

APPENDIX G

Surface Water Analytical Results and Summary Statistics





REMEDIAL INVESTIGATION REPORT APPENDIX G – SURFACE WATER ANALYTICAL RESULTS AND SUMMARY STATISTICS

Newark Bay Study Area
Newark Bay, New Jersey

May 2022

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Table G-1
Surface Water Samples – By Depth

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
At Surface	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	132	53	53/132 (40.2%)	1.02	0.871	0.0758	<1.22	0.219	5.31	<0.241	<2.81
At Surface	Metals	Arsenic	µg/L	87	87	87/87 (100%)	1.24	0.269	0.0288	1.2	0.73	1.84	--	--
At Surface	Metals	Arsenic (dissolved)	µg/L	87	87	87/87 (100%)	1.14	0.243	0.0261	1.1	0.73	1.65	--	--
At Surface	Metals	Cadmium	µg/L	156	156	156/156 (100%)	0.0669	0.0219	0.00175	0.0635	0.027	0.233	--	--
At Surface	Metals	Cadmium (dissolved)	µg/L	156	156	156/156 (100%)	0.0556	0.0146	0.00117	0.0545	0.006	0.101	--	--
At Surface	Metals	Chromium	µg/L	87	87	87/87 (100%)	1.06	0.698	0.0749	0.83	0.43	5.61	--	--
At Surface	Metals	Chromium (dissolved)	µg/L	87	86	86/87 (98.9%)	0.367	0.233	0.0249	0.31	0.15	1.5	<0.2	<0.2
At Surface	Metals	Copper	µg/L	156	156	156/156 (100%)	2.75	0.833	0.0667	2.53	1.29	8.09	--	--
At Surface	Metals	Copper (dissolved)	µg/L	156	156	156/156 (100%)	1.82	0.425	0.0341	1.79	1.16	4.42	--	--
At Surface	Metals	Lead	µg/L	156	156	156/156 (100%)	1.63	1.06	0.0845	1.2	0.533	8.5	--	--
At Surface	Metals	Lead (dissolved)	µg/L	156	156	156/156 (100%)	0.254	0.273	0.0218	0.161	0.048	1.75	--	--
At Surface	Metals	Mercury	ng/L	156	156	156/156 (100%)	19	14.3	1.15	13.2	1.7	76.3	--	--
At Surface	Metals	Mercury (dissolved)	ng/L	156	142	142/156 (91%)	3.01	5.34	0.428	1.44	0.36	53.5	<0.4	<4.28
At Surface	Metals	Methyl Mercury	ng/L	87	78	78/87 (89.7%)	0.0482	0.0361	0.00387	0.046	0.022	0.294	<0.049	<0.052
At Surface	Metals	Methyl Mercury (dissolved)	ng/L	87	26	26/87 (29.9%)	0.0276	0.0107	0.00115	<0.05	0.021	0.102	<0.048	<0.052
At Surface	Metals	Nickel	µg/L	87	87	87/87 (100%)	1.41	0.371	0.0397	1.3	0.89	2.41	--	--
At Surface	Metals	Nickel (dissolved)	µg/L	87	87	87/87 (100%)	1.19	0.316	0.0339	1.08	0.77	1.92	--	--
At Surface	Metals	Selenium	µg/L	87	16	16/87 (18.4%)	0.484	0.199	0.0214	<1	0.2	2.1	<1	<1
At Surface	Metals	Selenium (dissolved)	µg/L	87	8	8/87 (9.2%)	0.483	0.0668	0.00716	<1	0.2	0.6	<1	<1
At Surface	Metals	Silver	µg/L	87	73	73/87 (83.9%)	0.0321	0.089	0.00955	0.02	0.004	0.838	<0.02	<0.02
At Surface	Metals	Silver (dissolved)	µg/L	87	50	50/87 (57.5%)	0.00946	0.00458	0.000491	0.015	0.004	0.03	<0.02	<0.02
At Surface	Metals	Zinc	µg/L	87	87	87/87 (100%)	8.45	2.57	0.276	7.86	4.09	20.6	--	--
At Surface	Metals	Zinc (dissolved)	µg/L	87	87	87/87 (100%)	6.67	1.75	0.188	6.37	4.1	13.9	--	--
At Surface	PAH-SIM	Total HMW PAHs	ng/L	86	86	86/86 (100%)	119	98.1	10.6	92.4	17.2	610	--	--
At Surface	PAH-SIM	Total LMW PAHs	ng/L	86	86	86/86 (100%)	51.9	55.7	6.01	26.1	2.72	226	--	--
At Surface	PAH-SIM	Total PAHs	ng/L	86	86	86/86 (100%)	171	135	14.6	132	20.9	812	--	--
At Surface	PCB Congeners	Total PCB Congeners (209)	ng/L	132	132	132/132 (100%)	6.61	2.85	0.248	5.92	2.2	15.8	--	--
At Surface	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	87	76	76/87 (87.4%)	0.123	0.0911	0.00976	0.11	0.051	0.76	<0.047	<0.16
At Surface	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	87	60	60/87 (69%)	0.0993	0.0819	0.00878	0.08	0.033	0.49	<0.0152	<0.39
At Surface	Pesticides	cis-Nonachlor	ng/L	87	44	44/87 (50.6%)	0.0772	0.0654	0.00702	0.063	0.019	0.158	<0.0124	<0.4
At Surface	Pesticides	Dieldrin	ng/L	87	84	84/87 (96.6%)	0.349	0.173	0.0185	0.29	0.106	0.987	<0.2	<0.29
At Surface	Pesticides	Heptachlor epoxide	ng/L	87	80	80/87 (92%)	0.152	0.0888	0.00952	0.131	0.063	0.474	<0.068	<0.19
At Surface	Pesticides	Total Alpha + Gamma Chlordane	ng/L	87	87	87/87 (100%)	0.367	0.187	0.0201	0.32	0.0978	0.81	--	--
At Surface	Pesticides	Total DDx (2,4 and 4,4)	ng/L	87	77	77/87 (88.5%)	1.02	1.38	0.148	0.735	0.117	11.7	<0.1	<0.686
At Surface	Pesticides	Total DDx (4,4)	ng/L	87	76	76/87 (87.4%)	0.793	0.965	0.103	0.613	0.205	8.1	<0.1	<0.686
At Surface	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	86	3	3/86 (3.49%)	1.03	0.302	0.0326	<1.9	2.4	2.7	<1.9	<2.2
At Surface	Semivolatiles	Hexachlorobenzene	µg/L	173	6	6/173 (3.47%)	0.0483	0.0489	0.00372	<0.19	0.0001	0.042	<0.0000312	<0.22
Below Surface	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	101	31	31/101 (30.7%)	1.01	1.2	0.119	<1.18	0.361	7.98	<0.369	<3.84
Below Surface	Metals	Arsenic	µg/L	71	71	71/71 (100%)	1.34	0.286	0.0339	1.31	0.78	2.3	--	--
Below Surface	Metals	Arsenic (dissolved)	µg/L	71	71	71/71 (100%)	1.16	0.24	0.0285	1.1	0.67	1.62	--	--
Below Surface	Metals	Cadmium	µg/L	118	118	118/118 (100%)	0.0685	0.0269	0.00247	0.062	0.031	0.193	--	--
Below Surface	Metals	Cadmium (dissolved)	µg/L	118	117	117/118 (99.2%)	0.0527	0.0141	0.0013	0.053	0.007	0.1	<0.02	<0.02
Below Surface	Metals	Chromium	µg/L	71	71	71/71 (100%)	1.31	0.918	0.109	0.98	0.46	4.9	--	--
Below Surface	Metals	Chromium (dissolved)	µg/L	71	70	70/71 (98.6%)	0.376	0.328	0.0389	0.3	0.11	2.7	<0.2	<0.2
Below Surface	Metals	Copper	µg/L	118	118	118/118 (100%)	3.15	1.74	0.16	2.6	1.38	13.1	--	--
Below Surface	Metals	Copper (dissolved)	µg/L	118	118	118/118 (100%)	1.7	0.525	0.0483	1.7	0.832	4.48	--	--

Table G-1
Surface Water Samples – By Depth

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
Below Surface	Metals	Lead	µg/L	118	118	118/118 (100%)	2.04	1.95	0.179	1.38	0.616	12	--	--
Below Surface	Metals	Lead (dissolved)	µg/L	118	118	118/118 (100%)	0.286	0.42	0.0386	0.16	0.035	3.85	--	--
Below Surface	Metals	Mercury	ng/L	118	118	118/118 (100%)	24.7	31.4	2.89	15.9	0.38	296	--	--
Below Surface	Metals	Mercury (dissolved)	ng/L	118	106	106/118 (89.8%)	3.34	4.86	0.447	1.54	0.25	32.7	<0.39	<4.26
Below Surface	Metals	Methyl Mercury	ng/L	71	64	64/71 (90.1%)	0.0559	0.0368	0.00436	0.049	0.021	0.192	<0.049	<0.052
Below Surface	Metals	Methyl Mercury (dissolved)	ng/L	71	23	23/71 (32.4%)	0.028	0.0111	0.00132	<0.05	0.021	0.101	<0.048	<0.052
Below Surface	Metals	Nickel	µg/L	71	71	71/71 (100%)	1.5	0.617	0.0732	1.34	0.85	5.05	--	--
Below Surface	Metals	Nickel (dissolved)	µg/L	71	71	71/71 (100%)	1.08	0.298	0.0353	1.06	0.62	1.79	--	--
Below Surface	Metals	Selenium	µg/L	71	9	9/71 (12.7%)	0.484	0.105	0.0125	<1	0.2	1.1	<1	<1
Below Surface	Metals	Selenium (dissolved)	µg/L	71	4	4/71 (5.63%)	0.489	0.0464	0.00551	<1	0.3	0.3	<1	<1
Below Surface	Metals	Silver	µg/L	71	66	66/71 (93%)	0.0307	0.0224	0.00265	0.024	0.009	0.13	<0.02	<0.02
Below Surface	Metals	Silver (dissolved)	µg/L	71	43	43/71 (60.6%)	0.00976	0.00674	0.0008	0.012	0.003	0.056	<0.02	<0.02
Below Surface	Metals	Zinc	µg/L	71	71	71/71 (100%)	8.62	3.82	0.454	7.76	3.56	28.9	--	--
Below Surface	Metals	Zinc (dissolved)	µg/L	71	71	71/71 (100%)	5.88	1.96	0.233	5.8	2.2	13.3	--	--
Below Surface	PAH-SIM	Total HMW PAHs	ng/L	71	71	71/71 (100%)	155	239	28.4	88.9	19.7	1,690	--	--
Below Surface	PAH-SIM	Total LMW PAHs	ng/L	71	71	71/71 (100%)	67.4	95.1	11.3	30.2	3.22	660	--	--
Below Surface	PAH-SIM	Total PAHs	ng/L	71	71	71/71 (100%)	222	291	34.5	142	23.3	1,960	--	--
Below Surface	PCB Congeners	Total PCB Congeners (209)	ng/L	101	101	101/101 (100%)	6.45	3.12	0.31	5.5	3.08	20.4	--	--
Below Surface	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	71	63	63/71 (88.7%)	0.183	0.55	0.0652	0.1	0.049	4.6	<0.048	<0.19
Below Surface	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	71	48	48/71 (67.6%)	0.145	0.448	0.0532	0.066	0.031	3.7	<0.0202	<0.4
Below Surface	Pesticides	cis-Nonachlor	ng/L	71	40	40/71 (56.3%)	0.0708	0.0642	0.00762	0.043	0.021	0.117	<0.0141	<0.4
Below Surface	Pesticides	Dieldrin	ng/L	71	69	69/71 (97.2%)	0.303	0.258	0.0306	0.26	0.103	2.1	<0.27	<0.32
Below Surface	Pesticides	Heptachlor epoxide	ng/L	71	63	63/71 (88.7%)	0.119	0.107	0.0127	0.093	0.0257	0.67	<0.051	<0.19
Below Surface	Pesticides	Total Alpha + Gamma Chlordane	ng/L	71	71	71/71 (100%)	0.323	0.183	0.0217	0.25	0.0482	0.85	--	--
Below Surface	Pesticides	Total DDx (2,4 and 4,4)	ng/L	71	67	67/71 (94.4%)	1.14	1.2	0.142	0.8	0.169	5.91	<0.111	<0.138
Below Surface	Pesticides	Total DDx (4,4)	ng/L	71	67	67/71 (94.4%)	0.898	0.87	0.103	0.635	0.169	4.18	<0.111	<0.138
Below Surface	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	71	2	2/71 (2.82%)	1	0.218	0.0258	<1.9	1.8	2.6	<1.9	<2.1
Below Surface	Semivolatiles	Hexachlorobenzene	µg/L	142	4	4/142 (2.82%)	0.0483	0.0484	0.00406	<0.19	0.000119	0.052	<0.0000236	<0.21

Notes:

Non-detects included at the 1/2 reporting limit for mean, standard deviation, and standard error estimates.

Non-detects evaluated at full reporting limit for median estimate.

If all sample results are non-detect, non-detects evaluated at full reporting limit.

