APPENDIX C

Polychlorinated Biphenyl Data

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Deployment Nos. 1 and 2 and Surface Sampling Event No. 1

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Battelle
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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS-ST04-111207	SS-ST03-111207	SS-ST02-111207	SS-ST01-111207	SS-ST01-111207-DUP	ST-04-103107-1
Battelle ID	Q0930-P	Q0931-P	Q0932-P	Q0933-P	Q0934-P	Q0718-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	11/12/07	11/12/07	11/12/07	11/12/07	11/12/07	10/31/07
Extraction Date	01/11/08	01/11/08	01/11/08	01/11/08	01/11/08	01/11/08
Analysis Date	01/17/08	01/17/08	01/17/08	01/17/08	01/17/08	01/17/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	62.01	32.5	52.41	74.19	74.29	53.42
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT TRAP
Sample Size	12.65	20.64	14.76	7.71	7.76	2.83
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	3400.58 D	818.99 D	1890.1 D	2244.48 D	956.26	5679.8 D
Cl3(18)	7438.4 D	1783.45 D	4088.35 D	3867.9 D	1763.69 D	16792.21 D
Cl3(28)	10019.8 D	2642.93 D	7351.11 D	4436.1 D	2302.55 D	23225.51 D
Cl3(31)	10416.34 D	2852.54 D	7321.77 D	4495.55 D	2298.87 D	23772.1 D
Cl3(37)	671.64 E	234.82	532.02	409.04	196.49	1706.89
Cl4(44)	4651.99 D	980.83 D	2660.92 D	1693.33 D	805.3	9972.12 D
Cl4(49)	15382.49 D	3446.34 D	9723.85 D	4909.66 D	2453.7 D	37717.62 D
Cl4(52)	16421.95 D	3476.24 D	9180.82 D	5575.44 D	2509.13 D	41261.61 D
Cl4(66)	909.81 D	233.58 D	958.42 D	922.7	428.84	2689.08 D
Cl4(70)	548.13 D	476.77	643.19 D	806.51	380.04	1384.57 D
Cl4(74)	363.65 D	413.1	401.84 D	636.35	289.61	1008.45 D
Cl4(77)	145.6	58.49	122.17	100.07	50.73	440.07
Cl4(81)	8.78 U	5.38 U	7.53 U	14.41 U	14.32 U	39.26 U
Cl5(87)	323.84	94.87	235.78	137.95	64.59	938.73
Cl5(99)	3019.59 D	850.89 D	2442 D	1229.98 D	668.64	10297.02 D
Cl5(101)	3363.68 D	685.05 D	2129.65 D	1449.78	637.32	8539.04 D
Cl5(105)	358.61	106.31	258.23	119.01	56.42	994.79
Cl5(110)	5655.67 D	1180.62 D	3918.18 D	1975.41 D	727.57 D	14564.17 D
Cl5(114)	8.78 U	5.38 U	7.53 U	14.41 U	14.32 U	39.26 U
Cl5(118)	1398.34 D	358.44 D	923.01 D	515.45 D	482.22	5082.02 D
Cl5(123)	337.42	113.31	261.22	163.93	78.75	1039.64
Cl5(126)	8.78 U	5.38 U	7.53 U	14.41 U	14.32 U	39.26 U
Cl6(128)	290.85	76.1	181.7	91.83	40.36	839.61
Cl6(138)	878.78 D	240.74	540.49	271.46	131.5	2304.44
Cl6(149)	5390.84 D	1246.69 D	2925.76 D	1624.82 D	872.03 D	13062.32 D
Cl6(151)	1328.66 D	176.7	422.23	221.78	93.09	1962.79
Cl6(153)	4255.41 D	946.94 D	2226.5 D	1463.59 D	613.85 D	10631.02 D
Cl6(156)	249.33	70.61	163.64	86.54	45.4	748.98
Cl6(157)	58.2	20.06	41.44	28.56	23.91	178.7
Cl6(158)	314.98	88.04	201.86	106.19	46.49	865.25
Cl6(167)	261.46	68.2	166.51	95.47	47.75	719.87
Cl6(169)	14.67	5.38 U	7.53 U	14.41 U	14.32 U	120.51
Cl7(170)	267.23	66.76	170.36	81.62	35.72	756.57
Cl7(177)	110.88	30.62	71.01	40.88	18.07	336.98
Cl7(180)	542.22	148.49	331.25	180.85	79.84	1518.17
Cl7(183)	193.17	48.5	121.47	60.53	25.38	535.91
Cl7(187)	646.01	170.14	397.24	208.89	90.93	1812.63
Cl7(189)	37.74	11.87	21.45	20.13	14.32 U	97.21
Cl8(194)	136.3	32.93	87.16	55.35	29.05	395.17
Cl8(195)	37.65	8.98	20.64	16.66	12.29 J	122.55
Cl8(201)	20.42	5.6	13.94	13.81 J	14.32 U	61.69
Cl8(203)	140.85	30.59	54.6	52.15	30.9	420.95
Cl9(206)	78.37	25.07	50.84	32.9	21.85	232.41
LOC 10	25.53	8.64	17.91	14.41 U	14.32 U	88.99
Surrogate Recoveries (%)						
Cl3(34)	88	80	89	76	81	81
Cl6(152)	78	71	79	66	79	75

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-03-103107-1	ST-02-103107-1	ST-01-103107-1	ST-01-103107-2	ST-01-103107-3	ST-01-121007-1
Battelle ID	Q0720-P	Q0722-P	Q0724-P	Q0725-P	Q0726-P	Q1173-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	10/31/07	10/31/07	10/31/07	10/31/07	10/31/07	12/10/07
Extraction Date	01/11/08	01/11/08	01/11/08	01/11/08	01/11/08	01/11/08
Analysis Date	01/17/08	01/17/08	01/17/08	01/17/08	01/17/08	01/18/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	53.47	49.4	41.67	44.44	43.6	51.67
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	6.11	2.55	1.52	4.34	3.67	2.67
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	5091.04 D	6129.59 D	1771.22	683.15	720.89	337.89
Cl3(18)	14911.12 D	15108.42 D	4824.26	1872.09	1956.77	1228.4
Cl3(28)	18158.42 D	21047.19 D	10471.09 D	3977.5 D	3267.24 D	2235.53
Cl3(31)	18223.91 D	21543 D	8340.93 D	2962.59 D	2788.5 D	1996.28
Cl3(37)	1104.38	1626.17	786.38	316.39	304.8	216.48
Cl4(44)	7020.02 D	8865.84 D	3400.53	1281.47	1287.01	909.64
Cl4(49)	26940.36 D	30994.66 D	11297.7 D	3688.29 D	3932.65 D	3035.21
Cl4(52)	29361.53 D	33635.25 D	13033.42 D	4387.37 D	4227.2 D	3345.27
Cl4(66)	1504.36 D	1736.91 D	1848.78	698.41	673.77	446.32
Cl4(70)	870.69 D	1563.42 D	1347.89	510.44	521.65	349.93
Cl4(74)	513.38 D	2970.64	1534.63	585.01	548.92	361.73
Cl4(77)	278.85	411.02	273.84	102.93	99.78	88.93
Cl4(81)	18.19 U	43.57 U	73.1 U	25.6 U	30.28 U	41.61 U
Cl5(87)	535.12	855.6	323.02	122.1	131.56	91.68
Cl5(99)	6074.65 D	6897.66 D	4429.48	1758.6	1604.1	1133.2
Cl5(101)	5253.26 D	6116.26 D	3144.03	1223.13	1231.88	863.12
Cl5(105)	623.75	824.53	373.85	149.85	149.12	108.62
Cl5(110)	8709.26 D	12453.77 D	4788.77 D	1672.52 D	2371.61	1653.35
Cl5(114)	18.19 U	43.57 U	73.1 U	25.6 U	30.28 U	41.61 U
Cl5(118)	2032.73 D	3334.92 D	3245.99	1277.51	1194.02	772.34
Cl5(123)	607.94	936.56	479.72	177.36	202.58	150.96
Cl5(126)	18.19 U	43.57 U	73.1 U	25.6 U	30.28 U	41.61 U
Cl6(128)	513.48	612.75	290.25	123.05	101.33	72.5
Cl6(138)	2927.27 D	1904.65	888.06	349	345.4	248.41
Cl6(149)	9282.75 D	11196.66 D	3592.1	1370.28	1462.96	1085.6
Cl6(151)	1163.29	1516.21	508.88	192.81	203.25	133.96
Cl6(153)	6252.49 D	7737.35 D	4108.54	1577.16	1524.56	1063.02
Cl6(156)	459.88	590.18	338.06	122.68	121.16	106.86
Cl6(157)	109.83	143.25	131.69	50.05	49.25	66.46
Cl6(158)	536.71	665.69	320.77	131.41	122.79	102.69
Cl6(167)	445.92	554.31	329.86	116.5	124.06	104.13
Cl6(169)	18.19 U	43.57 U	73.1 U	25.6 U	30.28 U	41.61 U
Cl7(170)	435.22	565.7	275.41	102.89	106.91	89.84
Cl7(177)	187.96	252.36	116.64	46.41	51.01	41.92
Cl7(180)	900.75	1217.53	581.96	222.03	219.51	167.74
Cl7(183)	330.23	413.05	162.42	72.86	63.9	45.99
Cl7(187)	1102.03	1441.9	645.41	246.32	244.77	178.84
Cl7(189)	58.47	95.78	73.1 U	25.6 U	41.49	41.61 U
Cl8(194)	219.97	314.27	206.47	67.17	76.19	41.61 U
Cl8(195)	60.31	86.06	83.12	22.01 J	28.1 J	41.61 U
Cl8(201)	32.47	59.95	63.36 J	20.1 J	30.28 U	41.61 U
Cl8(203)	229.69	224.07	209.59	75.13	74.14	41.61 U
Cl9(206)	132.7	189.76	140.12	49.74	60.49	57.73
LOC 10	44.74	81.87	85.9	28.79	33.03	41.61 U

Surrogate Recoveries (%)

Cl3(34)	78	77	73	70	72	76
Cl6(152)	66	68	67	67	68	70

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-01-121007-2	ST-01-121007-3	ST-02-121007-1	ST-03-121007-1	ST-04-121007-1
Battelle ID	Q1174-P	Q1175-P	Q1176-P	Q1178-P	Q1180-P
Sample Type	SA	SA	SA	SA	SA
Collection Date	12/10/07	12/10/07	12/10/07	12/10/07	12/10/07
Extraction Date	01/11/08	01/11/08	01/11/08	01/11/08	01/11/08
Analysis Date	01/18/08	01/18/08	01/18/08	01/18/08	01/18/08
Analytical Instrument	MS	MS	MS	MS	MS
% Moisture	64.79	58.73	55.26	57.55	61.76
% Lipid	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	2.00	2.26	3.42	9.94	5.85
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	758.68	575.22	1991.49	1795.91 D	2529.08 D
Cl3(18)	2853.21	2187.4	9742.72 D	5707.23 D	8682.51 D
Cl3(28)	4465.18 D	4113.27	17125.7 D	6772.64 D	10566.09 D
Cl3(31)	4980.6	3774.13	16250.45 D	6751.38 D	11005.69 D
Cl3(37)	485.54	350.54	1319.66	599.65	906.3
Cl4(44)	2232.46	1641.67	6498.74 D	3197.22 D	5544.8 D
Cl4(49)	6611.76 D	4826.89 D	23730.84 D	11282.94 D	17837.94 D
Cl4(52)	7317.35 D	5781.23 D	24970.82 D	12693.81 D	21404.92 D
Cl4(66)	1066.73	811.24	2152.13 D	396.78 D	801.52 D
Cl4(70)	891.67	634.22	1096.88 D	283.07 D	402.37 D
Cl4(74)	857.18	663.37	2439.91	162.08 D	1609.68 E
Cl4(77)	159.76	132.63	364.38	150.28	242.99
Cl4(81)	55.56 U	49.16 U	32.49 U	11.18 U	18.99 U
Cl5(87)	245.88	170.04	625.24	324.63	483.48
Cl5(99)	2617.2	2005.08	6189.85 D	2536.34 D	4007.16 D
Cl5(101)	2142.56	1542.89	5140.1 D	2178.11 D	3057.32 D
Cl5(105)	236.19	191.03	674.67	349.07	530.31
Cl5(110)	4183.91	3025.11	8999.61 D	3662.09 D	5707.67 D
Cl5(114)	55.56 U	49.16 U	32.49 U	11.18 U	18.99 U
Cl5(118)	1869.96	1377.57	2933.66 D	907.48 D	1271.44 D
Cl5(123)	300.85	227.32	714.77	350.77	549.72
Cl5(126)	55.56 U	49.16 U	32.49 U	11.18 U	18.99 U
Cl6(128)	179.08	120.86	510.62	278.25	439.52
Cl6(138)	552.14	453.3	1469.15	813.89	1232.03
Cl6(149)	2567.28	1909.4	7352.9 D	5237.03 D	7687.49 D
Cl6(151)	323.88	271.37	1136.72	655.58	1052.66
Cl6(153)	2412.62	1977.77	6765.5 D	3601.25 D	6268.01 D
Cl6(156)	188.76	165.48	481.46	252.49	384.78
Cl6(157)	97.19	85.43	131.33	58.57	94.99
Cl6(158)	210.11	162.56	564.96	281.41	456.57
Cl6(167)	197.4	175.67	457.17	259.75	379.94
Cl6(169)	55.56 U	49.16 U	32.49 U	11.18 U	18.99 U
Cl7(170)	165.23	151.63	461.07	248.44	411.18
Cl7(177)	73.34	72.91	192.27	114.1	159.35
Cl7(180)	380.68	297.83	966.56	520.38	820.43
Cl7(183)	104.75	96	340.69	187.28	282.78
Cl7(187)	408.26	321.88	1126.53	593.19	964.82
Cl7(189)	55.56 U	49.16 U	71.11	33.85	57.94
Cl8(194)	128.51	115.1	242.29	133.35	215.98
Cl8(195)	56.28	49.16 U	72.05	39.74	64.59
Cl8(201)	55.56 U	49.16 U	43.99	19.64	33.26
Cl8(203)	139.27	106.38	170.51	88.3	135.82
Cl9(206)	86.22	72.04	143.18	78.31	130.61
LOC 10	59.04	57.07	65.36	25.52	44.1

Surrogate Recoveries (%)

Cl3(34)	72	81	75	77	81
Cl6(152)	69	79	72	70	80

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	Procedural Blank	
Battelle ID	BL300PB-P	
Sample Type	PB	
Collection Date	01/11/08	
Extraction Date	01/11/08	
Analysis Date	01/16/08	
Analytical Instrument	MS	
% Moisture	54.77	
% Lipid	NA	
Matrix	SEDIMENT	
Sample Size	6.89	
Size Unit-Basis	G_DRY	
Units	UG/KG_DRY	
Cl2(8)	16.29	U
Cl3(18)	16.29	U
Cl3(28)	20.4	
Cl3(31)	15.21	J
Cl3(37)	16.13	U
Cl4(44)	16.13	U
Cl4(49)	16.13	U
Cl4(52)	17.63	
Cl4(66)	16.29	U
Cl4(70)	16.13	U
Cl4(74)	16.13	U
Cl4(77)	16.29	U
Cl4(81)	16.13	U
Cl5(87)	16.13	U
Cl5(99)	16.13	U
Cl5(101)	16.29	U
Cl5(105)	16.13	U
Cl5(110)	16.13	U
Cl5(114)	16.13	U
Cl5(118)	16.29	U
Cl5(123)	16.13	U
Cl5(126)	16.13	U
Cl6(128)	16.29	U
Cl6(138)	16.29	U
Cl6(149)	16.13	U
Cl6(151)	16.13	U
Cl6(153)	16.29	U
Cl6(156)	16.13	U
Cl6(157)	16.13	U
Cl6(158)	16.13	U
Cl6(167)	16.13	U
Cl6(169)	16.13	U
Cl7(170)	16.29	U
Cl7(177)	16.13	U
Cl7(180)	16.29	U
Cl7(183)	16.13	U
Cl7(187)	16.13	U
Cl7(189)	16.13	U
Cl8(194)	16.13	U
Cl8(195)	16.13	U
Cl8(201)	16.13	U
Cl8(203)	16.13	U
Cl9(206)	16.13	U
LOC 10	16.13	U

Surrogate Recoveries (%)

