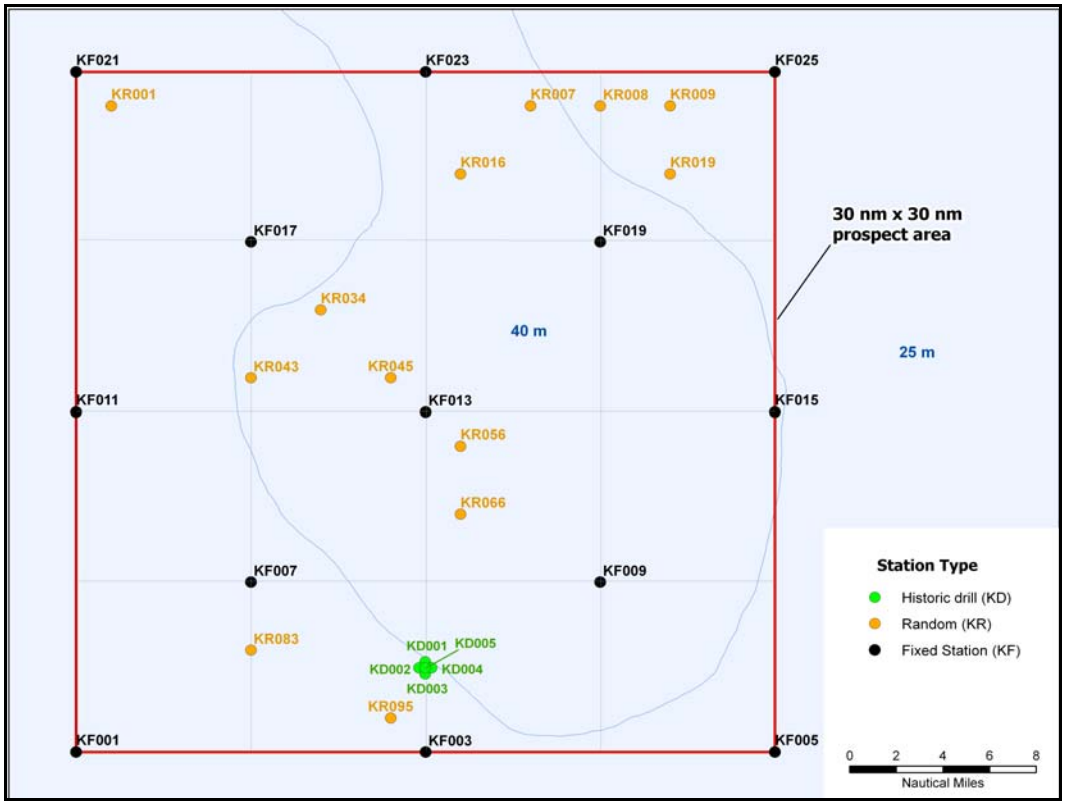

Figure 3. Klondike Sampling Stations.

2.2. Sample Receipt, Storage, and Holding Times

Sediment samples were split in the field and were shipped directly to FIT for total organic carbon (TOC), grain size, and metals analysis. Sediment samples for organic compound analysis, and all biota samples, were shipped to the Battelle Duxbury laboratory. The samples were stored frozen in Seward, AK, in the custody of Aldrich Offshore Services (AOS), from early November to early December, 2008. Prior to storage at AOS, the samples were stored frozen on the ship.

Nineteen coolers with samples were received by Battelle and eight coolers by FIT on December 9, 2008. The temperature of the coolers was recorded and samples were logged into the laboratory and given unique laboratory IDs. Sediment and biota tissue samples will be stored frozen until sample processing can begin. Tissue samples will be split, with one aliquot retained at Battelle for hydrocarbons analysis, and another shipped to FIT for metals analysis. Table 1 is a listing of the target holding times, containers types, and preservations.

Table 1. Target Sample Holding Times, Container Types, and Preservation

Matrix	Preservation	Container Type	Holding Times
Sediment	-20°C	Organics: Glass with Teflon-lined lid	Organics: process within 1 year of collection, analyze within 40 days of extraction
		Metals: Glass with Teflon-lined lid	Metals and Hg: process within 6 months
Tissue	-20°C	Organics: Glass with Teflon-lined lid	Organics: process within 1 year of collection, analyze within 40 days of extraction
		Metals: Glass with Teflon-lined lid	Metals and Hg: process within 6 months

2.3. Preliminary Sample Splitting and Preparation

Different types of biota samples and zooplankton for the Chemical Characterization Project will be homogenized at Battelle and split for analysis. Samples splits will be shipped to FIT for metals analysis. Sediment samples were split in the field and sent to each individual laboratory. The procedures listed below describe sample homogenization, splitting, and shipping.

2.3.1. Tissue Homogenization

Amphipods and Worms: Frozen amphipods and worms will be completely thawed. The overlying water will be poured off and the sample will be homogenized in a glass jar by maceration using a Tissuemizer® or blender equipped with Teflon® gaskets and titanium probes.

Crabs: The crabs will be partially thawed and rinsed with reagent water if necessary to remove extraneous material. The overlying water will be poured off. Using a mortar and pestle, the whole body crab (including shell) will be crushed. The crab sample will be transferred to a glass jar and homogenized using a Tissuemizer® or blender equipped with Teflon® gaskets and titanium blades.

Clams: The partially thawed clams will be shucked with a titanium knife or equivalent, to remove soft tissues from shell. The overlying water will be poured off and the clams will be homogenized in a glass jar by maceration using a Tissuemizer® or blender equipped with Teflon® gaskets and titanium probes.

Zooplankton: The zooplankton samples will be composited by field track lines. Table 2 lists the samples that will be composited. Samples to be composited will be processed at the same time. Each sample will be transferred in to 250 mL glass centrifuge tubes and centrifuged at 2000 rpm for 15 minutes. The overlying water from each sample will be filtered using an 8-µm glass fiber filter. The same filter will be used for all samples to be composited. The solids isolated from the centrifugation will be combined with all samples to be composited. The solids from the filter will be added to the composite sample.

Table 2. Zooplankton Composting Scheme

Battelle ID	Field ID	Composite Sample ID	Battelle ID
Q5905	08-03-BF001-01-ZC	BF001, BF011, and BF021 composite	Q6098
Q6030	08-03-BF011-01-ZC		
Q6020	08-03-BF021-01-ZC		
Q5880	08-03-BF003-01-ZC	BF003, BF013, and BF023 composite	Q6099
Q5907	08-03-BF013-01-ZC		
Q5757	08-03-BF023-01-ZC		
Q5733	08-03-BF005-01-ZC	BF005, BF015, and BF025 composite	Q6100
Q5716	08-03-BF015-01-ZC		
Q5765	08-03-BF025-01-ZC		
Q5902	08-03-BF007-01-ZC	BF007 and BF017 composite	Q6101
Q6016	08-03-BF017-01-ZC		
Q5730	08-03-BF009-01-ZC	BF009 and BF019 composite	Q6102
Q5770	08-03-BF019-01-ZC		
Q5784	08-03-KF001-01-ZC	KF001 and KF021 composite	Q6103
Q5663	08-03-KF021-01-ZC		
Q5813	08-03-KF003-01-ZC	KF003, KF013 and KF0023 composite	Q6104
Q5702	08-03-KF013-01-ZC		
Q5667	08-03-KF023-01-ZC		
Q5827	08-03-KF005-01-ZC	KF005, KF015 and KF0025 composite	Q6105
Q5825	08-03-KF015-01-ZC		
Q5788	08-03-KF025-01-ZC		
Q5700	08-03-KF007-01-ZC	KF007 and KF017 composite	Q6106
Q5681	08-03-KF017-01-ZC		
Q5709	08-03-KF009-01-ZC	KF009 and KF019 composite	Q6107
Q5807	08-03-KF019-01-ZC		

2.3.2. Splitting

The following sample amounts will be removed and place in pre-labeled (with the Battelle sample ID, at a minimum) jars:

A. For samples with >25-30 g total wet weight, the homogenized tissue samples will be split 5:2 (Battelle:FIT) and Battelle and FIT will perform the full suite of analyses. The samples will be split 50 g for Battelle and 20 g for FIT, whenever possible.

B. For samples with >8-10 g but <25-30 g total wet weight, the homogenized tissue samples will be split 1:1 (Battelle:FIT), and Battelle will perform the full suite of organics analysis and FIT will perform the full suite of metals analyses, if possible. FIT may eliminate the Mercury analysis and only perform the "Other" metals analysis, if they determine that they don't have enough sample mass.

C. For samples with < 8-10 g total wet weight the laboratory will not split the homogenized tissue samples; Battelle will perform the full suite of organics analysis but FIT will not perform any metals analysis.

Due to limited sample mass, FIT will perform percent moisture on all tissue samples they receive. (Battelle will determine the moisture content on the few samples that only will be analyzed at Battelle)

2.3.3. Shipping

The samples split for Florida Institute of Technology (FIT), custody forms, copies of original custody forms, and split information will be shipped to the attention of Dr. John Trefry at FIT.

2.4. Organic Chemical Analysis

The sediment and biological tissue samples will be analyzed for a large suite of polycyclic aromatic hydrocarbon (PAH), petroleum biomarker, and saturated hydrocarbon compounds (SHC). The sample analyses are summarized below. The project-specific laboratory Quality Assurance Project Plans are maintained in the project file.

2.4.1. Sediment Sample Preparation

Sediment samples will be extracted for PAH (Table 3), petroleum biomarkers (Table 4), and SHC (Table 5) following laboratory SOPs. Briefly, approximately 30-g of wet sediment will be fortified with surrogate internal standards (SIS) and extracted with dichloromethane (DCM) using orbital shaker techniques. The extract will be dried over anhydrous sodium sulfate, and concentrated. A separate 5-g aliquot will be used for dry weight determination. The weight of the extract will be determined gravimetrically. The extract will be split and half: one half will be archived; and the other half will be purified using a combination of alumina clean up column and silica gel column fractions, isolating the saturated hydrocarbon and petroleum biomarker fraction from the aromatic hydrocarbon fraction. The resulting extracts will be concentrated and spiked with internal standards (IS). The F1 extract will be split for separate SHC analysis by modified EPA Method 8015 using gas chromatography with flame ionization detection (GC/FID) and for petroleum biomarkers analysis by modified EPA Method 8270 using gas chromatography/mass spectrometry (GC/MS) in the selected ion (SIM) mode. The F2 extract will be submitted for PAH analysis also using the modified EPA Method 8270 by GC/MS in the SIM mode.

2.4.2. Tissue Sample Preparation

Approximately 20-g of wet tissue, if available, will be fortified with SIS and serially extracted with DCM. The samples will be extracted by maceration using a TissueMizer® with stainless steel probes. Between extractions the samples will be centrifuged to facilitate solvent removal and the extract collected. The extracts will be treated with sodium sulfate to remove water, and then concentrated. A portion of the tissue extract will be removed for lipid content determination. The sample extracts will be purified using a combination alumina clean up column and silica gel column fractions, isolating the saturated hydrocarbon and chemical biomarker fraction from the aromatic hydrocarbon fraction. The pre-injection volumes (PIV) of the F1 and F2 extracts will be adjusted for samples with low sample mass, to minimize the impact on analytical sensitivity from having less that optimum sample mass. The extracts will be spiked with IS and submitted to instrument analysis as described above.

Table 3. Polynuclear Aromatic Hydrocarbon (PAH) and Alkyl PAH Target Analyte List

Compound	Reporting Code	SIS/RIS	Compound	Reporting Code	SIS/RIS
Naphthalene	C0N	A/1	Benzo[a]anthracene	BAA	B/3
C1-Naphthalenes	C1N	A/2	Chrysene	C0C	B/3
C_2-Naphthalenes	C2N	A/2	C_1-Chrysenes	C1C	B/3
C_3-Naphthalenes	C3N	A/2	C_2-Chrysenes	C2C	B/3
C_4-Naphthalenes	C4N	A/2	C_3-Chrysenes	C3C	B/3
Acenaphthylene	ACEY	A/2	C_4-Chrysenes	C4C	B/3
Acenaphthene	ACE	A/2	Benzo[b]fluoranthene	BBF	B/4
Biphenyl	BIP	A/2	Benzo[k]fluoranthene	BKF	B/4
Dibenzofuran	DBF	A/2	Benzo[e]pyrene	BEP	B/4
Fluorene	C0F	A/2	Benzo[a]pyrene	BAP	B/4
C_1-Fluorenes	C1F	A/2	Perylene	PER	B/4
C_2-Fluorenes	C2F	A/2	Indeno[1,2,3-c,d]pyrene	IND	B/4
C_3-Fluorenes	C3F	A/2	Dibenzo[a,h]anthracene	DAH	B/4
Anthracene	C0A	A/3	Benzo[g,h,i]perylene	BGP	B/4
Phenanthrene	C0P	A/3	Total PAH	TPAH	
C_1-Phenanthrenes/Anthracenes	C1P/A	A/3			
C_2-Phenanthrenes/Anthracenes	C2P/A	A/3			
C_3-Phenanthrenes/Anthracenes	C3P/A	A/3			
C_4-Phenanthrenes/Anthracenes	C4P/A	A/3			
Retene	RET	A/3			
Dibenzothiophene	C0D	A/3			
C_1-Dibenzothiophenes	C1D	A/3	Surrogate Compounds		
C_2-Dibenzothiophenes	C2D	A/3	Naphthalene-d_8	D8N	A/1
C_3-Dibenzothiophenes	C3D	A/3	Acenaphthene-d_{10}	D10ACE	A/2
C_4-Dibenzothiophenes	C4D	A/3	Phenanthrene-d_{10}	D10PH	A/3
Fluoranthene	FLANT	A/3	Benzo(a)pyrene-d_{12}	D12BAP	B/4
Pyrene	PYR	A/3			
C_1-Fluoranthenes/Pyrenes	C1F/P	A/3	Recovery Internal Standard		
C_2-Fluoranthenes/Pyrenes	C2F/P	A/3	Fluorene-d_{10}	D10F	A
C_3-Fluoranthenes/Pyrenes	C3F/P	A/3	Chrysene-d_{12}	D12C	B

Table 4. Petroleum Biomarker (Sterane and Triterpane) Target Analyte List

Compound	Reporting Code	SIS/RIS
C_{23} Diterpane	T4	A/1
13β,17α-diacholestane(20S)	S4	A/1
13β,17α-diacholestane(20R)	S5	A/1
C_{29} Tricyclictriterpane	T9	A/1
C_{29} Tricyclictriterpane	T10	A/1
5α,14α,17α-cholestane(20R) [a]	S17	A/1
18α(H)-22,29,30-trisnorhopane(TS)	T11	A/1
17α(H)-22,29,30-trisnorhopane(TM)	T12	A/1
5α,14α,17α,24-methylcholestane(20R)	S24	A/1
5α,14α,17α,24-ethylcholestane(20S)	S25	A/1
5α,14α,17α,24-ethylcholestane(20R)	S28	A/1
17α(H),21β(H)-30-norhopane	T15	A/1
18α(H)-oleanane	T18	A/1
17α(H),21β(H)-hopane	T19	A/1
22S-17α(H),21β(H)-30-homohopane	T21	A/1
22R-17α(H),21β(H)-30-homohopane	T22	A/1
17β(H),21β(H)-hopane [a]	T23	A/1

Table 4. Petroleum Biomarker (Sterane and Triterpane) Target Analyte List, continued

Compound	Reporting Code	SIS/RIS
Surrogate Compounds		
5β(H)-cholane	5B	2
Recovery Internal Standards		
Chrysene-d_{12}	D12C	A

[a] Compound used in calibration, but not reported

Table 5. Saturated Hydrocarbons Target Analyte List

Compound	Reporting Code	SIS/RIS	Compound	Reporting Code	SIS/RIS
n-Nonane	C9	A/1	n-Heptacosane	C27	A/1
n-Decane	C10	A/1	n-Octacosane	C28	A/1
n-Undecane	C11	A/1	n-Nonacosane	C29	A/1
n-Dodecane	C12	A/1	n-Triacontane	C30	A/1
n-Tridecane	C13	A/1	n-Hentriacontane	C31	A/1
Isoprenoid RRT 1380	1380	A/1	n-Dotriacontane	C32	A/1
n-Tetradecane	C14	A/1	n-Tritriacontane	C33	A/1
Isoprenoid RRT 1470	1470	A/1	n-Tetratriacontane	C34	A/1
n-Pentadecane	C15	A/1	n-Pentatriacontane	C35	A/1
Isoprenoid RRT 1650	1650	A/1	n-Hexatriacontane	C36	A/1
n-Hexadecane	C16	A/1	n-Heptatriacontane	C37	A/1
n-Heptadecane	C17	A/1	n-Octatriacontane	C38	A/1
Pristane	PRIS	A/1	n-Nonatriacontane	C39	A/1
n-Octadecane	C18	A/1	n-Tetracontane	C40	A/1
Phytane	PHYT	A/1	Total Saturated HCs	TSHC	A/1
n-Nonadecane	C19	A/1	Total Petroleum HCs	TPH	A/1
n-Eicosane	C20	A/1			
n-Heneicosane	C21	A/1			
n-Docosane	C22	A/1	Surrogate Compounds		
n-Tricosane	C23	A/1	Tetracosane-d_{50}	D50T	A/1
n-Tetracosane	C24	A/1	5a-Androstane	5AA	B/1
n-Pentacosane	C25	A/1			
n-Hexacosane	C26	A/1	Recovery Internal Standard		
n-Heptacosane	C27	A/1	Eicosane-d_{42}	D42E	1

2.4.3. Instrumental Analysis

The PAH and petroleum biomarker analysis will be performed by GC/MS in accordance with Battelle SOP 5-157, *Identification and Quantification of Semi-volatile Organic Compounds [SVOA] by Gas Chromatography/Mass Spectrometry*. The SOP is a modification of EPA Method 8270 to include additional target compounds (e.g., alkyl PAHs and petroleum biomarkers), and to obtain lower detection limits and better specificity by operating the detector in the selected ion monitoring (SIM) mode.

The SHC analysis will be performed by GC/FID in accordance with Battelle SOP No. 5-202, *Determination of Low Level Total Petroleum Hydrocarbon (Diesel Range Organics – DRO) and Individual Hydrocarbon Concentration in Environmental Samples*. The SOP is a modification of US Environmental Protection Agency (EPA) Method 8015, to obtain improved sensitivity and specificity, to include a number of additional key target parameters, and to ensure that the analysis is appropriate for complex sediment and biological tissue samples.