Acronyms and Abbreviations:

BHC = hexachlorocyclohexane

HMW = high-molecular weight

LMW = low-molecular weight

ng/L = nanogram per liter

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

pg/L = picogram per liter

SIM = selective ion monitoring

Total DDx = sum of dichlorodipenyldichloroethylene (DDE), dichlorodipenyldichloroethane (DDD), and dichlorodipenyltrichloroethane (DDT)

µg/L = microgram per liter

% = percent

Table G-2
Surface Water Samples – By Event

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
HF1: Feb. 2013	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	38	5	5/38 (13.2%)	0.658	0.464	0.0753	<1.04	1.05	3.05	<0.594	<1.53
HF1: Feb. 2013	Metals	Arsenic	µg/L	38	38	38/38 (100%)	1.05	0.144	0.0234	1.03	0.73	1.49	--	--
HF1: Feb. 2013	Metals	Arsenic (dissolved)	µg/L	38	38	38/38 (100%)	0.934	0.117	0.0189	0.94	0.67	1.16	--	--
HF1: Feb. 2013	Metals	Cadmium	µg/L	38	38	38/38 (100%)	0.0563	0.00958	0.00155	0.053	0.047	0.09	--	--
HF1: Feb. 2013	Metals	Cadmium (dissolved)	µg/L	38	37	37/38 (97.4%)	0.0452	0.00676	0.0011	0.046	0.04	0.055	<0.02	<0.02
HF1: Feb. 2013	Metals	Chromium	µg/L	38	38	38/38 (100%)	1.02	0.537	0.0872	0.81	0.55	2.81	--	--
HF1: Feb. 2013	Metals	Chromium (dissolved)	µg/L	38	37	37/38 (97.4%)	0.372	0.155	0.0252	0.325	0.23	0.87	<0.2	<0.2
HF1: Feb. 2013	Metals	Copper	µg/L	38	38	38/38 (100%)	2.36	0.609	0.0988	2.12	1.85	4.3	--	--
HF1: Feb. 2013	Metals	Copper (dissolved)	µg/L	38	38	38/38 (100%)	1.47	0.244	0.0396	1.46	0.832	2.04	--	--
HF1: Feb. 2013	Metals	Lead	µg/L	38	38	38/38 (100%)	1.34	0.681	0.111	1.07	0.71	3.27	--	--
HF1: Feb. 2013	Metals	Lead (dissolved)	µg/L	38	38	38/38 (100%)	0.215	0.198	0.0321	0.142	0.046	0.838	--	--
HF1: Feb. 2013	Metals	Mercury	ng/L	38	38	38/38 (100%)	17	14.2	2.3	10.4	1.7	62.4	--	--
HF1: Feb. 2013	Metals	Mercury (dissolved)	ng/L	38	36	36/38 (94.7%)	2.07	2.17	0.352	1.06	0.39	8.56	<0.39	<0.4
HF1: Feb. 2013	Metals	Methyl Mercury	ng/L	38	35	35/38 (92.1%)	0.0442	0.0224	0.00364	0.041	0.021	0.12	<0.05	<0.05
HF1: Feb. 2013	Metals	Methyl Mercury (dissolved)	ng/L	38	8	8/38 (21.1%)	0.0265	0.00532	0.000862	<0.05	0.023	0.05	<0.048	<0.051
HF1: Feb. 2013	Metals	Nickel	µg/L	38	38	38/38 (100%)	1.02	0.139	0.0225	0.99	0.87	1.39	--	--
HF1: Feb. 2013	Metals	Nickel (dissolved)	µg/L	38	38	38/38 (100%)	0.824	0.0898	0.0146	0.81	0.68	1.17	--	--
HF1: Feb. 2013	Metals	Selenium	µg/L	38	2	2/38 (5.26%)	0.487	0.0578	0.00937	<1	0.2	0.3	<1	<1
HF1: Feb. 2013	Metals	Selenium (dissolved)	µg/L	38	1	1/38 (2.63%)	0.495	0.0324	0.00526	<1	0.3	0.3	<1	<1
HF1: Feb. 2013	Metals	Silver	µg/L	38	38	38/38 (100%)	0.02	0.00924	0.0015	0.016	0.011	0.047	--	--
HF1: Feb. 2013	Metals	Silver (dissolved)	µg/L	38	23	23/38 (60.5%)	0.00829	0.00263	0.000426	0.0105	0.004	0.015	<0.02	<0.02
HF1: Feb. 2013	Metals	Zinc	µg/L	38	38	38/38 (100%)	8	1.6	0.259	7.42	6.03	12.7	--	--
HF1: Feb. 2013	Metals	Zinc (dissolved)	µg/L	38	38	38/38 (100%)	5.86	1.12	0.181	5.78	2.2	8.23	--	--
HF1: Feb. 2013	PAH-SIM	Total HMW PAHs	ng/L	38	38	38/38 (100%)	125	86.4	14	95.2	56.5	484	--	--
HF1: Feb. 2013	PAH-SIM	Total LMW PAHs	ng/L	38	38	38/38 (100%)	147	93.9	15.2	137	66.6	660	--	--
HF1: Feb. 2013	PAH-SIM	Total PAHs	ng/L	38	38	38/38 (100%)	272	154	25	240	127	943	--	--
HF1: Feb. 2013	PCB Congeners	Total PCB Congeners (209)	ng/L	38	38	38/38 (100%)	4.73	2.55	0.414	3.66	2.68	14.9	--	--
HF1: Feb. 2013	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	38	24	24/38 (63.2%)	0.0469	0.017	0.00276	0.0545	0.049	0.086	<0.047	<0.063
HF1: Feb. 2013	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	38	18	18/38 (47.4%)	0.0581	0.0625	0.0101	<0.0385	0.032	0.083	<0.025	<0.4
HF1: Feb. 2013	Pesticides	cis-Nonachlor	ng/L	38	23	23/38 (60.5%)	0.105	0.0754	0.0122	0.055	0.019	0.13	<0.38	<0.4
HF1: Feb. 2013	Pesticides	Dieldrin	ng/L	38	38	38/38 (100%)	0.223	0.0644	0.0104	0.21	0.14	0.36	--	--
HF1: Feb. 2013	Pesticides	Heptachlor epoxide	ng/L	38	32	32/38 (84.2%)	0.106	0.0469	0.00761	0.099	0.073	0.2	<0.051	<0.15
HF1: Feb. 2013	Pesticides	Total Alpha + Gamma Chlordane	ng/L	38	38	38/38 (100%)	0.278	0.128	0.0208	0.216	0.153	0.8	--	--
HF1: Feb. 2013	Pesticides	Total DDx (2,4 and 4,4)	ng/L	38	38	38/38 (100%)	0.937	0.929	0.151	0.662	0.269	5.91	--	--
HF1: Feb. 2013	Pesticides	Total DDx (4,4)	ng/L	38	38	38/38 (100%)	0.748	0.641	0.104	0.531	0.19	4.08	--	--
HF1: Feb. 2013	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	38	0	0/38 (0%)	<1.92	0.0413	0.0067	<1.9	--	--	<1.9	<2
HF1: Feb. 2013	Semivolatiles	Hexachlorobenzene	µg/L	76	0	0/76 (0%)	<0.0961	0.0967	0.0111	<0.0951	--	--	<0.000031	<0.2
HF2: Jun. 2013	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	34	15	15/34 (44.1%)	1.55	1.37	0.235	<1.37	0.742	6.61	<0.481	<2.72
HF2: Jun. 2013	Metals	Cadmium	µg/L	34	34	34/34 (100%)	0.0485	0.0111	0.00191	0.045	0.034	0.087	--	--
HF2: Jun. 2013	Metals	Cadmium (dissolved)	µg/L	34	34	34/34 (100%)	0.0331	0.0109	0.00186	0.037	0.006	0.043	--	--
HF2: Jun. 2013	Metals	Copper	µg/L	34	34	34/34 (100%)	3.26	0.896	0.154	3.06	1.97	5.67	--	--
HF2: Jun. 2013	Metals	Copper (dissolved)	µg/L	34	34	34/34 (100%)	1.83	0.68	0.117	1.7	1.07	4.42	--	--
HF2: Jun. 2013	Metals	Lead	µg/L	34	34	34/34 (100%)	2.27	1.26	0.216	1.94	0.782	6.05	--	--
HF2: Jun. 2013	Metals	Lead (dissolved)	µg/L	34	34	34/34 (100%)	0.286	0.222	0.0381	0.202	0.058	0.999	--	--

Table G-2
Surface Water Samples – By Event

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
HF2: Jun. 2013	Metals	Mercury	ng/L	34	34	34/34 (100%)	25.4	17.4	2.98	17.4	7.56	74.3	--	--
HF2: Jun. 2013	Metals	Mercury (dissolved)	ng/L	34	34	34/34 (100%)	2.65	2.02	0.347	2.14	0.51	10.3	--	--
HF2: Jun. 2013	PCB Congeners	Total PCB Congeners (209)	ng/L	34	34	34/34 (100%)	8.85	3.49	0.599	7.94	3.66	16.6	--	--
R1: Aug. 2011	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	36	22	22/36 (61.1%)	0.827	0.925	0.154	0.677	0.361	5.31	<0.369	<1.54
R1: Aug. 2011	Metals	Arsenic	µg/L	36	36	36/36 (100%)	1.58	0.215	0.0358	1.64	0.84	1.79	--	--
R1: Aug. 2011	Metals	Arsenic (dissolved)	µg/L	36	36	36/36 (100%)	1.49	0.169	0.0282	1.54	0.79	1.65	--	--
R1: Aug. 2011	Metals	Cadmium	µg/L	36	36	36/36 (100%)	0.0552	0.009	0.0015	0.0575	0.027	0.071	--	--
R1: Aug. 2011	Metals	Cadmium (dissolved)	µg/L	36	36	36/36 (100%)	0.0488	0.00685	0.00114	0.05	0.027	0.063	--	--
R1: Aug. 2011	Metals	Chromium	µg/L	36	36	36/36 (100%)	0.992	0.453	0.0755	0.91	0.46	2.57	--	--
R1: Aug. 2011	Metals	Chromium (dissolved)	µg/L	36	36	36/36 (100%)	0.315	0.113	0.0188	0.3	0.11	0.77	--	--
R1: Aug. 2011	Metals	Copper	µg/L	36	36	36/36 (100%)	2.59	0.554	0.0924	2.59	1.29	4.61	--	--
R1: Aug. 2011	Metals	Copper (dissolved)	µg/L	36	36	36/36 (100%)	1.88	0.262	0.0436	1.94	0.845	2.25	--	--
R1: Aug. 2011	Metals	Lead	µg/L	36	36	36/36 (100%)	1.5	0.732	0.122	1.36	0.643	4.53	--	--
R1: Aug. 2011	Metals	Lead (dissolved)	µg/L	36	36	36/36 (100%)	0.178	0.136	0.0227	0.144	0.035	0.741	--	--
R1: Aug. 2011	Metals	Mercury	ng/L	36	36	36/36 (100%)	15.3	6.85	1.14	13.8	0.38	35.3	--	--
R1: Aug. 2011	Metals	Mercury (dissolved)	ng/L	36	36	36/36 (100%)	2.31	3.32	0.553	1.18	0.36	18.1	--	--
R1: Aug. 2011	Metals	Methyl Mercury	ng/L	36	34	34/36 (94.4%)	0.0514	0.0169	0.00282	0.05	0.025	0.108	<0.049	<0.051
R1: Aug. 2011	Metals	Methyl Mercury (dissolved)	ng/L	36	22	22/36 (61.1%)	0.0285	0.0142	0.00237	0.0295	0.021	0.102	<0.048	<0.051
R1: Aug. 2011	Metals	Nickel	µg/L	36	36	36/36 (100%)	1.98	0.55	0.0917	1.86	1.56	5.05	--	--
R1: Aug. 2011	Metals	Nickel (dissolved)	µg/L	36	36	36/36 (100%)	1.56	0.135	0.0225	1.6	1.13	1.88	--	--
R1: Aug. 2011	Metals	Selenium	µg/L	36	7	7/36 (19.4%)	0.544	0.298	0.0497	<1	0.2	2.1	<1	<1
R1: Aug. 2011	Metals	Selenium (dissolved)	µg/L	36	3	3/36 (8.33%)	0.481	0.0668	0.0111	<1	0.2	0.3	<1	<1
R1: Aug. 2011	Metals	Silver	µg/L	36	34	34/36 (94.4%)	0.0427	0.137	0.0228	0.018	0.004	0.838	<0.02	<0.02
R1: Aug. 2011	Metals	Silver (dissolved)	µg/L	36	14	14/36 (38.9%)	0.00856	0.00241	0.000401	<0.02	0.004	0.012	<0.02	<0.02
R1: Aug. 2011	Metals	Zinc	µg/L	36	36	36/36 (100%)	7.74	1.31	0.219	7.88	4.09	11.2	--	--
R1: Aug. 2011	Metals	Zinc (dissolved)	µg/L	36	36	36/36 (100%)	6.26	0.946	0.158	6.29	2.92	8.91	--	--
R1: Aug. 2011	PAH-SIM	Total HMW PAHs	ng/L	35	35	35/35 (100%)	94.5	51.6	8.71	74.4	32.1	231	--	--
R1: Aug. 2011	PAH-SIM	Total LMW PAHs	ng/L	35	35	35/35 (100%)	20.1	18	3.04	13	4.73	75.6	--	--
R1: Aug. 2011	PAH-SIM	Total PAHs	ng/L	35	35	35/35 (100%)	115	64.7	10.9	87.4	37.2	291	--	--
R1: Aug. 2011	PCB Congeners	Total PCB Congeners (209)	ng/L	36	36	36/36 (100%)	6.94	1.62	0.27	6.62	4.19	10.6	--	--
R1: Aug. 2011	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	36	36	36/36 (100%)	0.156	0.0286	0.00478	0.154	0.111	0.268	--	--
R1: Aug. 2011	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	36	31	31/36 (86.1%)	0.16	0.0484	0.00806	0.17	0.105	0.259	<0.1	<0.166
R1: Aug. 2011	Pesticides	cis-Nonachlor	ng/L	36	25	25/36 (69.4%)	0.0735	0.0303	0.00505	0.0854	0.0279	0.158	<0.0224	<0.188
R1: Aug. 2011	Pesticides	Dieldrin	ng/L	36	36	36/36 (100%)	0.525	0.145	0.0241	0.54	0.276	0.987	--	--
R1: Aug. 2011	Pesticides	Heptachlor epoxide	ng/L	36	32	32/36 (88.9%)	0.222	0.0989	0.0165	0.238	0.0959	0.474	<0.0699	<0.19
R1: Aug. 2011	Pesticides	Total Alpha + Gamma Chlordane	ng/L	36	36	36/36 (100%)	0.534	0.15	0.0249	0.553	0.191	0.771	--	--
R1: Aug. 2011	Pesticides	Total DDx (2,4 and 4,4)	ng/L	36	33	33/36 (91.7%)	1.03	0.457	0.0761	1.08	0.356	2.59	<0.466	<0.686
R1: Aug. 2011	Pesticides	Total DDx (4,4)	ng/L	36	33	33/36 (91.7%)	0.793	0.32	0.0534	0.798	0.356	1.72	<0.466	<0.686
R1: Aug. 2011	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	35	4	4/35 (11.4%)	1.15	0.493	0.0833	<2	1.8	2.7	<1.9	<2.1
R1: Aug. 2011	Semivolatiles	Hexachlorobenzene	µg/L	71	6	6/71 (8.45%)	0.0483	0.0494	0.00586	<0.19	0.0001	0.00019	<0.000463	<0.21
R2: Feb. 2012	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	41	20	20/41 (48.8%)	1.37	1.55	0.242	<1.52	0.262	7.98	<0.241	<3.84
R2: Feb. 2012	Metals	Cadmium	µg/L	41	41	41/41 (100%)	0.0698	0.0296	0.00463	0.06	0.049	0.233	--	--
R2: Feb. 2012	Metals	Cadmium (dissolved)	µg/L	41	41	41/41 (100%)	0.0541	0.00809	0.00126	0.053	0.039	0.088	--	--