Cl3(34)	76
Cl6(152)	83

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The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	060208-03: Sand, White Quartz, -50+70				
Battelle ID	BL301LCS-P				
Sample Type	LCS				
Collection Date	01/11/08				
Extraction Date	01/11/08				
Analysis Date	01/16/08				
Analytical Instrument	MS				
% Moisture	NA				
% Lipid	NA				
Matrix	SEDIMENT				
Sample Size	NA				
Size Unit-Basis	NA				
Units	NG		Target	% Recovery	Qualifier
Cl2(8)	2907.86		4012.00	72	
Cl3(18)	2731.06		4012.00	68	
Cl3(28)	2706.82		4004.00	68	
Cl3(31)	317.61				
Cl3(37)	111.11	U			
Cl4(44)	3040.36		4008.00	76	
Cl4(49)	111.11	U			
Cl4(52)	2899.95		4000.00	72	
Cl4(66)	2954.69		4004.00	74	
Cl4(70)	111.11	U			
Cl4(74)	111.11	U			
Cl4(77)	2683.72		4000.00	67	
Cl4(81)	111.11	U			
Cl5(87)	111.11	U			
Cl5(99)	111.11	U			
Cl5(101)	2618.17		4008.00	65	
Cl5(105)	3151.57		4004.00	79	
Cl5(110)	111.11	U			
Cl5(114)	111.11	U			
Cl5(118)	2658.32		4004.00	66	
Cl5(123)	111.11	U			
Cl5(126)	2480.8		4024.00	62	
Cl6(128)	2919.76		4024.00	73	
Cl6(138)	2776.57		4008.00	69	
Cl6(149)	111.11	U			
Cl6(151)	111.11	U			
Cl6(153)	2948.05		4004.00	74	
Cl6(156)	111.11	U			
Cl6(157)	111.11	U			
Cl6(158)	111.11	U			
Cl6(167)	111.11	U			
Cl6(169)	111.11	U			
Cl7(170)	3079.27		4020.00	77	
Cl7(177)	111.11	U			
Cl7(180)	3283.51		4016.00	82	
Cl7(183)	111.11	U			
Cl7(187)	3165.89		4012.00	79	
Cl7(189)	111.11	U			
Cl8(194)	111.11	U			
Cl8(195)	3069.34		4012.00	77	
Cl8(201)	111.11	U			
Cl8(203)	111.11	U			
Cl9(206)	3144.12		4012.00	78	
LOC 10	3541.02		4004.00	88	

Surrogate Recoveries (%)

Cl3(34)	79
Cl6(152)	82

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS-ST01-111207		SS-ST01-111207				
Battelle ID	Q0933-P		Q0933MS-P				
Sample Type	SA		MS				
Collection Date	11/12/07		11/12/2007				
Extraction Date	01/11/08		1/11/2008				
Analysis Date	01/17/08		1/17/2008				
Analytical Instrument	MS		MS				
% Moisture	74.19		78.81				
% Lipid	NA		NA				
Matrix	SEDIMENT		SEDIMENT				
Sample Size	7.71		2.94				
Size Unit-Basis	G_DRY		G_DRY				
Units	UG/KG_DRY		UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	2244.48	D	3784.65	E	1364.63	113	
Cl3(18)	3867.9	D	5902.9	E	1364.63	149	
Cl3(28)	4436.1	D	7278.18	E	1361.90	209	
Cl3(31)	4495.55	D	6673.93	E			
Cl3(37)	409.04		508.41				
Cl4(44)	1693.33	D	3501.27		1363.27	133	
Cl4(49)	4909.66	D	6910.61	E			
Cl4(52)	5575.44	D	8713.31	E	1360.54	231	
Cl4(66)	922.7		2283.67		1361.90	100	
Cl4(70)	806.51		934.82				
Cl4(74)	636.35		770.95				
Cl4(77)	100.07		1282.43		1360.54	87	
Cl4(81)	14.41	U	37.79	U			
Cl5(87)	137.95		181.03				
Cl5(99)	1229.98	D	1852.56				
Cl5(101)	1449.78		2813.99		1363.27	100	
Cl5(105)	119.01		1293.65		1361.90	86	
Cl5(110)	1975.41	D	3431.78				
Cl5(114)	14.41	U	37.79	U			
Cl5(118)	515.45	D	2418.63		1361.90	140	
Cl5(123)	163.93		209.15				
Cl5(126)	14.41	U	1117.09		1368.71	82	
Cl6(128)	91.83		1238.51		1368.71	84	
Cl6(138)	271.46		1419.63		1363.27	84	
Cl6(149)	1624.82	D	1925.62				
Cl6(151)	221.78		273.81				
Cl6(153)	1463.59	D	2640.2		1361.90	86	
Cl6(156)	86.54		123.2				
Cl6(157)	28.56		74.98				
Cl6(158)	106.19		142.67				
Cl6(167)	95.47		146.48				
Cl6(169)	14.41	U	37.79	U			
Cl7(170)	81.62		1263.64		1367.35	86	
Cl7(177)	40.88		54.53				
Cl7(180)	180.85		1438.39		1365.99	92	
Cl7(183)	60.53		61.98				
Cl7(187)	208.89		1378.82		1364.63	86	
Cl7(189)	20.13		37.79	U			
Cl8(194)	55.35		87.3				
Cl8(195)	16.66		1102.19		1364.63	80	
Cl8(201)	13.81	J	37.79	U			
Cl8(203)	52.15		92.76				
Cl9(206)	32.9		1154.51		1364.63	82	
LOC 10	14.41	U	1055.47		1361.90	77	

Surrogate Recoveries (%)

Cl3(34)	76	83
Cl6(152)	66	75

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS-ST01-111207						
Battelle ID	Q0933MSD-P						
Sample Type	MSD						
Collection Date	11/12/2007						
Extraction Date	1/11/2008						
Analysis Date	1/17/2008						
Analytical Instrument	MS						
% Moisture	77.34						
% Lipid	NA						
Matrix	SEDIMENT						
Sample Size	3.09						
Size Unit-Basis	G_DRY						
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	2101.63		1298.38	0		200.0	
Cl3(18)	2871.52		1298.38	0		200.0	
Cl3(28)	3424.1		1295.79	0		200.0	
Cl3(31)	2694						
Cl3(37)	225.41						
Cl4(44)	1924.24		1297.09	18		152.3	
Cl4(49)	2651.35						
Cl4(52)	3901.34	E	1294.50	0		200.0	
Cl4(66)	1460.13		1295.79	41		83.7	
Cl4(70)	370.12						
Cl4(74)	313.17						
Cl4(77)	1091.27		1294.50	77		12.2	
Cl4(81)	35.96	U					
Cl5(87)	73.77						
Cl5(99)	655.27						
Cl5(101)	1551.2		1297.09	8		170.4	
Cl5(105)	1136.38		1295.79	79		8.5	
Cl5(110)	1217.77						
Cl5(114)	35.96	U					
Cl5(118)	1472.32		1295.79	74		61.7	
Cl5(123)	104.11						
Cl5(126)	1049.43		1302.27	81		1.2	
Cl6(128)	1045.92		1302.27	73		14.0	
Cl6(138)	1083.89		1297.09	63		28.6	
Cl6(149)	632.41						
Cl6(151)	83.23						
Cl6(153)	1504.21		1295.79	3		186.5	
Cl6(156)	65.66						
Cl6(157)	54.07						
Cl6(158)	74.38						
Cl6(167)	82.16						
Cl6(169)	35.96	U					
Cl7(170)	1086.76		1300.97	77		11.0	
Cl7(177)	29.39	J					
Cl7(180)	1230.99		1299.68	81		12.7	
Cl7(183)	25.4	J					
Cl7(187)	1092.83		1298.38	68		23.4	
Cl7(189)	35.96	U					
Cl8(194)	35.96	U					
Cl8(195)	1027.69		1298.38	78		2.5	
Cl8(201)	35.96	U					
Cl8(203)	35.96	U					
Cl9(206)	1072.47		1298.38	80		2.5	
LOC 10	1100.84		1295.79	85		9.9	

Surrogate Recoveries (%)

Cl3(34)	75
Cl6(152)	70

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0005

PROJECT: New Bedford Harbor Sediment Trap Study (USACE)
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment Trap Samples
SAMPLE CUSTODY: Surface sediment and sediment trap samples were collected on 10/31/07, 11/12/07, and 12/10/07. Samples arrived in three shipments, and were hand delivered to the Battelle Duxbury Chemistry Sample Custodian. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. After being received by the lab, the sediment trap samples were centrifuged to remove excess water. The samples were then stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	LCS/LCSD, Laboratory Duplicate Relative Percent Difference	Detection Limits (ug/kg dry wt)
PCB Congeners	EPA 1668A and 8270C	< RL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD	16.13

METHOD: Sediment trap samples were extracted for PCB congeners following modified EPA Method 3545. Approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was poured through a funnel and passed through glass wool and sodium sulfate. The extract was then brought to 100 mL; 10 mL was removed and continued on for further processing. The 10 mL split was treated with copper, solvent exchanged to hexane, and passed through a Florisil SPE cartridge. The post-Florisil extract was then brought to 10 mL, out of which 1 mL was removed to be fortified with internal standards (IS). Extracts designated for PCB congener analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on EPA Methods 1668A and 8270C. Sample data were quantified by the method of internal standards, using the IS compounds. Data was evaluated against sample specific reporting limits.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
08-0005	10/31/2007 – 12/07/2007	1/11/08	1/16/08-1/18/08

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0005

LIST OF SAMPLES:

08-0005

Sample ID	**Battelle ID**
SS-ST04-111207	Q0930
SS-ST03-111207	Q0931
SS-ST02-111207	Q0932
SS-ST01-111207	Q0933
SS-ST01-111207DUP	Q0934
ST-04-103107-01	Q0718
ST-03-103107-01	Q0720
ST-02-103107-01	Q0722
ST-01-103107-01	Q0724
ST-01-103107-02	Q0725
ST-01-103107-03	Q0726
ST-01-121007-1	Q1173
ST-01-121007-2	Q1174
ST-01-121007-3	Q1175
ST-02-121007-1	Q1176
ST-03-121007-1	Q1178
ST-04-121007-1	Q1180

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0005 – PCB 28, and PCB 52 were detected in the PB at concentration slightly above the reporting limits and qualified with a "N". The presence of these compounds in the PB does not have any impact on the data quality because the detected concentrations in the field samples were at least three orders of magnitude higher for these compounds.

LABORATORY CONTROL SAMPLE: A pair of laboratory control (LCS) and laboratory control sample duplicate (LCSD) samples was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between the percent recoveries is calculated to measure the data quality in terms of precision.

08-0005 – No exceedence noted. All percent recoveries were within laboratory control limit of 40-120%.

MATRIX SPIKE A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

08-0005 – The background sample was highly-contaminated with PCBs. Many of the target compounds were not spiked at a concentration > 5 x background, and therefore could not be used for data evaluation. For this reason, the MS sample was not diluted to resolve the concentrations qualified with "E". Data were reported as is.

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0005

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0005 – No exceedence noted. All surrogate recoveries were within laboratory control limit of 40-120%.

CALIBRATIONS: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration check (CCC) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) between the ICAL and the CCC should be <25% for individual analytes; additionally, an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

08-0005 –
0 ICAL exceedence,
1 ICC exceedence: PCB 81 had a %D at 32.6% in the ICC due to standard impurity.
2 CCC exceedence: PCB 123 were responding slightly higher than criteria in two CCCs. This slight overestimation should have limited impact on interpretation of the data.

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397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422
Proj. Name: Sediment Traps - NBH
SAMPLERS: Signature: [signature]

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	BATTELLE ID	CLIENT ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER (TOC / Grain Size)	ACIDIFIED	PRESERVED	Total Number of Containers
10/31/07	1411	Q0718	ST-04-103107-1	station 4 1st sed trap deployment		✓						✓			1
	1411	Q0719	ST-04-103107-2	" 4		✓						✓			1
	1422	Q0720	ST-03-103107-1	" 3		✓						✓			1
	1422	Q0721	ST-03-103107-2	" 3		✓						✓			1
	1431	Q0722	ST-02-103107-1	" 2		✓						✓			1
	1431	Q0723	ST-02-103107-2	" 2		✓						✓			1
	1441	Q0724	ST-01-103107-1	" 1		✓						✓			1
	1441	Q0725	ST-01-103107-2	" 1		✓						✓			1
	1441	Q0726	ST-01-103107-3	" 1		✓						✓			1

Relinquished by:	Date/Time		Received by:	Date/Time	
Mike McKee	11/01/07	12:00	Jeannine P. Seyfert	11/1/07	12:00
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

ORIGINAL

Battelle
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Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422
Proj. Name: New Bedford Harbor

SAMPLERS: Signature: Michael Walsh

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	Client ID ~~BATTELLE ID~~	LIMS ID ~~CLIENT ID~~	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
11/12/2007	0950	SS-ST04-	111207 Q0930	Surface Sediment from Sediment Trap Kaltrans		✓									1
11/12/2007	1016	SS-ST03-	111207 Q0931	" "		✓									1
11/12/2007	1051	SS-ST02-	111207 Q0932	" "		✓									1
11/12/2007	1105	SS-ST01-	111207 Q0933	1of2 " "		✓									1
11/12/2007	1116	SS-ST01-	111207-DUP	2of2 " Q0934 "		✓									1

Relinquished by:	Date/Time		Received by:	Date/Time	
Michael Walsh	11/12/2007	1545	Jeannine Seyfert	11-12-07	15:45
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

ORIGINAL

Chain of Custody

Battelle

Project Name: NBH Sed Traps
Project Number: G606422

Relinquished by: Mike McKee *Date:* 12-11-07
Received by: Jeanmi Hyfit. *Date:* 12-11-07

Field Sample ID	Analytical Lab Sample ID	Sample Date (ddmmmyy)	Sample Time (local)	Station ID	Analysis	No. of Containers	Size (liters)	Container Type	Preservative
ST-01-121007-1	Q1173	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-121007-2	Q1174	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-121007-3	Q1175	12-10-2007	0915	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-121007-1	Q1176	12-10-2007	0910	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-121007-2	Q1177	12-10-2007	0910	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-121007-1	Q1178	12-10-2007	0900	ST03	PCB, TOC, Grain Size	1	2	PE	
ST-03-121007-2	Q1179	12-10-2007	0900	ST03	PCB, TOC, Grain Size	1	2	PE	
ST-04-121007-1	Q1180	12-10-2007	0855	ST04	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-121007-2	Q1181	12-10-2007	0855	ST04	PCB, TOC, Grain Size	1	2	PE	NA

This is the corrected COC. Please see the corrective action for details.

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Deployment Nos. 3-5 and
Surface Sampling Event No. 2

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-01-041508-B	ST-01-041508-C	ST-02-041508-A	ST-03-041508-A	ST-04-041508-A	SS01-042208
Battelle ID	Q2744-P	Q2745-P	Q2746-P	Q2748-P	Q2750-P	Q2793-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	04/15/08	04/15/08	04/15/08	04/15/08	04/15/08	04/22/08
Extraction Date	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08
Analysis Date	07/26/08	07/26/08	07/27/08	07/27/08	07/27/08	07/27/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	75.49	73.74	74.88	74.06	75.98	67.25
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT
Sample Size	1.08	1.14	1.25	1.30	1.20	1.69
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	644.03	777.61	1263.73	1116.99	2299.82	1912.34
Cl3(18)	2151.18	2733.89	4698.6 D	4669.49 D	8914.26 D	3834.4 D
Cl3(28)	3686.37	4145.59 D	8130.16 D	7165.21 D	11642.27 D	9592.74 D
Cl3(31)	3345.63	3866.87	6792.44 D	6366.65 D	12606.64 D	8325.15 D
Cl3(37)	337.31	395.59	670.34	580.14	1113.17	951.07
Cl4(44)	1887.39	2088.98	3822.36 D	3651.71 D	6667.89 D	3308.47 D
Cl4(49)	5854.56 D	6318.25 D	11911.58 D	10782.12 D	21859.26 D	11673.16 D
Cl4(52)	6474.27 D	7280.28 D	12970.05 D	12483.68 D	25372.96 D	10469.31 D
Cl4(66)	885.09	1041.06	1923.96	1716.89	2914.75	2514.1 D
Cl4(70)	650.48	715.67	1347.52	1195.66	2035.29	2140.9
Cl4(74)	592.91	667.67	1244.17	1064.99	1862.2	1658.18
Cl4(77)	129.77	135.08	184.26	178.75	281.96	249.69
Cl4(81)	66.46 J	122.32 U	111.56 U	107.26 U	116.2 U	82.51 U
Cl5(87)	157.18	225.42	335.77	264.51	548.34	349.22
Cl5(99)	1618.91	1869.74	4606.22 D	4123.12 D	6558.19 D	3755.34 D
Cl5(101)	1740.67	1895.92	4076.76 D	3791.54 D	5765.3 D	3571.27 D
Cl5(105)	194.16	198.3	316.63	341.19	556.1	390.99
Cl5(110)	2635.84	2914.03	5510.89 D	5100.62 D	9410.72 D	5130.69 D
Cl5(114)	266.21	265	241.99	249.34	211.04	139.18
Cl5(118)	1178.35	1324.23	2428.11	2305.89	4983.87 D	3380.19 D
Cl5(123)	137.63	152.17	304.24	290.29	496.97	339.88
Cl5(126)	129.12 U	122.32 U	111.56 U	107.26 U	116.2 U	82.51 U
Cl6(128)	139.13	172.62	258.73	259.54	460.53	284.44
Cl6(138)	455.88	471.89	796	802.03	1367.96	913.12
Cl6(149)	2037.99	2154.49	4328.76 D	3848.38 D	6757.55 D	3564.15 D
Cl6(151)	337.18	368.17	618.23	615.78	1219.04	578.48
Cl6(153)	1693.36	1898.41	4309.02 D	4111.28 D	6379.07 D	3570.3 D
Cl6(156)	144.98	143.19	233.28	219.33	384.18	268.34
Cl6(157)	128.6 U	121.83 U	63.19 J	53.42 J	95.08 J	62.75 J
Cl6(158)	211.61	189.95	284.8	277.93	440.63	336.39
Cl6(167)	140.38	135.57	209.17	225.23	396.81	229.9
Cl6(169)	129.12 U	122.32 U	111.56 U	107.26 U	97.95 J	82.51 U
Cl7(170)	138.42	152.58	243.51	245.53	408.22	242.2
Cl7(177)	62.29 J	84.4 J	96.41 J	98.75 J	195.23	106.94
Cl7(180)	244.4	291.63	443	441.92	860.63	493.29
Cl7(183)	113.68 J	107.52 J	197.75	176.14	297.9	193.77
Cl7(187)	253.48	268.1	514	499.02	998.16	525.04
Cl7(189)	128.6 U	121.83 U	38.82 J	106.84 U	65.23 J	30.92 J
Cl8(194)	128.6 U	124.08	114.91	96.6 J	191.57	134.75
Cl8(195)	128.6 U	121.83 U	111.11 U	106.84 U	82.89 J	47.55 J
Cl8(201)	128.6 U	121.83 U	57.95 J	106.84 U	115.74 U	82.18 U
Cl8(203)	128.6 U	121.83 U	142.69	164.2	247.76	144.6
Cl9(206)	15.63 J	48.69 J	35.22 J	28 J	100.6 J	70.95 J
Cl10(209)	12.34 J	49.07 J	28.36 J	17.94 J	41.92 J	22.53 J