Analytical instruments will be calibrated before sample analysis with a 5-point calibration (minimum) and a calibration verification standard will be analyzed at the beginning and end of each 24-h period during, bracketing field and quality control sample analysis. The concentrations of the target compounds will be calculated versus the surrogate compounds that were spiked into the sample prior to extraction to most accurately represent the field sample concentration; surrogate compound recoveries will also be determined**.**

2.5. Inorganic Chemical Analysis

The sediment and biological tissue samples will be analyzed for selected trace and major metals by Florida Institute of Technology (FIT), in accordance with FIT's SOPs. FIT will also determine the sediment grain size and the total organic carbon (TOC) content of the sediments. The sample analyses are summarized below.

2.5.1. Sediment Sample Preparation and Metals Analysis

The well mixed sediment samples will be freeze-dried and then totally digested in Teflon® beakers using concentrated, high-purity hydrofluoric acid (HF), nitric acid (HNO_3) and perchloric acid ($HClO_4$). The completely dissolved and clear samples will be diluted with distilled deionized water (DDW) prior to analysis. Sediment samples to be analyzed for mercury will be digested by heating with HNO_3 and sulfuric acid (H_2SO_4).

2.5.2. Tissue Sample Preparation and Metals Analysis

Tissue samples to be analyzed for all metals, with the exception of Hg, will be freeze-dried and then digested by a sequential addition of concentrated, high-purity nitric acid (HNO_3), hydrogen peroxide (H_2O_2), and hydrochloric acid (HCl). The solution was then diluted with DDW. Mercury analyses will be performed using by digesting with concentrated, high-purity HNO_3 and H_2SO_4.

2.5.3. Metals Analysis

The samples will be analyzed by flame atomic absorption spectrometry (FAAS), graphite furnace atomic absorption spectrometry (GFAAS; Zeeman or Continuum background correction), cold vapor atomic absorption spectrometry (CVAAS), or inductively coupled plasma/mass spectrometry (ICP/MS), for determination of the different metals. Table 6 lists the applicable instrumental analysis for each metal. Mercury concentrations will be measured by CVAAS. These methods are based on USEPA methods described for Series 7000 (FAAS and GFAAS), Series 7470 (CVAAS), and Series 6010A (ICP/MS) (USEPA 1991), with optimization to address the required detection limits and the sample matrices.

2.6. Ancillary Measurements

Sediments will also be processed by sieve and pipette methods to determine sediment grain size with data for the following four fractions: gravel, sand, silt and clay. For organic matter content, the total organic carbon (TOC) content will be determined at 900ºC using a Shimadzu total carbon analyzer.

Table 6: Analytical Methods for Metals and Supporting Parameters

Metal	Method[1]	Sediment Metal/Parameter	Tissue Metal/Parameter
Ag – silver	ZGFAAS	√	√
Al – aluminum	FAAS	√	
As – arsenic	ZGFAAS	√	√
Ba – barium	ICP-MS	√	√
Cd – cadmium	ICP-MS	√	√
Cr – chromium[2]	FAAS	√	√
Cu – copper	FAAS	√	√
Fe – iron	FAAS	√	√
Hg – mercury	CVAAS	√	√
Mn – manganese	FAAS	√	√
Pb – lead	ICP-MS	√	√
Se – selenium[3]	ICP-MS	√	√
Zn – zinc	FAAS	√	√
Other Parameters			
Grain Size	Sieve and Pipet	√	
TOC	Shimadzu total C analyzer	√	

[1]CVAAS = Cold Vapor Atomic Absorption Spectrometry;
FAAS = Flame Atomic Absorption Spectrometry;
GFAAS = Graphite Furnace Atomic Absorption Spectrometry;
ICP/MS = Inductively Coupled Plasma/Mass Spectrometry; and
ZGFAAS = Zeeman Graphite Furnace Atomic Absorption Spectrometry.
[2]Sediment samples will be analyzed by FAAS; Tissue samples will be analyzed by GFAAS
[3]Sediment samples will be analyzed by ICPMS; Tissue samples will be analyzed by ZGFAAS

3.0. QUALITY ASSURANCE AND QUALITY CONTROL

3.1. Quality Assurance

The Quality Assurance Unit (QAU) at Battelle Duxbury will remain independent of all work activities pertaining to this project. The QAU will monitor the Battelle Duxbury components of the project according to existing Battelle SOPs to ensure the accuracy, integrity, and completeness of the data. Analytical project staff members will be responsible for ensuring that sample tracking, sample preparation, and analytical instrument operation all meet the quality control criteria detailed in the applicable analytical SOPs. Similar QA procedures are in place at Florida Institute of Technology, where key project data will also be generated. The SOPs for organic and inorganic analyses are listed in Attachment C and D, respectively.

3.2. Quality Control

Quality control is an integral part of the laboratory activities. It demonstrates the quality of operations and analyses, provides analysts with metrics about method performance, and aids project managers in identifying and correcting systematic and random problems that can plague field and laboratory operations. A routine set of quality control (QC) samples accompany every set of samples processed and analyzed for any work conducted at the laboratory. The following QC samples will be analyzed with each batch of samples:

- Procedural Blank (PB) - A procedural blank is combination of solvents, surrogates, and all reagents used during sample processing, processed concurrently with the field samples. It is intended to monitor purity of reagents and potential laboratory contamination.
- Laboratory Control Sample (LCS) - An LCS sample is a contaminant-free matrix-specific sample [e.g., Ottawa sand or sodium sulfate (sediment) and clean Talpia (tissue)] that is prepared with each processing batch. It is spiked with the analytes of interest and processed identically to the field samples to assess analyte recoveries. The LCS is prepared for organic analysis only.
- Matrix spike (MS) - A matrix spike is a field sample spiked with the analytes of interest at approximately 10 × the MDL, processed concurrently with the field samples. It is intended to monitor the recoveries and effectiveness of the method with the sample matrix.
- Sample duplicate (QADU) - A duplicate is a second aliquot of a field sample processed and analyzed to monitor precision. The duplicate may be a second matrix spike sample.
- Standard reference material (SRM) – A standard reference material is prepared with each processing batch to assess accuracy of the analytical procedures.
- North Slope Crude (NSC) Reference Oil - An NSC sample is used to evaluate the instrumental accuracy and also provide petroleum pattern information, aiding in the qualitative identification of target analytes. The NSC is analyzed for organics only.

The data quality objectives (DQO) for each QC parameter in this project are presented in Table 7. Analytical results that do not meet the listed DQOs will be submitted to and/or reviewed with the Project Manager for assessment of the potential impact of the results. Affected samples may be reanalyzed at the Project Manager's discretion. Quality control sample data that are accepted outside the DQOs will be indicated the appropriate data qualifier (Table 8), and the rationale for accepting the analysis will be documented.

Table 7. Data Quality Objectives

QC Sample Type	Data Quality Objective	Corrective Action
Procedural Blank	Organics: < 5×MDL, or field sample concentration >5×MDL. Metals: No more than 2 analytes > 5×MDL	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
Laboratory Control Sample (LCS)	Organics: 70 – 130% Recovery	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
Matrix Spike (MS)	Organics: 70 – 130% Recovery Spike levels >5× unspiked field sample concentration for MQO to apply. Metals: 80 – 120% Recovery	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
Duplicate (DUP)	Organics: RPD < 30% Field sample concentration >5× MDL for MQO to apply. Metals: RPD < 25% for 65% of the analytes	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented

Table 7. Data Quality Objectives , continued

QC Sample Type	Data Quality Objective	Corrective Action
Reference Material (SRM)	Organics: Values must be within 30% of the certified value on average for all compounds, not to exceed 35% of the certified value for more than 30% of the compounds. Target concentration > 5× MDL for MQO to apply. Metals: Values must be within 20% of certified values for > 85% of the certified analytes and within 35% for Hg	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
Control Oil	Organics: < 30% Difference from control values for 90% of the analytes. Concentration > 5× MDL for MQO to apply.	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
SIS Recovery	Organics: 40 – 120% recovery	Results examined by PM or task leader. Corrective action (re-extraction, re-analysis) or justification documented.
Initial Calibration	Organics: < 25% RSD Metals: Correlation coefficient r ≥ 0.999 for all analytes	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented
Continuing Calibration	Organics: < 25% PD Metals: 15% RSD for all analytes	Re-extraction, re-analysis, and/or document and justify – determined by PM; all corrective actions documented

Table 8. Data Qualifiers

Qualifier	Definition
B	Analyte concentration in procedural blank exceeds MQO, and the field sample concentration is <5× the level found in the procedural blank.
D	Dilution Run. Initial run outside linear range of instrument.
E	Estimate, result is greater than the highest concentration level in the calibration.
J	Analyte detected below the sample-specific Reporting Limit (RL).
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined or estimated.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not applicable
T	Holding Time (HT) exceeded.
U	Analyte not detected at approximately 3:1 signal:noise ratio, or greater.

3.2.1. Method Detection Limits

The method detection limit (MDL) is defined as the minimum concentration that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDLs for metals will be determined by the method outlined in U.S. Federal Register (U.S. EPA, 1997). Reporting limits (RL) are defined by the sample concentration of a compound that is equivalent to the final extract concentration based on the low calibration standard concentration.

Target compounds confidently detected below the RL (typically down to a concentration using a signal-to-noise ratio criteria of approximately 3:1) will be reported and qualified appropriately, regardless of how it compares to the calculated MDL. Approximate MDLs and RLs for each matrix for organic compounds are presented in Table 9. Table 10 lists the MDLs for each matrix for metals and ancillary measures. The RL for metals is defined as 5 times the MDL.

Table 9. Hydrocarbon Analytes MDLs and RLs (µg/kg, dry weight)

Compound Class	MDL[a]	RL[b]
PAH and Alkylated PAH		
Sediment	0.02-0.1 µg/kg dry	1.0 µg/kg dry
Biological tissue	0.09-2.3 µg/kg dry	5.0 µg/kg dry
Petroleum Biomarkers		
Sediment	0.6 µg/kg dry	5.0 µg/kg dry
Biological tissue	1.9 µg/kg dry	25 µg/kg dry
Saturated Hydocarbons		
Individual SHC Compounds		
Sediment	0.03-0.05 mg/kg dry	0.2 mg/kg dry
Biological tissue	0.06-0.4 mg/kg dry	1.0 mg/kg dry
Total SHC/PH		
Sediment	2.4 mg/kg dry	NA
Biological tissue	52 mg/kg dry	NA

[a] MDL: Method detection limit (per EPA MDL protocol). Detection limits are based on a PIV of 0.50mL for sediment and 0.25 for tissue, dilution factor of 2 for sediment and 1 for tissue, and a dry weight sample mass of 20 g for sediment 2 g for tissue.
[b] RL: Reporting Limit; field sample concentration equivalent to a final extract concentration equal to that of the low calibration standard (based on a dry weight sample mass of 20 g for sediment and 2 g for tissue)

Table 10. Inorganic MDLs

Metal	Sediment MDLs (µg metal/g dry)	Tissue MDLs (µg metal/g dry)
Ag – silver	0.01	0.004
Al – aluminum	10	
As – arsenic	0.2	0.03
Ba – barium	1	0.01
Cd – cadmium	0.02	0.001
Cr – chromium	1	0.01
Cu – copper	2	0.7
Fe – iron	10	2.5
Hg – mercury	0.001	0.001
Mn – manganese	3	1.1
Pb – lead	0.2	0.003
Se – selenium	0.04	0.03
Zn – zinc	2	0.4
Other Parameters		
Grain Size	---	
TOC	0.1%	

4.0. REPORTING

4.1. Field Data

The delivery of field data is described in the Field Survey Report. The field data will be delivered by Exponent; the prime contractor for the field component of the Chemical Characterization Project.

4.2. Laboratory Data

The laboratory analytical data will be delivered to the project senior scientists (at Battelle, Exponent, Florida Institute of Technology, and Neff & Associates,) for use in the development of the draft and final reports. The laboratory data will be delivered in validated Excel spreadsheet files. Additional data and electronic files (e.g., analytical instrument chromatograms, and other graphical data presentations) may also be compiled at the analytical laboratories for delivery to the report authors. Analytical data will also be delivered to CPAI as appendices to the final report, and electronically on a CD that accompanies the final report. In addition the laboratory will submit data as an electronic data deliverable (EDD), in a format agreed on between CPAI and Battelle.

4.3. Draft Report

The draft report will be a comprehensive data and interpretive report that integrates the results and information from the field activities and the data from the laboratory sample analyses. The chemical concentrations and distribution will be thoroughly presented, and the environmental significance of the measured concentrations will be discussed. The concentrations, and spatial and compositional characteristics, of the measured chemicals will be described, including discussions of potential sources. The data generated for the Chukchi Sea in this project will be put into perspective using data from other studies and areas, particularly the Beaufort Sea, that may be useful for comparison purposes.

The hydrocarbon data will be analyzed by advanced fingerprinting methods to identify and characterize sources of the hydrocarbon assemblages in sediments and marine animal tissues. In the Chukchi Sea environment, hydrocarbons may be derived from biogenic sources (decay of marine and terrestrial organic matter), coal, shales, and peat eroded from the coast and banks of rivers entering the Chukchi Sea, natural oil seeps and oil spills from human activities, and combustion-sourced (pyrogenic) hydrocarbons from human activities, distant forest fires, and introduced to the Chukchi Sea in arctic haze. It is important to characterize sources of hydrocarbons in marine sediments and food web animals in baseline studies in the Chukchi Sea so that any contributions from future development activities can be characterized and quantified. It may also be possible to identify inputs of metals and hydrocarbons from earlier drilling activities in the Klondike and Burger prospects.

The geochemistry of the metals in sediments also will be characterized to gain insights into natural and anthropogenic processes that may account for the sources, abundance, and distribution of metals in sediments of the Klondike and Burger prospects. Concentrations of trace metals in sediments will be plotted versus Al in a manner similar to that used during the ANIMIDA and cANIMIDA Programs in the Beaufort Sea (Trefry et al., 2003). Strong linear relationships were obtained during the ANIMIDA Program in the Beaufort Sea. The resulting graphs were then used as templates to evaluate metals concentrations during the cANIMIDA Program. If any metal data plotted as positive anomalies (i.e., plotted above the upper prediction interval and suggest possible anthropogenic inputs of a metal) on the Al versus metal plots, then the respective geographical area was given closer attention during the next appropriate sampling trip. In other words, anomalous metal concentrations serve as warning signals to focus future sampling in a particular area where chemicals may be accumulating. For example, results for Ba from the cANIMIDA Program in the Beaufort Sea (2004-2006) can be used to identify four locations

where anthropogenic inputs of Ba probably occurred. Each site has or had a reasonable source of anthropogenic Ba from drilling muds. Thus, the normalization technique will serve as a potentially valuable tool for identifying anthropogenic inputs of metals to sediments in the Chukchi Sea.

A high quality dataset of hydrocarbon and metals data for Chukchi Sea sediments and marine animal tissues may enable CPAI to identify trends of change in the study areas. This will contribute to the ability to differentiate between environmental changes caused by climate change and development activities, and other possible causes. It also may help characterize pathways of food web transfer of chemicals from sediments and primary producers to top trophic levels, including marine birds and mammals.

4.4. Final Report

A final report will be prepared by addressing comments received on the draft report, and incorporating appropriate revisions. The team of report authors from the four (4) organizations (Gregory Durell from Battelle, Jerry Neff from Neff & Associates, John Trefry from Florida Institute of Technology, and John Brown from Exponent) will review all comments that are received from reviewers of the draft report. The team will develop a consensus on how to address all comments. A report will be prepared for CPAI and Shell E&P describing how all comments were addressed. Battelle welcomes an opportunity to discuss the team's recommended approach to addressing review comments with CPAI and Shell E&P as well as any third party reviewers, prior to completing the final report. Delivery of a final report will be in compliance with CPAI established data management protocols, anticipated to be drafted by March 31, 2009.

4.5. Project Status Report

A status report will be prepared and delivered each month to CPAI. The report will include information on the status of the technical work, activities since the last report, and the budget. The report will also identify any potential issues, possible implications on the project, and recommended actions to address the issues.

5.0. SCHEDULE

The following is a listing of the milestones, deliverables, and estimated schedule.

Table 11. Project Milestones, Deliverables, and Schedule

Activity/Milestone	Category	Proposed Activity Dates
Contract Execution		December 2, 2008
Sample Receipt, Handling, Shipping, and Preparation for Analysis	Lab	December 3, 2008 – January 9, 2009
Study Plan	Deliverable	December 8, 2008 – January 30, 2009
Field Survey Report	Deliverable	December 8, 2008 – January 30, 2009
Laboratory Analysis – Sediment Samples	Lab	January 12 – April 3, 2009
Laboratory Analysis – Tissue Samples	Lab	January 12 – April 3, 2009
Debriefing/Symposium Meeting	Meeting	January 16 – January 23, 2009
Laboratory Analytical Data	Deliverable	April 24, 2009
Draft Report	Deliverable	April – July 31, 2009
Final Report	Deliverable	Within 21 days of receipt of comments.
Project Status Report	Deliverable	Monthly

6.0. PROJECT ORGANIZATION AND COMMUNICATION

Figure 4 presents the organizational structure of the Chemical Characterization project team. The Team consists of the following four (4) organizations: Battelle, Exponent Inc., Florida Institute of Technology (FIT), and Neff & Associates. The lead team leaders from the four (4) organizations are Mr. Gregory Durell (Battelle), Mr. John Brown (Exponent), Dr. John Trefry (Florida Institute of Technology), and Dr. Jerry Neff (Neff & Associates).

Battelle is the prime contractor for the non-field component of the Chemical Characterization Project and will provide project management and oversight activities. In addition, Battelle will coordinate the preparation and delivery of all deliverables and serve as a project point-of-contact for CPAI. Battelle's technical role will include (1) working with the team to prepare the Study Plan; (2) attending project meetings; (3) conducting the organic compound laboratory analyses; and (4) working closely with the Chemical Characterization Project's Senior Technical Coordinator and lead report author (Dr. Jerry Neff) to provide data and other input to the project reports.