Table G-2
Surface Water Samples – By Event

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
R2: Feb. 2012	Metals	Copper	µg/L	41	41	41/41 (100%)	2.37	0.728	0.114	2.08	1.65	4.73	--	--
R2: Feb. 2012	Metals	Copper (dissolved)	µg/L	41	41	41/41 (100%)	1.37	0.208	0.0324	1.35	1.06	1.86	--	--
R2: Feb. 2012	Metals	Lead	µg/L	41	41	41/41 (100%)	1.48	0.891	0.139	1.08	0.652	4.64	--	--
R2: Feb. 2012	Metals	Lead (dissolved)	µg/L	41	41	41/41 (100%)	0.188	0.184	0.0287	0.132	0.048	0.796	--	--
R2: Feb. 2012	Metals	Mercury	ng/L	41	41	41/41 (100%)	18.9	14.5	2.26	12.8	5.25	67.6	--	--
R2: Feb. 2012	Metals	Mercury (dissolved)	ng/L	41	32	32/41 (78%)	1.59	2.03	0.317	0.81	0.27	8.25	<0.4	<0.4
R2: Feb. 2012	PCB Congeners	Total PCB Congeners (209)	ng/L	41	41	41/41 (100%)	7.13	3.44	0.537	5.4	3.85	20.4	--	--
R3: Mar. 2012	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	41	12	12/41 (29.3%)	0.938	0.443	0.0692	<1.68	0.219	2.29	<0.986	<3.3
R3: Mar. 2012	Metals	Arsenic	µg/L	41	41	41/41 (100%)	1.1	0.136	0.0212	1.08	0.96	1.77	--	--
R3: Mar. 2012	Metals	Arsenic (dissolved)	µg/L	41	41	41/41 (100%)	0.987	0.0602	0.0094	0.98	0.85	1.21	--	--
R3: Mar. 2012	Metals	Cadmium	µg/L	41	41	41/41 (100%)	0.0657	0.0142	0.00221	0.065	0.041	0.131	--	--
R3: Mar. 2012	Metals	Cadmium (dissolved)	µg/L	41	41	41/41 (100%)	0.057	0.00938	0.00147	0.06	0.037	0.069	--	--
R3: Mar. 2012	Metals	Chromium	µg/L	41	41	41/41 (100%)	0.867	0.334	0.0521	0.81	0.43	1.76	--	--
R3: Mar. 2012	Metals	Chromium (dissolved)	µg/L	41	40	40/41 (97.6%)	0.288	0.146	0.0228	0.24	0.15	0.73	<0.2	<0.2
R3: Mar. 2012	Metals	Copper	µg/L	41	41	41/41 (100%)	2.57	0.688	0.107	2.41	1.55	4.5	--	--
R3: Mar. 2012	Metals	Copper (dissolved)	µg/L	41	41	41/41 (100%)	1.78	0.402	0.0628	1.79	1.01	3.39	--	--
R3: Mar. 2012	Metals	Lead	µg/L	41	41	41/41 (100%)	1.1	0.444	0.0693	0.958	0.533	2.2	--	--
R3: Mar. 2012	Metals	Lead (dissolved)	µg/L	41	41	41/41 (100%)	0.214	0.227	0.0355	0.127	0.048	1.04	--	--
R3: Mar. 2012	Metals	Mercury	ng/L	41	41	41/41 (100%)	14.2	8.95	1.4	11.3	4.83	50.4	--	--
R3: Mar. 2012	Metals	Mercury (dissolved)	ng/L	41	41	41/41 (100%)	2.31	3.31	0.516	0.97	0.25	14.1	--	--
R3: Mar. 2012	Metals	Methyl Mercury	ng/L	41	32	32/41 (78%)	0.0354	0.0145	0.00226	0.039	0.022	0.076	<0.049	<0.052
R3: Mar. 2012	Metals	Methyl Mercury (dissolved)	ng/L	41	5	5/41 (12.2%)	0.0264	0.00661	0.00103	<0.05	0.021	0.065	<0.048	<0.052
R3: Mar. 2012	Metals	Nickel	µg/L	41	41	41/41 (100%)	1.22	0.167	0.0261	1.18	0.85	1.68	--	--
R3: Mar. 2012	Metals	Nickel (dissolved)	µg/L	41	41	41/41 (100%)	0.98	0.134	0.021	1.01	0.62	1.22	--	--
R3: Mar. 2012	Metals	Selenium	µg/L	41	5	5/41 (12.2%)	0.473	0.0837	0.0131	<1	0.2	0.5	<1	<1
R3: Mar. 2012	Metals	Selenium (dissolved)	µg/L	41	3	3/41 (7.32%)	0.483	0.0629	0.00982	<1	0.2	0.3	<1	<1
R3: Mar. 2012	Metals	Silver	µg/L	41	24	24/41 (58.5%)	0.0205	0.0109	0.0017	0.02	0.014	0.044	<0.02	<0.02
R3: Mar. 2012	Metals	Silver (dissolved)	µg/L	41	13	13/41 (31.7%)	0.0104	0.00358	0.000558	<0.02	0.006	0.023	<0.02	<0.02
R3: Mar. 2012	Metals	Zinc	µg/L	41	41	41/41 (100%)	6.39	1.38	0.216	6.25	3.56	10.9	--	--
R3: Mar. 2012	Metals	Zinc (dissolved)	µg/L	41	41	41/41 (100%)	4.8	1.1	0.172	5.16	2.37	7.19	--	--
R3: Mar. 2012	PAH-SIM	Total HMW PAHs	ng/L	41	41	41/41 (100%)	69.9	33	5.15	64.4	17.2	153	--	--
R3: Mar. 2012	PAH-SIM	Total LMW PAHs	ng/L	41	41	41/41 (100%)	13.9	13.9	2.18	9.17	3.21	64.7	--	--
R3: Mar. 2012	PAH-SIM	Total PAHs	ng/L	41	41	41/41 (100%)	83.7	43.1	6.73	74.5	20.9	187	--	--
R3: Mar. 2012	PCB Congeners	Total PCB Congeners (209)	ng/L	41	41	41/41 (100%)	5.54	1.52	0.237	5.15	3.59	9.63	--	--
R3: Mar. 2012	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	41	41	41/41 (100%)	0.11	0.0302	0.00471	0.105	0.0637	0.182	--	--
R3: Mar. 2012	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	41	23	23/41 (56.1%)	0.045	0.0308	0.00481	0.054	0.031	0.137	<0.0152	<0.0832
R3: Mar. 2012	Pesticides	cis-Nonachlor	ng/L	41	7	7/41 (17.1%)	0.018	0.0134	0.00209	<0.0253	0.019	0.064	<0.0124	<0.0542
R3: Mar. 2012	Pesticides	Dieldrin	ng/L	41	41	41/41 (100%)	0.246	0.1	0.0156	0.239	0.103	0.482	--	--

Table G-2
Surface Water Samples – By Event

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
R3: Mar. 2012	Pesticides	Heptachlor epoxide	ng/L	41	41	41/41 (100%)	0.108	0.0556	0.00869	0.0937	0.0257	0.255	--	--
R3: Mar. 2012	Pesticides	Total Alpha + Gamma Chlordane	ng/L	41	41	41/41 (100%)	0.251	0.115	0.0179	0.224	0.0482	0.526	--	--
R3: Mar. 2012	Pesticides	Total DDx (2,4 and 4,4)	ng/L	41	31	31/41 (75.6%)	0.379	0.307	0.048	0.312	0.117	1.29	<0.1	<0.159
R3: Mar. 2012	Pesticides	Total DDx (4,4)	ng/L	41	30	30/41 (73.2%)	0.337	0.268	0.0418	0.291	0.169	1.13	<0.1	<0.185
R3: Mar. 2012	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	41	1	1/41 (2.44%)	1	0.226	0.0352	<1.9	2.4	2.4	<1.9	<2.2
R3: Mar. 2012	Semivolatiles	Hexachlorobenzene	µg/L	82	2	2/82 (2.44%)	0.0474	0.0483	0.00534	<0.000146	0.042	0.052	<0.0000236	<0.22
R4: Jun. 2012	Metals	Cadmium	µg/L	41	41	41/41 (100%)	0.08	0.0274	0.00429	0.073	0.054	0.193	--	--
R4: Jun. 2012	Metals	Cadmium (dissolved)	µg/L	41	41	41/41 (100%)	0.0638	0.00598	0.000934	0.064	0.048	0.076	--	--
R4: Jun. 2012	Metals	Copper	µg/L	41	41	41/41 (100%)	3.5	1.91	0.298	2.97	2.13	11.2	--	--
R4: Jun. 2012	Metals	Copper (dissolved)	µg/L	41	41	41/41 (100%)	2.17	0.308	0.0481	2.15	1.49	3.03	--	--
R4: Jun. 2012	Metals	Lead	µg/L	41	41	41/41 (100%)	2.22	2.44	0.381	1.57	0.64	12	--	--
R4: Jun. 2012	Metals	Lead (dissolved)	µg/L	41	41	41/41 (100%)	0.287	0.28	0.0437	0.175	0.068	1.46	--	--
R4: Jun. 2012	Metals	Mercury	ng/L	41	41	41/41 (100%)	30.1	48	7.5	16	0.9	296	--	--
R4: Jun. 2012	Metals	Mercury (dissolved)	ng/L	41	26	26/41 (63.4%)	5.18	8.92	1.39	4.21	0.5	53.5	<0.4	<4.28
R5: Dec. 2012	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	43	10	10/43 (23.3%)	0.8	0.587	0.0895	<0.996	0.912	2.65	<0.736	<2.2
R5: Dec. 2012	Metals	Arsenic	µg/L	43	43	43/43 (100%)	1.42	0.209	0.0318	1.4	1.2	2.3	--	--
R5: Dec. 2012	Metals	Arsenic (dissolved)	µg/L	43	43	43/43 (100%)	1.19	0.0891	0.0136	1.2	0.91	1.5	--	--
R5: Dec. 2012	Metals	Cadmium	µg/L	43	43	43/43 (100%)	0.0908	0.0232	0.00354	0.084	0.057	0.175	--	--
R5: Dec. 2012	Metals	Cadmium (dissolved)	µg/L	43	43	43/43 (100%)	0.0724	0.0103	0.00157	0.07	0.052	0.101	--	--
R5: Dec. 2012	Metals	Chromium	µg/L	43	43	43/43 (100%)	1.75	1.2	0.184	1.4	0.6	5.61	--	--
R5: Dec. 2012	Metals	Chromium (dissolved)	µg/L	43	43	43/43 (100%)	0.495	0.461	0.0702	0.33	0.15	2.7	--	--
R5: Dec. 2012	Metals	Copper	µg/L	43	43	43/43 (100%)	3.74	1.93	0.295	3.2	2.06	13.1	--	--
R5: Dec. 2012	Metals	Copper (dissolved)	µg/L	43	43	43/43 (100%)	1.86	0.536	0.0817	1.67	1.41	4.48	--	--
R5: Dec. 2012	Metals	Lead	µg/L	43	43	43/43 (100%)	2.71	2.05	0.312	2.05	0.88	9.89	--	--
R5: Dec. 2012	Metals	Lead (dissolved)	µg/L	43	43	43/43 (100%)	0.487	0.674	0.103	0.27	0.05	3.85	--	--
R5: Dec. 2012	Metals	Mercury	ng/L	43	43	43/43 (100%)	28.3	19.6	2.99	20.6	8.49	78.4	--	--
R5: Dec. 2012	Metals	Mercury (dissolved)	ng/L	43	43	43/43 (100%)	5.57	7.05	1.08	2.75	0.4	32.7	--	--
R5: Dec. 2012	Metals	Methyl Mercury	ng/L	43	41	41/43 (95.3%)	0.0739	0.0572	0.00873	0.051	0.023	0.294	<0.051	<0.051
R5: Dec. 2012	Metals	Methyl Mercury (dissolved)	ng/L	43	14	14/43 (32.6%)	0.0295	0.0141	0.00215	<0.05	0.021	0.101	<0.048	<0.051
R5: Dec. 2012	Metals	Nickel	µg/L	43	43	43/43 (100%)	1.61	0.383	0.0585	1.5	1.12	2.85	--	--
R5: Dec. 2012	Metals	Nickel (dissolved)	µg/L	43	43	43/43 (100%)	1.23	0.215	0.0328	1.18	0.85	1.92	--	--
R5: Dec. 2012	Metals	Selenium	µg/L	43	11	11/43 (25.6%)	0.442	0.105	0.016	<1	0.2	0.4	<1	<1
R5: Dec. 2012	Metals	Selenium (dissolved)	µg/L	43	5	5/43 (11.6%)	0.484	0.0652	0.00994	<1	0.2	0.6	<1	<1
R5: Dec. 2012	Metals	Silver	µg/L	43	43	43/43 (100%)	0.0426	0.0287	0.00438	0.034	0.016	0.14	--	--
R5: Dec. 2012	Metals	Silver (dissolved)	µg/L	43	43	43/43 (100%)	0.0109	0.00953	0.00145	0.007	0.003	0.056	--	--
R5: Dec. 2012	Metals	Zinc	µg/L	43	43	43/43 (100%)	11.7	4.1	0.625	10.4	5.9	28.9	--	--
R5: Dec. 2012	Metals	Zinc (dissolved)	µg/L	43	43	43/43 (100%)	8.21	2.03	0.31	7.9	4.1	13.9	--	--
R5: Dec. 2012	PAH-SIM	Total HMW PAHs	ng/L	43	43	43/43 (100%)	240	299	45.7	140	62.2	1,690	--	--
R5: Dec. 2012	PAH-SIM	Total LMW PAHs	ng/L	43	43	43/43 (100%)	55.4	55.1	8.4	38.5	2.72	274	--	--