Surrogate Recoveries (%)

Cl3(34)	90	103	94	85	91	94
Cl6(152)	84	94	84	76	81	86

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS02-042208	SS03-042208	SS04-042208	SS01-042208-DUP	ST-04-051508-A	ST-03-051508-A
Battelle ID	Q2794-P	Q2795-P	Q2796-P	Q2797-P	Q2879-P	Q2881-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	04/22/08	04/22/08	04/22/08	04/22/08	05/15/08	05/15/08
Extraction Date	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08
Analysis Date	07/27/08	07/27/08	07/27/08	07/27/08	07/27/08	07/28/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	66.29	63.96	47.4	69.35	79.03	80.31
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	1.69	1.80	2.74	1.54	1.10	0.98
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	1353.87	2021.44	748.2	2316.33	1188.43	1135.11
Cl3(18)	3439.46 D	5515.36 D	2224 D	4791.14 D	5448.59 D	4238.42
Cl3(28)	10622.8 D	11475.25 D	3144.39 D	10128.23 D	9160.46 D	8544.93 D
Cl3(31)	10611.97 D	10928.57 D	2950.03 D	9978.66 D	8443.61 D	6712.76 D
Cl3(37)	993.38	1111.73	241.46	1198.34	771.14	734.51
Cl4(44)	3127.58 D	4227.73 D	1639.63	3379.89 D	4074.95	3200.62
Cl4(49)	15320.96 D	16047.83 D	4006.94 D	12635.5 D	13563.71 D	10579.31 D
Cl4(52)	12115.55 D	15977.21 D	4404.55 D	11275.11 D	14956.62 D	12010.15 D
Cl4(66)	2537.38 D	2762.62 D	676.42	2986.98 D	2141.79	1942.85
Cl4(70)	1981.48	2048.36 D	458.86	2345.66	1490.01	1343.76
Cl4(74)	1804.33	1921.26	510.76	1858.34	1461.45	1284.68
Cl4(77)	237.06	263.41	77.48	260.95	232.72	217.52
Cl4(81)	82.51 U	77.47 U	50.89 U	90.55 U	126.77 U	142.29 U
Cl5(87)	375.11	426.88	122.5	413.34	345.61	297.04
Cl5(99)	4557.04 D	4870.36 D	1092.09	4484.38 D	5370.51 D	3447.18
Cl5(101)	4342.8 D	4470.25 D	1100.32	4512.28 D	4235.96 D	3629.85
Cl5(105)	433.59	480.78	109.48	448.94	400.38	335.75
Cl5(110)	6512.13 D	6817.45 D	2130.08 D	5829.13 D	6639.42 D	6722.65 D
Cl5(114)	129.95	183.39	109.91	176.68	217.4	264.4
Cl5(118)	3920.97 D	3539.68 D	752.42	3793.45 D	2921.1	2465.95
Cl5(123)	403.53	464.49	91.73	379.95	374.33	299.38
Cl5(126)	82.51 U	77.47 U	50.89 U	90.55 U	126.77 U	142.29 U
Cl6(128)	349.12	319.83	80.22	286.99	300.55	260.5
Cl6(138)	1046.93	1077.65	230.48	950.12	968.98	869.44
Cl6(149)	3897.4 D	5724 D	1283.47	4217.21 D	4932.75 D	4407.34 D
Cl6(151)	693.74	817.01	209.42	628.1	807.37	645.64
Cl6(153)	4603.99 D	4667.28 D	1045.52	4194.91 D	4629.92 D	3566.67
Cl6(156)	293.97	298.51	62.53	286.06	272.11	250.92
Cl6(157)	67.81 J	74.53 J	50.69 U	67.48 J	61.74 J	76.8 J
Cl6(158)	352.94	385.58	96.51	305.37	383.03	346.75
Cl6(167)	267.99	307.03	77.61	237.51	264.41	256.76
Cl6(169)	82.51 U	62.09 J	50.89 U	90.55 U	126.77 U	142.29 U
Cl7(170)	289	298.57	63.06	250.01	286.95	255.36
Cl7(177)	134.48	146.51	38.51 J	97.97	150.8	97.14 J
Cl7(180)	577.39	618.78	130.61	510.7	584.39	438.25
Cl7(183)	219.59	253.42	57.03	213.59	216.04	192.28
Cl7(187)	664.16	733.12	152.53	582.37	635.38	557.78
Cl7(189)	40.98 J	33 J	50.69 U	28.55 J	33.99 J	141.72 U
Cl8(194)	140.38	153.42	28.89 J	132.47	167.7	134.93 J
Cl8(195)	60.13 J	45.6 J	50.69 U	90.19 U	126.26 U	141.72 U
Cl8(201)	53.73 J	49.75 J	50.69 U	50.81 J	126.26 U	141.72 U
Cl8(203)	181.86	185.43	37.64 J	143.93	188.28	141.72 U
Cl9(206)	81.61 J	90.78	15.68 J	55.09 J	53.78 J	90.38 J
Cl10(209)	31.6 J	28.99 J	50.69 U	27.1 J	126.26 U	141.72 U

Surrogate Recoveries (%)

Cl3(34)	91	94	89	93	85	85
Cl6(152)	81	84	78	82	76	79

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-02-051508-A	ST-01-051508-B	ST-01-051508-C	ST-01-061108-B	ST-01-061108-C	ST-02-061108-A
Battelle ID	Q2883-P	Q2886-P	Q2887-P	Q3079-P	Q3080-P	Q3081-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	05/15/08	05/15/08	05/15/08	06/11/08	06/11/08	06/11/08
Extraction Date	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08	07/17/08
Analysis Date	07/28/08	07/28/08	07/28/08	07/28/08	07/28/08	07/28/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	76.21	83.89	83.72	79.03	75.91	67.9
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	1.18	0.80	0.82	1.04	1.28	1.59
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	1384.28	832.42	894.98	2318.06	2762.66	3226.4 D
Cl3(18)	5677.33 D	3122.68	3425.23	7859.03 D	8673.7 D	8472.97 D
Cl3(28)	11132.2 D	5061.77 D	5464.33 D	12674.81 D	11620.01 D	13520.13 D
Cl3(31)	9366.5 D	4675.43 D	5132.51 D	10699.23 D	11681.36 D	12573.76 D
Cl3(37)	950.12	459.19	470.13	1134.94	1147.81	1257.04
Cl4(44)	4166.03 D	2175.09	2372.93	4836.78 D	4963 D	5201.64 D
Cl4(49)	13273.16 D	7215.42 D	7546.79 D	14335.28 D	15999.94 D	19026.7 D
Cl4(52)	15169.61 D	7977.01 D	8564.41 D	16317.74 D	17420.6 D	20509.02 D
Cl4(66)	2617.03	1162.73	1325.56	3277.05	3113.42	3707.36 D
Cl4(70)	1790.21	864.81	935.17	2356.42	2447.86	2942.68 D
Cl4(74)	1754.47	809.12	895.67	1964.96	1890.74	2028.32
Cl4(77)	260.38	169.38 J	169.27 J	284.61	286.26	311.63
Cl4(81)	118.17 U	174.31 U	170.05 U	134.08 U	108.94 U	87.7 U
Cl5(87)	343.88	194.63	227.63	652.05	681.85	830.57
Cl5(99)	4980.72 D	1876.48	2111.96	6330.1 D	5821.53 D	6636.02 D
Cl5(101)	4348.02 D	2199.43	2292.75	5488.06 D	5800.54 D	6369.72 D
Cl5(105)	455.35	199.25	224.52	689.05	665.93	776.43
Cl5(110)	8897.88 D	3129.3	3411.71	7229.89 D	8373.76 D	9367.73 D
Cl5(114)	247.38	325.39	320.57	226.68	179.41	134.91
Cl5(118)	4512.59 D	1395.98	1562.66	5334.38 D	5205.99 D	5144.24 D
Cl5(123)	398.34	175.12	176.21	455.59	510.84	564.84
Cl5(126)	118.17 U	174.31 U	170.05 U	134.08 U	108.94 U	87.7 U
Cl6(128)	344.4	193.45	149.55 J	414.39	479.78	530.93
Cl6(138)	1072.6	484.84	563.19	1483.96	1448.41	1750.51
Cl6(149)	5711.56 D	2354.45	2626.23	5193.3 D	6300.89 D	6858.05 D
Cl6(151)	774.62	382.21	422.03	870.29	960.3	1262.94
Cl6(153)	4800.82 D	1941.91	2187.24	5488.14 D	5410.11 D	6745.46 D
Cl6(156)	308.09	165.07 J	159.76 J	369.68	393.49	410.7
Cl6(157)	84 J	173.61 U	63.96 J	97.87 J	76.95 J	85.87 J
Cl6(158)	344.74	229.25	233.44	447.51	448.1	541.3
Cl6(167)	292.1	145.77 J	151.18 J	312.31	312	383.77
Cl6(169)	118.17 U	174.31 U	170.05 U	134.08 U	108.94 U	87.7 U
Cl7(170)	287.94	174.21	187.42	309.59	350.34	408.5
Cl7(177)	121.93	65.37 J	60.38 J	147.35	137.9	184.06
Cl7(180)	594.11	281.15	328.52	697.46	644.28	834.93
Cl7(183)	237.23	117.48 J	118.62 J	264.78	259.9	302.84
Cl7(187)	650.72	298.65	315.56	765.15	760.01	1007.51
Cl7(189)	48.52 J	173.61 U	169.38 U	49.66 J	108.51 U	48.86 J
Cl8(194)	161.01	66.08 J	169.38 U	158.46	172.71	197.1
Cl8(195)	70.48 J	173.61 U	169.38 U	72.5 J	108.51 U	68.15 J
Cl8(201)	117.7 U	173.61 U	169.38 U	69.8 J	108.51 U	56.49 J
Cl8(203)	191.67	173.61 U	144.63 J	205.06	184.45	223.1
Cl9(206)	64.71 J	173.61 U	169.38 U	75.2 J	76.59 J	104.07
Cl10(209)	23.12 J	173.61 U	169.38 U	23.53 J	24.06 J	32.58 J

Surrogate Recoveries (%)

Cl3(34)	90	85	95	89	90	91
Cl6(152)	85	78	88	84	84	85

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-04-061108-A		ST-03-061108-A	
Battelle ID	Q3083-P		Q3085-P	
Sample Type	SA		SA	
Collection Date	06/11/08		06/11/08	
Extraction Date	07/17/08		07/17/08	
Analysis Date	07/28/08		07/28/08	
Analytical Instrument	MS		MS	
% Moisture	72.8		76.62	
% Lipid	NA		NA	
Matrix	SEDIMENT TRAP		SEDIMENT TRAP	
Sample Size	1.42		1.21	
Size Unit-Basis	G_DRY		G_DRY	
Units	UG/KG_DRY		UG/KG_DRY	
Cl2(8)	2617.82		2262.56	
Cl3(18)	10476.1	D	8865.01	D
Cl3(28)	14588.01	D	13746.49	D
Cl3(31)	14188.62	D	12865.96	D
Cl3(37)	1506.59		1407.02	
Cl4(44)	6645.89	D	6450.8	D
Cl4(49)	23428.11	D	19929.82	D
Cl4(52)	26312.38	D	22642.86	D
Cl4(66)	3633.26	D	3964.74	D
Cl4(70)	2897.5	D	2861.35	
Cl4(74)	2484.63		2292.4	
Cl4(77)	372.95		338.41	
Cl4(81)	98.2	U	115.24	U
Cl5(87)	854.39		929.57	
Cl5(99)	8222.48	D	7061.3	D
Cl5(101)	7339.22	D	7123.05	D
Cl5(105)	847.25		919.23	
Cl5(110)	11904.7	D	9908.2	D
Cl5(114)	129.34		175.24	
Cl5(118)	5923.24	D	5938.8	D
Cl5(123)	600.51		572.17	
Cl5(126)	98.2	U	115.24	U
Cl6(128)	550.8		600.57	
Cl6(138)	1594.2		2045.39	
Cl6(149)	8413.17	D	8217.08	D
Cl6(151)	1229.65		1267.16	
Cl6(153)	8100.69	D	7419.54	D
Cl6(156)	438.28		543.8	
Cl6(157)	113.25		145.92	
Cl6(158)	616.47		573.25	
Cl6(167)	426.7		401.85	
Cl6(169)	98.2	U	115.24	U
Cl7(170)	399.64		478.88	
Cl7(177)	177.64		200.72	
Cl7(180)	893.36		905.96	
Cl7(183)	331.54		330.44	
Cl7(187)	1014.78		1022.86	
Cl7(189)	58.24	J	49.66	J
Cl8(194)	227.85		214.06	
Cl8(195)	97.81	U	110.25	J
Cl8(201)	97.81	U	114.78	U
Cl8(203)	252.61		267.27	
Cl9(206)	117.71		101.06	J
Cl10(209)	30.34	J	35.05	J

Surrogate Recoveries (%)

Cl3(34)	83	82
Cl6(152)	76	76

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	Procedural Blank	
Battelle ID	BM032PB-P	
Sample Type	PB	
Collection Date	07/17/08	
Extraction Date	07/17/08	
Analysis Date	07/26/08	
Analytical Instrument	MS	
% Moisture	73.19	
% Lipid	NA	
Matrix	SEDIMENT	
Sample Size	1.35	
Size Unit-Basis	G_DRY	
Units	UG/KG_DRY	
Cl2(8)	102.88	U
Cl3(18)	102.88	U
Cl3(28)	103.29	U
Cl3(31)	102.88	U
Cl3(37)	103.29	U
Cl4(44)	103.29	U
Cl4(49)	102.88	U
Cl4(52)	102.88	U
Cl4(66)	102.88	U
Cl4(70)	102.88	U
Cl4(74)	102.88	U
Cl4(77)	102.88	U
Cl4(81)	103.29	U
Cl5(87)	103.29	U
Cl5(99)	102.88	U
Cl5(101)	102.88	U
Cl5(105)	102.88	U
Cl5(110)	103.29	U
Cl5(114)	102.88	U
Cl5(118)	103.29	U
Cl5(123)	103.29	U
Cl5(126)	103.29	U
Cl6(128)	103.29	U
Cl6(138)	102.88	U
Cl6(149)	102.88	U
Cl6(151)	103.29	U
Cl6(153)	103.29	U
Cl6(156)	103.29	U
Cl6(157)	102.88	U
Cl6(158)	102.88	U
Cl6(167)	102.88	U
Cl6(169)	103.29	U
Cl7(170)	102.88	U
Cl7(177)	102.88	U
Cl7(180)	103.29	U
Cl7(183)	103.29	U
Cl7(187)	103.29	U
Cl7(189)	102.88	U
Cl8(194)	102.88	U
Cl8(195)	102.88	U
Cl8(201)	102.88	U
Cl8(203)	102.88	U
Cl9(206)	102.88	U
Cl10(209)	102.88	U

Surrogate Recoveries (%)