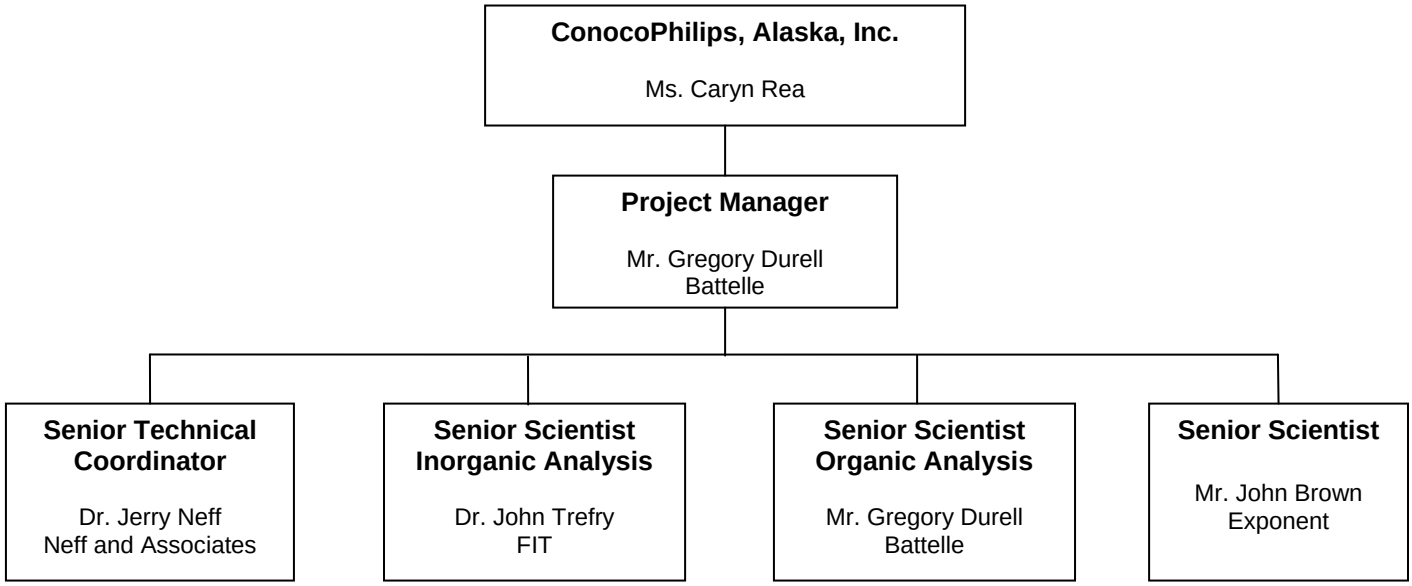

Figure 4. Chemical Characterization Project Team

6.1. Project Manager

Mr. Gregory Durell will serve as Battelle's Project Manager, Lead Scientist, and CPAI's point-of-contact for the project. He will be directly involved with and/or oversee all project technical activities at Battelle and the subcontractors. Mr. Durell's technical contributions to the reports will, in particular, include investigating the organic compound situation in the biological resources, and overall data integration.

6.2. Key Personnel

Dr. Jerry Neff, of Neff & Associates, will serve as the Chemical Characterization Project's Senior Technical Coordinator and will be a subcontractor to Battelle. Dr. Neff will play an important role integrating all activities in the Chemical Characterization Project. Dr. Neff's role will include (1) providing technical counsel, leadership, and guidance to the project team; (2) working with the team to

prepare the Study Plan; (3) attending project meetings; and (4) acting as the lead report author of the project reports**.**

Mr. John Brown, of Exponent Inc., will be a subcontractor to Battelle. Mr. Brown will play an important Senior Scientist role on project, and his activities will include (1) providing contributions to the Study Plan; (2) attending project meetings; and (3) working closely with the lead report author (Dr. Jerry Neff) to provide data and other information for the project reports**.** Mr. Brown's technical contributions to the reports will, in particular, include investigating and interpreting the organic compound situation in the sediments. Mr. Brown will also serve as the Project Manager of the Chemical Characterization field project, and will provide a valuable link between the field project and this project.

Dr. John Trefry, of Florida Institute of Technology, will be a subcontractor to Battelle. Dr. Trefry will play an important Senior Scientist role on project, and his activities will include (1) providing contributions to the Study Plan; (2) participate in project meetings; (3) oversight of the metals chemistry laboratory analyses (which will be conducted at Florida Institute of Technology); and (4) working closely with the lead report author (Dr. Jerry Neff) to provide data and other information for the project reports**.** Dr. Trefry's contributions to the reports will, in particular, include analysis and interpretation of the metals chemistry data.

John Hardin, of Battelle, will serve as an experienced Senior/Chief Field Scientist for the Chemical Characterization project, as described in the Field Survey Plan. Mr. Hardin also attended the project kickoff and planning meetings in May 2008, and will attend the January 2009 debriefing meeting; he will serve as a crucial link between this non-field project and the field sample collection activities.

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ATTACHMENT A

Summary of Samples Collected
(with Analysis Information)

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Summary of Samples Collected From Klondike

Station	Sediment		Amphipods		Crabs		Clams				Worms		Zooplankton		
	Collected	**Analyze**	**Collected**	**Analyze**	**Collected** (*Opillio sp;* # Org)	**Analyze**	**Collected BC2** (*Macoma* # Org.)	**Collected BC5** (*Astarte* # Org.)	**Analyze BC2**	**Analyze BC5**	**Collected WC2** (Maldanidae; cc)	**Analyze WC2**	**Collected**	**Composite**	**Analyze**
Fixed															
KF001	1	1	1	1							15		1	A	1
KF003	1	1			1						10		1	C	1
KF005	1	1						2			50	1	1	E	1
KF007	1	1											1	B	1
KF009	1	1									20		1	D	1
KF011	1	1													
KF013	1	1									40	1	1	C	
KF015	1	1											1	E	
KF017	1	1			3			2					1	B	
KF019	1	1											1	D	
KF021	1	1			8	1							1	A	
KF023	1	1			4	1					10		1	C	
KF025	1	1			7	1					60	1	1	E	
Primary Random															
KR001	1	1			10	1									
KR007	1	1			3			3		1	30				
KR008	1	1			5	1		12		1	20				
KR009	1	1						4		1	30	1			
KR016	1	1			4	1	1				20				
KR019	3	1			6	1		4		1	60	1			
KR034	1	1									40	1			
KR043	1	1													
KR045	3	3									40	1			
KR056	1	1									20				
KR066	1	1									20				
KR083	1	1													
KR095	1	1			3		3		1		20				
Secondary Random															
KR004															
KR014															
KR029															
KR069															
KR077															
KR079															

Station	Sediment		Amphipods		Crabs		Clams				Worms		Zooplankton		
	Collected	**Analyze**	**Collected**	**Analyze**	**Collected** (*Opillio sp;* # Org)	**Analyze**	**Collected BC2** (*Macoma* # Org.)	**Collected BC5** (*Astarte* # Org.)	**Analyze BC2**	**Analyze BC5**	**Collected WC2** (Maldanidae; cc)	**Analyze WC2**	**Collected**	**Composite**	**Analyze**
KR093															
KR094															
KR099															
Site Specific (historical drill sites; at depth)															
KD001	7	1			10						25				
KD002	4	4			6	1	1				20	1			
KD003	6	1			9						25				
KD004	6	1			3						15				
KD005	6	6			4	1		7		1	15	1			
TOTAL BASE #SAMPLES	59	41	1	1	16	9	3	7	1	5	24	9	12		5

Summary of Samples Collected From Burger

Station	Sediment		Amphipods		Crabs		Clams				Worms		Zooplankton		
	Collected	Analyze	Collected	Analyze	Collected (*Opillio sp;* # Org)	Analyze	Collected BC2 (*Macoma* # Org.)	Collected BC5 (*Astarte* # Org.)	Analyze BC2	Analyze BC5	Collected WC2 (Maldanidae; cc)	Analyze WC2	Collected	Composite	Analyze
Fixed															
BF001	1	1						30		1			1	A	1
BF003	1	1			5			18		1	40	1	1	C	1
BF005	3	3			33	1		35		1			1	E	1
BF007	1	1						19		1			1	B	1
BF009	1	1						12					1	D	1
BF011	1	1	1	1	27	1		26		1			1	A	
BF013	1	1	3	3	6	1		6					1	C	
BF015	1	1					14	15	1	1			1	E	
BF017	1	1			3			25		1	10	1	1	B	
BF019	1	1					6	6					1	D	
BF021	1	1			5			10			20	1	1	A	
BF023	1	1			16	1		19					1	C	
BF025	1	1			45	1	44		1				1	E	
Primary Random															
BR005	1	1			9			50		1					
BR016	1	1					7								
BR020	1	1					9								
BR032	3	1			6			29							
BR038	1	1	1	1			24	9	1	1					
BR043	1	1			12	1		12							
BR047	1	1													
BR077	1	1						10							
BR080	1	1	1	1	10	1		14		1					
BR086	1	1			6			18			50	1			
BR093	1	1						38		1	30	1			
BR098	1	1						16		1	50	1			
BR099	1	1	1	1				12			20	1			
Secondary Random															
BR006															
BR018															
BR039															
BR042															
BR049															
BR051															

Station	Sediment		Amphipods		Crabs		Clams				Worms		Zooplankton		
	Collected	**Analyze**	**Collected**	**Analyze**	**Collected** (*Opillio sp;* # Org)	**Analyze**	**Collected BC2** (*Macoma* # Org.)	**Collected BC5** (*Astarte* # Org.)	**Analyze BC2**	**Analyze BC5**	**Collected WC2** (Maldanidae; cc)	**Analyze WC2**	**Collected**	**Composite**	**Analyze**
BR087	1							7			30	1			
BR095															
BR100	1	1			30	1		19			30	1			
Site Specific (historical drill sites; at depth)															
BD001	5	1			2		5	25	1	1					
BD002	6	1													
BD003	5	1					6	4							
BD004	5	1	1	1	2	1		2							
BD005	6	6	1	1											
New Stations															
BN001	1							40			40		1		
BN002															
BN003															
BN004															
BN005															
TOTAL BASE #SAMPLES	60	39	9	9	16	9	8	28	4	13	10	9	14		5

ATTACHMENT B

Complete List of Samples Collected and Samples Selected for Analysis

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Sediment Samples Selected for Analysis

BDO Id	Matrix	Field ID	Station	Collection Date
Q6000	Sediment	08-03-BD001-01-SC02	BD001	21-Sep-08
Q5926	Sediment	08-03-BD002-01-SC02	BD002	15-Sep-08
Q6005	Sediment	08-03-BD003-01-SC02	BD003	21-Sep-08
Q6010	Sediment	08-03-BD004-01-SC02	BD004	21-Sep-08
Q5896	Sediment	08-03-BD005-01-SC46	BD005	15-Sep-08
Q5897	Sediment	08-03-BD005-01-SC68	BD005	15-Sep-08
Q5898	Sediment	08-03-BD005-01-SC810	BD005	15-Sep-08
Q5899	Sediment	08-03-BD005-01-SC1012	BD005	15-Sep-08
Q5932	Sediment	08-03-BD005-01-SC02	BD005	15-Sep-08
Q5933	Sediment	08-03-BD005-01-SC24	BD005	15-Sep-08
Q5903	Sediment	08-03-BF001-01-SC	BF001	16-Sep-08
Q5879	Sediment	08-03-BF003-01-SC	BF003	02-Sep-08
Q5726	Sediment	08-03-BF005-01-SC	BF005	20-Sep-08
Q5727	Sediment	08-03-BF005-02-SC	BF005	20-Sep-08
Q5728	Sediment	08-03-BF005-03-SC	BF005	20-Sep-08
Q5900	Sediment	08-03-BF007-01-SC	BF007	16-Sep-08
Q5729	Sediment	08-03-BF009-01-SC	BF009	20-Sep-08
Q6029	Sediment	08-03-BF011-01-SC	BF011	13-Sep-08
Q5906	Sediment	08-03-BF013-01-SC	BF013	16-Sep-08
Q5717	Sediment	08-03-BF015-01-SC	BF015	19-Sep-08
Q6015	Sediment	08-03-BF017-01-SC	BF017	12-Sep-08
Q5769	Sediment	08-03-BF019-01-SC	BF019	19-Sep-08
Q6019	Sediment	08-03-BF021-01-SC	BF021	13-Sep-08
Q5755	Sediment	08-03-BF023-01-SC	BF023	17-Sep-08
Q5764	Sediment	08-03-BF025-01-SC	BF025	18-Sep-08
Q5744	Sediment	08-03-BR005-01-SC	BR005	21-Sep-08
Q5760	Sediment	08-03-BR016-01-SC	BR016	18-Sep-08
Q5715	Sediment	08-03-BR020-01-SC	BR020	19-Sep-08
Q5916	Sediment	08-03-BR032-01-SC	BR032	14-Sep-08
Q5766	Sediment	08-03-BR038-01-SC	BR038	18-Sep-08
Q6028	Sediment	08-03-BR043-01-SC	BR043	14-Sep-08
Q5909	Sediment	08-03-BR047-01-SC	BR047	17-Sep-08
Q5732	Sediment	08-03-BR077-01-SC	BR077	20-Sep-08
Q5723	Sediment	08-03-BR080-01-SC	BR080	19-Sep-08
Q5861	Sediment	08-03-BRO86-01-SC	BR086	01-Sep-08
Q5884	Sediment	08-03-BR093-01-SC	BR093	02-Sep-08
Q5889	Sediment	08-03-BR098-01-SC	BR098	02-Sep-08
Q5870	Sediment	08-03-BR099-01-SC	BR099	03-Sep-08
Q5871	Sediment	08-03-BR100-01-SC	BR100	03-Sep-08
Q5950	Sediment	08-03-KD001-01-SC02	KD001	01-Sep-08
Q5774	Sediment	08-03-KD002-01-SC02	KD002	01-Sep-08
Q5775	Sediment	08-03-KD002-01-SC24	KD002	01-Sep-08
Q5776	Sediment	08-03-KD002-01-SC46	KD002	01-Sep-08
Q5777	Sediment	08-03-KD002-01-SC68	KD002	01-Sep-08
Q5947	Sediment	08-03-KD003-01-SC	KD003	01-Sep-08
Q5936	Sediment	08-03-KD004-01-SC02	KD004	01-Sep-08

BDO Id	Matrix	Field ID	Station	Collection Date
Q5785	Sediment	08-03-KD005-01-SC68	KD005	01-Sep-08
Q5850	Sediment	08-03-KD005-01-SC	KD005	01-Sep-08
Q5939	Sediment	08-03-KD005-01-SC810	KD005	01-Sep-08
Q5940	Sediment	08-03-KD005-01-SC1012	KD005	01-Sep-08
Q5941	Sediment	08-03-KD005-01-SC02	KD005	01-Sep-08
Q5942	Sediment	08-03-KD005-01-SC24	KD005	01-Sep-08
Q5943	Sediment	08-03-KD005-01-SC46	KD005	01-Sep-08
Q5704	Sediment	08-03-KF001-01-SC	KF001	21-Aug-08
Q5821	Sediment	08-03-KF003-01-SC	KF003	29-Aug-08
Q5826	Sediment	08-03-KF005-01-SC	KF005	31-Aug-08
Q5705	Sediment	08-03-KF007-01-SC	KF007	22-Aug-08
Q5710	Sediment	08-03-KF009-01-SC	KF009	24-Aug-08
Q5708	Sediment	08-03-KF011-01-SC	KF011	21-Aug-08
Q5694	Sediment	08-03-KF013-01-SC	KF013	23-Aug-08
Q5824	Sediment	08-03-KF015-01-SC	KF015	31-Aug-08
Q5678	Sediment	08-03-KF017-01-SC	KF017	30-Aug-08
Q5811	Sediment	08-03-KF019-01-SC	KF019	28-Aug-08
Q5664	Sediment	08-03-KF021-01-SC	KF021	27-Aug-08
Q5669	Sediment	08-03-KF023-01-SC	KF023	27-Aug-08
Q5806	Sediment	08-03-KF025-01-SC	KF025	27-Aug-08
Q5662	Sediment	08-03-KR001-01-SC	KR001	27-Aug-08
Q5682	Sediment	08-03-KR007-01-SC	KR007	30-Aug-08
Q5973	Sediment	08-03-KR008-01-SC	KR008	30-Aug-08
Q5978	Sediment	08-03-KR009-01-SC	KR009	30-Aug-08
Q5687	Sediment	08-03-KR016-01-SC	KR016	30-Aug-08
Q5983	Sediment	08-03-KR019-01-SC	KR019	30-Aug-08
Q5697	Sediment	08-03-KR034-01-SC	KR034	23-Aug-08
Q5699	Sediment	08-03-KR043-01-SC	KR043	22-Aug-08
Q5693	Sediment	08-03-KR045-01-SC	KR045	23-Aug-08
Q5695	Sediment	08-03-KR045-03-SC	KR045	23-Aug-08
Q5696	Sediment	08-03-KR045-02-SC	KR045	23-Aug-08
Q5706	Sediment	08-03-KR056-01-SC	KR056	23-Aug-08
Q5707	Sediment	08-03-KR066-01-SC	KR066	22-Aug-08
Q5698	Sediment	08-03-KR083-01-SC	KR083	22-Aug-08
Q5819	Sediment	08-03-KR095-01-SC	KR095	29-Aug-08