Table G-2
Surface Water Samples – By Event

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
R5: Dec. 2012	PAH-SIM	Total PAHs	ng/L	43	43	43/43 (100%)	295	348	53.1	186	69.8	1,960	--	--
R5: Dec. 2012	PCB Congeners	Total PCB Congeners (209)	ng/L	43	43	43/43 (100%)	6.36	2.95	0.449	5.59	2.2	14.9	--	--
R5: Dec. 2012	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	43	38	38/43 (88.4%)	0.275	0.704	0.107	0.11	0.084	4.6	<0.08	<0.19
R5: Dec. 2012	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	43	36	36/43 (83.7%)	0.212	0.571	0.087	0.095	0.05	3.7	<0.066	<0.23
R5: Dec. 2012	Pesticides	cis-Nonachlor	ng/L	43	29	29/43 (67.4%)	0.102	0.0708	0.0108	0.075	0.021	0.15	<0.38	<0.4
R5: Dec. 2012	Pesticides	Dieldrin	ng/L	43	38	38/43 (88.4%)	0.336	0.306	0.0466	0.28	0.18	2.1	<0.2	<0.32
R5: Dec. 2012	Pesticides	Heptachlor epoxide	ng/L	43	38	38/43 (88.4%)	0.12	0.123	0.0188	0.088	0.052	0.67	<0.068	<0.096
R5: Dec. 2012	Pesticides	Total Alpha + Gamma Chlordane	ng/L	43	43	43/43 (100%)	0.343	0.201	0.0306	0.27	0.1	0.85	--	--
R5: Dec. 2012	Pesticides	Total DDx (2,4 and 4,4)	ng/L	43	42	42/43 (97.7%)	1.9	2.02	0.308	1.38	0.323	11.7	<0.4	<0.4
R5: Dec. 2012	Pesticides	Total DDx (4,4)	ng/L	43	42	42/43 (97.7%)	1.44	1.43	0.217	1.15	0.23	8.1	<0.4	<0.4
R5: Dec. 2012	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	43	0	0/43 (0%)	<1.97	0.0599	0.00913	<2	--	--	<1.9	<2.1
R5: Dec. 2012	Semivolatiles	Hexachlorobenzene	µg/L	86	2	2/86 (2.33%)	0.0494	0.0494	0.00533	<0.19	0.0037	0.0068	<0.00062	<0.21

Notes:

Non-detects included at the 1/2 reporting limit for mean, standard deviation, and standard error estimates.

Non-detects evaluated at full reporting limit for median estimate.

If all sample results are non-detect, non-detects evaluated at full reporting limit.

Acronyms and Abbreviations:

BHC = hexachlorocyclohexane

DDT = dichlorodiphenyltrichloroethane

HPAHs = high molecular weight polycyclic aromatic hydrocarbons

LPAHs = low molecular weight polycyclic aromatic hydrocarbon

ng/L = nanogram per liter

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

pg/L = picogram per liter

SIM = selective ion monitoring

µg/L = microgram per liter

% = percent

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
ARK	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	38	6	6/38 (15.8%)	0.598	0.264	0.0428	<1.18	0.262	1.28	<0.481	<2.47
ARK	Metals	Arsenic	µg/L	28	28	28/28 (100%)	1.39	0.304	0.0575	1.4	0.97	2.3	--	--
ARK	Metals	Arsenic (dissolved)	µg/L	28	28	28/28 (100%)	1.23	0.243	0.0458	1.2	0.89	1.6	--	--
ARK	Metals	Cadmium	µg/L	46	46	46/46 (100%)	0.0657	0.0207	0.00305	0.06	0.038	0.175	--	--
ARK	Metals	Cadmium (dissolved)	µg/L	46	45	45/46 (97.8%)	0.0536	0.0134	0.00198	0.0535	0.008	0.076	<0.02	<0.02
ARK	Metals	Chromium	µg/L	28	28	28/28 (100%)	1	0.825	0.156	0.78	0.51	4.9	--	--
ARK	Metals	Chromium (dissolved)	µg/L	28	27	27/28 (96.4%)	0.285	0.138	0.0261	0.25	0.15	0.73	<0.2	<0.2
ARK	Metals	Copper	µg/L	46	46	46/46 (100%)	2.97	1.71	0.252	2.56	1.65	13.1	--	--
ARK	Metals	Copper (dissolved)	µg/L	46	46	46/46 (100%)	1.72	0.605	0.0892	1.64	0.832	4.42	--	--
ARK	Metals	Lead	µg/L	46	46	46/46 (100%)	1.33	1.37	0.203	1	0.64	9.89	--	--
ARK	Metals	Lead (dissolved)	µg/L	46	46	46/46 (100%)	0.198	0.189	0.0279	0.146	0.067	1.04	--	--
ARK	Metals	Mercury	ng/L	46	46	46/46 (100%)	16.8	14	2.06	13.2	5.42	78.4	--	--
ARK	Metals	Mercury (dissolved)	ng/L	46	36	36/46 (78.3%)	2.45	2.8	0.413	1.76	0.36	14.1	<0.4	<4.28
ARK	Metals	Methyl Mercury	ng/L	28	27	27/28 (96.4%)	0.0448	0.0292	0.00551	0.039	0.022	0.157	<0.05	<0.05
ARK	Metals	Methyl Mercury (dissolved)	ng/L	28	7	7/28 (25%)	0.0266	0.0078	0.00147	<0.05	0.023	0.065	<0.048	<0.052
ARK	Metals	Nickel	µg/L	28	28	28/28 (100%)	1.47	0.403	0.0762	1.37	0.93	2.85	--	--
ARK	Metals	Nickel (dissolved)	µg/L	28	28	28/28 (100%)	1.17	0.303	0.0573	1.14	0.73	1.71	--	--
ARK	Metals	Selenium	µg/L	28	5	5/28 (17.9%)	0.514	0.328	0.0621	<1	0.2	2.1	<1	<1
ARK	Metals	Selenium (dissolved)	µg/L	28	2	2/28 (7.14%)	0.482	0.067	0.0127	<1	0.2	0.3	<1	<1
ARK	Metals	Silver	µg/L	28	24	24/28 (85.7%)	0.028	0.0222	0.00419	0.0245	0.012	0.13	<0.02	<0.02
ARK	Metals	Silver (dissolved)	µg/L	28	19	19/28 (67.9%)	0.00861	0.00472	0.000893	0.0075	0.004	0.023	<0.02	<0.02
ARK	Metals	Zinc	µg/L	28	28	28/28 (100%)	8.39	4.43	0.838	7.59	4.59	28.9	--	--
ARK	Metals	Zinc (dissolved)	µg/L	28	28	28/28 (100%)	5.98	1.91	0.361	6.22	2.2	8.7	--	--
ARK	PAH-SIM	Total HMW PAHs	ng/L	28	28	28/28 (100%)	86.5	68.4	12.9	71.1	17.2	315	--	--
ARK	PAH-SIM	Total LMW PAHs	ng/L	28	28	28/28 (100%)	57.9	132	25	9.61	2.72	660	--	--
ARK	PAH-SIM	Total PAHs	ng/L	28	28	28/28 (100%)	144	182	34.5	87.5	20.9	943	--	--
ARK	PCB Congener	Total PCB Congeners (209)	ng/L	38	38	38/38 (100%)	5.32	1.63	0.265	5.01	2.68	11.9	--	--
ARK	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	28	28	28/28 (100%)	0.127	0.0656	0.0124	0.112	0.055	0.33	--	--
ARK	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	28	21	21/28 (75%)	0.128	0.0796	0.0151	0.14	0.031	0.3	<0.0152	<0.4
ARK	Pesticides	cis-Nonachlor	ng/L	28	14	14/28 (50%)	0.0521	0.0533	0.0101	0.0383	0.019	0.0686	<0.024	<0.39
ARK	Pesticides	Dieldrin	ng/L	28	28	28/28 (100%)	0.295	0.156	0.0295	0.245	0.104	0.584	--	--
ARK	Pesticides	Heptachlor epoxide	ng/L	28	26	26/28 (92.9%)	0.11	0.0686	0.013	0.0876	0.0308	0.284	<0.0699	<0.0921
ARK	Pesticides	Total Alpha + Gamma Chlordane	ng/L	28	28	28/28 (100%)	0.286	0.17	0.0321	0.212	0.0978	0.666	--	--
ARK	Pesticides	Total DDx (2,4 and 4,4)	ng/L	28	25	25/28 (89.3%)	2.16	2.58	0.488	1.44	0.117	11.7	<0.111	<0.122
ARK	Pesticides	Total DDx (4,4)	ng/L	28	24	24/28 (85.7%)	1.57	1.79	0.339	1.07	0.302	8.1	<0.111	<0.185
ARK	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	28	1	1/28 (3.57%)	0.993	0.16	0.0302	<1.9	1.8	1.8	<1.9	<2
ARK	Semivolatiles	Hexachlorobenzene	µg/L	56	0	0/56 (0%)	<0.0963	0.0971	0.013	<0.0951	--	--	<0.0000273	<0.2
NB NBE	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	37	13	13/37 (35.1%)	1.04	1.29	0.212	<1.3	0.427	7.98	<0.589	<2.81
NB NBE	Metals	Arsenic	µg/L	25	25	25/25 (100%)	1.25	0.302	0.0604	1.2	0.73	1.77	--	--
NB NBE	Metals	Arsenic (dissolved)	µg/L	25	25	25/25 (100%)	1.17	0.264	0.0529	1.1	0.73	1.62	--	--
NB NBE	Metals	Cadmium	µg/L	42	42	42/42 (100%)	0.0619	0.0167	0.00258	0.059	0.027	0.131	--	--
NB NBE	Metals	Cadmium (dissolved)	µg/L	42	42	42/42 (100%)	0.0552	0.0118	0.00182	0.053	0.032	0.076	--	--
NB NBE	Metals	Chromium	µg/L	25	25	25/25 (100%)	0.847	0.252	0.0505	0.77	0.49	1.6	--	--
NB NBE	Metals	Chromium (dissolved)	µg/L	25	25	25/25 (100%)	0.344	0.133	0.0265	0.31	0.19	0.71	--	--
NB NBE	Metals	Copper	µg/L	42	42	42/42 (100%)	2.48	0.667	0.103	2.36	1.29	4.58	--	--
NB NBE	Metals	Copper (dissolved)	µg/L	42	42	42/42 (100%)	1.81	0.281	0.0434	1.88	1.21	2.35	--	--