Cl3(34)	83
Cl6(152)	87

Not Surrogate Corrected

Analyzed by Sisson, Jeannine
3/19/2009

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	060208-03: Sand, White Quartz, -50+70				
Battelle ID	BM033LCS-P				
Sample Type	LCS				
Collection Date	07/17/08				
Extraction Date	07/17/08				
Analysis Date	07/26/08				
Analytical Instrument	MS				
% Moisture	NA				
% Lipid	NA				
Matrix	SEDIMENT				
Sample Size	5.17				
Size Unit-Basis	G_DRY				
Units	UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	671.21		776.02	86	
Cl3(18)	654.3		776.02	84	
Cl3(28)	616.04		774.47	80	
Cl3(31)	61.68				
Cl3(37)	26.97	U			
Cl4(44)	699.86		775.24	90	
Cl4(49)	26.86	U			
Cl4(52)	719.86		773.69	93	
Cl4(66)	738.46		774.47	95	
Cl4(70)	26.86	U			
Cl4(74)	26.86	U			
Cl4(77)	678.56		773.69	88	
Cl4(81)	26.97	U			
Cl5(87)	26.97	U			
Cl5(99)	26.86	U			
Cl5(101)	640.47		775.24	83	
Cl5(105)	737.36		774.47	95	
Cl5(110)	26.97	U			
Cl5(114)	60.06				
Cl5(118)	625.91		774.47	81	
Cl5(123)	26.97	U			
Cl5(126)	698.6		778.34	90	
Cl6(128)	705.87		778.34	91	
Cl6(138)	596.88		775.24	77	
Cl6(149)	26.86	U			
Cl6(151)	26.97	U			
Cl6(153)	682.11		774.47	88	
Cl6(156)	26.97	U			
Cl6(157)	26.86	U			
Cl6(158)	26.86	U			
Cl6(167)	26.86	U			
Cl6(169)	26.97	U			
Cl7(170)	668.14		777.56	86	
Cl7(177)	26.86	U			
Cl7(180)	723.52		776.79	93	
Cl7(183)	26.97	U			
Cl7(187)	696.8		776.02	90	
Cl7(189)	26.86	U			
Cl8(194)	26.86	U			
Cl8(195)	667.7		776.02	86	
Cl8(201)	26.86	U			
Cl8(203)	26.86	U			
Cl9(206)	749.25		776.02	97	
Cl10(209)	752.09		774.47	97	

Surrogate Recoveries (%)

Cl3(34)	91
Cl6(152)	93

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS01-042208		SS01-042208				
Battelle ID	Q2793-P		Q2793MS-P				
Sample Type	SA		MS				
Collection Date	04/22/08		4/22/2008				
Extraction Date	07/17/08		7/17/2008				
Analysis Date	07/27/08		7/27/2008				
Analytical Instrument	MS		MS				
% Moisture	67.25		67.62				
% Lipid	NA		NA				
Matrix	SEDIMENT		SEDIMENT				
Sample Size	1.69		1.64				
Size Unit-Basis	G_DRY		G_DRY				
Units	UG/KG_DRY		UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	1912.34		4548.31	D	2446.34	108	
Cl3(18)	3834.4	D	6042.06	D	2446.34	90	
Cl3(28)	9592.74	D	10861.76	D	2441.46	52	
Cl3(31)	8325.15	D	8406.61	D			
Cl3(37)	951.07		815.05				
Cl4(44)	3308.47	D	4705.39	D	2443.90	57	
Cl4(49)	11673.16	D	10134.93	D			
Cl4(52)	10469.31	D	11727.27	D	2439.02	52	
Cl4(66)	2514.1	D	4231.88	D	2441.46	70	
Cl4(70)	2140.9		1770.42				
Cl4(74)	1658.18		1403.68				
Cl4(77)	249.69		2242.98		2439.02	82	
Cl4(81)	82.51	U	85.03	U			
Cl5(87)	349.22		311.77				
Cl5(99)	3755.34	D	3872.63	D			
Cl5(101)	3571.27	D	5265.46	D	2443.90	69	
Cl5(105)	390.99		2143.38	D	2441.46	72	
Cl5(110)	5130.69	D	5046.61	D			
Cl5(114)	139.18		137.71				
Cl5(118)	3380.19	D	4781.1	D	2441.46	57	
Cl5(123)	339.88		287.12				
Cl5(126)	82.51	U	2208.41		2453.66	90	
Cl6(128)	284.44		1684.49	D	2453.66	57	
Cl6(138)	913.12		3151.63	D	2443.90	92	
Cl6(149)	3564.15	D	3843.78	D			
Cl6(151)	578.48		502.04				
Cl6(153)	3570.3	D	5016.5	D	2441.46	59	
Cl6(156)	268.34		221.11				
Cl6(157)	62.75	J	78.55	J			
Cl6(158)	336.39		252.28				
Cl6(167)	229.9		210.84				
Cl6(169)	82.51	U	85.03	U			
Cl7(170)	242.2		2150.71		2451.22	78	
Cl7(177)	106.94		83.62	J			
Cl7(180)	493.29		2965.33	D	2448.78	101	
Cl7(183)	193.77		160.15				
Cl7(187)	525.04		2059.28	D	2446.34	63	
Cl7(189)	30.92	J	84.69	U			
Cl8(194)	134.75		99.5				
Cl8(195)	47.55	J	2023.24		2446.34	81	
Cl8(201)	82.18	U	84.69	U			
Cl8(203)	144.6		132.64				
Cl9(206)	70.95	J	2076.19		2446.34	82	
Cl10(209)	22.53	J	1992.54		2441.46	81	

Surrogate Recoveries (%)

Cl3(34)	94	87
Cl6(152)	86	76

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	SS01-042208						
Battelle ID	Q2793MSD-P						
Sample Type	MSD						
Collection Date	4/22/2008						
Extraction Date	7/17/2008						
Analysis Date	7/27/2008						
Analytical Instrument	MS						
% Moisture	67.87						
% Lipid	NA						
Matrix	SEDIMENT						
Sample Size	1.69						
Size Unit-Basis	G_DRY						
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	4669	D	2373.96	116		7.1	
Cl3(18)	6053.73	D	2373.96	93		3.3	
Cl3(28)	10116.75	D	2369.23	22		81.1	
Cl3(31)	8892.11	D					
Cl3(37)	1009.68						
Cl4(44)	5263.07	D	2371.60	82		36.0	
Cl4(49)	11600.79	D					
Cl4(52)	12260.44	D	2366.86	76		37.5	
Cl4(66)	4406.46	D	2369.23	80		13.3	
Cl4(70)	2015.21						
Cl4(74)	1569.37						
Cl4(77)	2640.7	D	2366.86	101		20.8	
Cl4(81)	82.51	U					
Cl5(87)	370.37						
Cl5(99)	4170.43	D					
Cl5(101)	5131.58	D	2371.60	66		4.4	
Cl5(105)	2269.17	D	2369.23	79		9.3	
Cl5(110)	5090.85	D					
Cl5(114)	130.76						
Cl5(118)	4975.2	D	2369.23	67		16.1	
Cl5(123)	306.68						
Cl5(126)	1822.07	D	2381.07	77		15.6	
Cl6(128)	2025.49	D	2381.07	73		24.6	
Cl6(138)	3339.6	D	2371.60	102		10.3	
Cl6(149)	3911.33	D					
Cl6(151)	507.19						
Cl6(153)	5211.72	D	2369.23	69		15.6	
Cl6(156)	213.98						
Cl6(157)	71.06	J					
Cl6(158)	268.89						
Cl6(167)	209.91						
Cl6(169)	82.51	U					
Cl7(170)	2740.38	D	2378.70	105		29.5	
Cl7(177)	97.66						
Cl7(180)	2671.7	D	2376.33	92		9.3	
Cl7(183)	165.96						
Cl7(187)	2638.1	D	2373.96	89		34.2	
Cl7(189)	82.18	U					
Cl8(194)	128.35						
Cl8(195)	2263.54	D	2373.96	93		13.8	
Cl8(201)	82.18	U					
Cl8(203)	162.72						
Cl9(206)	2125.59	D	2373.96	87		5.9	
Cl10(209)	2253.29	D	2369.23	94		14.9	

Surrogate Recoveries (%)

Cl3(34)	94
Cl6(152)	81

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0170

PROJECT: New Bedford Harbor Sediment Trap Study (USACE)
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment Trap Samples
SAMPLE CUSTODY: Surface sediment and sediment trap samples were collected on 4/15/08, 4/22/08, 5/15/08, and 6/11/08. Samples arrived in four shipments, and were hand delivered to the Battelle Duxbury Chemistry Sample Custodian. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. After being received by the lab, the sediment trap samples were centrifuged to remove excess water. The samples were then stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	LCS/LCSD, Laboratory Duplicate Relative Percent Difference	Detection Limits (ug/kg dry wt)
PCB Congeners	EPA 1668A and 8270C	< RL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD	103.29

METHOD: Sediment trap samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was poured through a funnel and passed through glass wool and sodium sulfate. The extract was then brought to 100 mL; 10 mL was removed and continued on for further processing. The 10 mL split was treated with copper, solvent exchanged to hexane, and passed through a Florisil SPE cartridge. The post-Florisil extract was then brought to 10 mL, out of which 1 mL was removed to be fortified with internal standards (IS). Extracts designated for PCB congener analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on EPA Methods 1668A and 8270C. Sample data were quantified by the method of internal standards, using the IS compounds. Data was evaluated against sample specific reporting limits.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
08-0170	4/15/2008 – 6/11/2008	7/17/08	7/26/08-7/28/08

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0170

LIST OF SAMPLES:

08-0005

Sample ID	**Battelle ID**
ST-01-041508B	Q2744
ST-01-041508C	Q2745
ST-02-041508A	Q2746
ST-03-041508A	Q2748
ST-04-041508A	Q2750
SS01-042208	Q2793
SS02-042208	Q2794
SS03-042208	Q2795
SS04-042208	Q2796
SS01-042208DUP	Q2797
ST-04-051508-A	Q2879
ST-03-051508-A	Q2881
ST-02-051508-A	Q2883
ST-01-051508-B	Q2886
ST-01-051508-C	Q2887
ST-01-061108-B	Q3079
ST-01-061108-C	Q3080
ST-02-061108-A	Q3081
ST-04-061108-A	Q3083
ST-03-061108-A	Q3085

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0170 – No exceedences noted. No target analytes were detected in the blank sample.

LABORATORY CONTROL SAMPLE: A pair of laboratory control (LCS) and laboratory control sample duplicate (LCSD) samples was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between the percent recoveries is calculated to measure the data quality in terms of precision.

08-0170 – No exceedence noted. All percent recoveries of spiked analytes were within laboratory control limit of 40-120%.

MATRIX SPIKE A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

08-0170 – No exceedence noted. All percent recoveries of spiked analytes were within laboratory control limit of 40-120%. All RPDs were within laboratory control limit of <30%.

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0170

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0170 – No exceedence noted. All surrogate recoveries were within laboratory control limit of 40-120%.

CALIBRATIONS: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration check (CCC) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) between the ICAL and the CCC should be <25% for individual analytes; additionally, an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

08-0170 –
0 ICAL exceedence,
1 ICC exceedence: PCB 81 exceeded the %D criteria in the ICC due to standard impurity.
0 CCC exceedence: PCB 123 were responding slightly higher than criteria in two CCCs. This slight overestimation should have limited impact on interpretation of the data.

Chain of Custody

Battelle

Project Name: NBH Sed Traps
Project Number: G606422

Relinquished by: Mike McKee
Received by: Jeannie Aylsd

Date: 04-16-08
Date: 4-17-08

Field Sample ID	Analytical Lab Sample ID	Sample Date (ddmmmyy)	Sample Time (local)	Station ID	Analysis[1]	No. of Containers	Size (liters)	Container Type	Preservative
ST-01-041508-A	Q2743	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-041508-B	Q2744	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-01-041508-C	Q2745	04-15-2008	1556	ST01	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-041508-A	Q2746	04-15-2008	1620	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-02-041508-B	Q2747	04-15-2008	1620	ST02	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-041508-A	Q2748	04-15-2008	1438	ST03	PCB, TOC, Grain Size	1	2	PE	NA
ST-03-041508-B	Q2749	04-15-2008	1438	ST03	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-041508-A	Q2750	04-15-2008	1637	ST04	PCB, TOC, Grain Size	1	2	PE	NA
ST-04-041508-B	Q2751	04-15-2008	1637	ST04	PCB, TOC, Grain Size	1	2	PE	NA

[1] All sediment trap samples will be allowed to settle overnight at 4°C. On the following day, overlying water will be decanted and remaining sediment slurry will be centrifuged to remove excessive water. The weight of each centrifuged sample will be weighed to assess reproducibility of total mass at each location. PCB, TOC, and grain size analyses will be conducted on 1 of 2 samples at ST-02, 03, and 04. PCB, TOC, and grain size analyses will be conducted on 2 of 3 samples collected at ST-01. Samples designated for PCB analysis will be frozen until sample analysis starts. Samples designated for TOC and grain size analyses will be shipped to Applied Marine Sciences located in League City, TX.

Battelle

The Business of Innovation

ShpNo SHP-080424-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, April 24, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	5

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☑ Yes ☐ No ☐ Unknown /Lot No.: Unknown

Storage Location: Field Room II: Refrigerator - R0004 (Lower Col **BDO IDs Assigned:** Q2793 - Q2797

Samples logged in by: Seyfert, Jeannine **Date/Time:** 04/24/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-080424-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, April 24, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q2793	SS01-042208	04/22/08 9:45	04/24/08 16:13	1	SEDIMENT	4	NA	NA	NA	F0002 (Walk-in)			
Q2794	SS02-042208	04/22/08 10:30	04/24/08 16:13	1	SEDIMENT	4	NA	NA	NA	F0002 (Walk-in)			
Q2795	SS03-042208	04/22/08 9:08	04/24/08 16:14	1	SEDIMENT	4	NA	NA	NA	F0002 (Walk-in)			
Q2796	SS04-042208	04/22/08 8:18	04/24/08 16:14	1	SEDIMENT	4	NA	NA	NA	F0002 (Walk-in)			
Q2797	SS01-042208-DUP	04/22/08 10:05	04/24/08 16:14	1	SEDIMENT	4	NA	NA	NA	F0002 (Walk-in)			

Total Samples: 5

Chain of Custody

Battelle

Project Name: NBH Sed Traps
Project Number: G606422

Relinquished by: Mike McKee
Received by: Jeannine Hyatt

Date: 04-23-08
Date: 4-24-08

Field Sample ID	Analytical Lab Sample ID	Sample Date (ddmmmyy)	Sample Time (local)	Station ID	Analysis[1]	No. of Containers	Size (liters)	Container Type	Preservative
SS01-042208	Q2793	04-22-2008	0945	ST01	PCB	1	0.5	PC glass	NA
SS02-042208	Q2794	04-22-2008	1030	ST02	PCB	1	0.5	PC glass	NA
SS03-042208	Q2795	04-22-2008	0908	ST03	PCB	1	0.5	PC glass	NA
SS04-042208	Q2796	04-22-2008	0818	ST04	PCB	1	0.5	PC glass	NA
SS01-042208-DUP	Q2797	04-22-2008	1005	ST01	PCB[1]	1	0.5	PC glass	NA

[1] The field sampling plan did not specify field duplicates for sediment grab analysis. Please contact Deirdre before running the duplicate sample.

Battelle
The Business of Innovation

ShpNo SHP-080519-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Friday, May 16, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Field Room II: Refrigerator - R0004 (Lower Col **BDO IDs Assigned:** Q2879 - Q2887

Samples logged in by: Seyfert, Jeannine **Date/Time:** 05/16/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-080519-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Friday, May 16, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q2879	ST-04-051508-A	05/15/08 14:38	05/19/08 16:45	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2880	ST-04-051508-B	05/15/08 14:38	05/19/08 16:45	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2881	ST-03-051508-A	05/15/08 14:59	05/19/08 16:45	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2882	ST-03-051508-B	05/15/08 14:59	05/19/08 16:45	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2883	ST-02-051508-A	05/15/08 15:36	05/19/08 16:46	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2884	ST-02-051508-B	05/15/08 15:36	05/19/08 16:46	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2885	ST-01-051508-A	05/15/08 15:52	05/19/08 16:46	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2886	ST-01-051508-B	05/15/08 15:52	05/19/08 16:46	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q2887	ST-01-051508-C	05/15/08 15:52	05/19/08 16:47	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			

Total Samples: 9

Battelle
The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: GG06422
Proj. Name: Sediment Trap - NBH

SAMPLERS: Signature: Michael P McCann

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ~~BATTELLE~~ ID	FIELD ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER TOC/Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
05/15/08	14:38	Q2879	ST-04-051508-A	4th sediment trap recovery station 04		✓						✓			
↓	↓	Q2880	ST-04-051508-B	station 04		✓						✓			
	14:59	Q2881	ST-03-051508-A	station 03		✓						✓			
	↓	Q2882	ST-03-051508-B	station 03		✓						✓			
	15:36	Q2883	ST-02-051508-A	station 02		✓						✓			
	↓	Q2884	ST-02-051508-B	station 02		✓						✓			
	15:52	Q2885	ST-01-051508-A	station 01		✓						✓			
		Q2886	ST-01-051508-B	station 01		✓						✓			
↓	↓	Q2887	ST-01-051508-C	station 01		✓						✓			

Relinquished by:	Date/Time		Received by:	Date/Time	
Michael P McCann	05/16/08	1200	Jeannie Light	5/16/08	1200
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments: After settling and decanting, all samples will be weighed for reproducibility. At station 01, 2 of 3 samples will be analyzed for PCB, TOC, & Grain Size. At stations 02, 03 & 04, 1 of 2 samples will be analyzed for PCB, TOC, & Grain Size.