Tissue Samples Selected for Analysis

BDO ID	Biota Type	Field ID	Station	Collection Date	
Q5750	Amphipod	08-03-BD004-01-AC	BD004	21-Sep-08	
Q5925	Amphipod	08-03-BD005-01-AC	BD005	15-Sep-08	
Q5919	Amphipod	08-03-BF011-01-AC	BF011	14-Sep-08	
Q5752	Amphipod	08-03-BF013-01-AC	BF013	17-Sep-08	
Q5753	Amphipod	08-03-BF013-02-AC	BF013	17-Sep-08	
Q5754	Amphipod	08-03-BF013-03-AC	BF013	17-Sep-08	
Q5720	Amphipod	08-03-BR038-01-AC	BR038	19-Sep-08	
Q5736	Amphipod	08-03-BR080-01-AC	BR080	20-Sep-08	
Q5869	Amphipod	08-03-BR099-01-AC	BR099	03-Sep-08	
Q5954	Amphipod	08-03-KF001-01-AC	KF001	21-Aug-08	*
Q5996	Clam	08-03-BD001-01-BC2	BD001	21-Sep-08	
Q5999	Clam	08-03-BD001-01-BC5	BD001	21-Sep-08	
Q5904	Clam	08-03-BF001-01-BC5	BF001	16-Sep-08	
Q5882	Clam	08-03-BF003-01-BC5	BF003	02-Sep-08	
Q5724	Clam	08-03-BF005-01-BC5	BF005	20-Sep-08	
Q5901	Clam	08-03-BF007-01-BC5	BF007	16-Sep-08	
Q6033	Clam	08-03-BF011-01-BC5	BF011	13-Sep-08	
Q5718	Clam	08-03-BF015-01-BC5	BF015	19-Sep-08	
Q5719	Clam	08-03-BF015-01-BC2	BF015	19-Sep-08	
Q6017	Clam	08-03-BF017-01-BC5	BF017	12-Sep-08	
Q5763	Clam	08-03-BF025-01-BC2	BF025	18-Sep-08	
Q5745	Clam	08-03-BR005-01-BC5	BR005	21-Sep-08	
Q5767	Clam	08-03-BR038-01-BC2	BR038	18-Sep-08	
Q5768	Clam	08-03-BR038-01-BC5	BR038	18-Sep-08	
Q5722	Clam	08-03-BR080-01-BC5	BR080	19-Sep-08	
Q5887	Clam	08-03-BR093-01-BC5	BR093	02-Sep-08	
Q5890	Clam	08-03-BR098-01-BC5	BR098	02-Sep-08	
Q5848	Clam	08-03-KD005-01-BC5	KD005	01-Sep-08	*
Q5689	Clam	08-03-KR007-01-BC5	KR007	30-Aug-08	*
Q5974	Clam	08-03-KR008-01-BC5	KR008	30-Aug-08	
Q5981	Clam	08-03-KR009-01-BC5	KR009	30-Aug-08	*
Q5990	Clam	08-03-KR019-01-BC5	KR019	30-Aug-08	*
Q5815	Clam	08-03-KR095-01-BC2	KR095	29-Aug-08	*
Q5747	Crab	08-03-BD004-01-CC	BD004	21-Sep-08	*
Q5725	Crab	08-03-BF005-01-CC	BF005	20-Sep-08	
Q6032	Crab	08-03-BF011-01-CC	BF011	13-Sep-08	
Q5911	Crab	08-03-BF013-01-CC	BF013	16-Sep-08	
Q5759	Crab	08-03-BF023-01-CC	BF023	17-Sep-08	
Q5761	Crab	08-03-BF025-01-CC	BF025	18-Sep-08	
Q6026	Crab	08-03-BR043-01-CC	BR043	14-Sep-08	
Q5721	Crab	08-03-BR080-01-CC	BR080	19-Sep-08	
Q5866	Crab	08-03-BR100-01-CC	BR100	03-Sep-08	
Q5860	Crab	08-03-KD002-01-CC	KD002	01-Sep-08	
Q5849	Crab	08-03-KD005-01-CC	KD005	01-Sep-08	
Q5786	Crab	08-03-KF021-01-CC	KF021	27-Aug-08	
Q5670	Crab	08-03-KF023-01-CC	KF023	27-Aug-08	

BDO ID	Biota Type	Field ID	Station	Collection Date	
Q5787	Crab	08-03-KF025-01-CC	KF025	27-Aug-08	
Q5675	Crab	08-03-KR001-01-CC	KR001	27-Aug-08	
Q5976	Crab	08-03-KR008-01-CC	KR008	30-Aug-08	
Q5683	Crab	08-03-KR016-01-CC	KR016	30-Aug-08	
Q5823	Crab	08-03-KR019-01-CC	KR019	30-Aug-08	
Q5881	Worm	08-03-BF003-01-WC2	BF003	02-Sep-08	
Q6021	Worm	08-03-BF017-01-WC2	BF017	12-Sep-08	*
Q6024	Worm	08-03-BF021-01-WC2	BF021	13-Sep-08	
Q5878	Worm	08-03-BR086-01-WC2	BR086	02-Sep-08	
Q5863	Worm	08-03-BR087-01-WC2	BR087	02-Sep-08	
Q5885	Worm	08-03-BR093-01-WC2	BR093	02-Sep-08	
Q5891	Worm	08-03-BR098-01-WC2	BR098	02-Sep-08	
Q5873	Worm	08-03-BR099-01-WC2	BR099	03-Sep-08	
Q5867	Worm	08-03-BR100-01-WC2	BR100	03-Sep-08	
Q5857	Worm	08-03-KD002-01-WC2	KD002	01-Sep-08	*
Q5845	Worm	08-03-KD005-01-WC2	KD005	01-Sep-08	*
Q5831	Worm	08-03-KF005-01-WC2	KF005	31-Aug-08	
Q5961	Worm	08-03-KF013-01-WC2	KF013	23-Aug-08	
Q5805	Worm	08-03-KF025-01-WC2	KF025	27-Aug-08	
Q5980	Worm	08-03-KR009-01-WC2	KR009	30-Aug-08	
Q5987	Worm	08-03-KR019-02-WC2	KR019	30-Aug-08	*
Q5968	Worm	08-03-KR034-01-WC2	KR034	23-Aug-08	*
Q5972	Worm	08-03-KR045-01-WC2	KR045	23-Aug-08	
Q6098	Zooplankton	BF001, BF011, and BF021 composite		13-Sep-08	
Q6099	Zooplankton	BF003, BF013, and BF023 composite		02-Sep-08	
Q6100	Zooplankton	BF005, BF015, and BF025 composite		18-Sep-08	
Q6101	Zooplankton	BF007 and BF017 composite		12-Sep-08	
Q6102	Zooplankton	BF009 and BF019 composite		19-Sep-08	
Q6103	Zooplankton	KF001 and KF021 composite		21-Aug-08	*
Q6104	Zooplankton	KF003, KF013 and KF0023 composite		23-Aug-08	
Q6105	Zooplankton	KF005, KF015 and KF0025 composite		27-Aug-08	**
Q6106	Zooplankton	KF007 and KF017 composite		22-Aug-08	*
Q6107	Zooplankton	KF009 and KF019 composite		23-Aug-08	*

* Limited sample mass; sample analysis includes PAH, SHC, and biomarkers. Metals analysis will not be performed.
** Limited sample mass; all analyses except mercury analysis was performed.

Sediment Samples Selected for Archiving (no analysis, initially)

BDO Id	Matrix	Field ID	Station	Collection Date
Q6001	Sediment	08-03-BD001-01-SC24	BD001	21-Sep-08
Q6002	Sediment	08-03-BD001-01-SC46	BD001	21-Sep-08
Q6003	Sediment	08-03-BD001-01-SC68	BD001	21-Sep-08
Q6004	Sediment	08-03-BD001-01-SC810	BD001	21-Sep-08
Q5927	Sediment	08-03-BD002-01-SC24	BD002	15-Sep-08
Q5928	Sediment	08-03-BD002-01-SC46	BD002	15-Sep-08
Q5929	Sediment	08-03-BD002-01-SC68	BD002	15-Sep-08
Q5930	Sediment	08-03-BD002-01-SC810	BD002	15-Sep-08
Q5931	Sediment	08-03-BD002-01-SC1012	BD002	15-Sep-08
Q6006	Sediment	08-03-BD003-01-SC24	BD003	21-Sep-08
Q6007	Sediment	08-03-BD003-01-SC46	BD003	21-Sep-08
Q6008	Sediment	08-03-BD003-01-SC68	BD003	21-Sep-08
Q6009	Sediment	08-03-BD003-01-SC810	BD003	21-Sep-08
Q6011	Sediment	08-03-BD004-01-SC24	BD004	21-Sep-08
Q6012	Sediment	08-03-BD004-01-SC46	BD004	21-Sep-08
Q6013	Sediment	08-03-BD004-01-SC68	BD004	21-Sep-08
Q6014	Sediment	08-03-BD004-01-SC810	BD004	21-Sep-08
Q5778	Sediment	08-03-BN001-01-SC	BN001	04-Sep-08
Q5915	Sediment	08-03-BR032-02-SC	BR032	14-Sep-08
Q5917	Sediment	08-03-BR032-03-SC	BR032	14-Sep-08
Q5888	Sediment	08-03-BR087-01-SC	BR087	02-Sep-08
Q5771	Sediment	08-03-KD001-01-SC68	KD001	01-Sep-08
Q5772	Sediment	08-03-KD001-01-SC810	KD001	01-Sep-08
Q5773	Sediment	08-03-KD001-01-SC1012	KD001	01-Sep-08
Q5951	Sediment	08-03-KD001-01-SC24	KD001	01-Sep-08
Q5952	Sediment	08-03-KD001-01-SC46	KD001	01-Sep-08
Q5944	Sediment	08-03-KD003-01-SC68	KD003	01-Sep-08
Q5945	Sediment	08-03-KD003-01-SC810	KD003	01-Sep-08
Q5946	Sediment	08-03-KD003-01-SC1012	KD003	01-Sep-08
Q5948	Sediment	08-03-KD003-01-SC24	KD003	01-Sep-08
Q5949	Sediment	08-03-KD003-01-SC46	KD003	01-Sep-08
Q5934	Sediment	08-03-KD004-01-SC810	KD004	01-Sep-08
Q5935	Sediment	08-03-KD004-01-SC1012	KD004	01-Sep-08
Q5937	Sediment	08-03-KD004-01-SC24	KD004	01-Sep-08
Q5938	Sediment	08-03-KD004-01-SC46	KD004	01-Sep-08
Q6035	Sediment	08-03-KD004-01-SC68	KD004	01-Sep-08
Q5984	Sediment	08-03-KR019-02-SC	KR019	30-Aug-08
Q5985	Sediment	08-03-KR019-03-SC	KR019	30-Aug-08

Tissue Samples Selected for Archiving (no analysis, initially)

BDO Id	Biota Type	Field ID	Station	Collection Date
Q5992	Amphipod	08-03-BD002-01-AC	BD002	21-Sep-08
Q5918	Amphipod	08-03-BF011-01-AC	BF011	14-Sep-08
Q6025	Amphipod	08-03-BF017-01-AC	BF017	13-Sep-08
Q5751	Clam	08-03-BD002-01-BC5	BD002	21-Sep-08
Q5993	Clam	08-03-BD003-01-BC5	BD003	21-Sep-08
Q5994	Clam	08-03-BD003-01-BC2	BD003	21-Sep-08
Q5748	Clam	08-03-BD004-01-BC5	BD004	21-Sep-08
Q5734	Clam	08-03-BF009-01-BC5	BF009	20-Sep-08
Q5910	Clam	08-03-BF013-01-BC5	BF013	16-Sep-08
Q5712	Clam	08-03-BF019-01-BC5	BF019	19-Sep-08
Q5713	Clam	08-03-BF019-01-BC2	BF019	19-Sep-08
Q6023	Clam	08-03-BF021-01-BC5	BF021	13-Sep-08
Q5758	Clam	08-03-BF023-01-BC5	BF023	17-Sep-08
Q5779	Clam	08-03-BN001-01-BC5	BN001	04-Sep-08
Q5762	Clam	08-03-BR016-01-BC2	BR016	18-Sep-08
Q5714	Clam	08-03-BR020-01-BC2	BR020	19-Sep-08
Q5914	Clam	08-03-BR032-01-BC5	BR032	14-Sep-08
Q6027	Clam	08-03-BR043-01-BC5	BR043	14-Sep-08
Q5735	Clam	08-03-BR077-01-BC5	BR077	20-Sep-08
Q5876	Clam	08-03-BR086-01-BC5	BR086	02-Sep-08
Q5893	Clam	08-03-BR087-01-BC6	BR087	02-Sep-08
Q5895	Clam	08-03-BR087-01-BC5	BR087	02-Sep-08
Q5874	Clam	08-03-BR099-01-BC5	BR099	03-Sep-08
Q5868	Clam	08-03-BR100-01-BC5	BR100	03-Sep-08
Q5840	Clam	08-03-KD001-01-BC1	KD001	01-Sep-08
Q5855	Clam	08-03-KD002-01-BC2	KD002	01-Sep-08
Q5856	Clam	08-03-KD002-01-BC4	KD002	01-Sep-08
Q5858	Clam	08-03-KD002-01-BC1	KD002	01-Sep-08
Q5838	Clam	08-03-KD003-01-BC1	KD003	01-Sep-08
Q5852	Clam	08-03-KD004-01-BC1	KD004	01-Sep-08
Q5847	Clam	08-03-KD005-01-BC1	KD005	01-Sep-08
Q5830	Clam	08-03-KF005-01-BC5	KF005	31-Aug-08
Q5679	Clam	08-03-KF017-01-BC1	KF017	30-Aug-08
Q5680	Clam	08-03-KF017-01-BC5	KF017	30-Aug-08
Q5808	Clam	08-03-KF019-01-BC4	KF019	28-Aug-08
Q5666	Clam	08-03-KF021-01-BC1	KF021	27-Aug-08
Q5676	Clam	08-03-KR001-01-BC1	KR001	27-Aug-08
Q5686	Clam	08-03-KR016-01-BC2	KR016	30-Aug-08
Q5989	Clam	08-03-KR019-01-BC4	KR019	30-Aug-08
Q5816	Clam	08-03-KR095-01-BC3	KR095	29-Aug-08
Q5817	Clam	08-03-KR095-01-BC1	KR095	29-Aug-08
Q5997	Crab	08-03-BD001-01-CC	BD001	21-Sep-08
Q5883	Crab	08-03-BF003-01-CC	BF003	02-Sep-08
Q6018	Crab	08-03-BF017-01-CC	BF017	12-Sep-08
Q6022	Crab	08-03-BF021-01-CC	BF021	13-Sep-08
Q5746	Crab	08-03-BR005-01-CC	BR005	21-Sep-08

BDO Id	Biota Type	Field ID	Station	Collection Date
Q6034	Crab	08-03-BR032-01-CC	BR032	14-Sep-08
Q5877	Crab	08-03-BR086-01-CC	BR086	02-Sep-08
Q5842	Crab	08-03-KD001-01-CC1	KD001	01-Sep-08
Q5843	Crab	08-03-KD001-01-CC	KD001	01-Sep-08
Q5844	Crab	08-03-KD001-01-CC	KD001	01-Sep-08
Q5834	Crab	08-03-KD003-01-CC	KD003	01-Sep-08
Q5835	Crab	08-03-KD003-01-CC	KD003	01-Sep-08
Q5854	Crab	08-03-KD004-01-CC	KD004	01-Sep-08
Q5822	Crab	08-03-KF003-01-CC	KF003	29-Aug-08
Q5828	Crab	08-03-KF005-01-CC1	KF005	31-Aug-08
Q5829	Crab	08-03-KF005-01-CC1	KF005	31-Aug-08
Q5677	Crab	08-03-KF017-01-CC	KF017	30-Aug-08
Q5688	Crab	08-03-KR007-01-CC	KR007	30-Aug-08
Q5991	Crab	08-03-KR019-01-CC	KR019	30-Aug-08
Q5818	Crab	08-03-KR095-01-CC	KR095	29-Aug-08
Q5908	Blank	08-03-BF013-01-EB	BF013	16-Sep-08
Q5756	Blank	08-03-BF023-01-EB	BF023	17-Sep-08
Q5812	Blank	08-03-KF003-01-FB	KF003	29-Aug-08
Q5692	Blank	08-03-KF013-01-EB	KF013	22-Aug-08
Q5668	Blank	08-03-KF023-01-FB	KF023	27-Aug-08
Q5977	Blank	08-03-KR008-01-EB	KR008	30-Aug-08
Q5864	Sea Cucumber	08-03-BR098-01-HC	BR098	02-Sep-08
Q5865	Sea Cucumber	08-03-BR098-01-HC	BR098	02-Sep-08
Q5875	Sea Cucumber	08-03-BR099-01-HC	BR099	03-Sep-08
Q5872	Sea Cucumber	08-03-BR100-01-HC	BR100	03-Sep-08
Q5665	Blank	08-03-KF021-01-FB	KF021	27-Aug-08
Q5959	Snail	08-03-KF007-01-SNC	KF007	22-Aug-08
Q5967	Snail	08-03-KR034-01-SNC	KR034	23-Aug-08
Q5966	Snail	08-03-KR056-01-SNC	KR056	23-Aug-08
Q5958	Snail	08-03-KR083-01-SNC	KR083	22-Aug-08
Q5814	Wipe	08-03-KF003-01-FS	KF003	29-Aug-08
Q5809	Wipe	08-03-KF019-01-FSB	KF019	28-Aug-08
Q5810	Wipe	08-03-KF019-01-FSA	KF019	28-Aug-08
Q5979	Wipe	08-03-KR008-01-WI	KR008	30-Aug-08
Q5998	Worm	08-03-BD001-01-WC1	BD001	21-Sep-08
Q5995	Worm	08-03-BD003-01-WC1	BD003	21-Sep-08
Q5749	Worm	08-03-BD004-01-WC1	BD004	21-Sep-08
Q6031	Worm	08-03-BF011-01-WC1	BF011	13-Sep-08
Q5780	Worm	08-03-BN001-01-WC1	BN001	04-Sep-08
Q5781	Worm	08-03-BN001-01-WC2	BN001	04-Sep-08
Q5894	Worm	08-03-BR087-01-WC1	BR087	02-Sep-08
Q5886	Worm	08-03-BR093-01-WC1	BR093	02-Sep-08
Q5892	Worm	08-03-BR098-01-WC1	BR098	02-Sep-08
Q5839	Worm	08-03-KD001-01-WC1	KD001	01-Sep-08
Q5841	Worm	08-03-KD001-01-WC2	KD001	01-Sep-08
Q5859	Worm	08-03-KD002-01-WC1	KD002	01-Sep-08
Q5836	Worm	08-03-KD003-01-WC1	KD003	01-Sep-08
Q5837	Worm	08-03-KD003-01-WC2	KD003	01-Sep-08
Q5851	Worm	08-03-KD004-01-WC2	KD004	01-Sep-08