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
NB NBE	Metals	Lead	µg/L	42	42	42/42 (100%)	1.36	0.834	0.129	1.11	0.643	4.69	--	--
NB NBE	Metals	Lead (dissolved)	µg/L	42	42	42/42 (100%)	0.223	0.191	0.0294	0.148	0.061	0.89	--	--
NB NBE	Metals	Mercury	ng/L	42	42	42/42 (100%)	14.6	10.9	1.68	10.8	6.47	55.3	--	--
NB NBE	Metals	Mercury (dissolved)	ng/L	42	38	38/42 (90.5%)	1.96	1.87	0.289	1.24	0.48	8.97	<0.4	<0.4
NB NBE	Metals	Methyl Mercury	ng/L	25	22	22/25 (88%)	0.0366	0.0126	0.00252	0.037	0.023	0.06	<0.049	<0.051
NB NBE	Metals	Methyl Mercury (dissolved)	ng/L	25	10	10/25 (40%)	0.0253	0.00242	0.000484	<0.05	0.021	0.034	<0.048	<0.052
NB NBE	Metals	Nickel	µg/L	25	25	25/25 (100%)	1.37	0.367	0.0735	1.29	0.89	2.09	--	--
NB NBE	Metals	Nickel (dissolved)	µg/L	25	25	25/25 (100%)	1.2	0.3	0.06	1.17	0.77	1.64	--	--
NB NBE	Metals	Selenium	µg/L	25	3	3/25 (12%)	0.48	0.0707	0.0141	<1	0.2	0.5	<1	<1
NB NBE	Metals	Selenium (dissolved)	µg/L	25	0	0/25 (0%)	<1	0	0	<1	--	--	<1	<1
NB NBE	Metals	Silver	µg/L	25	25	25/25 (100%)	0.0168	0.00735	0.00147	0.016	0.004	0.04	--	--
NB NBE	Metals	Silver (dissolved)	µg/L	25	16	16/25 (64%)	0.00872	0.00242	0.000485	0.009	0.003	0.014	<0.02	<0.02
NB NBE	Metals	Zinc	µg/L	25	25	25/25 (100%)	7.92	1.5	0.301	8	4.09	11	--	--
NB NBE	Metals	Zinc (dissolved)	µg/L	25	25	25/25 (100%)	6.78	1.13	0.225	6.68	5.28	8.91	--	--
NB NBE	PAH-SIM	Total HMW PAHs	ng/L	25	25	25/25 (100%)	78.2	25.8	5.16	70.4	43.9	154	--	--
NB NBE	PAH-SIM	Total LMW PAHs	ng/L	25	25	25/25 (100%)	42.6	55.8	11.2	13.8	4.9	182	--	--
NB NBE	PAH-SIM	Total PAHs	ng/L	25	25	25/25 (100%)	121	71.9	14.4	87.3	52.1	336	--	--
NB NBE	PCB Congener	Total PCB Congeners (209)	ng/L	37	37	37/37 (100%)	5.4	2.1	0.346	5.01	2.2	12	--	--
NB NBE	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	25	14	14/25 (56%)	0.114	0.0768	0.0154	0.135	0.105	0.28	<0.047	<0.19
NB NBE	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	25	10	10/25 (40%)	0.0828	0.0675	0.0135	<0.042	0.0638	0.209	<0.0216	<0.23
NB NBE	Pesticides	cis-Nonachlor	ng/L	25	14	14/25 (56%)	0.0813	0.068	0.0136	0.058	0.025	0.088	<0.0138	<0.4
NB NBE	Pesticides	Dieldrin	ng/L	25	20	20/25 (80%)	0.34	0.187	0.0374	0.31	0.17	0.713	<0.2	<0.32
NB NBE	Pesticides	Heptachlor epoxide	ng/L	25	19	19/25 (76%)	0.155	0.0982	0.0196	0.137	0.088	0.382	<0.068	<0.096
NB NBE	Pesticides	Total Alpha + Gamma Chlordane	ng/L	25	25	25/25 (100%)	0.339	0.187	0.0374	0.301	0.1	0.754	--	--
NB NBE	Pesticides	Total DDx (2,4 and 4,4)	ng/L	25	22	22/25 (88%)	0.626	0.337	0.0674	0.578	0.323	1.28	<0.1	<0.4
NB NBE	Pesticides	Total DDx (4,4)	ng/L	25	22	22/25 (88%)	0.496	0.265	0.053	0.45	0.23	1.06	<0.1	<0.4
NB NBE	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	25	1	1/25 (4%)	1.06	0.344	0.0688	<2	2.7	2.7	<1.9	<2.1
NB NBE	Semivolatiles	Hexachlorobenzene	µg/L	50	5	5/50 (10%)	0.0495	0.0499	0.00705	<0.19	0.0001	0.0037	<0.000035	<0.21
NB NBN	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	48	25	25/48 (52.1%)	1.31	1.23	0.177	1.33	0.404	6.61	<0.241	<3.84
NB NBN	Metals	Arsenic	µg/L	32	32	32/32 (100%)	1.29	0.264	0.0467	1.2	0.95	1.7	--	--
NB NBN	Metals	Arsenic (dissolved)	µg/L	32	32	32/32 (100%)	1.15	0.274	0.0484	1.05	0.67	1.65	--	--
NB NBN	Metals	Cadmium	µg/L	56	56	56/56 (100%)	0.0777	0.0359	0.00479	0.068	0.034	0.233	--	--
NB NBN	Metals	Cadmium (dissolved)	µg/L	56	56	56/56 (100%)	0.0564	0.0152	0.00203	0.055	0.028	0.101	--	--
NB NBN	Metals	Chromium	µg/L	32	32	32/32 (100%)	1.43	0.841	0.149	1.2	0.55	4.2	--	--
NB NBN	Metals	Chromium (dissolved)	µg/L	32	31	31/32 (96.9%)	0.486	0.501	0.0886	0.315	0.21	2.7	<0.2	<0.2
NB NBN	Metals	Copper	µg/L	56	56	56/56 (100%)	3.33	1.75	0.234	2.92	1.53	11.2	--	--
NB NBN	Metals	Copper (dissolved)	µg/L	56	56	56/56 (100%)	1.85	0.546	0.073	1.77	1.09	4.48	--	--
NB NBN	Metals	Lead	µg/L	56	56	56/56 (100%)	2.46	2.19	0.293	1.76	0.667	12	--	--
NB NBN	Metals	Lead (dissolved)	µg/L	56	56	56/56 (100%)	0.393	0.586	0.0782	0.189	0.058	3.85	--	--
NB NBN	Metals	Mercury	ng/L	56	56	56/56 (100%)	32.3	41.5	5.55	23.4	0.38	296	--	--
NB NBN	Metals	Mercury (dissolved)	ng/L	56	53	53/56 (94.6%)	4.73	6.28	0.84	2.46	0.37	32.7	<0.39	<2.92
NB NBN	Metals	Methyl Mercury	ng/L	32	31	31/32 (96.9%)	0.0652	0.0385	0.00681	0.0535	0.024	0.165	<0.051	<0.051
NB NBN	Metals	Methyl Mercury (dissolved)	ng/L	32	10	10/32 (31.2%)	0.032	0.0164	0.00289	<0.05	0.024	0.101	<0.048	<0.052
NB NBN	Metals	Nickel	µg/L	32	32	32/32 (100%)	1.53	0.424	0.075	1.42	0.91	2.38	--	--
NB NBN	Metals	Nickel (dissolved)	µg/L	32	32	32/32 (100%)	1.2	0.365	0.0645	1.1	0.72	1.92	--	--

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
NB NBN	Metals	Selenium	µg/L	32	8	8/32 (25%)	0.466	0.0971	0.0172	<1	0.2	0.7	<1	<1
NB NBN	Metals	Selenium (dissolved)	µg/L	32	7	7/32 (21.9%)	0.459	0.0979	0.0173	<1	0.2	0.6	<1	<1
NB NBN	Metals	Silver	µg/L	32	30	30/32 (93.8%)	0.0556	0.144	0.0255	0.025	0.009	0.838	<0.02	<0.02
NB NBN	Metals	Silver (dissolved)	µg/L	32	18	18/32 (56.2%)	0.0109	0.00992	0.00175	0.02	0.004	0.056	<0.02	<0.02
NB NBN	Metals	Zinc	µg/L	32	32	32/32 (100%)	9.17	3.14	0.554	8.28	4.6	17.7	--	--
NB NBN	Metals	Zinc (dissolved)	µg/L	32	32	32/32 (100%)	6.72	2.43	0.43	6.03	4	13.9	--	--
NB NBN	PAH-SIM	Total HMW PAHs	ng/L	31	31	31/31 (100%)	162	119	21.4	117	61.1	535	--	--
NB NBN	PAH-SIM	Total LMW PAHs	ng/L	31	31	31/31 (100%)	59.1	51.6	9.27	46.6	5.31	181	--	--
NB NBN	PAH-SIM	Total PAHs	ng/L	31	31	31/31 (100%)	221	152	27.4	176	67.2	651	--	--
NB NBN	PCB Congener	Total PCB Congeners (209)	ng/L	48	48	48/48 (100%)	7.74	2.72	0.392	7.41	3.46	16.6	--	--
NB NBN	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	32	32	32/32 (100%)	0.105	0.0383	0.00676	0.1	0.049	0.17	--	--
NB NBN	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	32	28	28/32 (87.5%)	0.0771	0.0507	0.00897	0.059	0.032	0.209	<0.054	<0.166
NB NBN	Pesticides	cis-Nonachlor	ng/L	32	16	16/32 (50%)	0.0793	0.0648	0.0115	0.0618	0.028	0.131	<0.0126	<0.4
NB NBN	Pesticides	Dieldrin	ng/L	32	32	32/32 (100%)	0.318	0.152	0.0269	0.255	0.16	0.71	--	--
NB NBN	Pesticides	Heptachlor epoxide	ng/L	32	31	31/32 (96.9%)	0.125	0.0691	0.0122	0.12	0.052	0.318	<0.19	<0.19
NB NBN	Pesticides	Total Alpha + Gamma Chlordane	ng/L	32	32	32/32 (100%)	0.369	0.162	0.0287	0.33	0.178	0.756	--	--
NB NBN	Pesticides	Total DDx (2,4 and 4,4)	ng/L	32	31	31/32 (96.9%)	0.922	0.49	0.0867	0.9	0.169	2.01	<0.545	<0.545
NB NBN	Pesticides	Total DDx (4,4)	ng/L	32	31	31/32 (96.9%)	0.746	0.378	0.0669	0.681	0.169	1.62	<0.545	<0.545
NB NBN	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	32	1	1/32 (3.12%)	1.02	0.254	0.0449	<1.9	2.4	2.4	<1.9	<2.2
NB NBN	Semivolatiles	Hexachlorobenzene	µg/L	64	1	1/64 (1.56%)	0.048	0.0488	0.0061	<0.0004	0.042	0.042	<0.000041	<0.22
NB NBS	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	48	7	7/48 (14.6%)	0.622	0.299	0.0431	<1.11	0.313	0.974	<0.369	<3.3
NB NBS	Metals	Arsenic	µg/L	32	32	32/32 (100%)	1.29	0.27	0.0477	1.3	0.91	1.79	--	--
NB NBS	Metals	Arsenic (dissolved)	µg/L	32	32	32/32 (100%)	1.14	0.216	0.0382	1.12	0.79	1.55	--	--
NB NBS	Metals	Cadmium	µg/L	56	56	56/56 (100%)	0.057	0.0138	0.00184	0.0545	0.031	0.096	--	--
NB NBS	Metals	Cadmium (dissolved)	µg/L	56	56	56/56 (100%)	0.0485	0.0132	0.00176	0.048	0.007	0.075	--	--
NB NBS	Metals	Chromium	µg/L	32	32	32/32 (100%)	0.97	0.544	0.0963	0.76	0.43	2.57	--	--
NB NBS	Metals	Chromium (dissolved)	µg/L	32	32	32/32 (100%)	0.298	0.0972	0.0172	0.295	0.11	0.59	--	--
NB NBS	Metals	Copper	µg/L	56	56	56/56 (100%)	2.6	0.888	0.119	2.36	1.38	5.37	--	--
NB NBS	Metals	Copper (dissolved)	µg/L	56	56	56/56 (100%)	1.66	0.493	0.0658	1.6	0.845	3.82	--	--
NB NBS	Metals	Lead	µg/L	56	56	56/56 (100%)	1.44	0.94	0.126	1.08	0.533	4.68	--	--
NB NBS	Metals	Lead (dissolved)	µg/L	56	56	56/56 (100%)	0.191	0.155	0.0207	0.132	0.035	0.724	--	--
NB NBS	Metals	Mercury	ng/L	56	56	56/56 (100%)	13.3	7.49	1	11.4	4.83	41.1	--	--
NB NBS	Metals	Mercury (dissolved)	ng/L	56	52	52/56 (92.9%)	1.93	2.7	0.361	1.17	0.25	18.1	<0.4	<0.4
NB NBS	Metals	Methyl Mercury	ng/L	32	26	26/32 (81.2%)	0.0419	0.019	0.00336	0.049	0.021	0.106	<0.049	<0.052
NB NBS	Metals	Methyl Mercury (dissolved)	ng/L	32	8	8/32 (25%)	0.0254	0.00448	0.000792	<0.05	0.021	0.048	<0.048	<0.052
NB NBS	Metals	Nickel	µg/L	32	32	32/32 (100%)	1.47	0.766	0.135	1.28	0.85	5.05	--	--
NB NBS	Metals	Nickel (dissolved)	µg/L	32	32	32/32 (100%)	1.04	0.307	0.0542	1.01	0.62	1.69	--	--
NB NBS	Metals	Selenium	µg/L	32	4	4/32 (12.5%)	0.497	0.131	0.0231	<1	0.2	1.1	<1	<1
NB NBS	Metals	Selenium (dissolved)	µg/L	32	0	0/32 (0%)	<1	0	0	<1	--	--	<1	<1
NB NBS	Metals	Silver	µg/L	32	24	24/32 (75%)	0.0232	0.0168	0.00297	0.02	0.01	0.075	<0.02	<0.02