ORIGINAL

Battelle
The Business of Innovation

ShpNo SHP-080616-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, June 12, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☑ Tape ☐ Custody Seals ☑ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q3078 - Q3086

Samples logged in by: Seyfert, Jeannine **Date/Time:** 06/12/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-080616-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, June 12, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q3078	ST-01-061108-A	06/11/08 12:15	06/16/08 10:12	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3079	ST-01-061108-B	06/11/08 12:15	06/16/08 10:12	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3080	ST-01-061108-C	06/11/08 12:15	06/16/08 10:12	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3081	ST-02-061108-A	06/11/08 12:24	06/16/08 10:12	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3082	ST-02-061108-B	06/11/08 12:24	06/16/08 10:13	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3083	ST-04-061108-A	06/11/08 12:48	06/16/08 10:13	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3084	ST-04-061108-B	06/11/08 12:48	06/16/08 10:13	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3085	ST-03-061108-A	06/11/08 13:10	06/16/08 10:13	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3086	ST-03-061108-B	06/11/08 13:10	06/16/08 10:14	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			

Total Samples: 9

Battelle
The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422
Proj. Name: NBH Sed Trap

SAMPLERS: Signature: Michael P Mc

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	Lab ~~BATTELLE~~ ID	Field ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER TOC/Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
06/11/08	1215	Q3078	ST-01-061108-A	5m sediment trap recovery station 01		✓						✓			
	↓	Q3079	ST-01-061108-B	01		✓						✓			
		Q3080	ST-01-061108-C	01		✓						✓			
	1224	Q3081	ST-02-061108-A	02		✓						✓			
	↓	Q3082	ST-02-061108-B	02		✓						✓			
	1248	Q3083	ST-04-061108-A	04		✓						✓			
	↓	Q3084	ST-04-061108-B	04		✓						✓			
	1310	Q3085	ST-03-061108-A	03		✓						✓			
	↓	Q3086	ST-03-061108-B	03		✓						✓			

Relinquished by:	Date/Time	Received by:	Date/Time
Michael P. Mc	~~06/12/08~~ 06/12/08 0800	Jeannie Seyfert	6/12/08 1148
Relinquished by:	Date/Time	Received by:	Date/Time
MPM	06/12/08		

Comments: After settling samples for 24 hrs and decanting, all samples will be weighed for reproducibility. At ST-01 2 of 3 samples will be analyzed for PCB, TOC & GS. At ST-02, 03 & 04 only 1 of 2 samples will be analyzed for PCB, TOC & GS

ORIGINAL

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Deployment Nos. 6-9

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Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-01-071008-B	ST-01-071008-C	ST-02-071008-A	ST-04-071008-A	ST-03-071008-A	ST-04-073108-A
Battelle ID	Q3438-P	Q3439-P	Q3440-P	Q3442-P	Q3444-P	Q3734-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	07/10/08	07/10/08	07/10/08	07/10/08	07/10/08	07/31/08
Extraction Date	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08
Analysis Date	10/27/08	10/27/08	10/27/08	10/28/08	10/28/08	10/28/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	78.47	76.42	73.11	75.2	76.08	71.51
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	0.73	1.08	2.72	2.49	2.40	2.88
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	3171.16	5259.4	4375.59	4997.94	3216.31	3166.33
Cl3(18)	9084.48	12244.4	9171.37 D	11663.2 D	7746.34 D	9120.59 D
Cl3(28)	12946.59	17824 D	13791.05 D	17601.49 D	11999.74 D	14787.37 D
Cl3(31)	13090.66	17730.25 D	13616.51 D	17113.06 D	12477.15 D	14880.54 D
Cl3(37)	1419.38	1881.66	1804.27	1647.76	1443.07	1378.43
Cl4(44)	5881.55	8197.97	6618.67 D	7476.4 D	6905.91 D	7369.79 D
Cl4(49)	18105.43	20745.5 D	17921.51 D	22999.22 D	17893.48 D	22582.46 D
Cl4(52)	20182.42	22840.11 D	20069.71 D	29231 D	19585.57 D	24176.16 D
Cl4(66)	3883.38	5890.57	4529.14	4872.13	3589.64	3543.88
Cl4(70)	3553.12	5499.64	4119.25	4224.19	3404.3	3265.92
Cl4(74)	2206.01	3263.21	2933.56	3116.94	2427.03	2320.53
Cl4(77)	533.34	538.3	381.77	383.4	342.98	330.6
Cl4(81)	344.52 U	232.87 U	92.46 U	101 U	104.79 U	87.33 U
Cl5(87)	2058.8	2107.54	1983.65	1693	1592.02	1583.6
Cl5(99)	6557.48	9034.77	6920.73 D	8573.09 D	7016.24 D	7604.93 D
Cl5(101)	8727.95	11477.63	8374.51 D	9871.65 D	8457.82 D	8713.05 D
Cl5(105)	1553.88	1895.77	1778.42	1736.74	1546.57	1575.54
Cl5(110)	10412.39	12677.74	9738.71 D	11926.14 D	9932.35 D	11267.2 D
Cl5(114)	342.47 U	231.48 U	91.91 U	100.4 U	104.17 U	86.81 U
Cl5(118)	6640.82	7996.71	6800.61 D	7585.93 D	6821.53 D	6973.38 D
Cl5(123)	914.74	1053.92	820.34	922.79	783.16	790.48
Cl5(126)	343.84 U	232.41 U	92.28 U	100.8 U	104.58 U	87.15 U
Cl6(128)	1111.27	1177.54	1025.99	1047.1	927.79	1024.14
Cl6(138)	2893.46	3470.33	3124.6	3115.7	2776.89	2688.19
Cl6(149)	7261.38	8523.08	7672.59 D	9489.89 D	8419.5 D	8911.33 D
Cl6(151)	1335.55	1679.94	1497.16	1533.23	1312.32	1350.62
Cl6(153)	7489.36	9683.25	6438.37 D	7987.63 D	6412.45 D	7999.59 D
Cl6(156)	771.7	882.67	702.29	759.02	652.94	711.15
Cl6(157)	319.04 J	286.03	182.68	170.34	172	164.11
Cl6(158)	852.88	936.98	922.94	930.69	812.42	834.25
Cl6(167)	469.59	555.61	486.28	513.05	481.73	514.74
Cl6(169)	343.84 U	232.41 U	92.28 U	100.8 U	104.58 U	87.15 U
Cl7(170)	625.16	645.67	561.23	580.06	547.2	662.52
Cl7(177)	354.71	397.81	280.41	289.47	265.27	276.56
Cl7(180)	1059.3	1286.45	1079.51	1130.87	1026.87	1096.71
Cl7(183)	312.34 J	456.51	403.34	438.64	407.24	430.41
Cl7(187)	871.11	1084.56	1044.71	1215.39	1012.28	1225.86
Cl7(189)	342.47 U	231.48 U	91.91 U	100.4 U	104.17 U	86.81 U
Cl8(194)	342.47 U	312.77	220.27	231.61	199.42	246.89
Cl8(195)	342.47 U	164.16 J	93.16	75.76 J	71.71 J	116.73
Cl8(201)	342.47 U	231.48 U	91.91 U	39.37 J	37.5 J	39.48 J
Cl8(203)	342.47 U	231.48 U	243.27	283.34	232.14	289.54
Cl9(206)	342.47 U	231.48 U	146.73	142.75	146.69	136.67
Cl10(209)	342.47 U	231.48 U	91.91 U	100.4 U	104.17 U	43.42 J

Surrogate Recoveries (%)

Cl3(34)	85	88	90	86	72	90
Cl6(152)	92	92	97	87	79	98

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-01-073108-B	ST-01-073108-C	ST-02-073108-A	ST-03-073108-A	ST-01-082508-B	ST-01-082508-C
Battelle ID	Q3737-P	Q3738-P	Q3739-P	Q3741-P	Q4052-P	Q4053-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	07/31/08	07/31/08	07/31/08	07/31/08	08/25/08	08/25/08
Extraction Date	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08
Analysis Date	10/28/08	10/28/08	10/28/08	10/28/08	10/28/08	10/28/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	72.56	78.05	69.3	74.11	70.44	70.1
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	2.74	1.86	3.10	2.60	0.92	1.14
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	2269.01	2116.47 D	3576.08	3162.56	1362.11	1879.78
Cl3(18)	4852.21 D	6199.34	8785.95 D	6838.47 D	3048.23	4522.18
Cl3(28)	7721.04 D	7590.21 D	14286.55 D	12747.62 D	5305.12	9791.71
Cl3(31)	7325.03 D	7981.65 D	13867.22 D	12231.19 D	5203.89	9363.12
Cl3(37)	768	747.96	1403.15	1305.96	472.86	588.22
Cl4(44)	3368.2	3678.6	6285.97 D	6130.6 D	1931.5	3276.68
Cl4(49)	9426.1 D	10329.55 D	19409.55 D	17396.77 D	6603.1	12525.27
Cl4(52)	10152.78 D	10054.97 D	20610.41 D	18481.46 D	6891.05	13074.18
Cl4(66)	2009.63	2015.21	3821.88	3582.27	1194.83	2166.85
Cl4(70)	2015.39	1835.05	3471.28	3256.52	983.63	1825.41
Cl4(74)	1299.92	1286.06	2478.63	2420.16	799.63	1420.33
Cl4(77)	225.99	252.96	329.48	388.9	274.54	277.39
Cl4(81)	91.79 U	135.22 U	81.13 U	96.73 U	273.37 U	220.61 U
Cl5(87)	979.64	725.35	1523.83	1480.74	472	798.7
Cl5(99)	3441.63	3583.17	6266.24 D	6988.79 D	1939.46	3957.55
Cl5(101)	4414.34	4170.74	7714.54 D	7798.43 D	2174.54	4571.25
Cl5(105)	887.11	676.77	1481.87	1584.02	285.1	583.31
Cl5(110)	5075.49 D	5316.02	8933.44 D	9251.02 D	2803.58	5154.47
Cl5(114)	91.24 U	134.41 U	80.65 U	96.15 U	271.74 U	219.3 U
Cl5(118)	3227.28	3092.07	5721.38 D	6167.31 D	1677.76	3142.84
Cl5(123)	446.39	485.09	747.34	779.55	404.73	523.64
Cl5(126)	91.61 U	134.95 U	80.97 U	96.54 U	272.83 U	220.18 U
Cl6(128)	565.79	444.36	888.33	1012.47	266.55 J	395.17
Cl6(138)	1641.54	1229.23	2898.88	3173.03	681.55	1138.12
Cl6(149)	3939.42	3941.98	7232.87 D	8291.79 D	2105.26	3759.68
Cl6(151)	642.34	612.2	1232.18	1343.55	433.91	708.27
Cl6(153)	4268.44	3863.58	6107.56 D	6040.89 D	1942.94	3853.2
Cl6(156)	347.18	341.43	649.9	704.6	307.23	369.61
Cl6(157)	122.66	134.41 U	156.03	176.58	271.74 U	166.78 J
Cl6(158)	405.23	419.05	747.37	896.33	248.39 J	349.43
Cl6(167)	257.54	253.25	443.53	516.71	198.22 J	250.55
Cl6(169)	91.61 U	134.95 U	80.97 U	96.54 U	272.83 U	220.18 U
Cl7(170)	306.43	295.23	500.97	633.86	216.18 J	237.13
Cl7(177)	169.39	186.47	248.1	292.55	271.74 U	209.69 J
Cl7(180)	568.45	489.74	934.31	1179.92	366.84	445.98
Cl7(183)	194.42	189.07	355.61	428.71	108.88 J	170.16 J
Cl7(187)	483.59	535.99	959.22	1183.76	319.33	447.48
Cl7(189)	91.24 U	134.41 U	61.71 J	81.97 J	271.74 U	219.3 U
Cl8(194)	139.15	142	230.17	253.96	271.74 U	219.3 U
Cl8(195)	91.24 U	134.41 U	100.39	96.3	271.74 U	219.3 U
Cl8(201)	91.24 U	134.41 U	32.43 J	40.09 J	271.74 U	219.3 U
Cl8(203)	144.6	170.95	250.99	289.17	271.74 U	219.3 U
Cl9(206)	92.42	108.14 J	134.52	141.57	271.74 U	219.3 U
Cl10(209)	91.24 U	134.41 U	31.46 J	52.03 J	271.74 U	219.3 U

Surrogate Recoveries (%)

Cl3(34)	86	86	89	97	83	87
Cl6(152)	89	92	92	102	88	93

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-02-082508-A	ST-03-082508-A	ST-04-082508-A	ST01-100208-B	ST01-100208-C	ST02-100208-A
Battelle ID	Q4054-P	Q4056-P	Q4058-P	Q4850-P	Q4851-P	Q4852-P
Sample Type	SA	SA	SA	SA	SA	SA
Collection Date	08/25/08	08/25/08	08/25/08	10/02/08	10/02/08	10/02/08
Extraction Date	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08	10/08/08
Analysis Date	10/28/08	10/28/08	10/29/08	10/29/08	10/29/08	10/29/08
Analytical Instrument	MS	MS	MS	MS	MS	MS
% Moisture	68.26	71.17	80	73.23	72.51	72.67
% Lipid	NA	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	3.23	2.89	2.03	2.72	2.77	2.77
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	1444.01	1630.8	2201.43	1336.27	1259.33	1295.65
Cl3(18)	3473.48	4376.65	6442.8	3095.2	2926.17	3324.74
Cl3(28)	4706.1 D	6898.05 D	9354.26 D	6010.29	5384.38	5331.09
Cl3(31)	4772.81 D	5946.13 D	8500.48 D	4748.85	4243.63	5150.2
Cl3(37)	423.38	556.74	875.82	452.29	477.47	403.33
Cl4(44)	2052.85	3418.44	4477.57	2079.33	1777.06	2041.39
Cl4(49)	5945.37 D	9982.03 D	12558.96 D	4732.43 D	5495.5	5902.71 D
Cl4(52)	6120.43 D	10222.65 D	14387.17 D	5794.82 D	5538.22 D	6219.21 D
Cl4(66)	1093.7	1836.97	2476.43	1051.99	1028.53	1066.35
Cl4(70)	999.36	1296.87	2105.96	847.28	744.08	909.31
Cl4(74)	745.73	1207.89	1690.24	864.77	842.75	708.21
Cl4(77)	126.07	141.21	274.43	173.95	161.77	135.28
Cl4(81)	77.86 U	87.02 U	123.89 U	92.46 U	90.79 U	90.79 U
Cl5(87)	387.07	691.55	893.42	398.26	321.1	372.62
Cl5(99)	1972.3	3965.67	5172.81	2651.58	2356.5	1910.02
Cl5(101)	2329.89	4435.69	5508.59	2242.54	1819.35	2223.48
Cl5(105)	337.78	680.27	885.54	345.93	346.04	328.78
Cl5(110)	2964.7	5152.44	7156.41	2997.73	2484.65	2863.64
Cl5(114)	77.4 U	86.51 U	123.15 U	91.91 U	90.25 U	90.25 U
Cl5(118)	1648.43	3109.7	4005.88	2117.65	1896.22	1597.39
Cl5(123)	242.74	384.88	530.8	289.97	259.64	245.59
Cl5(126)	77.71 U	86.85 U	123.65 U	92.28 U	90.61 U	90.61 U
Cl6(128)	244.47	404.83	622.16	293.04	236.28	261.03
Cl6(138)	669.51	1217.73	1677.59	824.89	722.53	668.4
Cl6(149)	2238.17	3746.34	5713.79	2205.45	1981.33	2171.2
Cl6(151)	366.1	621.04	853.53	373.21	347.34	349.35
Cl6(153)	2221.84	4157.3	5969.61	2978.31	2717.35	2255.37
Cl6(156)	189.02	331.1	445.68	259.95	246.19	205.46
Cl6(157)	87.38	105.66	158.61	92.04	90.25 U	65.68 J
Cl6(158)	241.7	373.65	564.17	246.66	215.77	206.15
Cl6(167)	134.08	239.83	333.27	196.98	173.25	149.43
Cl6(169)	77.71 U	86.85 U	123.65 U	92.28 U	90.61 U	90.61 U
Cl7(170)	151.53	262.29	358.97	201.64	203.14	164.3
Cl7(177)	113.59	138.03	193.8	136.61	124.84	98.05
Cl7(180)	286.7	497.61	712.82	441.9	326.28	304.18
Cl7(183)	100.27	189.16	277.72	150.96	123.46	95.05
Cl7(187)	304.63	487.6	744.75	361.27	343.86	310.95
Cl7(189)	77.4 U	86.51 U	123.15 U	91.91 U	90.25 U	90.25 U
Cl8(194)	86.21	136.61	195.81	117.5	111.84	90.25 U
Cl8(195)	55.36 J	58.43 J	85.66 J	63.22 J	90.25 U	90.25 U
Cl8(201)	77.4 U	86.51 U	123.15 U	91.91 U	90.25 U	90.25 U
Cl8(203)	90.25	137	206.51	104.58	114.17	102.12
Cl9(206)	77.4 U	85.63 J	121.34 J	91.91 U	80.17 J	90.25 U
Cl10(209)	77.4 U	86.51 U	123.15 U	91.91 U	90.25 U	90.25 U