BDO Id	Biota Type	Field ID	Station	Collection Date
Q5853	Worm	08-03-KD004-01-WC1	KD004	01-Sep-08
Q5846	Worm	08-03-KD005-01-WC1	KD005	01-Sep-08
Q5955	Worm	08-03-KF001-01-WC2	KF001	21-Aug-08
Q5956	Worm	08-03-KF001-01-WC3	KF001	21-Aug-08
Q5957	Worm	08-03-KF001-01-WC1	KF001	21-Aug-08
Q5673	Worm	08-03-KF003-01-WC2	KF003	29-Aug-08
Q5674	Worm	08-03-KF003-01-WC1	KF003	29-Aug-08
Q5962	Worm	08-03-KF007-01-WC1	KF007	22-Aug-08
Q5655	Worm	08-03-KF009-01-WC2	KF009	24-Aug-08
Q5711	Worm	08-03-KF009-01-WC1	KF009	24-Aug-08
Q5970	Worm	08-03-KF011-01-WC1	KF011	21-Aug-08
Q5671	Worm	08-03-KF023-01-WC2	KF023	27-Aug-08
Q5672	Worm	08-03-KF023-01-WC1	KF023	27-Aug-08
Q5690	Worm	08-03-KR007-01-WC2	KR007	30-Aug-08
Q5691	Worm	08-03-KR007-01-WC1	KR007	30-Aug-08
Q5975	Worm	08-03-KR008-01-WC2	KR008	30-Aug-08
Q5982	Worm	08-03-KR009-01-WC1	KR009	30-Aug-08
Q5684	Worm	08-03-KR016-01-WC2	KR016	30-Aug-08
Q5685	Worm	08-03-KR016-01-WC1	KR016	30-Aug-08
Q5986	Worm	08-03-KR019-01-WC2	KR019	30-Aug-08
Q5988	Worm	08-03-KR019-03-WC2	KR019	30-Aug-08
Q5964	Worm	08-03-KR043-01-WC1	KR043	22-Aug-08
Q5971	Worm	08-03-KR045-01-WC1	KR045	23-Aug-08
Q5963	Worm	08-03-KR056-01-WC3	KR056	23-Aug-08
Q5965	Worm	08-03-KR056-01-WC2	KR056	23-Aug-08
Q5969	Worm	08-03-KR066-01-WC2	KR066	22-Aug-08
Q5960	Worm	08-03-KR083-01-WC1	KR083	22-Aug-08
Q5820	Worm	08-03-KR095-01-WC2	KR095	29-Aug-08
Q5862	Worm	08-03BR086-01-WC1	BR086	02-Sep-08

ATTACHMENT C

Standard Operating Procedures for Organic Analyses (Battelle)

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Referenced Battelle SOPs

Procedure	Battelle SOP Number	Battelle SOP Title
Extraction of Sediment	SOP 5-192	Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis
Extraction of Biota Tissue	SOP 5-190	Tissue Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis
Cleanup Procedure	SOP 5-328	Removal (cleanup) of Sulfur from Environmental Sample Extracts
Fractionation Procedure	SOP 5-330	Silica Gel Fractionation (cleanup)of Environmental Extracts for the Separation of Saturated Hydrocarbons and Aromatic Compounds
Cleanup Procedure	SOP 5-329	Alumina Cleanup of Environmental Sample Extracts
Instrumental Analysis (GC/MS)	SOP 5-157	Identification and Quantitation of Polynuclear Aromatic Hydrocarbons and other Organic Compounds by Gas Chromatography/Mass Spectrometry
Instrumental Analysis (GC/FID)	SOP 5-202	Determination of Low Level Total Petroleum Hydrocarbons (Diesel Range Organics – DRO) and Individual Hydrocarbon Concentrations in Environmental Samples

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ATTACHMENT D

Standard Operating Procedures for Inorganic Analyses (Florida Institute of Technology)

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Standard Operating Procedures (SOP) for Florida Institute of Technology (FIT)

FIT-2001	Total Digestion of Sediment Samples for Trace Metal Analysis
FIT-2002	Sediment Digestion for Mercury Analysis
FIT-2010-Al	Determination of Aluminum Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2010-Cr	Determination of Chromium Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2010-Cu	Determination of Copper Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2010-Fe	Determination of Iron Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2010-Mn	Determination of Manganese Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2010-Zn	Determination of Zinc Concentrations by Flame Atomic Absorption Spectrometry for Solutions of Digested Sediment
FIT-2012-Ba	Determination of Barium Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2012-Cd	Determination of Cadmium Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2012-Pb	Determination of Lead Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2012-Ag	Determination of Silver Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2012-As	Determination of Arsenic Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2012-Se	Determination of Selenium Concentrations by Inductively Coupled Plasma-Mass Spectrometry for Solutions of Digested Sediment
FIT-2014	Determination of Mercury Concentrations in Sediments by Cold Vapor Atomic Absorption Spectrometry
FIT-1001	Preparation of Tissue Samples for Trace Metal Analysis
FIT-1013-Al	Determination of Aluminum in Tissues by Flame Atomic Absorption Spectrometry
FIT-1013-Cd	Determination of Cadmium in Tissues by Flame Atomic Absorption

	Spectrometry
FIT-1013-Cu	Determination of Copper in Tissues by Flame Atomic Absorption Spectrometry
FIT-1013-Fe	Determination of Iron in Tissues by Flame Atomic Absorption Spectrometry
FIT-1013-Mn	Determination of Manganese in Tissues by Flame Atomic Absorption Spectrometry
FIT-1013-Zn	Determination of Zinc in Tissues by Flame Atomic Absorption Spectrometry
FIT-1012-Ba	Determination of Barium in Tissues by Inductively Coupled Plasma-Mass Spectrometry
FIT-1012-Cd	Determination of Cadmium in Tissues by Inductively Coupled Plasma-Mass Spectrometry
FIT-1012-Pb	Determination of Lead in Tissues by Inductively Coupled Plasma-Mass Spectrometry
FIT-1012-As	Determination of Arsenic in Tissues by Inductively Coupled Plasma-Mass Spectrometry
FIT-1012-Se	Determination of Selenium in Tissues by Inductively Coupled Plasma-Mass Spectrometry
FIT-1014	Determination of Mercury in Tissues Cold Vapor Atomic Absorption Spectrometry
FIT-4000	Series for Nutrients and Organic Carbon

ATTACHMENT E

Field Survey Report

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APPENDIX E

Field Survey Report

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Exponent®

Field Survey Report – Chemical Characterization Study for the 2008 Environmental Studies Program in the Chukchi Sea

Field Survey Report –Chemical Characterization Study for the 2008 Environmental Studies Program in the Chukchi Sea

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Contents

List of Figures

List of Tables

Acronyms and Abbreviations

AOS	Aldrich Offshore Services
COC	Chain of Custody
CPAI	ConocoPhillips Alaska, Inc.
FIT	Florida Institute of Technology
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
IHA	Incidental Harassment Authorization
km	Kilometer
LOA	Letter of Authorization
MMS	Minerals Management Service
NEPA	National Environmental Policy Act
nm	Nautical Mile
NPDES	National Pollution Discharge and Elimination System
NPFVOA	North Pacific Fishing Vessel Owners' Association
OSHA	Occupational Safety and Health Administration
Shell E&P	Shell Exploration and Production
SOP	Standard Operating Procedure
PAHs	Polycyclic Aromatic Hydrocarbons
TBD	To Be Determined
TOC	Total Organic Carbon

Executive Summary

This report presents a summary of the field investigation and sample collection portion of the summer 2008 Chukchi Sea Environmental Studies Program Chemical Characterization Project conducted by Exponent and Battelle on behalf of ConocoPhillips Alaska, Inc., (CPAI) and Shell Exploration and Production (Shell E&P) from August 19 to September 22, 2008 in the Chukchi Sea, Alaska. The summer 2008 field investigations were conducted in two prospect areas previously drilled for exploratory purposes in 1989 and 1990. These two prospect areas, located in the Chukchi Sea, are called the Klondike and Burger study areas. The purpose of the Chemical Characterization Project field program is to collect samples for laboratory analyses to provide baseline data on the distribution and concentrations of chemical constituents associated with offshore oil and gas operations in sediments and biota from the Chukchi Sea. These constituents of concern include metals and hydrocarbons. In conjunction with the Chemical Characterization portion of this field investigation, additional interdisciplinary scientific teams conducted baseline research on seabird and marine mammal observations, zooplankton distribution, benthic taxonomy, passive acoustic monitoring data collection of vocalizing marine mammals and ambient sound, and water column profiles and velocities.

This field report includes a summary of the logistics and schedules, site locations, and specific details on the types, numbers, and locations of sample collections for the Chemical Characterization portion of the summer 2008 field investigations. Included in the appendices are copies of station logs, field notes, sample summary tables, fully executed chain of custody forms, and photo documentation for the month long investigation.

1 Introduction

1.1 Study Background

In February 2008, ConocoPhillips Alaska, Inc. (CPAI) and Shell Exploration & Production (Shell E&P) purchased lease blocks around two prospect areas, Klondike and Burger, in the Outer Continental Shelf (OCS) of the Chukchi Sea, Alaska (Figure 1). To progress a successful permit application to drill on these prospects, CPAI and Shell E&P are collecting baseline scientific information on the marine environment. The baseline scientific information includes data on seabird and marine mammals, plankton (phytoplankton and zooplankton), benthic taxonomy, recordings of ambient noise and vocalizing marine mammals, water column profiles and velocities, and the distribution and concentrations of chemicals of concern. These data will be used as part of an analysis of the potential effects of offshore oil and gas activities on the Chukchi Sea marine environment and its resources. Ultimately, the data and subsequent analyses will be used in the preparation of multiple regulatory documents such as National Pollution Discharge and Elimination System (NPDES) permits, National Environmental Protection Act (NEPA) documents, and Incidental Harassment Authorization (IHA) and Letter of Authorization (LOA) for incidental, unintentional take of marine mammals and protected marine birds. Samples collected from the CPAI and Shell E&P Chukchi Sea Environmental Studies Chemical Characterization Project include sediment and biota samples for chemical analysis. Understanding the distribution of various chemical constituents in the sediment and various lower trophic level species (e.g., pelagic zooplankton, benthic clams, and amphipods) provides an indication of the baseline chemical concentrations at the lower tiers of the food web and provides input into food web models for predicting the risk of potential exposure of organic compounds and metals to higher trophic level organisms such as fish, whales, seals, walrus, and birds. This field report summarizes the Chemical Characterization portion of the summer 2008 Chukchi field efforts.

1.2 Scientific Purpose

The objective of the Chemical Characterization Project is to collect and synthesize baseline scientific information about the marine environment in the two lease areas (Klondike and Burger) in the Chukchi Sea.

The purpose of the 2008 Chemical Characterization Project was to generate the first year of baseline (pre-drilling) data for metals and hydrocarbons in sediments, zooplankton, amphipods, and benthic invertebrates in the Klondike and Burger prospect areas. These baseline data are important to characterize the marine environment prior to the commencement of exploratory drilling activities to document pre-existing metal and hydrocarbon concentrations from natural or anthropogenic sources. The specific objectives of the field portion of the chemical characterization project were to:

1) Collect sediment samples for metals and hydrocarbon analyses at fixed, random, and historic drill sites within the Klondike and Burger prospect areas (Figures 2 and 3).

2) Collect biota samples for metals and hydrocarbon analyses wherever biota were most abundant at the fixed, random, and historic drill sites (zooplankton samples were collected only at the odd numbered fixed stations; clams, amphipods, and other biota were collected wherever they could be obtained in sufficient sample volume/mass for chemical analyses).

1.3 Study Area

The OCS of the Chukchi Sea is the least-developed continental shelf area of the United States. The northeastern Chukchi Sea lies north of latitude 70°N and is covered with sea ice for much of the year. However, it is a biologically rich area with high biological productivity, supported by nutrient inputs from the Bering Sea, upwelling from the Arctic continental slope, and the western Russian Chukchi Sea. Between 1988 and 1991, five exploratory wells were drilled, plugged, and abandoned in the U.S. portion of the Chukchi Sea. Two wells, drilled by Shell Oil Co., which showed promising formation geology and potential indications for hydrocarbons (primarily gas and condensate) are located in the current Klondike and Burger prospect areas. The two prospect areas are approximately 75 miles offshore of Wainwright, Alaska, in roughly 40 to 50 meters of water (Figure 1).

2 Cruise Operation Plan and Schedule

The multipurpose vessel M/V Bluefin served as the research vessel for the 2008 summer field investigations. The sampling teams were mobilized from Wainwright, AK in a transport vessel to meet the M/V Bluefin offshore. On August 19, 2008, the Chemical Characterization Project field sampling team boarded the M/V Bluefin for the approximately 30-day field duration. The Chemical Characterization Project field sampling team was demobilized on September 5, 2008 for 5 days due to ice in the study area, and then remobilized on September 11, 2008, and returned to the M/V Bluefin through the end of the chemical characterization portion of the cruise, which occurred on September 22, 2008. The first half of the cruise focused primarily on sample collections in the Klondike survey area, while the second half of the cruise focused on sample collections in the Burger survey area.

The M/V/ Bluefin was equipped with an A-frame and a hydraulic winch mounted on the starboard side of the ship working through a Baltic Door. The system was used to deploy the double Van Veen grab, zooplankton nets (bongo net for the zooplankton sampling), clam dredge, and for retrieving deployed amphipod traps.

3 2008 Chemical Characterization Field Sampling Team

Joe Jermane – Vessel Captain (C Port)

John Hardin – Field Biologist (Battelle)

Waverly Thorsen – Field Chemist (Exponent)

Jeff LaDage – Marine Technician/Winch Operator (Aldrich Offshore Services [AOS])

Joshua Mumm – Marine Technician/Winch Operator (AOS)

Art Flippin – HSE/Medic (St. Jernholm Consulting)

4 Field Methods

4.1 Overview

The principal goals of this survey were to collect samples in sufficient volume/mass for chemical analysis of sediment, benthic infauna, amphipods, and zooplankton at fixed, random, and historic drill sites in the two prospect areas (Klondike and Burger). The required volumes/mass of each matrix for metals, grain size, total organic carbon, and hydrocarbon analyses was pre-determined with each respective analytical laboratory to ensure that, wherever possible, enough of each sample was obtained.

Throughout the survey, field notes and station logs were maintained by the Exponent and Battelle scientists, along with proper sample identification and chain of custody forms. Official standard operating procedures (SOPs), as outlined in the Field Survey Plan (Exponent 2008) were followed, and any deviations or comments relating to the procedures were reported in the field notes and station logs. Photocopies of the station logs and field notes are presented in Appendices A and B, attached to this report.

Photo documentation was also conducted during the entire chemical characterization survey and included photographs of each individual sediment grab from which a sample was collected for chemical analysis, and photographs of biota (amphipods, clams, worms and zooplankton). The photographs were labeled with time and date stamps, according to required CPAI photo documentation procedures, and are presented in Appendix E. At the time of this report, final taxonomic identifications have not been completed on the biota, so no genus or species names are provided in this report. Species identifications will be provided in the analytical report(s).

4.2 Station Selection

A total of three different sampling location types were addressed in this field survey: 1) fixed, 2) random, and 3) historical drill sampling sites. Stations were not sampled unless the estimated percent of fine material ('fines') was > 20% silt/clay, indicating depositional sediment (Note: Only one sampling station [KS003] was not sampled for sediment due to limited presence of

fines). The sampling fixed and random stations were based on a stratified-random paradigm, where each of the two prospect areas was gridded for sample collection locations (Figures 2 and 3). Locations of the historic drill sites were provided by CPAI prior to the cruise.

4.2.1 Fixed Stations

The study design included 13 fixed stations from each prospect area. A 7.5 nautical mile (nm) grid was placed on the 30 x 30 nm prospect block and stations were established on the grid corners and every other grid block intersection (Figures 2 and 3). Grid points were labeled by row from left to right and from south to north (i.e. the southwest corner was 001). Only the odd fixed station locations were sampled for chemical analysis.

4.2.2 Random Stations – Primary and Secondary

Thirteen random ('primary random') stations were determined by establishing a 3 nm grid throughout each of the two 30 nm square study blocks. Stations were sequentially numbered by row from left to right and from north to south (i.e. the northwest corner was numbered 001). From these 100 fixed locations, 13 stations were randomly selected. In the event that a primary random station could not be sampled (e.g., due to ice in the Burger study area in early September), 13 alternate random ('secondary random') stations were established using the same method described above for primary random stations. During the 2008 summer field investigation ice in the Burger study area prevented the M/V Bluefin from reaching specific primary random stations on the 2nd and 3rd of September. Subsequently, secondary random stations were established, and samples were collected. However, after movement of the ice floe, all primary random stations in the Burger study area were sampled. The secondary random samples are not planned for analyses and will be archived. Tables 1 through 8 list the sample stations, locations, water depth, time, and date for the Klondike and Burger study areas for sediment, clam dredge, zooplankton, and amphipods sample collection activities. Actual samples collected at each station location are presented in Appendix C.

4.2.3 Historic Drill Stations

At both the Klondike and Burger study areas, historic drill stations were comprised of five individual sampling locations representing the center latitude and longitude location of the original historic drill site (i.e., KD005 and BD005, respectively), and four additional stations established as radials around each of the exploratory drill sites. The radial stations were located approximately 0.5-km to the north, south, east, and west of the center of the historic drill site and along the axis of and perpendicular to the prevailing currents in each study area (Figures 2 and 3).

4.2.4 Station Locations for Biota Sampling

Attempts were made to collect biota samples at most stations where sediment samples were collected. As expected, due to patchiness of the biota (e.g., especially clams and amphipods) in the study areas, biota were collected at a subset of the fixed and random sediment stations, and at some of the historic drill stations. Zooplankton samples for chemical analysis were collected at all fixed stations except for KF011.

The sediment and biota sampling were conducted in conjunction with the benthic infaunal sample collections (i.e., for taxonomy) performed by the University of Alaska, Fairbanks such that the samples for chemistry and infauna are statistically linkable. This was accomplished through the use of a double Van Veen grab, which provided two linked grab samples per station location: one grab for chemical sampling and one grab for benthic infauna sampling.

Continuing field sampling for the program would ideally be consistent with the fixed, random, and historic drill site locations over a multi-year program, with additional sampling possible at sites of interest such as whale feeding areas or known locations of upwelling.

4.3 Sample Identification Scheme

Each sediment and biota sample collected was assigned a unique sample tracking number. The sample identification scheme provides basic information about the sample and allows the

sample to be uniquely identified throughout the program. The basic index for the sample identification is as follows:

Year – Survey Number – Site Code – Replicate – Sample Type

For example, 08-03-KF021-01-SC, representing the 2008 chemical characterization survey, cruise number 3, the Klondike ('K'), fixed ('F') station number 021, replicate number 01, sediment sample collected for sediment chemistry ('SC') analysis. A description of the data fields in the sample identification is provided in Table 10.