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
NB NBS	Metals	Silver (dissolved)	µg/L	32	15	15/32 (46.9%)	0.00934	0.00314	0.000555	<0.02	0.004	0.021	<0.02	<0.02
NB NBS	Metals	Zinc	µg/L	32	32	32/32 (100%)	7.39	2.2	0.389	7.24	3.56	13.6	--	--
NB NBS	Metals	Zinc (dissolved)	µg/L	32	32	32/32 (100%)	5.35	1.52	0.268	5.54	2.37	8.6	--	--
NB NBS	PAH-SIM	Total HMW PAHs	ng/L	32	32	32/32 (100%)	91.2	48.7	8.6	78	20.1	214	--	--
NB NBS	PAH-SIM	Total LMW PAHs	ng/L	32	32	32/32 (100%)	44.2	49.9	8.83	12	3.22	155	--	--
NB NBS	PAH-SIM	Total PAHs	ng/L	32	32	32/32 (100%)	135	78.7	13.9	111	23.3	275	--	--
NB NBS	PCB Congener	Total PCB Congeners (209)	ng/L	48	48	48/48 (100%)	5.15	1.88	0.271	4.71	2.92	13.1	--	--
NB NBS	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	32	24	24/32 (75%)	0.305	0.817	0.144	0.131	0.0637	4.6	<0.048	<0.063
NB NBS	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	32	18	18/32 (56.2%)	0.231	0.665	0.117	0.0797	0.0444	3.7	<0.0202	<0.154
NB NBS	Pesticides	cis-Nonachlor	ng/L	32	14	14/32 (43.8%)	0.078	0.0725	0.0128	<0.151	0.019	0.0909	<0.0189	<0.4
NB NBS	Pesticides	Dieldrin	ng/L	32	32	32/32 (100%)	0.35	0.353	0.0624	0.273	0.103	2.1	--	--
NB NBS	Pesticides	Heptachlor epoxide	ng/L	32	26	26/32 (81.2%)	0.138	0.145	0.0256	0.104	0.0257	0.67	<0.051	<0.19
NB NBS	Pesticides	Total Alpha + Gamma Chlordane	ng/L	32	32	32/32 (100%)	0.31	0.197	0.0348	0.25	0.0482	0.85	--	--
NB NBS	Pesticides	Total DDx (2,4 and 4,4)	ng/L	32	26	26/32 (81.2%)	0.703	0.588	0.104	0.668	0.207	2.98	<0.126	<0.686
NB NBS	Pesticides	Total DDx (4,4)	ng/L	32	26	26/32 (81.2%)	0.596	0.518	0.0916	0.562	0.19	2.68	<0.126	<0.686
NB NBS	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	32	2	2/32 (6.25%)	1.07	0.416	0.0735	<1.9	2.6	2.7	<1.9	<2
NB NBS	Semivolatiles	Hexachlorobenzene	µg/L	64	1	1/64 (1.56%)	0.0483	0.0485	0.00606	<0.19	0.0068	0.0068	<0.0000236	<0.2
NB NNE	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	29	15	15/29 (51.7%)	1.08	0.699	0.13	1.28	0.219	3.34	<0.592	<2.2
NB NNE	Metals	Arsenic	µg/L	20	20	20/20 (100%)	1.24	0.259	0.058	1.18	0.78	1.66	--	--
NB NNE	Metals	Arsenic (dissolved)	µg/L	20	20	20/20 (100%)	1.14	0.256	0.0574	1.06	0.72	1.57	--	--
NB NNE	Metals	Cadmium	µg/L	34	34	34/34 (100%)	0.0686	0.016	0.00274	0.068	0.036	0.102	--	--
NB NNE	Metals	Cadmium (dissolved)	µg/L	34	34	34/34 (100%)	0.0577	0.0178	0.00305	0.0595	0.006	0.093	--	--
NB NNE	Metals	Chromium	µg/L	20	20	20/20 (100%)	1.26	0.59	0.132	1.09	0.55	2.69	--	--
NB NNE	Metals	Chromium (dissolved)	µg/L	20	20	20/20 (100%)	0.442	0.301	0.0672	0.31	0.22	1.3	--	--
NB NNE	Metals	Copper	µg/L	34	34	34/34 (100%)	2.84	0.668	0.115	2.83	1.89	4.45	--	--
NB NNE	Metals	Copper (dissolved)	µg/L	34	34	34/34 (100%)	1.86	0.359	0.0616	1.84	1.22	2.74	--	--
NB NNE	Metals	Lead	µg/L	34	34	34/34 (100%)	1.86	0.87	0.149	1.63	0.616	3.98	--	--
NB NNE	Metals	Lead (dissolved)	µg/L	34	34	34/34 (100%)	0.304	0.332	0.0569	0.168	0.067	1.54	--	--
NB NNE	Metals	Mercury	ng/L	34	34	34/34 (100%)	23.5	14.8	2.53	18.2	1.7	55.9	--	--
NB NNE	Metals	Mercury (dissolved)	ng/L	34	32	32/34 (94.1%)	3.31	4.31	0.739	1.4	0.4	20.1	<0.4	<2.94
NB NNE	Metals	Methyl Mercury	ng/L	20	16	16/20 (80%)	0.0533	0.0289	0.00645	0.05	0.027	0.131	<0.05	<0.051
NB NNE	Metals	Methyl Mercury (dissolved)	ng/L	20	10	10/20 (50%)	0.0316	0.018	0.00402	0.049	0.022	0.102	<0.048	<0.051
NB NNE	Metals	Nickel	µg/L	20	20	20/20 (100%)	1.44	0.378	0.0844	1.28	0.91	2.04	--	--
NB NNE	Metals	Nickel (dissolved)	µg/L	20	20	20/20 (100%)	1.22	0.329	0.0735	1.14	0.76	1.7	--	--
NB NNE	Metals	Selenium	µg/L	20	1	1/20 (5%)	0.49	0.0447	0.01	<1	0.3	0.3	<1	<1
NB NNE	Metals	Selenium (dissolved)	µg/L	20	2	2/20 (10%)	0.48	0.0616	0.0138	<1	0.3	0.3	<1	<1
NB NNE	Metals	Silver	µg/L	20	18	18/20 (90%)	0.0244	0.0101	0.00227	0.023	0.014	0.053	<0.02	<0.02
NB NNE	Metals	Silver (dissolved)	µg/L	20	14	14/20 (70%)	0.00965	0.00503	0.00112	0.0085	0.004	0.023	<0.02	<0.02
NB NNE	Metals	Zinc	µg/L	20	20	20/20 (100%)	8.93	2.35	0.526	7.93	6.04	14	--	--

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
NB NNE	Metals	Zinc (dissolved)	µg/L	20	20	20/20 (100%)	6.97	2	0.447	6.21	5.38	12.2	--	--
NB NNE	PAH-SIM	Total HMW PAHs	ng/L	20	20	20/20 (100%)	165	133	29.7	120	40.4	610	--	--
NB NNE	PAH-SIM	Total LMW PAHs	ng/L	20	20	20/20 (100%)	71.9	62.4	13.9	45	9.17	202	--	--
NB NNE	PAH-SIM	Total PAHs	ng/L	20	20	20/20 (100%)	237	178	39.7	187	50.7	812	--	--
NB NNE	PCB Congener	Total PCB Congeners (209)	ng/L	29	29	29/29 (100%)	7.41	2.95	0.547	7	3.17	15.8	--	--
NB NNE	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	20	20	20/20 (100%)	0.106	0.0392	0.00877	0.104	0.052	0.169	--	--
NB NNE	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	20	15	15/20 (75%)	0.086	0.0688	0.0154	0.0647	0.037	0.234	<0.0564	<0.0832
NB NNE	Pesticides	cis-Nonachlor	ng/L	20	12	12/20 (60%)	0.0823	0.0638	0.0143	0.066	0.03	0.158	<0.0148	<0.4
NB NNE	Pesticides	Dieldrin	ng/L	20	20	20/20 (100%)	0.389	0.214	0.0478	0.29	0.17	0.987	--	--
NB NNE	Pesticides	Heptachlor epoxide	ng/L	20	20	20/20 (100%)	0.182	0.11	0.0245	0.135	0.061	0.474	--	--
NB NNE	Pesticides	Total Alpha + Gamma Chlordane	ng/L	20	20	20/20 (100%)	0.41	0.186	0.0416	0.378	0.12	0.771	--	--
NB NNE	Pesticides	Total DDx (2,4 and 4,4)	ng/L	20	19	19/20 (95%)	0.84	0.451	0.101	0.844	0.269	1.69	<0.466	<0.466
NB NNE	Pesticides	Total DDx (4,4)	ng/L	20	19	19/20 (95%)	0.672	0.343	0.0766	0.64	0.19	1.3	<0.466	<0.466
NB NNE	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	19	0	0/19 (0%)	<1.95	0.0612	0.014	<1.9	--	--	<1.9	<2.1
NB NNE	Semivolatiles	Hexachlorobenzene	µg/L	39	2	2/39 (5.13%)	0.0476	0.0494	0.00792	<0.19	0.000149	0.00019	<0.000492	<0.21
NB NNW	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	33	18	18/33 (54.5%)	1.57	1.4	0.244	1.6	0.596	6.44	<0.594	<1.91
NB NNW	Metals	Arsenic	µg/L	21	21	21/21 (100%)	1.21	0.267	0.0583	1.1	0.84	1.84	--	--
NB NNW	Metals	Arsenic (dissolved)	µg/L	21	21	21/21 (100%)	1.02	0.122	0.0266	1.02	0.75	1.22	--	--
NB NNW	Metals	Cadmium	µg/L	40	40	40/40 (100%)	0.0756	0.0238	0.00377	0.0705	0.041	0.154	--	--
NB NNW	Metals	Cadmium (dissolved)	µg/L	40	40	40/40 (100%)	0.0566	0.0141	0.00223	0.06	0.017	0.082	--	--
NB NNW	Metals	Chromium	µg/L	21	21	21/21 (100%)	1.62	1.31	0.286	1.11	0.56	5.61	--	--
NB NNW	Metals	Chromium (dissolved)	µg/L	21	21	21/21 (100%)	0.383	0.16	0.0349	0.31	0.23	0.8	--	--
NB NNW	Metals	Copper	µg/L	40	40	40/40 (100%)	3.28	1.32	0.21	2.94	1.85	8.09	--	--
NB NNW	Metals	Copper (dissolved)	µg/L	40	40	40/40 (100%)	1.72	0.39	0.0617	1.7	1.13	3.03	--	--
NB NNW	Metals	Lead	µg/L	40	40	40/40 (100%)	2.41	1.68	0.266	1.84	0.656	8.5	--	--
NB NNW	Metals	Lead (dissolved)	µg/L	40	40	40/40 (100%)	0.299	0.308	0.0488	0.17	0.071	1.46	--	--
NB NNW	Metals	Mercury	ng/L	40	40	40/40 (100%)	28.2	19.9	3.14	22.8	0.9	77.1	--	--
NB NNW	Metals	Mercury (dissolved)	ng/L	40	37	37/40 (92.5%)	4.58	8.95	1.42	1.82	0.27	53.5	<0.41	<2.92
NB NNW	Metals	Methyl Mercury	ng/L	21	20	20/21 (95.2%)	0.0715	0.065	0.0142	0.049	0.026	0.294	<0.051	<0.051
NB NNW	Metals	Methyl Mercury (dissolved)	ng/L	21	4	4/21 (19%)	0.0258	0.00383	0.000836	<0.05	0.022	0.042	<0.049	<0.051
NB NNW	Metals	Nickel	µg/L	21	21	21/21 (100%)	1.36	0.451	0.0984	1.26	0.88	2.41	--	--
NB NNW	Metals	Nickel (dissolved)	µg/L	21	21	21/21 (100%)	1.03	0.173	0.0378	1	0.73	1.44	--	--
NB NNW	Metals	Selenium	µg/L	21	4	4/21 (19%)	0.452	0.108	0.0235	<1	0.2	0.4	<1	<1
NB NNW	Metals	Selenium (dissolved)	µg/L	21	1	1/21 (4.76%)	0.495	0.0218	0.00476	<1	0.4	0.4	<1	<1
NB NNW	Metals	Silver	µg/L	21	18	18/21 (85.7%)	0.0363	0.0323	0.00705	0.024	0.013	0.14	<0.02	<0.02
NB NNW	Metals	Silver (dissolved)	µg/L	21	11	11/21 (52.4%)	0.0102	0.00379	0.000828	0.02	0.004	0.024	<0.02	<0.02
NB NNW	Metals	Zinc	µg/L	21	21	21/21 (100%)	9.81	4.15	0.906	8.56	5.17	20.6	--	--
NB NNW	Metals	Zinc (dissolved)	µg/L	21	21	21/21 (100%)	6.43	1.49	0.325	6.71	4.48	10.2	--	--
NB NNW	PAH-SIM	Total HMW PAHs	ng/L	21	21	21/21 (100%)	267	405	88.5	122	19.7	1,690	--	--

Table G-3
Surface Water Samples – By Location

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
NB NNW	PAH-SIM	Total LMW PAHs	ng/L	21	21	21/21 (100%)	89.6	67.5	14.7	77.9	5.43	274	--	--
NB NNW	PAH-SIM	Total PAHs	ng/L	21	21	21/21 (100%)	356	455	99.3	209	30.3	1,960	--	--
NB NNW	PCB Congener	Total PCB Congeners (209)	ng/L	33	33	33/33 (100%)	8.75	4.22	0.735	7.58	3.16	20.4	--	--
NB NNW	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	21	21	21/21 (100%)	0.0982	0.0356	0.00777	0.1	0.051	0.182	--	--
NB NNW	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	21	16	16/21 (76.2%)	0.0806	0.0506	0.011	0.071	0.036	0.137	<0.0531	<0.4
NB NNW	Pesticides	cis-Nonachlor	ng/L	21	14	14/21 (66.7%)	0.0748	0.0643	0.014	0.043	0.029	0.15	<0.0124	<0.4
NB NNW	Pesticides	Dieldrin	ng/L	21	21	21/21 (100%)	0.284	0.0984	0.0215	0.248	0.16	0.482	--	--
NB NNW	Pesticides	Heptachlor epoxide	ng/L	21	21	21/21 (100%)	0.124	0.0571	0.0125	0.098	0.063	0.255	--	--
NB NNW	Pesticides	Total Alpha + Gamma Chlordane	ng/L	21	21	21/21 (100%)	0.402	0.202	0.0441	0.32	0.192	0.81	--	--
NB NNW	Pesticides	Total DDx (2,4 and 4,4)	ng/L	21	21	21/21 (100%)	1.17	0.843	0.184	0.912	0.196	3.37	--	--
NB NNW	Pesticides	Total DDx (4,4)	ng/L	21	21	21/21 (100%)	0.959	0.672	0.147	0.796	0.196	2.74	--	--
NB NNW	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	21	0	0/21 (0%)	<1.97	0.0644	0.014	<2	--	--	<1.9	<2.1
NB NNW	Semivolatiles	Hexachlorobenzene	µg/L	42	1	1/42 (2.38%)	0.0483	0.0494	0.00762	<0.00051	0.052	0.052	<0.0000431	<0.21

Notes:

Non-detects included at the 1/2 reporting limit for mean, standard deviation, and standard error estimates.