Surrogate Recoveries (%)

Cl3(34)	85	87	95	90	93	85
Cl6(152)	92	92	100	96	98	95

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST04-100208-A	ST03-100208-A
Battelle ID	Q4854-P	Q4856-P
Sample Type	SA	SA
Collection Date	10/02/08	10/02/08
Extraction Date	10/08/08	10/08/08
Analysis Date	10/29/08	10/29/08
Analytical Instrument	MS	MS
% Moisture	75.18	70.66
% Lipid	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	2.52	2.93
Size Unit-Basis	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY
Cl2(8)	1297.48	1436.66
Cl3(18)	3250.95	3582.54
Cl3(28)	5936.65	4211.53 D
Cl3(31)	5545.16	4226.27 D
Cl3(37)	464.36	514.25
Cl4(44)	2324.01	2410.14
Cl4(49)	6332.29 D	5065.52 D
Cl4(52)	6804.79 D	5346.63 D
Cl4(66)	1273.34	1312.79
Cl4(70)	1051.43	1124.55
Cl4(74)	859	882.33
Cl4(77)	178.58	178.54
Cl4(81)	99.8 U	85.84 U
Cl5(87)	456.57	493.96
Cl5(99)	2389.63	2486.66
Cl5(101)	2613.42	2705.46
Cl5(105)	380.5	418.89
Cl5(110)	3393.12	3533.23
Cl5(114)	99.21 U	85.32 U
Cl5(118)	1948.2	2050.23
Cl5(123)	292.41	298.63
Cl5(126)	99.6 U	85.67 U
Cl6(128)	285.04	274.53
Cl6(138)	768.71	786.28
Cl6(149)	2727.23	2786.57
Cl6(151)	424.76	404.07
Cl6(153)	2547.58	2594.33
Cl6(156)	212.47	223.79
Cl6(157)	99.21 U	75.31 J
Cl6(158)	255.91	239.39
Cl6(167)	164.85	159
Cl6(169)	99.6 U	85.67 U
Cl7(170)	164.83	185.01
Cl7(177)	114.99	100.4
Cl7(180)	336.86	345.89
Cl7(183)	114.93	132.91
Cl7(187)	332.95	358.97
Cl7(189)	99.21 U	85.32 U
Cl8(194)	112.12	87.12
Cl8(195)	99.21 U	85.32 U
Cl8(201)	99.21 U	85.32 U
Cl8(203)	130.03	111.73
Cl9(206)	73.5 J	76.29 J
Cl10(209)	99.21 U	85.32 U

Surrogate Recoveries (%)

Cl3(34)	86	90
Cl6(152)	90	94

Not Surrogate Corrected

Analyzed by Thorn, Jonathan
3/19/2009

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	Procedural Blank	
Battelle ID	BM466PB-P	
Sample Type	PB	
Collection Date	10/08/08	
Extraction Date	10/08/08	
Analysis Date	10/27/08	
Analytical Instrument	MS	
% Moisture	73.45	
% Lipid	NA	
Matrix	SEDIMENT	
Sample Size	2.69	
Size Unit-Basis	G_DRY	
Units	UG/KG_DRY	
Cl2(8)	92.94	U
Cl3(18)	92.94	U
Cl3(28)	93.49	U
Cl3(31)	92.94	U
Cl3(37)	93.49	U
Cl4(44)	93.31	U
Cl4(49)	92.94	U
Cl4(52)	92.94	U
Cl4(66)	92.94	U
Cl4(70)	92.94	U
Cl4(74)	92.94	U
Cl4(77)	92.94	U
Cl4(81)	93.49	U
Cl5(87)	93.31	U
Cl5(99)	92.94	U
Cl5(101)	92.94	U
Cl5(105)	93.12	U
Cl5(110)	93.49	U
Cl5(114)	92.94	U
Cl5(118)	93.31	U
Cl5(123)	93.49	U
Cl5(126)	93.31	U
Cl6(128)	93.49	U
Cl6(138)	92.94	U
Cl6(149)	92.94	U
Cl6(151)	93.31	U
Cl6(153)	93.49	U
Cl6(156)	93.49	U
Cl6(157)	92.94	U
Cl6(158)	92.94	U
Cl6(167)	92.94	U
Cl6(169)	93.31	U
Cl7(170)	92.94	U
Cl7(177)	92.94	U
Cl7(180)	93.49	U
Cl7(183)	93.49	U
Cl7(187)	93.49	U
Cl7(189)	92.94	U
Cl8(194)	92.94	U
Cl8(195)	92.94	U
Cl8(201)	92.94	U
Cl8(203)	92.94	U
Cl9(206)	92.94	U
Cl10(209)	92.94	U

Surrogate Recoveries (%)

Cl3(34)	90
Cl6(152)	99

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	060208-03: Sand, White Quartz, -50+70				
Battelle ID	BM467LCS-P				
Sample Type	LCS				
Collection Date	10/08/08				
Extraction Date	10/08/08				
Analysis Date	10/27/08				
Analytical Instrument	MS				
% Moisture	NA				
% Lipid	NA				
Matrix	SEDIMENT				
Sample Size	10.07				
Size Unit-Basis	G_DRY				
Units	UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	350.7		398.41	88	
Cl3(18)	311.06		398.41	78	
Cl3(28)	298.74		397.62	75	
Cl3(31)	24.83	U			
Cl3(37)	24.98	U			
Cl4(44)	320.92		398.01	81	
Cl4(49)	24.83	U			
Cl4(52)	311.11		397.22	78	
Cl4(66)	299.76		397.62	75	
Cl4(70)	24.83	U			
Cl4(74)	24.83	U			
Cl4(77)	246.93		397.22	62	
Cl4(81)	24.98	U			
Cl5(87)	24.93	U			
Cl5(99)	24.83	U			
Cl5(101)	310.62		398.01	78	
Cl5(105)	333.19		397.62	84	
Cl5(110)	24.98	U			
Cl5(114)	24.83	U			
Cl5(118)	257.71		397.62	65	
Cl5(123)	24.98	U			
Cl5(126)	281.81		399.60	71	
Cl6(128)	323.82		399.60	81	
Cl6(138)	274.24		398.01	69	
Cl6(149)	24.83	U			
Cl6(151)	24.93	U			
Cl6(153)	325.65		397.62	82	
Cl6(156)	24.98	U			
Cl6(157)	24.83	U			
Cl6(158)	24.83	U			
Cl6(167)	24.83	U			
Cl6(169)	24.93	U			
Cl7(170)	330.81		399.21	83	
Cl7(177)	24.83	U			
Cl7(180)	319.77		398.81	80	
Cl7(183)	24.98	U			
Cl7(187)	323.75		398.41	81	
Cl7(189)	24.83	U			
Cl8(194)	24.83	U			
Cl8(195)	276.17		398.41	69	
Cl8(201)	24.83	U			
Cl8(203)	24.83	U			
Cl9(206)	295.31		398.41	74	
Cl10(209)	281.95		397.62	71	

Surrogate Recoveries (%)

Cl3(34)	80
Cl6(152)	102

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-04-071008-A		ST-04-071008-A				
Battelle ID	Q3442-P		Q3442MS-P				
Sample Type	SA		MS				
Collection Date	07/10/08		7/10/2008				
Extraction Date	10/08/08		10/8/2008				
Analysis Date	10/28/08		10/28/2008				
Analytical Instrument	MS		MS				
% Moisture	75.2		75.42				
% Lipid	NA		NA				
Matrix	SEDIMENT TRAP		SEDIMENT TRAP				
Sample Size	2.49		2.5				
Size Unit-Basis	G_DRY		G_DRY				
Units	UG/KG_DRY		UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	4997.94		6759.37	E	1604.80	110	
Cl3(18)	11663.2	D	18840.62	E	1604.80	447	
Cl3(28)	17601.49	D	27731.97	E	1601.60	633	
Cl3(31)	17113.06	D	25404.13	E			
Cl3(37)	1647.76		2002.6				
Cl4(44)	7476.4	D	11789.02	E	1603.20	269	
Cl4(49)	22999.22	D	35262.5	E			
Cl4(52)	29231	D	42339.17	E	1600.00	819	
Cl4(66)	4872.13		7201.73	E	1601.60	145	
Cl4(70)	4224.19		5261.22	E			
Cl4(74)	3116.94		3877.7				
Cl4(77)	383.4		1554.58		1600.00	73	
Cl4(81)	101	U	100.6	U			
Cl5(87)	1693		2116.32				
Cl5(99)	8573.09	D	10958.86	E			
Cl5(101)	9871.65	D	14358.42	E	1603.20	280	
Cl5(105)	1736.74		3719.52		1601.60	124	
Cl5(110)	11926.14	D	15687.42	E			
Cl5(114)	100.4	U	100	U			
Cl5(118)	7585.93	D	9469.13	E	1601.60	118	
Cl5(123)	922.79		1106.36				
Cl5(126)	100.8	U	1380.15		1609.60	86	
Cl6(128)	1047.1		2628.88		1609.60	98	
Cl6(138)	3115.7		5786.09	E	1603.20	167	
Cl6(149)	9489.89	D	11394.65	E			
Cl6(151)	1533.23		1900.33				
Cl6(153)	7987.63	D	14333.33	E	1601.60	396	
Cl6(156)	759.02		910.74				
Cl6(157)	170.34		211.84				
Cl6(158)	930.69		1164.87				
Cl6(167)	513.05		615.64				
Cl6(169)	100.8	U	100.4	U			
Cl7(170)	580.06		2126.02		1608.00	96	
Cl7(177)	289.47		329.24				
Cl7(180)	1130.87		2602.94		1606.40	92	
Cl7(183)	438.64		561.46				
Cl7(187)	1215.39		2728.76		1604.80	94	
Cl7(189)	100.4	U	92.22	J			
Cl8(194)	231.61		251.65				
Cl8(195)	75.76	J	1304.58		1604.80	77	
Cl8(201)	39.37	J	39.45	J			
Cl8(203)	283.34		297.59				
Cl9(206)	142.75		1285.4		1604.80	71	
Cl10(209)	100.4	U	1101.46		1601.60	69	

Surrogate Recoveries (%)

Cl3(34)	86	93
Cl6(152)	87	96

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-04-071008-A						
Battelle ID	Q3442MSD-P						
Sample Type	MSD						
Collection Date	7/10/2008						
Extraction Date	10/8/2008						
Analysis Date	10/28/2008						
Analytical Instrument	MS						
% Moisture	75.1						
% Lipid	NA						
Matrix	SEDIMENT TRAP						
Sample Size	2.5						
Size Unit-Basis	G_DRY						
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	6115.33	E	1604.80	70		44.4	
Cl3(18)	16963.94	E	1604.80	330		30.1	
Cl3(28)	24884.17	E	1601.60	455		32.7	
Cl3(31)	22662.05	E					
Cl3(37)	1805.43						
Cl4(44)	10532.19	E	1603.20	191		33.9	
Cl4(49)	32121.91	E					
Cl4(52)	38445.18	E	1600.00	576		34.8	
Cl4(66)	6515.33	E	1601.60	103		33.9	
Cl4(70)	4639.38						
Cl4(74)	3515.31						
Cl4(77)	1535.71		1600.00	72		1.4	
Cl4(81)	100.6	U					
Cl5(87)	1923.53						
Cl5(99)	10043.48	E					
Cl5(101)	13041.67	E	1603.20	198		34.3	
Cl5(105)	3376.06		1601.60	102		19.5	
Cl5(110)	14697.06	E					
Cl5(114)	100	U					
Cl5(118)	8911.77	E	1601.60	83		34.8	
Cl5(123)	1007.28						
Cl5(126)	1349.74		1609.60	84		2.4	
Cl6(128)	2575.52		1609.60	95		3.1	
Cl6(138)	4808.02		1603.20	106		44.7	
Cl6(149)	10556.17	E					
Cl6(151)	1703.21						
Cl6(153)	13069.11	E	1601.60	317		22.2	
Cl6(156)	811.81						
Cl6(157)	216.95						
Cl6(158)	1017.83						
Cl6(167)	564.67						
Cl6(169)	100.4	U					
Cl7(170)	1934.81		1608.00	84		13.3	
Cl7(177)	309.55						
Cl7(180)	2558.99		1606.40	89		3.3	
Cl7(183)	478.89						
Cl7(187)	2657.51		1604.80	90		4.3	
Cl7(189)	94.36	J					
Cl8(194)	251.41						
Cl8(195)	1207.07		1604.80	70		9.5	
Cl8(201)	40.92	J					
Cl8(203)	270.21						
Cl9(206)	1164.83		1604.80	64		10.4	
Cl10(209)	1119.39		1601.60	70		1.4	

Surrogate Recoveries (%)

Cl3(34)	89
Cl6(152)	90

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0280

PROJECT: New Bedford Harbor Sediment Trap Study (USACE)
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment Trap Samples
SAMPLE CUSTODY: Sediment trap samples were collected on 7/10/2008, 7/31/2008, 8/25/2008, and 10/2/2008. Samples were hand delivered to the Battelle Duxbury Chemistry Sample Custodian on four separate occasions. All samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. After being received by the lab, the sediment trap samples were centrifuged to remove excess water. The samples were then stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	Duplicate Relative Percent Difference	Reporting Limits (ug/kg dry wt)
PCB Congeners	EPA 1668A and 8270C	< RL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD	~ 93.00

METHOD: Sediment trap samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was poured through a funnel and passed through glass wool and sodium sulfate. The extract was then brought to 100 mL; 10 mL was removed and continued on for further processing. The 10 mL split was treated with copper, solvent exchanged to hexane, and passed through a Florisil SPE cartridge. The post-Florisil extract was then brought to 10 mL, out of which 1 mL was removed to be fortified with internal standards (IS). Extracts designated for PCB congener analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on EPA Methods 1668A and 8270C. Sample data were quantified by the method of internal standards, using the IS compounds. Data was evaluated against sample specific reporting limits.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were initially analyzed within 40 days of extract holding time, however some dilutions were analyzed after the 40 days expired.

Batch	Collection Date	Extraction Date	Analysis Date
08-0280	7/10, 7/31, 8/2, & 10/2/2008	10/8/08	10/27/2008 – 11/21/2008

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0280

LIST OF SAMPLES:
08-0005

Sample ID	Battelle ID
ST-01-071008-B	Q3438
ST-01-071008-C	Q3439
ST-02-071008-A	Q3440
ST-04-071008-A	Q3442
ST-03-071008-A	Q3444
ST-04-073108-A	Q3734
ST-01-073108-B	Q3737
ST-01-073108-C	Q3738
ST-02-073108-A	Q3739
ST-03-073108-A	Q3741
ST-01-082508-B	Q4052
ST-01-082508-C	Q4053
ST-02-082508-A	Q4054
ST-03-082508-A	Q4056
ST-04-082508-A	Q4058
ST01-100208-B	Q4850
ST01-100208-C	Q4851
ST02-100208-A	Q4852
ST04-100208-A	Q4854
ST03-100208-A	Q4856

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

08-0280 – No exceedences noted. No target analytes were detected in the blank sample.

LABORATORY CONTROL SAMPLE: A of laboratory control (LCS) sample was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

08-0280 – No exceedence noted. All percent recoveries of spiked analytes were within laboratory control limit of 40-120%.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

08-0280 – No exceedence noted. All percent recoveries of analytes spiked at a concentration great enough to be used for data quality assessment (> 5 x background) were within laboratory control limit of 40-120%. All RPDs between analytes spiked at a concentration great enough to be used for data quality assessment (> 5 x background) were within laboratory control limit of <30%.

PCB Congeners – Sediment Trap QA/QC Summary
Batch 08-0280

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

08-0280 – No exceedence noted. All surrogate recoveries were within laboratory control limit of 40-120%.

CALIBRATIONS: The GC/MS is calibrated with a minimum of a 6oint curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration verification (CCV) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) for the CCV should be <25% for individual analytes. Additionally an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

08-0280 – PCB 81 exceeded the %D criteria in the ICC due to standard impurity. A second ICC was run and results were acceptable for this compound. All other calibration criteria were met.