4.4 Station Plan and Field Sampling Procedures

4.4.1 Station Plan

In conjunction with the 2008 Chemical Characterization Project, zooplankton collection and water quality sampling occurred during the night shift operations on the amidships area of the vessel. The sequence of events at each sampling station followed specific procedures, described in detail below and in general was conducted in this order:

- Identify station (latitude and longitude)
- Navigate to station position within 0.2 nm radius of location
- Deploy/Retrieve amphipod traps (if applicable at station)
- Deploy and retrieve 18-minute bongo nets (at all fixed stations)
- Deploy and retrieve 10-minute bongo nets (at odd-fixed stations)
- Deploy and retrieve 10-minute vertical nets (at all fixed stations)
- Perform CTD water column profile (at all fixed stations)
- Collect 3 benthic sediment grabs (at each odd-fixed, random, and drill stations) and sieve sediments for bivalves and other benthic biota
- Deploy and retrieve 10-minute clam dredge (at most stations) and collect appropriate biota
- Deploy/Retrieve amphipod traps (if applicable at station)

- Navigate to next station

4.4.2 Field Sampling Procedures

4.4.2.1 Equipment Decontamination

Equipment decontamination procedures were followed at all times during sampling activities. The double Van Veen Grab, used to collect the sediment samples, was decontaminated in between each sampling station, and always prior to the first sampling of each shift period. The Kynar-coated 2-cm scoop used to collect the sediment samples for chemical analysis, plastic spoons used to homogenize and aliquot the sediment samples, and a Teflon siphon used to remove overlying water from the grab surface, were all decontaminated prior to any sampling activities and in between sampling stations. The decontamination procedure included a site-water rinse and physical removal of visible sediment debris, followed by a Liquinox™-water rinse and cleaning with scrub brushes, an additional site-water rinse, a distilled water rinse, and a wipe-down with acetone wipes. Plastic spoons were rinsed with reagent-grade ethanol, rather than wiped with acetone wipes. After decontamination, plastic spoons, the Kynar-coated 2-cm scoop, and the Teflon syringe were stored in clean plastic bags to avoid contamination prior to use. To assess potential sample contamination, customary QA/QC samples were collected from cleaned equipment and vessel sources, (e.g. water system, air, and lubricants). A summary of the QA/QC samples collected in this study are presented in Section 5 and Table 10.

4.4.3 Navigation

Station positions (latitude and longitude) are provided in Tables 1 though 8 and Appendix C (separated by sediment, clam dredge, zooplankton, and amphipod sample collections). Data presented in the tables include the station ID, the as-sampled vessel position coordinates (Latitude/Longitude, WGS84, decimal Degrees), and water depth (as sampled, not tide corrected) for the particular sample collection, and time and date of collection. Data presented in the database summary (Appendix C) include both the target station positions (latitude and longitude) and the actual station positions. Amphipod sample collection tables include the time

of trap deployment and retrieval in addition to the other information. Each "station" was defined as a 0.2 nm radius around the target station position. The actual latitude and longitude of the station were recorded from satellite transmissions using the global positioning system (GPS) when the station was successfully sampled. The coordinates presented in the summary tables represent the as-sampled latitude and longitude values for the location where the sample was collected. The latitude and longitude are those for the 1st benthic grab collected (out of a total of three collected) for ease of presentation and consistency.

4.4.4 Sediment Sampling

Surface sediment samples were collected using a modified double Van Veen grab sampler (Exponent SOP SD-04, referenced in the 2008 Field Survey Plan [Exponent 2008]). During the collection and handling of sediment samples from the grab sampler extreme care was taken throughout the subsampling process to avoid contact with metals and hydrocarbon sources. Samples were taken from the center of the grab and away from the sides of the grab. No metal spatulas were used for the collection of the trace metal (or hydrocarbon) samples. Rather, plastic or Kynar-coated scoops were used for sediment sampling. Clean gloves were worn during all sampling activities and the grab was protected during sampling and storage as much as possible from stack smoke, grease drips from winches and wires, and other potential airborne contamination.

Sediment samples were collected from the top 2 cm of the grab to represent recent accumulation. Upon retrieval of the grab back onto the vessel, the grabs were opened and the samples were checked for acceptability. If the grabs were over or underfilled and/or there was sign of sediment loss from the grab, and/or a thin layer of overlying water was not present, the grab was deemed unacceptable and was discarded. When this occurred, the site was resampled until an acceptable grab was obtained. In most cases, grabs were consistently acceptable, and the overlying water was gently siphoned off using a decontaminated Teflon syringe. The sediment sample was collected following removal of the overlying water. Unconsolidated sediment 2-cm deep was removed from the grab with a Kynar-coated scoop. The scoop was 2-cm deep to facilitate accurate depth collection of the sediment. The top 2 cm of sediment was collected by a series of several scoops from the portions of the sediment grab but not touching the sides of

the grab. The number of scoops collected was appropriate to fill a 500-mL pre-cleaned glass sample jar with a Teflon lined plastic lid. The sediment was then homogenized to consistent texture and color in the 500-mL sample jar, and approximately 250 mL was removed using a decontaminated plastic spoon and aliquoted into two 125-mL pre-cleaned glass sample jars with Teflon lined plastic lids. The sediment collection resulted in three sample containers for each station: one 500-mL jar containing approximately 200 to 250 mL of sediment for organics analysis, one 125-mL jar containing approximately 100 mL of sediment for metals and total organic carbon (TOC) analysis, and one 125-mL jar containing approximately 100 mL of sediment for grain size analysis. The sediment samples were stored either frozen (i.e., samples for organics, metals, and TOC analysis) or refrigerated (i.e., samples for grain size analysis), as indicated in the 2008 Field Survey Plan (Exponent 2008).

All sediment samples were surface sample collections, with the exception of the historic drill sites, where four to six 2-cm deep layers were collected to include both the unconsolidated upper 2-cm surface layer and the >2 cm, deeper, consolidated sediment layers.

The goal was to collect sediment samples with at least 20% fine materials (e.g., silt and clay). In all cases but one (i.e., KS003), the grab samples consisted primarily of fine grained sediments. At KS003, the grab sample contained primarily gravel and sand material with nominal fines present. Multiple grabs were attempted at this location to "search" for fine material; however, gravel-sized material was obtained for all attempts. All observations, notes, and details were documented in a field log book and in individual station logs for each site. Photographs of each grab from which a sediment sample was collected for chemical analysis were obtained and documented.

4.4.5 Biota Collections

Amphipod, bivalve, worm, crab, snail, sea cucumber, and zooplankton samples were collected for chemical analysis.

4.4.5.1 Amphipod Sampling

Amphipod traps were deployed at multiple stations. Amphipod collections were notably more successful in the Burger study area than in the Klondike study area (see Tables 4 through 8). Amphipods (*Anonyx* sp.) were collected by using Nytex mesh-lined plastic minnow traps baited with sardines. The traps were deployed for different durations of time, anywhere from approximately 2 hours to 32 hours, depending on the schedule of the vessel and the demands for transport from the other scientific groups on board. The amphipod traps were deployed with a long line anchor and a float with a flashing beacon. The sardine bait was placed in an enclosed Nytex mesh pouch to reduce the possibility of amphipods ingesting sardine tissue and to ensure that sardine particles do not become entrained with the amphipods. Upon trap retrieval, amphipods were removed from the traps, washed with site-seawater, and placed in a clean sieve for sorting. Representative photographs were taken of a few amphipod samples. Any non-*Anonyx* sp. amphipods and/or isopods were removed with clean forceps or by hand with clean gloves prior to transfer into the appropriate sample container. Effort was made to minimize any sediment particles entering the sample container with the amphipods.

4.4.5.2 Benthic Biota Sampling

Bivalve, worm, crab, snail, and sea cucumber samples were collected at multiple stations where they were found in large enough amounts to support chemical analysis. They were collected by both Van Veen grab and clam dredge. Sediment grabs were collected into large plastic buckets and sieved through a 2-cm stainless steel sieve using site-seawater pumped through a stainless steel pump. Biota collected in the 10-minute clam dredge drag were placed into a large plastic bucket, cleaned using site-seawater, and sorted into sample containers. The clam dredge consisted of a four-foot wide rake with approximately 2-inch long stainless steel prongs at two inch centers. A stiff polyethylene mesh net (~1 in. diameter holes) was attached to the rake to collect the dredge materials. Clams[1] (*Astarte* sp., and additional spp. to be determined [TBD]) were present in limited amounts in Klondike with greater success at Burger. Where found, clams were collected, rinsed with site-seawater, photographed, and placed in sample jars. Worms[1] (spp. TBD) were collected, removed by hand from any tubes and/or sediment, rinsed,

photographed, and placed in sample jars. Crabs[1] (spp. TBD) were collected solely from the clam dredges, photographed, rinsed, counted, and placed in sample jars.

4.4.5.3 Zooplankton Sampling

Zooplankton samples for chemical analysis were collected at all odd numbered fixed station locations (except KF011, due to miscommunication at the first chemistry zooplankton site of the survey) using a bongo net for a 10-minute deployment. The Bongo net was deployed using oblique tow methods, moving down and then up vertically through the water column while being towed horizontally. Approximately 250 mL of zooplankton/seawater slurry was collected for each sample. Effort was made to remove large jellyfish from the zooplankton samples aliquoted for chemical analysis.

4.5 Handling of Samples

All sediment, biota, and quality control samples for chemical analysis were inventoried (in a field log book maintained by the Chemical Characterization Project field personnel and on chain of custody [COC] forms) and stored in secure areas on the vessel immediately after collection. Inventory included counting all of the samples to ensure that all samples were collected and safely returned to the custody area on board, documenting all samples, and preparing a COC form. Sample ID's were cross-checked against the COC logs prior to packaging samples in coolers for shipment to the analytical laboratories. Sediment and biota samples for organics, metals, and TOC (sediment only) analysis were frozen immediately in on-board scientific freezers after collection to ensure their integrity and temperature. Sediment samples for grain size analysis were refrigerated in scientific incubators immediately after collection. The sediment samples remained either frozen or refrigerated (depending on the particular analysis) prior to and during transportation to the respective analytical laboratories. Sample integrity and custody was maintained at all times (Exponent SOP GEN-02 and GEN-03). Storage requirements for the different analytical samples types are presented in the 2008 Field Survey

[1] Specific species collected are in the process of being determined by University of Alaska – Fairbanks benthic taxonomists

Plan (Exponent 2008). Every effort was made to deliver the samples to the analytical laboratories in a timely manner that maintained sample temperatures below 4 to 6° C (i.e., Coolers containing samples were custody sealed and samples were shipped on blue ice by priority overnight shipment). Sediment samples for organics analysis were shipped to Battelle (Duxbury, MA). Sediment samples for metals, TOC, and grain size analysis were shipped to Florida Institute of Technology ([FIT] Melbourne, FL). All biota samples were shipped to Battelle for homogenizing and aliquoting. Aliquots will be sent to FIT for metals analysis by Battelle.

4.6 Shipping of Samples

At the end of the sampling efforts in each study area, the Chemical Characterization Project samples were packed in coolers for priority overnight shipment to the two analytical laboratories. The samples remained on-board the M/V Bluefin until the completion of the entire field survey and until the vessel returned to port in Seward, AK. Samples were removed in the packaged coolers from the boat, palletized and shrink-wrapped, and stored in a secured freezer and refrigerator (depending on the particular chemical analysis) in Seward for approximately one month. The palletized coolers were then transported by truck from Seward to Anchorage, AK. Samples were then shipped from Anchorage, AK to the respective laboratories (i.e., Battelle and Florida Institute of Technology). All COC and custody procedures were followed and maintained throughout the collection, packaging, and shipping process. Fully executed COCs with receipt conditions reported by the laboratories are presented in Appendix D. The shipping carrier was Federal Express. Samples were shipped frozen (organics, metals, and TOC), or refrigerated (grain size) with frozen gel ice with two custody seals on the outside of each cooler and COC forms inside each cooler (as per Exponent SOP GEN-02 and -03). No hazardous materials were included in the shipping.

4.7 Summary of Samples Collected

A comprehensive summary of the type and number of samples collected at each station is presented in Appendix C. Station logs for sediment and biota sampling were completed for each station and are included in Appendix A, with field notes presented in Appendix B. A daily

logbook was maintained by the Chemical Characterization Project field personnel, and by the Chief Scientist on the vessel to summarize the sampling activities completed and any health and safety issues.

4.7.1 Target Analytes of Interest

The analytes of interest for analysis in sediments, biota, and QA/QC samples are presented in Table 11. Organics include polycyclic aromatic hydrocarbons (PAHs) and petroleum biomarkers (sterane and triterpane), and saturated hydrocarbons. Twelve or thirteen individual metals are included, depending on whether sediment or biota are analyzed. Conventional parameters include TOC and grain size.

5 Quality Assurance/Quality Control (QA/QC)

Quality assurance/quality control (QA/QC) samples were collected as part of the sampling program to assess data quality. All field personnel (including boat crew members) were briefed on the potential for contamination and cross-contamination of samples and were given guidance on techniques to avoid such problems (e.g., cigarette smoking). This included the use of pre-cleaned sample containers; the use of clean sampling equipment; the use of the decontamination protocol described above; and good laboratory practices in general. It also included following specified sampling procedures and protocols in accordance with Exponent SOPs.

Several types of field quality control samples were collected during the survey, including equipment blanks, field blanks, and replicate (triplicate) samples. For both equipment blank and field blank samples, two subsets were collected, to be analyzed for both organics and metals, respectively. Field quality control procedures included the collection of equipment blanks. Equipment blanks were collected wherever sampling involved the use of collection equipment that came into direct contact with the sample (e.g., sampling spoons, scoops, modified Van Veen grab) during or following the collection of sediment chemistry samples. The equipment blank is representative of potential contamination associated with the equipment. To collect equipment blanks, the grab apparatus was first decontaminated according to the procedure outlined above. Then the inside of the bucket was rinsed with high-purity distilled water and the rinsate was collected directly into a clean, pre-labeled water sample container. The rinsate equipment blanks were stored frozen. For each set of equipment blank samples, two sets were collected, one for each set of analyses (i.e., organics and metals).

5.1 Replicate Samples

Triplicate sediment samples were collected at two sampling locations in each study area (i.e., two stations in Burger [BF005, BR032] and two stations in Klondike [KR019, KR045]) to assess the heterogeneity of the environment and sample collection reproducibility.

5.2 Equipment Blank Samples

Five equipment blank samples were collected throughout the cruise to assess any possible contamination that might have resulted from equipment contact with the sample. A distilled water rinse of a decontaminated plastic spoon and decontaminated 2-cm scoop were collected during sampling at each study area (KS002, BF013 and KF013, BF023, respectively), and a distilled water rinse of the decontaminated Van Veen grab was collected at KR008 mid-way through the field investigation.

5.3 Field Blank and Field Source Samples

A total of three field blank samples and three field source samples were collected during the field investigation to isolate any contamination from sample jars, site-seawater rinse (i.e., water pumps), and from potential source materials that might contain analytes of interest. The field blanks consisted of blank sample jars, a sample of site-seawater pumped through the hose system prior to installation of a stainless steel pump, and a sample of site-seawater pumped through the hose system following installation of the stainless steel pump. Field source samples were collected using pre-baked GFB Whatman filters and were collected from two different source possibilities including a sheave used for the winch-operation of the Van Veen grab and two 55-gallon oil drums containing Chevron Rykon oil and Chevron Clarity Hydraulic Oil AW. A third field source wipe was collected by placing two GFB filters (one in each side of the double Van Veen grab) inside the Van Veen for approximately 10 hours. The field source samples and station locations for where they were each collected are presented in Table 10.

6 Safety Considerations

All field personnel associated with the Chemical Characterization Project sample collection (i.e., Exponent and Battelle staff) were 40-hr HAZWOPER (Hazardous Waste Operations) certified, which conforms to federal (Occupational Safety and Health Administration [OSHA]) regulations. Additionally, all field staff completed the training required by CPAI, which included a Cold Water Survival Training Course conducted by the North Pacific Fishing Vessel Owners' Association (NPFVOA), and a physical compliant with Merchant Marine Medical requirements.

All personnel adhered to health and safety precautions promulgated onboard the vessel, which included the following specific safety requirements:

- Learning the location of all fire equipment, life rings, life preservers, survival suits, and life boats and knowing the proper use of all safety equipment.
- Participation in daily safety meetings and in weekly drills while on-board the M/V Bluefin.
- In the event of an emergency, knowing each specific individual's duties.
- Not smoking in bunks.
- No open-toed shoes or sandals when working on the operations deck; Steel-toed Xtra-Tuff boots were worn at all times on the back deck.
- No equipment was deployed over the side of the vessel without permission from the captain. All gear was aboard and secured before moving between stations.
- The buddy-system was used when working on deck. During rough weather, individuals did not enter the back deck area, unless absolutely necessary, and always let others know their whereabouts.

Field procedures required the use of several hazardous chemicals, which included ethanol and acetone wipes. Field personnel avoided direct contact with all chemicals and avoided breathing any fumes by working in open areas or fume hoods, wherever possible, and wearing gloves when using solvents. Material Safety Data Sheets (MSDSs) were available on the vessel for

each hazardous material on board. In general, the following guidelines were followed whenever chemicals were handled:

- Protective clothing and gloves were worn (e.g., nitrile gloves).
- Safety glasses were worn, where applicable.
- Work was performed in a well-ventilated area (typically on the open amidship deck of the vessel).
- Chemicals were stored securely in fume hoods or appropriate chemical storage cabinets on-board, away from living quarters and heat and ignition sources.

Waste solvents were collected in appropriate containers and were either combusted on-board the vessel in approved burn barrels, or were removed at the completion of the cruise and disposed of appropriately.

6.1 Personal Protection

Each member associated with the research used appropriate personal protection equipment at all times during the field collection portions of the survey (i.e., while working on the back-deck of the vessel). Full Mustang suits, steel-toed boots, and hard hats were worn during all field operation activities on the back-deck, which included launching or retrieving traps, dredges, and the Van Veen grab. Life lines were attached to staff deploying and retrieving equipment when the Baltic door was open. Survival suits were available on the vessel for all personnel.

6.2 Shipboard Policies

Prior to sailing, the ship's captain met with all scientific personnel to discuss safety procedures and the scientific work to be performed. Information on chemicals to be used during the cruise, equipment to be deployed, and other daily activities associated with the research were presented to the captain and project managers to provide as much information as possible prior to the commencement of the cruise, and the ensure the safety of all members on-board the vessel. Daily safety meetings were held prior to the commencement of any work on the back-deck of the vessel, and guidelines for safety were established and reviewed on a daily basis.

7 References

Exponent. 2008. Field Survey Plan: Chemical Characterization Study for the ConocoPhillips Alaska, Inc., 2008 Environmental Studies Program in the Chukchi Sea. Prepared for ConocoPhillips Alaska, Inc., Anchorage, AK by Exponent, Inc. 3 Clock Tower Place, Maynard, MA.