Non-detects evaluated at full reporting limit for median estimate.

If all sample results are non-detect, non-detects evaluated at full reporting limit.

Acronyms and Abbreviations:

BHC = hexachlorocyclohexane

DDT = dichlorodiphenyltrichloroethane

HPAHs = high molecular weight polycyclic aromatic hydrocarbons

LPAHs = low molecular weight polycyclic aromatic hydrocarbon

ng/L = nanogram per liter

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

pg/L = picogram per liter

SIM = selective ion monitoring

µg/L = microgram per liter

% = percent

Table G-4
Surface Water Samples – By Tide

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
High slack tide	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	50	11	11/50 (22%)	0.647	0.325	0.046	<1.24	0.262	1.79	<0.241	<1.78
High slack tide	Metals	Arsenic	µg/L	36	36	36/36 (100%)	1.35	0.312	0.052	1.28	0.84	2.3	--	--
High slack tide	Metals	Arsenic (dissolved)	µg/L	36	36	36/36 (100%)	1.19	0.207	0.0345	1.2	0.91	1.61	--	--
High slack tide	Metals	Cadmium	µg/L	62	62	62/62 (100%)	0.0663	0.0205	0.0026	0.064	0.027	0.175	--	--
High slack tide	Metals	Cadmium (dissolved)	µg/L	62	61	61/62 (98.4%)	0.0558	0.0127	0.00161	0.0575	0.008	0.072	<0.02	<0.02
High slack tide	Metals	Chromium	µg/L	36	36	36/36 (100%)	1	0.776	0.129	0.75	0.49	4.9	--	--
High slack tide	Metals	Chromium (dissolved)	µg/L	36	35	35/36 (97.2%)	0.296	0.119	0.0198	0.28	0.15	0.73	<0.2	<0.2
High slack tide	Metals	Copper	µg/L	62	62	62/62 (100%)	2.74	1.52	0.193	2.42	1.29	13.1	--	--
High slack tide	Metals	Copper (dissolved)	µg/L	62	62	62/62 (100%)	1.82	0.538	0.0684	1.82	0.832	4.42	--	--
High slack tide	Metals	Lead	µg/L	62	62	62/62 (100%)	1.35	1.25	0.159	1.02	0.616	9.89	--	--
High slack tide	Metals	Lead (dissolved)	µg/L	62	62	62/62 (100%)	0.231	0.202	0.0256	0.16	0.05	1.04	--	--
High slack tide	Metals	Mercury	ng/L	62	62	62/62 (100%)	14.5	12.6	1.6	10.6	0.9	78.4	--	--
High slack tide	Metals	Mercury (dissolved)	ng/L	62	54	54/62 (87.1%)	2.6	3.03	0.385	1.45	0.36	14.1	<0.4	<4.26
High slack tide	Metals	Methyl Mercury	ng/L	36	30	30/36 (83.3%)	0.0442	0.0273	0.00455	0.0475	0.023	0.157	<0.05	<0.052
High slack tide	Metals	Methyl Mercury (dissolved)	ng/L	36	10	10/36 (27.8%)	0.026	0.00687	0.00115	<0.05	0.021	0.065	<0.048	<0.052
High slack tide	Metals	Nickel	µg/L	36	36	36/36 (100%)	1.46	0.402	0.067	1.29	1.01	2.85	--	--
High slack tide	Metals	Nickel (dissolved)	µg/L	36	36	36/36 (100%)	1.17	0.272	0.0453	1.1	0.76	1.71	--	--
High slack tide	Metals	Selenium	µg/L	36	3	3/36 (8.33%)	0.486	0.0593	0.00988	<1	0.2	0.5	<1	<1
High slack tide	Metals	Selenium (dissolved)	µg/L	36	2	2/36 (5.56%)	0.489	0.0465	0.00774	<1	0.3	0.3	<1	<1
High slack tide	Metals	Silver	µg/L	36	28	28/36 (77.8%)	0.0473	0.137	0.0229	0.0215	0.004	0.838	<0.02	<0.02
High slack tide	Metals	Silver (dissolved)	µg/L	36	23	23/36 (63.9%)	0.00889	0.00393	0.000654	0.0085	0.004	0.023	<0.02	<0.02
High slack tide	Metals	Zinc	µg/L	36	36	36/36 (100%)	8.13	4.03	0.672	7.71	4.09	28.9	--	--
High slack tide	Metals	Zinc (dissolved)	µg/L	36	36	36/36 (100%)	5.97	1.55	0.258	5.78	2.2	8.91	--	--
High slack tide	PAH-SIM	Total HMW PAHs	ng/L	35	35	35/35 (100%)	94.3	70.1	11.9	70.3	19.7	315	--	--
High slack tide	PAH-SIM	Total LMW PAHs	ng/L	35	35	35/35 (100%)	42.4	114	19.4	9.4	3.21	660	--	--
High slack tide	PAH-SIM	Total PAHs	ng/L	35	35	35/35 (100%)	137	165	27.9	77.9	23.3	943	--	--
High slack tide	PCB Congeners	Total PCB Congeners (209)	ng/L	50	50	50/50 (100%)	5.44	1.63	0.231	5.07	3.59	11.9	--	--
High slack tide	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	36	34	34/36 (94.4%)	0.119	0.0419	0.00699	0.12	0.055	0.25	<0.12	<0.16
High slack tide	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	36	25	25/36 (69.4%)	0.0994	0.0672	0.0112	0.0958	0.0401	0.209	<0.0209	<0.39
High slack tide	Pesticides	cis-Nonachlor	ng/L	36	18	18/36 (50%)	0.061	0.0638	0.0106	0.0368	0.019	0.158	<0.0138	<0.4
High slack tide	Pesticides	Dieldrin	ng/L	36	34	34/36 (94.4%)	0.304	0.161	0.0268	0.245	0.103	0.7	<0.29	<0.32
High slack tide	Pesticides	Heptachlor epoxide	ng/L	36	34	34/36 (94.4%)	0.121	0.0785	0.0131	0.0936	0.028	0.351	<0.093	<0.096
High slack tide	Pesticides	Total Alpha + Gamma Chlordane	ng/L	36	36	36/36 (100%)	0.293	0.179	0.0298	0.225	0.0596	0.771	--	--
High slack tide	Pesticides	Total DDx (2,4 and 4,4)	ng/L	36	32	32/36 (88.9%)	1.37	2.19	0.366	0.844	0.169	11.7	<0.1	<0.133
High slack tide	Pesticides	Total DDx (4,4)	ng/L	36	32	32/36 (88.9%)	1.01	1.52	0.253	0.648	0.169	8.1	<0.1	<0.133
High slack tide	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	36	1	1/36 (2.78%)	1	0.141	0.0234	<2	1.8	1.8	<1.9	<2.2
High slack tide	Semivolatiles	Hexachlorobenzene	µg/L	72	2	2/72 (2.78%)	0.0489	0.0493	0.00581	<0.19	0.0001	0.000149	<0.0000236	<0.22
Low slack tide	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	37	15	15/37 (40.5%)	1.05	0.898	0.148	<1.25	0.421	5.31	<0.369	<3.84
Low slack tide	Metals	Arsenic	µg/L	28	28	28/28 (100%)	1.3	0.24	0.0453	1.28	0.97	1.68	--	--
Low slack tide	Metals	Arsenic (dissolved)	µg/L	28	28	28/28 (100%)	1.18	0.25	0.0472	1.1	0.85	1.65	--	--
Low slack tide	Metals	Cadmium	µg/L	46	46	46/46 (100%)	0.0782	0.0346	0.00509	0.073	0.041	0.233	--	--
Low slack tide	Metals	Cadmium (dissolved)	µg/L	46	46	46/46 (100%)	0.0614	0.0143	0.00211	0.06	0.041	0.101	--	--
Low slack tide	Metals	Chromium	µg/L	28	28	28/28 (100%)	1.18	0.646	0.122	1.14	0.46	3.6	--	--
Low slack tide	Metals	Chromium (dissolved)	µg/L	28	28	28/28 (100%)	0.425	0.292	0.0552	0.3	0.16	1.5	--	--
Low slack tide	Metals	Copper	µg/L	46	46	46/46 (100%)	3.11	1.46	0.215	2.81	1.55	11.1	--	--
Low slack tide	Metals	Copper (dissolved)	µg/L	46	46	46/46 (100%)	1.85	0.4	0.059	1.8	1.21	2.84	--	--

Table G-4
Surface Water Samples – By Tide

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
Low slack tide	Metals	Lead	µg/L	46	46	46/46 (100%)	1.99	1.74	0.257	1.56	0.626	11.8	--	--
Low slack tide	Metals	Lead (dissolved)	µg/L	46	46	46/46 (100%)	0.297	0.328	0.0484	0.16	0.048	1.75	--	--
Low slack tide	Metals	Mercury	ng/L	46	46	46/46 (100%)	28.9	43	6.34	19	5.32	296	--	--
Low slack tide	Metals	Mercury (dissolved)	ng/L	46	44	44/46 (95.7%)	3.69	4.74	0.699	1.36	0.25	20	<4.21	<4.28
Low slack tide	Metals	Methyl Mercury	ng/L	28	24	24/28 (85.7%)	0.0524	0.0289	0.00546	0.051	0.022	0.146	<0.049	<0.052
Low slack tide	Metals	Methyl Mercury (dissolved)	ng/L	28	11	11/28 (39.3%)	0.0327	0.0174	0.0033	<0.05	0.021	0.102	<0.048	<0.052
Low slack tide	Metals	Nickel	µg/L	28	28	28/28 (100%)	1.54	0.377	0.0713	1.5	0.85	2.28	--	--
Low slack tide	Metals	Nickel (dissolved)	µg/L	28	28	28/28 (100%)	1.3	0.324	0.0613	1.25	0.62	1.92	--	--
Low slack tide	Metals	Selenium	µg/L	28	8	8/28 (28.6%)	0.464	0.164	0.031	<1	0.2	1.1	<1	<1
Low slack tide	Metals	Selenium (dissolved)	µg/L	28	6	6/28 (21.4%)	0.468	0.0863	0.0163	<1	0.2	0.6	<1	<1
Low slack tide	Metals	Silver	µg/L	28	25	25/28 (89.3%)	0.0255	0.0146	0.00276	0.021	0.01	0.077	<0.02	<0.02
Low slack tide	Metals	Silver (dissolved)	µg/L	28	17	17/28 (60.7%)	0.0102	0.00561	0.00106	0.016	0.004	0.03	<0.02	<0.02
Low slack tide	Metals	Zinc	µg/L	28	28	28/28 (100%)	8.8	3.14	0.593	7.9	3.56	17.7	--	--
Low slack tide	Metals	Zinc (dissolved)	µg/L	28	28	28/28 (100%)	6.92	2.48	0.469	6.32	2.37	13.9	--	--
Low slack tide	PAH-SIM	Total HMW PAHs	µg/L	28	28	28/28 (100%)	124	76.2	14.4	106	37.5	381	--	--
Low slack tide	PAH-SIM	Total LMW PAHs	ng/L	28	28	28/28 (100%)	47.9	49.3	9.31	27	4.17	224	--	--
Low slack tide	PAH-SIM	Total PAHs	ng/L	28	28	28/28 (100%)	172	106	20.1	143	41.6	479	--	--
Low slack tide	PCB Congeners	Total PCB Congeners (209)	ng/L	37	37	37/37 (100%)	6.62	2.49	0.409	6.22	2.68	11.9	--	--
Low slack tide	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	28	27	27/28 (96.4%)	0.192	0.237	0.0448	0.136	0.059	1.2	<0.08	<0.08
Low slack tide	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	28	22	22/28 (78.6%)	0.171	0.208	0.0394	0.115	0.031	1.1	<0.054	<0.4
Low slack tide	Pesticides	cis-Nonachlor	ng/L	28	15	15/28 (53.6%)	0.0707	0.0621	0.0117	0.0643	0.019	0.131	<0.0138	<0.4
Low slack tide	Pesticides	Dieldrin	ng/L	28	27	27/28 (96.4%)	0.446	0.379	0.0716	0.355	0.104	2.1	<0.2	<0.2
Low slack tide	Pesticides	Heptachlor epoxide	ng/L	28	26	26/28 (92.9%)	0.184	0.138	0.0261	0.145	0.057	0.67	<0.068	<0.0699
Low slack tide	Pesticides	Total Alpha + Gamma Chlordane	ng/L	28	28	28/28 (100%)	0.421	0.197	0.0372	0.398	0.146	0.81	--	--
Low slack tide	Pesticides	Total DDx (2,4 and 4,4)	ng/L	28	25	25/28 (89.3%)	1.05	0.723	0.137	1.01	0.207	2.98	<0.115	<0.466
Low slack tide	Pesticides	Total DDx (4,4)	ng/L	28	25	25/28 (89.3%)	0.846	0.582	0.11	0.796	0.207	2.68	<0.115	<0.466
Low slack tide	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	28	3	3/28 (10.7%)	1.15	0.535	0.101	<1.9	2.6	2.7	<1.9	<2.1
Low slack tide	Semivolatiles	Hexachlorobenzene	µg/L	56	2	2/56 (3.57%)	0.0486	0.049	0.00655	<0.19	0.000183	0.00019	<0.000301	<0.21
Maximum ebb tide	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	40	23	23/40 (57.5%)	1.23	1.19	0.188	1.4	0.219	6.44	<0.558	<2.47
Maximum ebb tide	Metals	Arsenic	µg/L	30	30	30/30 (100%)	1.36	0.275	0.0502	1.4	0.91	1.84	--	--
Maximum ebb tide	Metals	Arsenic (dissolved)	µg/L	30	30	30/30 (100%)	1.21	0.247	0.045	1.2	0.79	1.59	--	--
Maximum ebb tide	Metals	Cadmium	µg/L	50	50	50/50 (100%)	0.0724	0.021	0.00296	0.068	0.031	0.154	--	--
Maximum ebb tide	Metals	Cadmium (dissolved)	µg/L	50	50	50/50 (100%)	0.0585	0.0107	0.00152	0.0585	0.027	0.077	--	--
Maximum ebb tide	Metals	Chromium	µg/L	30	30	30/30 (100%)	1.29	1.05	0.192	0.975	0.43	5.61	--	--
Maximum ebb tide	Metals	Chromium (dissolved)	µg/L	30	30	30/30 (100%)	0.326	0.18	0.0328	0.28	0.11	1.05	--	--
Maximum ebb tide	Metals	Copper	µg/L	50	50	50/50 (100%)	2.92	1.16	0.164	2.65	1.38	8.09	--	--
Maximum ebb tide	Metals	Copper (dissolved)	µg/L	50	50	50/50 (100%)	1.73	0.392	0.0554	1.74	0.845	2.48	--	--
Maximum ebb tide	Metals	Lead	µg/L	50	50	50/50 (100%)	1.82	1.45	0.205	1.4	0.533	8.5	--	--
Maximum ebb tide	Metals	Lead (dissolved)	µg/L	50	50	50/50 (100%)	0.232	0.239	0.0338	0.15	0.035	1.21	--	--
Maximum ebb tide	Metals	Mercury	ng/L	50	50	50/50 (100%)	21	16.8	2.38	14.8	0.38	76.3	--	--
Maximum ebb tide	Metals	Mercury (dissolved)	ng/L	50	41	41/50 (82%)	4.11	8.51	1.2	1.24	0.27	53.5	<0.4	<4.26
Maximum ebb tide	Metals	Methyl Mercury	ng/L	30	28	28/30 (93.3%)	0.0626	0.0564	0.0103	0.047	0.022	0.294	<0.049	<0.052
Maximum ebb tide	Metals	Methyl Mercury (dissolved)	ng/L	30	11	11/30 (36.7%)	0.0255	0.00336	0.000614	<0.05	0.021	0.039	<0.048	<0.052
Maximum ebb tide	Metals	Nickel	µg/L	30	30	30/30 (100%)	1.54	0.358	0.0653	1.42	0.93	2.41	--	--
Maximum ebb tide	Metals	Nickel (dissolved)	µg/L	30	30	30/30 (100%)	1.2	0.276	0.0505	1.2	0.63	1.7	--	--