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ShpNo SHP-080715-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Friday, July 11, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☑ Tape ☐ Custody Seals ☑ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q3437 - Q3445

Samples logged in by: Seyfert, Jeannine **Date/Time:** 07/11/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle
The Business of Innovation

ShpNo: SHP-080715-01

Battelle Project No:)7DUXCHEM

Report Corrective Actions

Corrective Action No: 1 **of** 1

Authorized ☐ Approved: ☐

COC Client:

COC Project: NBH sediment traps

COC Date: 7/15/2008 10:06:

	Description of Problem:	Explanation:
Client Id	Jars and C-O-C do not have matching Ids	The COC for Q3437 lists the client ID as "ST-01-071008-A." The jar simple lists the client ID as "ST01A."

Documentation of project manager notification

Sample Custodian	Seyfert, Jeannine	**Date:**	7/15/2008 10:12:00 A
Laboratory Manager:	Thorn, Jonathan	**Date:**	9/16/2008 11:48:00 A
Project Manager:	Zhang, Yixian	**Date:**	9/16/2008 10:59:00 A

Documentation of client notification (should be completed by project manager within 24 hrs):

On _____ **I contacted** _____ **at**

Results of communication with client (Describe any corrective action directed by the client):

Battelle field sampling staff was notified of the error on the jar.

Date this form was received back to the custodian: _____

Reference Number: _____

Battelle

The Business of Innovation

ShpNo SHP-080715-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Friday, July 11, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q3437	ST-01-071008-A	07/10/08 11:58	07/15/08 10:08	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3438	ST-01-071008-B	07/10/08 11:58	07/15/08 10:08	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3439	ST-01-071008-C	07/10/08 11:58	07/15/08 10:08	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3440	ST-02-071008-A	07/10/08 12:19	07/15/08 10:09	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3441	ST-02-071008-B	07/10/08 12:19	07/15/08 10:10	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3442	ST-03-071008-A	07/10/08 12:42	07/15/08 10:10	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3443	ST-03-071008-B	07/10/08 12:42	07/15/08 10:10	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3444	ST-04-071008-A	07/10/08 13:17	07/15/08 10:10	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			
Q3445	ST-04-071008-B	07/10/08 13:17	07/15/08 10:11	1	SEDIMENT TRA	4	NA	NA	NA	R0003 (Upper C			

Total Samples: 9

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Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422
Proj. Name: NBH Sed Trap

SAMPLERS: Signature: Michael P. McGee

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ~~BATTELLE~~ ID	FIELD ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	~~OTHER~~ TOC/Grain Size	ACIDIFIED	PRESERVED	Total Number of Containers
07/10/08	1158	Q3437	ST-01-071008-A	6th sediment trap recovery station Ø1		✓						✓			
↓	↓	Q3438	ST-01-071008-B	↓ Ø1		✓						✓			
		Q3439	ST-01-071008-C	Ø1		✓						✓			
	1219	Q3440	ST-02-071008-A	Ø2		✓						✓			
	↓	Q3441	ST-02-071008-B	Ø2		✓						✓			
	1242	Q3442	ST-04-071008-A	Ø4		✓						✓			
	↓	Q3443	ST-04-071008-B	Ø4		✓						✓			
	1317	Q3444	ST-03-071008-A	Ø3		✓						✓			
	↓	Q3445	ST-03-071008-B	Ø3		✓						✓			

Relinquished by:	Date/Time		Received by:	Date/Time	
Michael P. McGee	07/11/08	12:00	Jeannie Sylvester	7-11-08	12:00
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments: After settling for 24 hrs and decanting, all samples will be weighed for reproducibility. At station ST-Ø1 2 of 3 samples will be analyzed for PCB, TOC, & GS. At ST-Ø2, Ø3 & Ø4, only 1 of 2 samples will be analyzed.

ORIGINAL

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ShpNo SHP-080805-02

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, July 31, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Not Recorded

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler		None		Intact	Ambient	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): Ambient Temperature Blank used: ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q3734 - Q3742

Samples logged in by: Arsenault, Joanne **Date/Time:** 07/31/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle
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ShpNo SHP-080805-02

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number:

Client:

Received by: Seyfert, Jeannine

Date/Time Received: Thursday, July 31, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q3734	ST-04-073108-A	07/31/08 8:28	08/05/08 10:23	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3735	ST-04-073108-B	07/31/08 8:28	08/05/08 10:26	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3736	ST-01-072108-A	07/31/08 8:54	08/05/08 10:26	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3737	ST-01-073108-B	07/31/08 8:54	08/05/08 10:28	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3738	ST-01-073108-C	07/31/08 8:54	08/05/08 10:28	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3739	ST-02-073108-A	07/31/08 9:13	08/05/08 10:30	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3740	ST-02-073108-B	07/31/08 9:13	08/05/08 10:31	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3741	ST-03-073108-A	07/31/08 9:35	08/05/08 10:31	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			
Q3742	ST-03-073108-B	07/31/08 9:35	08/05/08 10:32	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper Co			

Total Samples: 9

Battelle

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Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G6Ø6422

Proj. Name: Sed Trap

SAMPLERS: Signature: [signature]

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ~~BATTELLE~~ ID	FIELD ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	~~OTHER~~ GS/TOC	ACIDIFIED	PRESERVED	Total Number of Containers
07/31/08	0828	Q3734	ST-04-073108-A	7th sediment trap recovery station Ø4		✓						✓			
	↓	Q3735	ST-04-073108-B	Ø4		✓						✓			
	0854	Q3736	ST-01-073108-A	Ø1		✓						✓			
	↓	Q3737	ST-01-073108-B	Ø1		✓						✓			
	↓	Q3738	ST-01-073108-C	Ø1		✓						✓			
	0913	Q3739	ST-02-073108-A	Ø2		✓						✓			
	↓	Q3740	ST-02-073108-B	Ø2		✓						✓			
	0935	Q3741	ST-03-073108-A	Ø3		✓						✓			
	↓	Q3742	ST-03-073108-B	Ø3		✓						✓			

Relinquished by:	Date/Time		Received by:	Date/Time	
[signature]	07/31/08	11:45	Jeannine Hefft	7-31-08	11:45am
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments: After settling for 24 hrs & decanting, all samples will be weighed for reproducibility. At station ST-Ø1 1 of 3 samples will be analyzed for PCB, TOC & GS. At ST-Ø2, Ø3 & Ø4, only 1 of 2 samples will be analyzed.

ORIGINAL

Battelle
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ShpNo SHP-080827-02

Battelle Project No: 07DUXCHEM

Sample Receipt Form

Approved: ☑ Authorized ☐

Project Number:
Client: NBH Sediment Trap
Received by: Arsenault, Joanne
Date/Time Received: Tuesday, August 26, 2008 2:10 PM
No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered
Tracking Number: Not Recorded
COC Forms: ☑ Shipped with samples ☐ No Forms

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	No Container				Not Applicable	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☑ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold
BDO IDs Assigned: Q4051 - Q4059
Samples logged in by: Arsenault, Joanne
Date/Time: 08/26/2008 2:10 PM
Approved By: Brackett, Roxanne
Approved On: 9/18/2008 11:3
Authorized By:
Authorized On:

Battelle

The Business of Innovation

ShpNo SHP-080827-02

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized:** ☐

Project Number:

Client: NBH Sediment Trap

Received by: Arsenault, Joanne

Date/Time Received: Tuesday, August 26, 2008 2:10 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q4051	ST-01-082508-A	08/25/08 13:07	08/27/08 13:46	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4052	ST-01-082508-B	08/25/08 13:07	08/27/08 13:50	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4053	ST-01-082508-C	08/25/08 13:07	08/27/08 13:50	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4054	ST-02-082508-A	08/25/08 13:30	08/27/08 13:50	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4055	ST-02-082508-B	08/25/08 13:30	08/27/08 13:51	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4056	ST-03-082508-A	08/25/08 14:18	08/27/08 13:51	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4057	ST-03-082508-B	08/25/08 14:18	08/27/08 13:52	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4058	ST-04-082508-A	08/25/08 13:56	08/27/08 13:52	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			
Q4059	ST-04-082508-B	08/25/08 13:56	08/27/08 13:52	1	SEDIMENT TRA		NA	NA	NA	R0003 (Upper C			

Total Samples: 9

Battelle

The Business of Innovation

Chain of Custody

397 Washington Street
Duxbury, MA 02332
Phone: 781-952-5200
Fax: 781-934-2124

Proj. No: G606422

Proj. Name: NBH Sed Trap

SAMPLERS: Signature: [signature]

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	LAB ~~BATTELLE~~ ID	FIELD ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER (GS/TOC)	ACIDIFIED	PRESERVED	Total Number of Containers
08/25/08	13:07	Q4051	ST-01-082508-A			✓						✓			1
	↓	Q4052	ST-01-082508-B			✓						✓			1
	↓	Q4053	ST-01-082508-C			✓						✓			1
	13:30	Q4054	ST-02-082508-A			✓						✓			1
	↓	Q4055	ST-02-082508-B			✓						✓			1
	14:18	Q4056	ST-03-082508-A			✓						✓			1
	↓	Q4057	ST-03-082508-B			✓						✓			1
	13:56	Q4058	ST-04-082508-A			✓						✓			1
	↓	Q4059	ST-04-082508-B			✓						✓			1

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	08/26/08 14:10	Joanne Donovan	8/26/08 1410
Relinquished by:	Date/Time	Received by:	Date/Time

Comments: After settling for 24 hrs & decanting, all samples will be weighed for reproducibility. At station ST-01, 2 of 3 samples will be analyzed for PCB, TOC & Grain Size. At station ST-02, 03 & 04 only 1 of 2 samples will be analyzed.

ORIGINAL

Battelle
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ShpNo SHP-081003-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422-07DUXCHEM **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, October 02, 2008 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Field Room II: Refrigerator - R0004 (Lower Col **BDO IDs Assigned:** Q4849 - Q4857

Samples logged in by: Seyfert, Jeannine **Date/Time:** 10/02/2008 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-081003-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422-07DUXCHEM **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Thursday, October 02, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q4849	ST01-100208-A	10/02/08 9:26	10/03/08 15:52	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4850	ST01-100208-B	10/02/08 9:26	10/03/08 15:54	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4851	ST01-100208-C	10/02/08 9:26	10/03/08 15:54	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4852	ST02-100208-A	10/02/08 9:55	10/03/08 15:54	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4853	ST02-100208-B	10/02/08 9:55	10/03/08 15:55	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4854	ST04-100208-A	10/02/08 10:22	10/03/08 15:55	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4855	ST04-100208-B	10/02/08 10:22	10/03/08 15:56	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4856	ST03-100208-A	10/02/08 10:45	10/03/08 15:56	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			
Q4857	ST03-100208-B	10/02/08 10:45	10/03/08 15:57	1	SEDIMENT TRA	4	NA	NA	NA	R0004 (Lower C			

Total Samples: 9

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Chain of Custody

Proj. No	Proj. Name
G606422	Sed Trap

SAMPLERS: Signature: Matthew R Zybek

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	Lab ~~BATTELLE~~ ID	Field ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	~~OTHER~~ GS/TOC	ACIDIFIED	PRESERVED	Total Number of Containers
10/2/08	0926	Q4849	ST01-100208-A	9th sediment trap recovery station ST01		X						X			1
		Q4850	ST01-100208-B	ST01		X						X			1
		Q4851	ST01-100208-C	ST01		X						X			1
	0955	Q4852	ST02-100208-A	ST02		X						X			1
		Q4853	ST02-100208-B	ST02		X						X			1
	1022	Q4854	ST04-100208-A	ST04		X						X			1
		Q4855	ST04-100208-B	ST04		X						X			1
	1045	Q4856	ST03-100208-A	ST03		X						X			1
		Q4857	ST03-100208-B	ST03		X						X			1

Relinquished by:	Date/Time		Received by:	Date/Time	
Matthew R Zybek	10/2/08	1315	Jeannine Seyfert	10/2/08	13:15
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments: After settling for 24 hours, All samples will be decanted + weighed for reproducability. At Station ST01 2 of 3 samples will be analyzed for PCB, TOC, + GS. At the remaining stations only 1 of 2 samples will be analyzed

ORIGINAL

Deployment No. 10

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Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-01-103008-B	ST-01-103008-C	ST-02-103008-A	ST-03-103008-A	ST-04-103008-A
Battelle ID	Q5252-P	Q5253-P	Q5254-P	Q5256-P	Q5258-P
Sample Type	SA	SA	SA	SA	SA
Collection Date	10/30/08	10/30/08	10/30/08	10/30/08	10/30/08
Extraction Date	02/02/09	02/02/09	02/02/09	02/02/09	02/02/09
Analysis Date	02/08/09	02/08/09	02/09/09	02/09/09	02/09/09
Analytical Instrument	MS	MS	MS	MS	MS
% Moisture	74	78	68.62	71.92	74.85
% Lipid	NA	NA	NA	NA	NA
Matrix	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP	SEDIMENT TRAP
Sample Size	1.17	0.81	3.31	2.81	2.53
Size Unit-Basis	G_DRY	G_DRY	G_DRY	G_DRY	G_DRY
Units	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY	UG/KG_DRY
Cl2(8)	1264.48	1040.39	1057.33	1039.1	1166.42
Cl3(18)	3414.9	2688.7	3012.62	3180.43	3447.58
Cl3(28)	6214.49	4727.63	6207.53 D	5798.58 D	5498.99
Cl3(31)	5476.05	4165.73	5561.12 D	5201.87 D	5211.4
Cl3(37)	580.58	527.82	512.14	435.97	424.34
Cl4(44)	2535.43	2050.05	2210.94	2263.93	2534.61
Cl4(49)	8886.1	6781.92	7791.17 D	7518.55 D	8400.96 D
Cl4(52)	9722.48	7614.38	8188.55 D	8447.86 D	9127.51 D
Cl4(66)	1391.79	1244.3	1235.75	1093.54	1123.36
Cl4(70)	1091.25	1122.07	1023.46	831.89	855.47
Cl4(74)	1099.05	914.9	879.35	829.36	768.14
Cl4(77)	190.89	200.97	125.11	123.71	137.79
Cl4(81)	107.26 U	154.94 U	37.92 U	44.66 U	49.6 U
Cl5(87)	366.5	504.8	338.99	255.28	297.73
Cl5(99)	2991.65	2479.29	2349.47	2566.34	2568.76
Cl5(101)	2810.9	2574.32	2476.56	2363.59	2366.53
Cl5(105)	410.21	567.6	338.44	296.28	320.27
Cl5(110)	4212.42	3753.59	3660.05	3623.08	3750.93
Cl5(114)	106.84 U	154.32 U	47.49	51.94	60.32
Cl5(118)	2289.77	2218.69	1796.22	1850.77	1895.48
Cl5(123)	318.68	341.91	234.12	221.84	244.75
Cl5(126)	107.26 U	154.94 U	37.92 U	44.66 U	49.6 U
Cl6(128)	261.92	296.17	228.15	218.25	227.05
Cl6(138)	919.51	1135.95	696.89	705.37	659.39
Cl6(149)	3074.35	2573.66	2515.61	2683.35	2723.4
Cl6(151)	510.27	496.32	408.75	408.8	442.33
Cl6(153)	3155.18	2982.84	2331.5	2588.26	2603.79
Cl6(156)	250.81	259.88	166.57	165.84	173.97
Cl6(157)	110.41	154.32 U	54.25	60.58	59.87
Cl6(158)	331.94	393.65	207.73	224.28	237.71
Cl6(167)	217.24	252.47	160.53	160.31	164.23
Cl6(169)	107.26 U	154.94 U	37.92 U	44.66 U	49.6 U
Cl7(170)	231.76	258.62	170.75	181.28	176.25
Cl7(177)	159.36	200.24	89.22	95.23	102.28
Cl7(180)	489.44	533.96	319.61	352.22	402.53
Cl7(183)	201.62	212.99	123.53	141.71	151.2
Cl7(187)	506.13	439.78	331.39	405	369.47
Cl7(189)	106.84 U	154.32 U	28.69 J	35.23 J	43.2 J
Cl8(194)	16.13 J	154.32 U	46.39	43.31 J	39.8 J
Cl8(195)	30.18 J	154.32 U	14.83 J	21.08 J	19.26 J
Cl8(201)	109.42	154.32 U	43.99	48.86	55.03
Cl8(203)	177.29	231.08	76.01	92.96	107.25
Cl9(206)	36.39 J	7.99 J	30.44 J	43.49 J	39.55 J
Cl10(209)	17.99 J	154.32 U	13 J	11.31 J	10.75 J

Surrogate Recoveries (%)