Figures

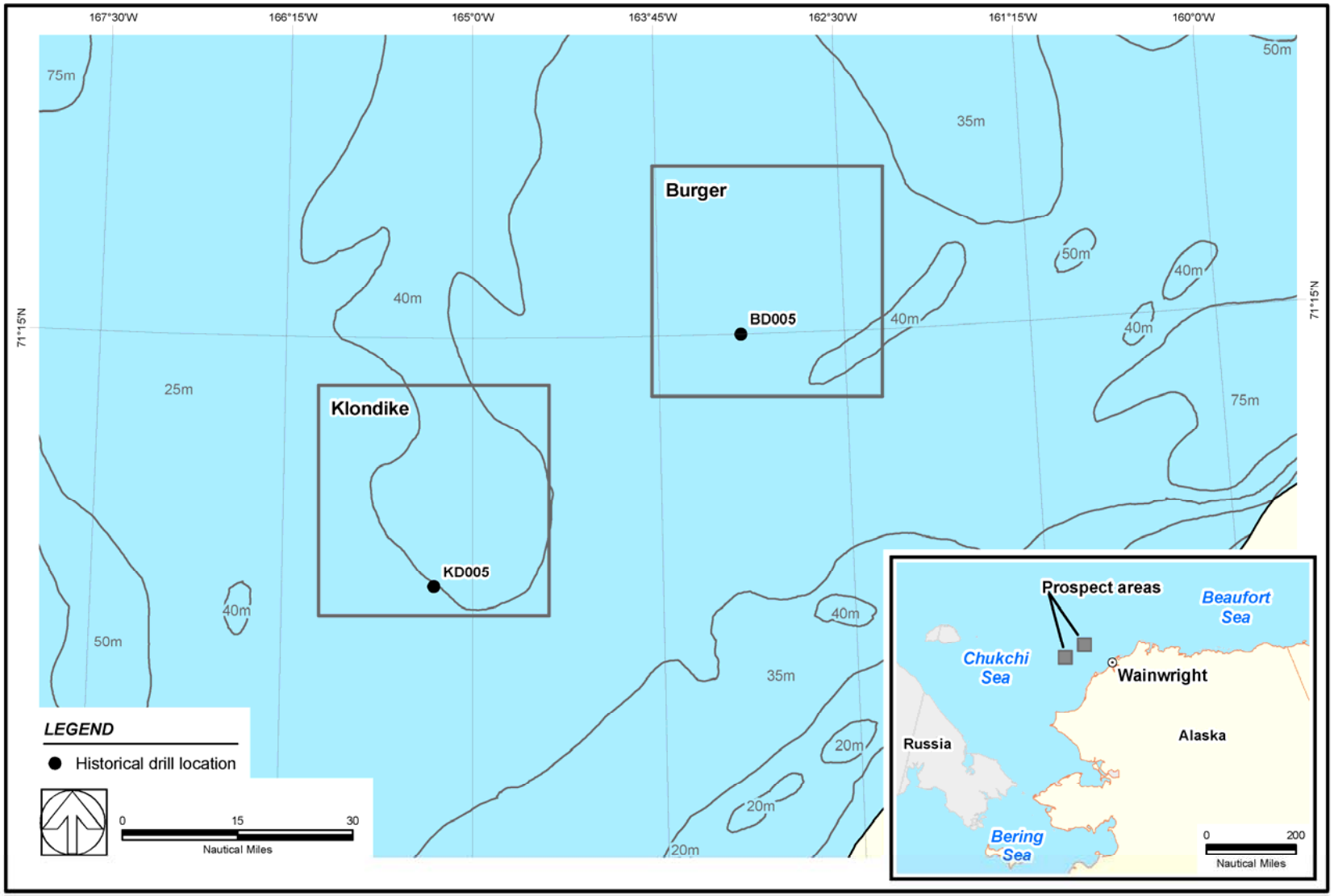

Figure 1. Locations of the two prospect areas (Burger and Klondike) relative to the Chukchi Sea

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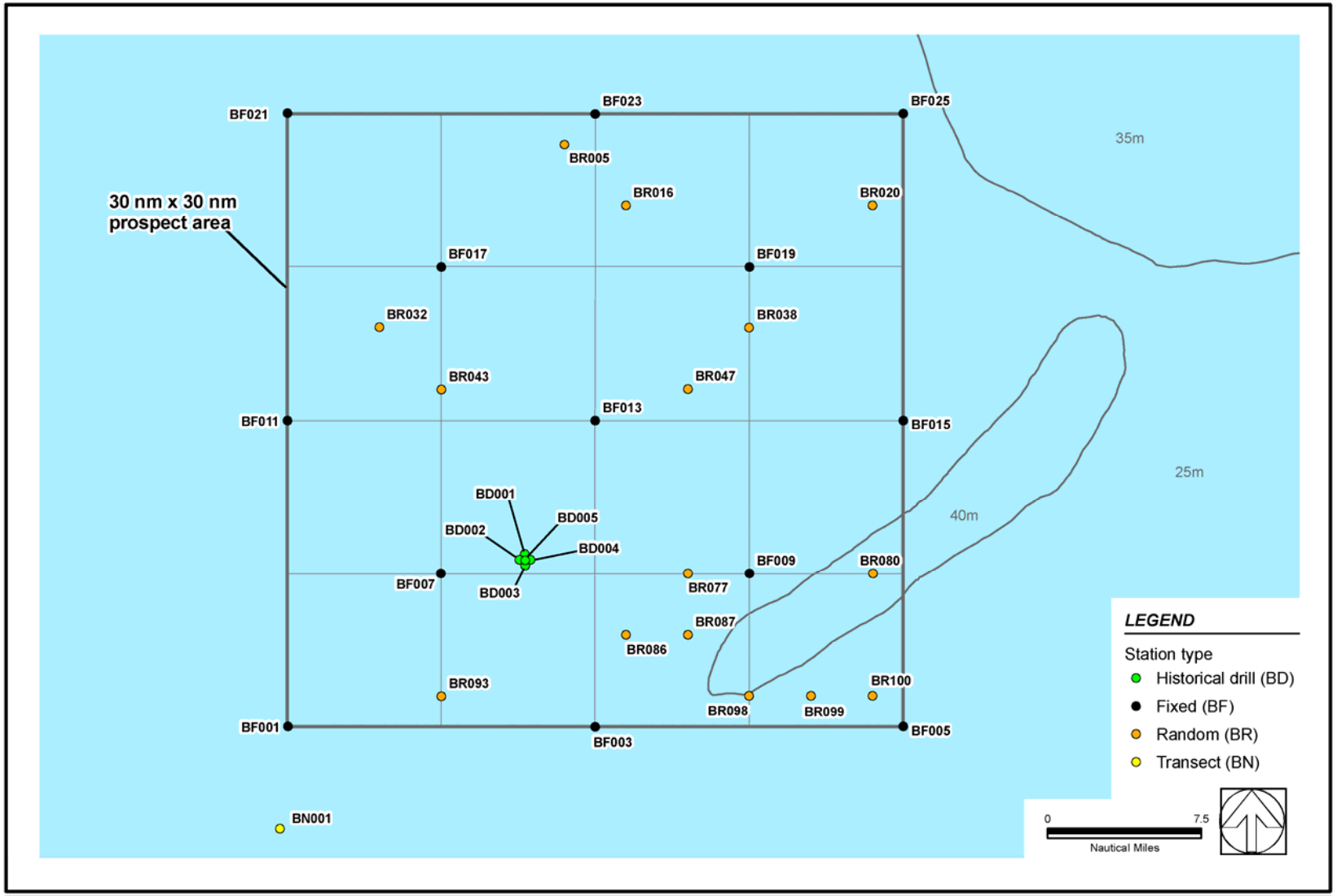

Figure 2. Contaminants program sampling station locations in Burger

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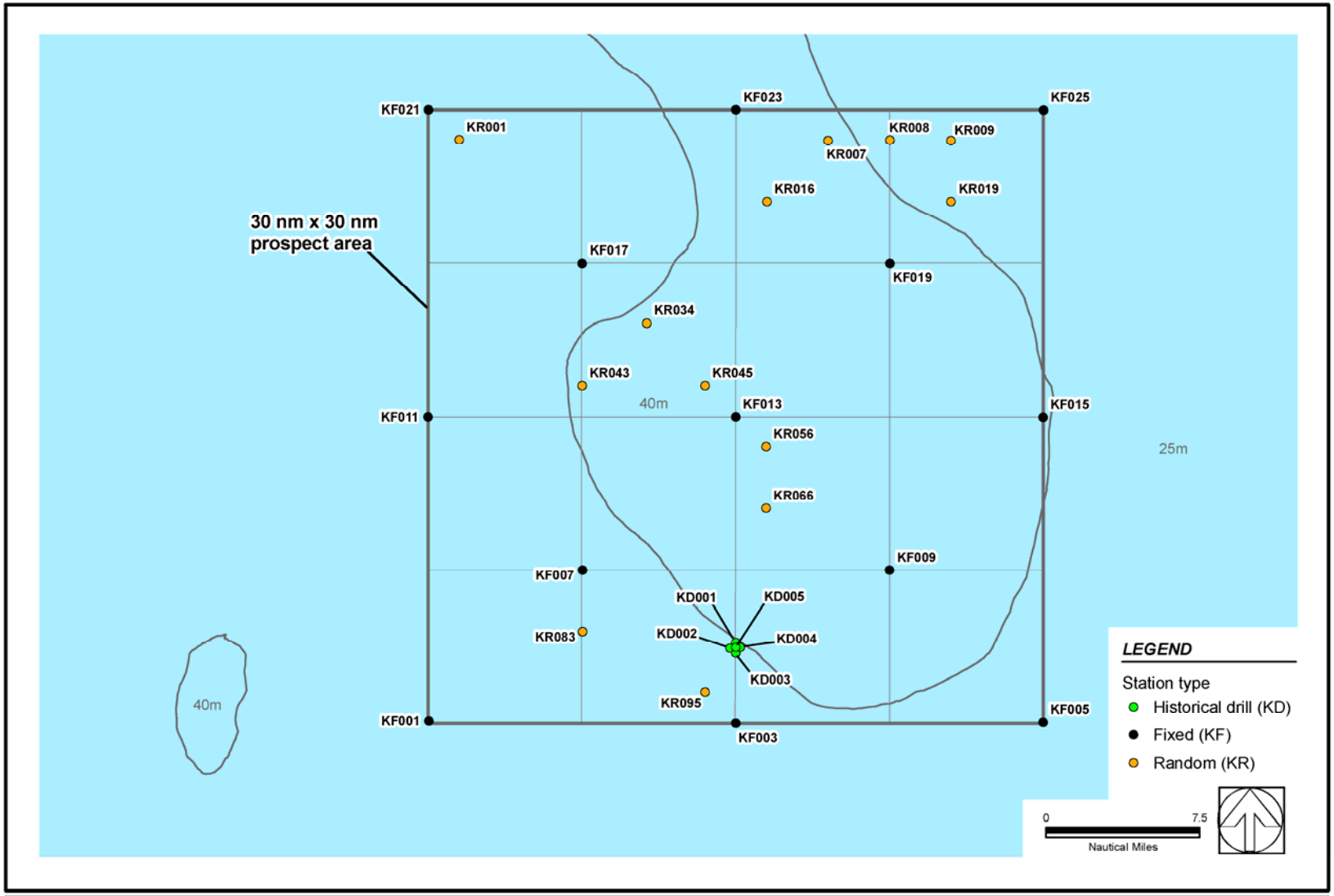

Figure 3. Contaminants program sampling station locations in Klondike

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Tables

Table 1. Klondike sediment and biota station locations, water depth, time, and date of sample collection.

Station	Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed (13)					
KF001	70.6480643	166.0016638	39.9	7:30:46	8/21/2008
KF003	70.6489090	165.2512844	39.7	5:01:06	8/29/2008
KF005	70.6489148	164.5013230	44.5	7:38:47	8/31/2008
KF007	70.7723082	165.6298009	38.6	4:02:04	8/22/2008
KF009	70.7732335	164.8752738	36.9	0:45:17	8/24/2008
KF011	70.8950757	166.0157329	39.2	0:40:23	8/21/2008
KF013	70.8977667	165.2551004	38.9	3:14:58	8/23/2008
KF015	70.8967595	164.4948166	35.6	3:31:04	8/31/2008
KF017	71.0212530	165.6388596	40.6	1:26:24	8/30/2008
KF019	71.0224134	164.8729733	32.8	6:28:44	8/28/2008
KF021	71.1442261	166.0274483	40.7	3:41:32	8/27/2008
KF023	71.1467926	165.2578500	41.7	10:11:33	8/27/2008
KF025	71.1461652	164.4873400	40.0	23:39:39	8/27/2008
Primary Random (13)					
KR001	71.1195652	165.9496602	40.4	23:30:18	8/26/2008
KR007	71.1218525	165.0276195	41.7	6:46:28	8/30/2008
KR008	71.1220683	164.8724261	38.6	8:14:36	8/30/2008
KR009	71.1215329	164.7194506	38.6	21:22:48	8/30/2008
KR016	71.0722775	165.1794203	40.0	5:07:14	8/30/2008
KR019	71.0721415	164.7198491	40.9	23:03:46	8/30/2008
KR034	70.9730045	165.4769906	39.4	6:01:27	8/23/2008
KR043	70.9216952	165.6362323	39.7	7:57:55	8/22/2008
KR045	70.9223692	165.3312461	38.9	4:31:25	8/23/2008
KR056	70.8732133	165.1797062	38.6	0:04:37	8/23/2008
KR066	70.8234089	165.1788367	39.3	22:32:14	8/22/2008
KR083	70.7224160	165.6285269	39.4	0:19:40	8/22/2008
KR095	70.6738255	165.3274395	40.6	1:50:59	8/29/2008
Historic Drill (5)					
KD001	70.7145128	165.2530791	39.9	0:14:26	9/1/2008
KD002	70.7098289	165.2666621	40.2	1:29:41	9/1/2008
KD003	70.7057730	165.2520409	39.7	6:14:38	9/1/2008
KD004	70.7103043	165.2412624	39.8	4:23:44	9/1/2008
KD005	70.7105223	165.2529609	40.0	3:00:02	9/1/2008

Table 2. Klondike clam dredge station locations, water depth, time, and date of sample collection.

Station		Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed						
	KF003	70.6483781	165.2497149	39.9	5:59:35	8/29/2008
	KF005	70.6485725	164.4980015	43.8	8:24:31	8/31/2008
	KF017	71.0202319	165.6379108	40.4	2:11:20	8/30/2008
	KF019	71.0220248	164.8738236	32.8	7:13:21	8/28/2008
	KF021	71.1454656	166.0258849	40.4	5:15:32	8/27/2008
	KF023	71.1460283	165.2578150	41.6	11:06:25	8/27/2008
	KF025	71.1459552	164.4894219	40.0	0:35:16	8/28/2008
Primary Random						
	KR001	71.1201890	165.9487082	40.5	1:05:20	8/27/2008
	KR007	71.1220654	165.0283755	41.7	7:26:29	8/30/2008
	KR008	71.1221009	164.8721640	38.6	9:02:15	8/30/2008
	KR009	71.1218612	164.7184470	38.9	22:14:23	8/30/2008
	KR016	71.0731920	165.1779978	40.0	5:49:13	8/30/2008
	KR019	71.0724036	164.7217358	41.0	0:02:01	8/31/2008
	KR095	70.6746917	165.3265815	40.3	3:01:10	8/29/2008
Historic Drill						
	KD001	70.7146711	165.2526017	40.0	0:59:02	9/1/2008
	KD002	70.7096030	165.2722630	40.0	2:27:04	9/1/2008
	KD003	70.7059143	165.2557399	39.8	7:02:53	9/1/2008
	KD004	70.7099915	165.2411146	39.8	5:15:37	9/1/2008
	KD005	70.7103655	165.2556322	40.0	3:56:20	9/1/2008

Note: Locations and time represent when dredge was deployed (approximately 10 minute dredge)

Table 3. Klondike zooplankton station locations, water depth, time, and date of sample collection.

Station		Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed						
	KF001	70.6478289	166.0027359	40.0	6:49:09	8/21/2008
	KF003	70.6518565	165.2534553	40.1	3:56:45	8/29/2008
	KF005	70.6497914	164.5215867	43.9	6:31:13	8/31/2008
	KF007	70.7756799	165.6368753	38.1	6:15:50	8/22/2008
	KF009	70.7756337	164.8947224	37.4	23:13:57	8/23/2008
	KF013	70.9036055	165.2470138	38.8	1:47:35	8/23/2008
	KF015	70.8945401	164.5003194	36.0	2:27:17	8/31/2008
	KF017	71.0267963	165.6490731	40.4	0:25:44	8/30/2008
	KF019	71.0223765	164.8567631	32.5	5:28:24	8/28/2008
	KF021	71.1444398	166.0368693	40.7	2:28:40	8/27/2008
	KF023	71.1417524	165.2685276	41.4	9:22:13	8/27/2008
	KF025	71.1396540	164.4940481	40.0	22:38:20	8/27/2008

Note: Approximately 10 minute bongos; locations and times represent beginning of collection

Table 4. Klondike amphipod station locations, water depth, trap deployment and retrieval time, and date of sample collection.

Station		Latitude (N)	Longitude (W)	Water Depth	Time (Deployed)	Time (Retrieved)	Date[a]
Fixed							
	KF001[b,c]	70.6480643	166.0016638	39.9	11:27:00	6:00:00	8/21/2008
	KF007[d]	70.7718119	165.6303441	38.4	17:47:00	Unrecovered	8/21/2008
	KF011[b]	70.8950757	166.0157329	39.2	14:06:00	23:30:00	8/20/2008
	KF021[b]	71.1442261	166.0274483	40.7	18:47:00	3:40:00	8/27/2008
Primary Random							
	KR001[b]	71.1195652	165.9496602	40.4	14:16:00	23:11:00	8/27/2008
	KR043	70.9220445	165.6353262	39.4	19:18:00	8:45:00	8/22/2008
	KR083	70.7213430	165.6299419	39.7	16:55:00	23:50:00	8/22/2008

[a] Date represents retrieval date (not deployment date).

[b] Actual coordinates not available; lat/long listed are for actual grab station locations .

[c] Only deployed trap that contained enough amphipod sample for collection and analysis.

[d] Amphipod trap not recovered (lost in fog).

Table 5. Burger sediment and biota station locations, water depth, time, and date of sample collection.

Station		Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed						
	BF001	71.1201942	163.8027983	39.8	8:20:40	9/16/2008
	BF003	71.1131997	163.0356872	42.5	2:56:39	9/2/2008
	BF005	71.1037243	162.2668396	44.2	2:16:30	9/20/2008
	BF007	71.2417196	163.4105993	42.4	2:18:47	9/16/2008
	BF009	71.2335010	162.6355409	43.6	7:53:54	9/20/2008
	BF011	71.3688929	163.7882039	42.5	23:28:42	9/13/2008
	BF013	71.3624968	163.0096744	43.5	23:14:37	9/16/2008
	BF015	71.3525543	162.2319418	42.8	8:12:11	9/19/2008
	BF017	71.4904363	163.3887800	39.9	23:16:46	9/12/2008
	BF019	71.4821244	162.6045131	41.4	1:15:27	9/19/2008
	BF021	71.6183140	163.7719583	38.8	4:46:09	9/13/2008
	BF023	71.6111934	162.9834605	39.9	23:48:00	9/17/2008
	BF025	71.6013829	162.1950585	42.1	6:47:59	9/18/2008
Primary Random						
	BR005	71.5871730	163.0650440	39.3	1:31:45	9/21/2008
	BR016	71.5358307	162.9134282	39.3	2:11:20	9/18/2008
	BR020	71.5281210	162.2853232	41.8	3:32:22	9/19/2008
	BR032	71.4426865	163.5498556	40.0	5:07:25	9/14/2008
	BR038	71.4326950	162.6113303	42.2	21:51:20	9/18/2008
	BR043	71.3910771	163.3969895	41.8	1:45:51	9/14/2008
	BR047	71.3849179	162.7728695	44.7	2:47:54	9/17/2008
	BR077	71.2353055	162.7901573	42.8	9:33:26	9/20/2008
	BR080	71.2292733	162.3257234	43.3	21:12:09	9/19/2008
	BR086	71.1872831	162.9505039	42.6	23:18:24	9/1/2008
	BR093	71.1416705	163.4172921	42.1	5:08:08	9/2/2008
	BR098	71.1339572	162.6480368	42.2	23:48:30	9/2/2008
	BR099	71.1320500	162.4937076	42.6	4:46:07	9/3/2008
Secondary Random						
	BR087	71.1854894	162.7957737	43.1	21:44:09	9/2/2008
	BR100	71.1299244	162.3393385	42.5	2:51:39	9/3/2008
Historic Drill						
	BD001	71.2554425	163.1977782	43.3	5:19:40	9/21/2008
	BD002	71.2510693	163.2119512	43.4	22:54:21	9/15/2008
	BD003	71.2462715	163.1981950	42.7	6:38:52	9/21/2008
	BD004	71.2506038	163.1841944	42.3	8:15:04	9/21/2008
	BD005	71.2506231	163.1976270	42.3	21:49:45	9/15/2008
New Stations						
	BN001	71.0374535	163.8270314	40.7	4:45:44	9/4/2008

Table 6. Burger clam dredge station locations, water depth, time, and date of sample collection.

Station	Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed					
BF001	71.1200092	163.8022200	40.2	9:14:22	9/16/2008
BF003	71.1137442	163.0342009	42.6	3:43:52	9/2/2008
BF005	71.1039880	162.2659735	45.0	3:07:39	9/20/2008
BF007	71.2417670	163.4097535	42.6	3:00:12	9/16/2008
BF009	71.2333221	162.6333665	43.4	8:32:00	9/20/2008
BF011	71.3684882	163.7859121	42.7	0:24:41	9/14/2008
BF013	71.3628950	163.0065701	43.4	0:03:25	9/17/2008
BF015	71.3534330	162.2309720	42.2	8:51:31	9/19/2008
BF017	71.4910509	163.3849320	40.0	0:12:00	9/13/2008
BF019	71.4830962	162.6037786	41.1	2:04:08	9/19/2008
BF021	71.6181505	163.7715511	38.9	5:44:02	9/13/2008
BF023	71.6099362	162.9886123	40.1	0:43:46	9/18/2008
BF025	71.6006213	162.1978559	42.1	7:37:11	9/18/2008
Primary Random					
BR005	71.5874785	163.0627847	39.3	2:12:33	9/21/2008
BR016	71.5358813	162.9111934	39.4	3:02:07	9/18/2008
BR032	71.4422792	163.5540856	40.3	6:06:18	9/14/2008
BR038	71.4338478	162.6104517	43.2	22:55:09	9/18/2008
BR043	71.3913961	163.3968173	41.5	2:31:32	9/14/2008
BR047	71.3851173	162.7715846	44.1	3:30:54	9/17/2008
BR077	71.2354323	162.7876354	43.9	10:09:50	9/20/2008
BR080	71.2291985	162.3211967	43.3	22:03:13	9/19/2008
BR086	71.1867002	162.9500761	43.0	0:20:43	9/2/2008
BR093	71.1407463	163.4199248	42.1	5:53:42	9/2/2008
BR098	71.1348445	162.6466320	41.9	0:55:55	9/3/2008
BR099	71.1309400	162.4943747	42.5	5:31:27	9/3/2008
Secondary Random					
BR087	71.1856018	162.7952645	43.1	22:46:36	9/2/2008
BR100	71.1307020	162.3455655	42.8	3:40:10	9/3/2008
Historic Drill					
BD001	71.2554155	163.2003747	42.8	6:04:06	9/21/2008
BD002	71.2511540	163.2124228	43.3	9:49:44	9/21/2008
BD003	71.2466215	163.2037477	43.1	7:30:17	9/21/2008
BD004	71.2510587	163.1835488	43.0	9:09:16	9/21/2008
New Stations					
BN001	71.0375702	163.8282812	40.7	5:43:12	9/4/2008

Table 7. Burger zooplankton station locations, water depth, time, and date of sample collection.

Station		Latitude (N)	Longitude (W)	Water Depth	Time	Date
Fixed						
	BF001	71.1208672	163.8086556	39.8	7:23:10	9/16/2008
	BF003	71.1143801	163.0227403	42.6	1:50:49	9/2/2008
	BF005	71.0979628	162.2816968	45.2	1:15:50	9/20/2008
	BF007	71.2430670	163.4208910	42.5	0:58:38	9/16/2008
	BF009	71.2340947	162.6178023	42.9	7:18:10	9/20/2008
	BF011	71.3680467	163.8055062	43.2	22:26:34	9/13/2008
	BF013	71.3542658	163.0209826	43.5	22:12:50	9/16/2008
	BF015	71.3529167	162.2171514	42.4	7:34:38	9/19/2008
	BF017	71.4835841	163.3848891	40.0	22:06:00	9/12/2008
	BF019	71.4802845	162.6057375	41.3	0:04:48	9/19/2008
	BF021	71.6254386	163.7662797	38.3	4:13:20	9/13/2008
	BF023	71.6067658	162.9919102	39.9	22:34:49	9/17/2008
	BF025	71.5980157	162.2100113	40.2	5:36:27	9/18/2008
New Stations						
	BN001	71.0356095	163.8389675	40.2	3:27:11	9/4/2008

Table 8. Burger amphipod station locations, water depth, trap deployment and retrieval time, and date of sample collection.

Station	Latitude (N)	Longitude (W)	Water Depth	Time (Deployed)	Time (Retrieved)	Date[a]
Fixed						
BF011	71.36900063 N	163.7876709 W	42.5	0:19:00	7:25:00	9/14/2008
BF013	71.36266783 N	163.00928653 W	43.4	23:59:00	9:15:00	9/17/2008
BF017	71.49051768 N	163.38582213 W	40	0:05:00	8:50:00	9/13/2008
BF021	71.61898503 N	163.78275203 W	38.9	5:36:00	19:08:00	9/13/2008
BF023	71.61221572 N	162.97355435 W	39.7	21:44:08	1:00:00	9/18/2008
Primary Random						
BR038	71.432393 N	162.61089471 W	43.2	22:48:00	10:15:00	9/18/2008
BR080	71.22975848 N	162.32632616 W	43.5	22:00:00	11:40:00	9/20/2008
BR099	71.13158112 N	162.49406838 W	42.5	2:17:00	4:30:00	9/3/2008
Secondary Random						
BS002	71.22863853 N	163.12123122 W	43.6	23:04:00	10:00:00	9/15/2008
Historic Drill						
BD002	71.25073583 N	163.21264783 W	42.9	5:04:17		9/21/2008
BD004	71.25067133 N	163.1833495 W	43.2	5:04:00	9:47:00	9/21/2008
BD005	71.2512765 N	163.19911023 W	43	0:20:00	10:40:00	9/15/2008

[a] Date represents retrieval date (not deployment date).

Table 9. Sample Identification Nomenclature

Field	Possible Input Options
Year	08 (study year 2008)
Survey	03 (Chemical Characterization Project Cruise)
Site Code	KF_ _ _ ; KR_ _ _; KS_ _ _; KD_ _ _
	BF_ _ _; BR_ _ _; BS_ _ _; BD_ _ _
	K=Klondike, B=Burger, F=Fixed, R=Random, D=Drill (e.g., KF021, BD001)
Replicate	01, 03 (03 = triplicate)
Sample Type	SC=sediment chemistry, AC=amphipod chemistry, BC=bivalve chemistry, ZC=zooplankton chemistry, WC=worm chemistry, CC=crab chemistry, HC=holuthroid chemistry, SnC=snail chemistry, FB=field blank, FS=field source, EB=equipment blank

Table 10. QA/QC samples collected during 2008 field investigations.

QA/QC Parameter	Station	Details
Equipment Blanks	KS002	DI rinse of decontaminated plastic sampling spoon
	KR008	DI rinse of decontaminated Van Veen grab
	KF013	DI rinse of decontaminated 2-cm sampling scoop
	BF013	DI rinse of decontaminated plastic sampling spoon
	BF023	DI rinse of decontaminated 2-cm sampling scoop
Field Blanks	KF003	water from seawater hose pumped by stainless pump
	KF021	water from seawater hose prior to installation of stainless pump
	KF023	blank sample jars (opened during sample collection)
Field Triplicates	KR019	sediment and biota triplicate samples
	KR045	sediment triplicate samples
	BF005	sediment triplicate samples
	BR032	sediment triplicate samples
Field Source Samples	KF003	Pre-baked GFB wipe of sheave used for Van Veen grab
	KF019	Pre-baked GFB wipe of 2x 55-gal oil drums stored on back deck
	KR008	Pre-baked GFB wipes stored for 10-hr inside Van Veen grab

Table 11. List of target analytes for analysis in sediment and biota samples (PAHs)

Compound	Reporting Code	SIS/RIS	Compound	Reporting Code	SIS/RIS
Naphthalene	C0N	A/1	Continued		
C1-Naphthalenes	C1N	A/2	Benzo[a]anthracene	BAA	B/3
C_2-Naphthalenes	C2N	A/2	Chrysene	C0C	B/3
C_3-Naphthalenes	C3N	A/2	C_1-Chrysenes	C1C	B/3
C_4-Naphthalenes	C4N	A/2	C_2-Chrysenes	C2C	B/3
Acenaphthylene	ACEY	A/2	C_3-Chrysenes	C3C	B/3
Acenaphthene	ACE	A/2	C_4-Chrysenes	C4C	B/3
Biphenyl	BIP	A/2	Benzo[b]fluoranthene	BBF	B/4
Dibenzofuran	DBF	A/2	Benzo[k]fluoranthene	BKF	B/4
Fluorene	C0F	A/2	Benzo[e]pyrene	BEP	B/4
C_1-Fluorenes	C1F	A/2	Benzo[a]pyrene	BAP	B/4
C_2-Fluorenes	C2F	A/2	Perylene	PER	B/4
C_3-Fluorenes	C3F	A/2	Indeno[1,2,3-c,d]pyrene	IND	B/4
Anthracene	C0A	A/3	Dibenzo[a,h]anthracene	DAH	B/4
Phenanthrene	C0P	A/3	Benzo[g,h,i]perylene	BGP	B/4
C_1-Phenanthrenes/Anthracenes	C1P/A	A/3			
C_2-Phenanthrenes/Anthracenes	C2P/A	A/3			
C_3-Phenanthrenes/Anthracenes	C3P/A	A/3			
C_4-Phenanthrenes/Anthracenes	C4P/A	A/3			
Retene	RET	A/3			
Dibenzothiophene	C0D	A/3			
C_1-Dibenzothiophenes	C1D	A/3	<u>Surrogate Compounds</u>		
C_2-Dibenzothiophenes	C2D	A/3	Naphthalene-d_8	D8N	A/1
C_3-Dibenzothiophenes	C3D	A/3	Acenaphthene-d_{10}	D10ACE	A/2
C_4-Dibenzothiophenes	C4D	A/3	Phenanthrene-d_{10}	D10PH	A/3
Fluoranthene	FLANT	A/3	Benzo(a)pyrene-d_{12}	D12BAP	B/4
Pyrene	PYR	A/3			
C_1-Fluoranthenes/Pyrenes	C1F/P	A/3	<u>Recovery Internal Standard</u>		
C_2-Fluoranthenes/Pyrenes	C2F/P	A/3	Acenapthylene-d_8	D8ACEY	A
C_3-Fluoranthenes/Pyrenes	C3F/P	A/3	Chrysene-d_{12}	D12C	B

Table 11 Cont'd. List of target analytes for analysis in sediment and biota samples (Steranes and triterpanes)

Compound	Reporting Code	SIS/RIS
C_{23} Diterpane	T4	A/1
13β,17α-diacholestane(20S)	S4	A/1
13β,17α-diacholestane(20R)	S5	A/1
C_{29} Tricyclictriterpane	T9	A/1
C_{29} Tricyclictriterpane	T10	A/1
5α,14α,17α-cholestane(20R) [a]	S17	A/1
18α(H)-22,29,30-trisnorhopane(TS)	T11	A/1
17α(H)-22,29,30-trisnorhopane(TM)	T12	A/1
5α,14α,17α,24-methylcholestane(20R)	S24	A/1
5α,14α,17α,24-ethylcholestane(20S)	S25	A/1
5α,14α,17α,24-ethylcholestane(20R)	S28	A/1
17α(H),21β(H)-30-norhopane	T15	A/1
18α(H)-oleanane	T18	A/1
17α(H),21β(H)-hopane	T19	A/1
22S-17α(H),21β(H)-30-homohopane	T21	A/1
22R-17α(H),21β(H)-30-homohopane	T22	A/1
17β(H),21β(H)-hopane [a]	T23	A/1
Surrogate Compounds		
5β(H)-cholane	5B	2
Recovery Internal Standards		
Chrysene-d_{12}	D12C	A

Table 11 Cont'd. List of target analytes for analysis in sediment and biota samples (Saturated hydrocarbons)

Compound	Reporting Code	SIS/RIS	Compound	Reporting Code	SIS/RIS
n-Octane (optional)	C8	A/1	Continued		
n-Nonane	C9	A/1	n-Heptacosane	C27	A/1
n-Decane	C10	A/1	n-Octacosane	C28	A/1
n-Undecane	C11	A/1	n-Nonacosane	C29	A/1
n-Dodecane	C12	A/1	n-Triacontane	C30	A/1
n-Tridecane	C13	A/1	n-Hentriacontane	C31	A/1
Isoprenoid RRT 1380	1380	A/1	n-Dotriacontane	C32	A/1
n-Tetradecane	C14	A/1	n-Tritriacontane	C33	A/1
Isoprenoid RRT 1470	1470	A/1	n-Tetratriacontane	C34	A/1
n-Pentadecane	C15	A/1	n-Pentatriacontane	C35	A/1
Isoprenoid RRT 1650	1650	A/1	n-Hexatriacontane	C36	A/1
n-Hexadecane	C16	A/1	n-Heptatriacontane	C37	A/1
n-Heptadecane	C17	A/1	n-Octatriacontane	C38	A/1
Pristane	PRIS	A/1	n-Nonatriacontane	C39	A/1
n-Octadecane	C18	A/1	n-Tetracontane	C40	A/1
Phytane	PHYT	A/1	Total Saturated HCs	TSHC	A/1
n-Nonadecane	C19	A/1			
n-Eicosane	C20	A/1			
n-Heneicosane	C21	A/1	<u>Surrogate Compounds</u>		
n-Docosane	C22	A/1	Tetracosane-d_{50}	D50T	A/1
n-Tricosane	C23	A/1	5a-Androstane	5AA	B/1
n-Tetracosane	C24	A/1			
n-Pentacosane	C25	A/1	<u>Recovery Internal Standard</u>		
n-Hexacosane	C26	A/1	Eicosane-d_{42}	D42E	1

Table 11 Cont'd. List of target analytes for analysis in sediment samples (Metals)

Metal	Method	MDLs (µg metal/g dry sediment)
Ag – silver	ZGFAAS	0.01
Al – aluminum	FAAS	10
As – arsenic	ZGFAAS	0.2
Ba – barium	ICP-MS	1
Cd – cadmium	ICP-MS	0.02
Cr – chromium	FAAS	1
Cu – copper	FAAS	2
Fe – iron	FAAS	10
Hg – mercury	CVAAS	0.001
Mn – manganese	FAAS	3
Pb – lead	ICP-MS	0.2
Se – selenium	ICP-MS	0.04
Zn – zinc	FAAS	2
Other Parameters		
Grain Size	Sieve and Pipet	---
TOC	Shimadzu Carbon System	0.1%
TOM and carbonate	Muffle Furnace	0.1%

CVAAS = Cold Vapor Atomic Absorption Spectrometry
FAAS = Flame Atomic Absorption Spectrometry
GFAAS = Graphite Furnace Atomic Absorption Spectrometry
ZGFAAS = Zeeman Graphite Furnace Atomic Absorption Spectrometry
ICP/MS = Inductively Coupled Plasma/Mass Spectrometry
MDL = Method Detection Limit

Table 11 Cont'd. List of target analytes for analysis in biota samples (Metals)

	Biological Tissue	
Metal	Method	MDLs (µg metal/g tissue dry weight)
Ag – silver	ZGFAAS	0.004
As – arsenic	ZGFAAS	0.03
Ba – barium	ICP-MS	0.01
Cd – cadmium	ICP-MS	0.001
Cr – chromium	FAAS	0.01
Cu – copper	FAAS	0.7
Fe – iron	FAAS	2.5
Hg – mercury	CVAAS	0.001
Mn – manganese	FAAS	1.1
Pb – lead	ICP-MS	0.003
Se – selenium	ICP-MS	0.03
Zn – zinc	FAAS	0.4

Appendix A

Field Station Logs for Klondike and Burger Sampling
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Appendix B

Field Notes
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Appendix C

Field Database and Sample Summaries
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Appendix D

Fully Executed Chain of Custody (COC) Forms
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Appendix E

Photo Documentation of Sediment Grabs, Clam Dredges, and Biota

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