Cl3(34)	73	76	76	80	82
Cl6(152)	75	79	74	79	82

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	Procedural Blank
Battelle ID	BM762PB-P
Sample Type	PB
Collection Date	02/02/09
Extraction Date	02/02/09
Analysis Date	02/08/09
Analytical Instrument	MS
% Moisture	NA
% Lipid	NA
Matrix	SEDIMENT
Sample Size	10.46
Size Unit-Basis	G_DRY
Units	UG/KG_DRY
Cl2(8)	11.95 U
Cl3(18)	11.95 U
Cl3(28)	12 U
Cl3(31)	11.95 U
Cl3(37)	12 U
Cl4(44)	12 U
Cl4(49)	11.95 U
Cl4(52)	11.95 U
Cl4(66)	11.95 U
Cl4(70)	11.95 U
Cl4(74)	11.95 U
Cl4(77)	11.95 U
Cl4(81)	12 U
Cl5(87)	12 U
Cl5(99)	11.95 U
Cl5(101)	11.95 U
Cl5(105)	11.95 U
Cl5(110)	12 U
Cl5(114)	11.95 U
Cl5(118)	12 U
Cl5(123)	12 U
Cl5(126)	12 U
Cl6(128)	12 U
Cl6(138)	11.95 U
Cl6(149)	11.95 U
Cl6(151)	12 U
Cl6(153)	12 U
Cl6(156)	12 U
Cl6(157)	11.95 U
Cl6(158)	11.95 U
Cl6(167)	11.95 U
Cl6(169)	12 U
Cl7(170)	11.95 U
Cl7(177)	11.95 U
Cl7(180)	12 U
Cl7(183)	12 U
Cl7(187)	12 U
Cl7(189)	11.95 U
Cl8(194)	11.95 U
Cl8(195)	11.95 U
Cl8(201)	11.95 U
Cl8(203)	11.95 U
Cl9(206)	11.95 U
Cl10(209)	11.95 U

Surrogate Recoveries (%)

Cl3(34)	87
Cl6(152)	95

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	Laboratory Control Sample				
Battelle ID	BM763LCS-P				
Sample Type	LCS				
Collection Date	02/02/09				
Extraction Date	02/02/09				
Analysis Date	02/08/09				
Analytical Instrument	MS				
% Moisture	NA				
% Lipid	NA				
Matrix	SEDIMENT				
Sample Size	10.56				
Size Unit-Basis	G_DRY				
Units	UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	280.48		379.92	74	
Cl3(18)	278.4		379.92	73	
Cl3(28)	247.79		379.17	65	
Cl3(31)	31.42				
Cl3(37)	11.88	U			
Cl4(44)	281.45		379.55	74	
Cl4(49)	11.84	U			
Cl4(52)	275.55		378.79	73	
Cl4(66)	269.29		379.17	71	
Cl4(70)	11.84	U			
Cl4(74)	11.84	U			
Cl4(77)	261.78		378.79	69	
Cl4(81)	11.88	U			
Cl5(87)	11.88	U			
Cl5(99)	11.84	U			
Cl5(101)	248.36		379.55	65	
Cl5(105)	273.25		379.17	72	
Cl5(110)	11.88	U			
Cl5(114)	11.84	U			
Cl5(118)	266.19		379.17	70	
Cl5(123)	11.88	U			
Cl5(126)	231.11		381.06	61	
Cl6(128)	261.37		381.06	69	
Cl6(138)	250.8		379.55	66	
Cl6(149)	11.84	U			
Cl6(151)	11.88	U			
Cl6(153)	285.07		379.17	75	
Cl6(156)	11.88	U			
Cl6(157)	11.84	U			
Cl6(158)	11.84	U			
Cl6(167)	11.84	U			
Cl6(169)	11.88	U			
Cl7(170)	243.77		380.68	64	
Cl7(177)	11.84	U			
Cl7(180)	273.36		380.30	72	
Cl7(183)	11.88	U			
Cl7(187)	261.94		379.92	69	
Cl7(189)	11.84	U			
Cl8(194)	11.84	U			
Cl8(195)	223.84		379.92	59	
Cl8(201)	11.84	U			
Cl8(203)	11.84	U			
Cl9(206)	229.31		379.92	60	
Cl10(209)	236.79		379.17	62	

Surrogate Recoveries (%)

Cl3(34)	78
Cl6(152)	89

Battelle
The Business of Innovation

Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-03-103008-A		ST-03-103008-A				
Battelle ID	Q5256-P		Q5256MS-P				
Sample Type	SA		MS				
Collection Date	10/30/08		10/30/2008				
Extraction Date	02/02/09		2/2/2009				
Analysis Date	02/09/09		2/9/2009				
Analytical Instrument	MS		MS				
% Moisture	71.92		71.77				
% Lipid	NA		NA				
Matrix	SEDIMENT TRAP		SEDIMENT TRAP				
Sample Size	2.81		1.5				
Size Unit-Basis	G_DRY		G_DRY				
Units	UG/KG_DRY		UG/KG_DRY		Target	% Recovery	Qualifier
Cl2(8)	1039.1		3886.46		2674.67	106	
Cl3(18)	3180.43		7935.14		2674.67	178	
Cl3(28)	5798.58	D	12231.56	E	2669.33	241	
Cl3(31)	5201.87	D	9697.67				
Cl3(37)	435.97		831.6				
Cl4(44)	2263.93		6333.89		2672.00	152	
Cl4(49)	7518.55	D	15560.65	E			
Cl4(52)	8447.86	D	19347.08	E	2666.67	409	
Cl4(66)	1093.54		4405.73		2669.33	124	
Cl4(70)	831.89		1569.26				
Cl4(74)	829.36		1572.75				
Cl4(77)	123.71		2213.9		2666.67	78	
Cl4(81)	44.66	U	83.67	U			
Cl5(87)	255.28		515.6				
Cl5(99)	2566.34		5055.93				
Cl5(101)	2363.59		6676.53		2672.00	161	
Cl5(105)	296.28		2826.18		2669.33	95	
Cl5(110)	3623.08		7120.92				
Cl5(114)	51.94		126.33				
Cl5(118)	1850.77		5837.06		2669.33	149	
Cl5(123)	221.84		452.82				
Cl5(126)	44.66	U	2074.42		2682.67	77	
Cl6(128)	218.25		2651.08		2682.67	91	
Cl6(138)	705.37		3316.17		2672.00	98	
Cl6(149)	2683.35		5332.65				
Cl6(151)	408.8		832.16				
Cl6(153)	2588.26		7390.18		2669.33	180	
Cl6(156)	165.84		366.6				
Cl6(157)	60.58		109.27				
Cl6(158)	224.28		452.99				
Cl6(167)	160.31		364.05				
Cl6(169)	44.66	U	83.67	U			
Cl7(170)	181.28		2533.96		2680.00	88	
Cl7(177)	95.23		197.19				
Cl7(180)	352.22		3203.31		2677.33	106	
Cl7(183)	141.71		280.2				
Cl7(187)	405		2952.71		2674.67	95	
Cl7(189)	35.23	J	85.62				
Cl8(194)	43.31	J	116.04				
Cl8(195)	21.08	J	2041.23		2674.67	76	
Cl8(201)	48.86		100.95				
Cl8(203)	92.96		176.76				
Cl9(206)	43.49	J	2233.76		2674.67	82	
Cl10(209)	11.31	J	2096.71		2669.33	78	

Surrogate Recoveries (%)

Cl3(34)	80	83
Cl6(152)	79	83

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Project Client: USACE - North Atlantic Division
Project Name: NBH Sediment Trap Sample PCB Congener Analysis (GC/MS)
Project Number: G606422-07DUXCHEM

Client ID	ST-03-103008-A						
Battelle ID	Q5256MSD-P						
Sample Type	MSD						
Collection Date	10/30/2008						
Extraction Date	2/2/2009						
Analysis Date	2/9/2009						
Analytical Instrument	MS						
% Moisture	71.54						
% Lipid	NA						
Matrix	SEDIMENT TRAP						
Sample Size	1.44						
Size Unit-Basis	G_DRY						
Units	UG/KG_DRY		Target	% Recovery	Qualifier	RPD (%)	Qualifier
Cl2(8)	3704.6		2786.11	96		9.9	
Cl3(18)	7338.56		2786.11	149		17.7	
Cl3(28)	11926.97	E	2780.56	220		9.1	
Cl3(31)	9233.12						
Cl3(37)	815.15						
Cl4(44)	6166.3		2783.33	140		8.2	
Cl4(49)	14518.5	E					
Cl4(52)	18035.42	E	2777.78	345		17.0	
Cl4(66)	4335.04		2780.56	117		5.8	
Cl4(70)	1583.59						
Cl4(74)	1563.6						
Cl4(77)	2218.88		2777.78	75		3.9	
Cl4(81)	87.15	U					
Cl5(87)	511.33						
Cl5(99)	4683.86						
Cl5(101)	6552.41		2783.33	150		7.1	
Cl5(105)	2795.35		2780.56	90		5.4	
Cl5(110)	6610.24						
Cl5(114)	108.86						
Cl5(118)	5576.43		2780.56	134		10.6	
Cl5(123)	422.96						
Cl5(126)	2056.51		2794.44	74		4.0	
Cl6(128)	2540.58		2794.44	83		9.2	
Cl6(138)	3274.99		2783.33	92		6.3	
Cl6(149)	4981.86						
Cl6(151)	794.09						
Cl6(153)	7066.87		2780.56	161		11.1	
Cl6(156)	344.26						
Cl6(157)	118.99						
Cl6(158)	426.2						
Cl6(167)	336.52						
Cl6(169)	87.15	U					
Cl7(170)	2485.33		2791.67	83		5.8	
Cl7(177)	192.08						
Cl7(180)	3009.68		2788.89	95		10.9	
Cl7(183)	266.8						
Cl7(187)	2821.08		2786.11	87		8.8	
Cl7(189)	86.81	U					
Cl8(194)	94.52						
Cl8(195)	2050.41		2786.11	73		4.0	
Cl8(201)	97.82						
Cl8(203)	238.14						
Cl9(206)	2223.2		2786.11	78		5.0	
Cl10(209)	2085.59		2780.56	75		3.9	

Surrogate Recoveries (%)

Cl3(34)	78
Cl6(152)	76

PCB Congeners – Sediment Trap QA/QC Summary
Batch 09-0016

PROJECT: New Bedford Harbor Sediment Trap Study (USACE)
PARAMETER: PCB Congeners
LABORATORY: Battelle, Duxbury, MA
MATRIX: Sediment Trap Samples
SAMPLE CUSTODY: Surface sediment and sediment trap samples were collected on 10/30/2008. Samples were hand delivered to the Battelle Duxbury Chemistry Sample Custodian. The samples were received in good condition and no custody issues were noted. Samples were logged into Battelle LIMS and received unique IDs. After being received by the lab, the sediment trap samples were centrifuged to remove excess water. The samples were then stored in the walk-in freezer until preparation could begin.

	Reference Method	Method Blank	Surrogate Recovery	LCS Recovery	MS Recovery	Duplicate Relative Percent Difference	Reporting Limits (ug/kg dry wt)
PCB Congeners	EPA 1668A and 8270C	< RL	40-120% Recovery	40-120% Recovery	40-120% Recovery (analyte conc. in MS must be >5x background)	≤30% RPD	~ 11.95 – 12.00

METHOD: Sediment trap samples were extracted for PCB congeners following modified EPA Method 3545. Sediments were air-dried overnight and approximately 5 g of sediment was spiked with surrogates and extracted using an Accelerated Solvent Extractor (ASE). The extract was poured through a funnel and passed through glass wool and sodium sulfate. The extract was then brought to 100 mL; 10 mL was removed and continued on for further processing. The 10 mL split was treated with copper, solvent exchanged to hexane, and passed through a Florisil SPE cartridge. The post-Florisil extract was then brought to 10 mL, out of which 1 mL was removed to be fortified with internal standards (IS). Extracts designated for PCB congener analysis were analyzed using gas chromatography/mass spectrometry (GC/MS), following Battelle SOP 5-315 which is based on EPA Methods 1668A and 8270C. Sample data were quantified by the method of internal standards, using the IS compounds. Data was evaluated against sample specific reporting limits.

HOLDING TIMES: Sediments of this batch were extracted within 1 year of sample holding time for frozen sediments. All extracts were analyzed within 40 days of extract holding time.

Batch	Collection Date	Extraction Date	Analysis Date
09-0016	10/30/2008	2/2/2009	2/8/2009 – 2/21/2009

PCB Congeners – Sediment Trap QA/QC Summary
Batch 09-0016

LIST OF SAMPLES:
08-0005

Sample ID	**Battelle ID**
ST-01-103008-B	Q5252
ST-01-103008-C	Q5253
ST-02-103008-A	Q5254
ST-03-103008-A	Q5256
ST-04-103008-A	Q5258

BLANK: A procedural blank (PB) was prepared with each analytical batch. Blanks were analyzed to ensure the sample extraction and analysis methods were free of contamination.

09-0016 – No exceedences noted. No target analytes were detected in the blank sample.

LABORATORY CONTROL SAMPLE: A of laboratory control (LCS) sample was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy.

09-0016 – No exceedence noted. All percent recoveries of spiked analytes were within laboratory control limit of 40-120%.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE: A pair of matrix spike (MS) and matrix spike duplicate samples (MSD) was prepared with each analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The RPD between percent recoveries was calculated to measure the data quality in terms of precision.

09-0016 – No exceedence noted. All percent recoveries of analytes spiked at a concentration great enough to be used for data quality assessment (> 5 x background) were within laboratory control limit of 40-120%. All RPDs between analytes spiked at a concentration great enough to be used for data quality assessment (> 5 x background) were within laboratory control limit of <30%.

SURROGATES: Two surrogate compounds were added prior to extraction, including PCB 34 and PCB 152. The recovery of each surrogate compound was calculated to measure data quality in terms of accuracy (extraction efficiency).

09-0016 – No exceedence noted. All surrogate recoveries were within laboratory control limit of 40-120%.

CALIBRATIONS: The GC/MS is calibrated with a minimum of a 6-point curve. The co-efficient of determination must be > 0.995 for each target analyte in the initial calibration (ICAL). Each batch of samples analyzed is bracketed by a continuing calibration verification (CCV) sample, run at a frequency of every 12 hours (minimally). This percent difference (PD) for the CCV should be <25% for individual analytes. Additionally an instrument calibration check (ICC) sample was run with the initial calibration. The PD for the ICC should be < 25% for each analyte.

09-0016 – PCB 81 exceeded the %D criteria in the ICC due to standard impurity. A second ICC was run and results were acceptable for this compound. All other calibration criteria were met.

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ShpNo SHP-081031-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**
Received by: Seyfert, Jeannine **Date/Time Received:** Friday, October 31, 2008 12:00 AM
No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** NA
COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler	NA	None	Not Applicable	Intact	4.0	9

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☑ Tape ☐ Custody Seals ☑ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 4 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☑ No ☐ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** Q5251 - Q5259
Samples logged in by: Seyfert, Jeannine **Date/Time:** 10/31/2008 12:00 AM
Approved By: **Approved On:**
Authorized By: **Authorized On:**

Battelle

The Business of Innovation

ShpNo SHP-081031-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ **Authorized** ☐

Project Number: G606422 **Client:**

Received by: Seyfert, Jeannine **Date/Time Received:** Friday, October 31, 2008 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
Q5251	ST-01-103008-A	10/30/08 9:11	10/31/08 9:53	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5252	ST-01-103008-B	10/30/08 9:11	10/31/08 9:54	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5253	ST-01-103008-C	10/30/08 9:11	10/31/08 9:54	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5254	ST-02-103008-A	10/30/08 9:30	10/31/08 9:54	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5255	ST-02-103008-B	10/30/08 9:30	10/31/08 9:55	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5256	ST-03-103008-A	10/30/08 9:50	10/31/08 9:55	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5257	ST-03-103008-B	10/30/08 9:50	10/31/08 9:55	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5258	ST-04-103008-A	10/30/08 10:10	10/31/08 9:55	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			
Q5259	ST-04-103008-B	10/30/08 10:10	10/31/08 9:56	1	SEDIMENT TRA	4	NA	No	NA	R0003 (Upper C			

Total Samples: 9

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Chain of Custody

Proj. No	Proj. Name
G606422	New Bedford Harbor Sed. Trap

SAMPLERS: Signature

Matt [illegible] Annie Murphy Patrick Curran

ANALYSIS REQUESTED → "NUMBER OF CONTAINERS"

DATE	TIME	Field ~~BATTELLE~~ ID	Lab ~~CLIENT~~ ID	SAMPLE DESCRIPTION	PEST	PCB	TPH FINGERPRINT	PAH	VOA	TBT	METALS	OTHER	ACIDIFIED	PRESERVED	Total Number of Containers
10/30/08	0911	ST-01-103008-A	Q5251	Sediment trap sample from station ST01		X									1
	↓	ST-01-103008-B	Q5252			X									1
		ST01-103008-C	Q5253			X									1
	0930	ST-02-103008-A	Q5254	ST02		X									1
	↓	ST-02-103008-B	Q5255	ST02		X									1
	0950	ST03-103008-A	Q5256	ST-03		X									1
	↓	ST-03-103008-B	Q5257	↓		X									1
	1010	ST-04-103008-A	Q5258	ST-04		X									1
	↓	ST-04-103008-B	Q5259	↓		X									1

Relinquished by:	Date/Time		Received by:	Date/Time	
Matthew R [illegible]	10/30/08	1700	Jeannine Lyfert	10/30/08	1700
Relinquished by:	Date/Time		Received by:	Date/Time	

Comments:

ORIGINAL