Table G-4
Surface Water Samples – By Tide

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
Maximum ebb tide	Metals	Selenium	µg/L	30	7	7/30 (23.3%)	0.46	0.116	0.0212	<1	0.2	0.7	<1	<1
Maximum ebb tide	Metals	Selenium (dissolved)	µg/L	30	2	2/30 (6.67%)	0.483	0.0648	0.0118	<1	0.2	0.3	<1	<1
Maximum ebb tide	Metals	Silver	µg/L	30	27	27/30 (90%)	0.0307	0.0264	0.00481	0.023	0.01	0.14	<0.02	<0.02
Maximum ebb tide	Metals	Silver (dissolved)	µg/L	30	16	16/30 (53.3%)	0.0101	0.00416	0.00076	0.02	0.004	0.024	<0.02	<0.02
Maximum ebb tide	Metals	Zinc	µg/L	30	30	30/30 (100%)	8.56	3.4	0.621	8.02	3.78	20.6	--	--
Maximum ebb tide	Metals	Zinc (dissolved)	µg/L	30	30	30/30 (100%)	6.12	1.81	0.331	6.16	2.4	9.56	--	--
Maximum ebb tide	PAH-SIM	Total HMW PAHs	ng/L	30	30	30/30 (100%)	174	308	56.2	88.7	17.2	1,690	--	--
Maximum ebb tide	PAH-SIM	Total LMW PAHs	ng/L	30	30	30/30 (100%)	30.9	54.1	9.88	12.6	2.72	274	--	--
Maximum ebb tide	PAH-SIM	Total PAHs	ng/L	30	30	30/30 (100%)	204	360	65.8	95	20.9	1,960	--	--
Maximum ebb tide	PCB Congeners	Total PCB Congeners (209)	ng/L	40	40	40/40 (100%)	7.24	3.47	0.549	5.99	3.38	20.4	--	--
Maximum ebb tide	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	30	28	28/30 (93.3%)	0.126	0.0454	0.00828	0.12	0.0639	0.27	<0.13	<0.19
Maximum ebb tide	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	30	26	26/30 (86.7%)	0.104	0.0556	0.0101	0.095	0.033	0.2	<0.0234	<0.15
Maximum ebb tide	Pesticides	cis-Nonachlor	ng/L	30	19	19/30 (63.3%)	0.0535	0.0445	0.00813	0.0424	0.021	0.15	<0.0126	<0.38
Maximum ebb tide	Pesticides	Dieldrin	ng/L	30	29	29/30 (96.7%)	0.347	0.158	0.0288	0.328	0.106	0.675	<0.25	<0.25
Maximum ebb tide	Pesticides	Heptachlor epoxide	ng/L	30	29	29/30 (96.7%)	0.143	0.0839	0.0153	0.126	0.0257	0.304	<0.082	<0.082
Maximum ebb tide	Pesticides	Total Alpha + Gamma Chlordane	ng/L	30	30	30/30 (100%)	0.381	0.207	0.0377	0.358	0.0482	0.81	--	--
Maximum ebb tide	Pesticides	Total DDx (2,4 and 4,4)	ng/L	30	27	27/30 (90%)	1.28	1.36	0.248	0.898	0.117	5.91	<0.138	<0.159
Maximum ebb tide	Pesticides	Total DDx (4,4)	ng/L	30	26	26/30 (86.7%)	0.994	0.993	0.181	0.733	0.23	4.18	<0.138	<0.185
Maximum ebb tide	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	29	1	1/29 (3.45%)	1.03	0.266	0.0494	<1.95	2.4	2.4	<1.9	<2.1
Maximum ebb tide	Semivolatiles	Hexachlorobenzene	µg/L	59	0	0/59 (0%)	<0.0963	0.0988	0.0129	<0.00051	--	--	<0.0000239	<0.21
Maximum flood tide	Dioxins/Furans	2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/L	40	15	15/40 (37.5%)	1.02	1.26	0.199	<1.11	0.313	7.98	<0.592	<2.81
Maximum flood tide	Metals	Arsenic	µg/L	30	30	30/30 (100%)	1.39	0.257	0.0469	1.4	0.96	1.79	--	--
Maximum flood tide	Metals	Arsenic (dissolved)	µg/L	30	30	30/30 (100%)	1.24	0.236	0.043	1.2	0.93	1.62	--	--
Maximum flood tide	Metals	Cadmium	µg/L	50	50	50/50 (100%)	0.0745	0.0235	0.00333	0.069	0.049	0.193	--	--
Maximum flood tide	Metals	Cadmium (dissolved)	µg/L	50	50	50/50 (100%)	0.0606	0.0125	0.00176	0.059	0.038	0.1	--	--
Maximum flood tide	Metals	Chromium	µg/L	30	30	30/30 (100%)	1.42	0.929	0.17	1.08	0.53	4.2	--	--
Maximum flood tide	Metals	Chromium (dissolved)	µg/L	30	29	29/30 (96.7%)	0.435	0.497	0.0908	0.3	0.18	2.7	<0.2	<0.2
Maximum flood tide	Metals	Copper	µg/L	50	50	50/50 (100%)	3.2	1.53	0.216	2.87	1.65	11.2	--	--
Maximum flood tide	Metals	Copper (dissolved)	µg/L	50	50	50/50 (100%)	1.84	0.563	0.0797	1.78	1.09	4.48	--	--
Maximum flood tide	Metals	Lead	µg/L	50	50	50/50 (100%)	2.18	1.98	0.279	1.65	0.652	12	--	--
Maximum flood tide	Metals	Lead (dissolved)	µg/L	50	50	50/50 (100%)	0.34	0.616	0.0871	0.153	0.048	3.85	--	--
Maximum flood tide	Metals	Mercury	µg/l	50	50	50/50 (100%)	23.9	20.3	2.87	18.7	5.42	127	--	--
Maximum flood tide	Metals	Mercury (dissolved)	µg/l	50	44	44/50 (88%)	3.35	5.82	0.823	1.6	0.42	32.7	<0.4	<4.24
Maximum flood tide	Metals	Methyl Mercury	µg/l	30	28	28/30 (93.3%)	0.0561	0.0387	0.00707	0.049	0.023	0.192	<0.05	<0.051
Maximum flood tide	Metals	Methyl Mercury (dissolved)	µg/l	30	9	9/30 (30%)	0.0289	0.0146	0.00267	<0.05	0.022	0.101	<0.048	<0.051
Maximum flood tide	Metals	Nickel	µg/L	30	30	30/30 (100%)	1.76	0.727	0.133	1.68	1.1	5.05	--	--
Maximum flood tide	Metals	Nickel (dissolved)	µg/L	30	30	30/30 (100%)	1.26	0.299	0.0546	1.2	0.71	1.79	--	--
Maximum flood tide	Metals	Selenium	µg/L	30	6	6/30 (20%)	0.513	0.314	0.0573	<1	0.2	2.1	<1	<1
Maximum flood tide	Metals	Selenium (dissolved)	µg/L	30	1	1/30 (3.33%)	0.49	0.0548	0.01	<1	0.2	0.2	<1	<1
Maximum flood tide	Metals	Silver	µg/L	30	25	25/30 (83.3%)	0.0319	0.022	0.00401	0.0305	0.011	0.09	<0.02	<0.02

Table G-4
Surface Water Samples – By Tide

Group	Analyte Group	Analyte	Units	Number of Samples	Number of Detects	Frequency of Detection	Arithmetic Mean	Standard Deviation	Standard Error	Median	Minimum Detect	Maximum Detect	Minimum Non-detect	Maximum Non-detect
Maximum flood tide	Metals	Silver (dissolved)	µg/L	30	17	17/30 (56.7%)	0.0107	0.00976	0.00178	0.02	0.003	0.056	<0.02	<0.02
Maximum flood tide	Metals	Zinc	µg/L	30	30	30/30 (100%)	9.23	3.22	0.589	8.49	5.14	17.5	--	--
Maximum flood tide	Metals	Zinc (dissolved)	µg/L	30	30	30/30 (100%)	6.71	2.32	0.424	6.38	2.53	13.3	--	--
Maximum flood tide	PAH-SIM	Total HMW PAHs	ng/L	30	30	30/30 (100%)	168	221	40.3	98.2	32.1	1,120	--	--
Maximum flood tide	PAH-SIM	Total LMW PAHs	ng/L	30	30	30/30 (100%)	37.5	43.7	7.98	26	4.03	202	--	--
Maximum flood tide	PAH-SIM	Total PAHs	ng/L	30	30	30/30 (100%)	206	258	47.1	127	37.6	1,260	--	--
Maximum flood tide	PCB Congeners	Total PCB Congeners (209)	ng/L	40	40	40/40 (100%)	6.68	2.52	0.399	6.32	2.2	13.1	--	--
Maximum flood tide	Pesticides	alpha-Hexachlorocyclohexane (alpha BHC)	ng/L	30	30	30/30 (100%)	0.29	0.816	0.149	0.132	0.0726	4.6	--	--
Maximum flood tide	Pesticides	beta-Hexachlorocyclohexane (beta BHC)	ng/L	30	17	17/30 (56.7%)	0.2	0.663	0.121	0.0795	0.0401	3.7	<0.0152	<0.23
Maximum flood tide	Pesticides	cis-Nonachlor	ng/L	30	13	13/30 (43.3%)	0.069	0.0575	0.0105	<0.0871	0.038	0.131	<0.0124	<0.39
Maximum flood tide	Pesticides	Dieldrin	ng/L	30	29	29/30 (96.7%)	0.346	0.173	0.0315	0.275	0.138	0.82	<0.27	<0.27
Maximum flood tide	Pesticides	Heptachlor epoxide	ng/L	30	26	26/30 (86.7%)	0.139	0.118	0.0216	0.102	0.049	0.6	<0.084	<0.19
Maximum flood tide	Pesticides	Total Alpha + Gamma Chlordane	ng/L	30	30	30/30 (100%)	0.376	0.186	0.034	0.32	0.12	0.85	--	--
Maximum flood tide	Pesticides	Total DDx (2,4 and 4,4)	ng/L	30	26	26/30 (86.7%)	0.907	0.715	0.131	0.664	0.205	2.84	<0.122	<0.686
Maximum flood tide	Pesticides	Total DDx (4,4)	ng/L	30	26	26/30 (86.7%)	0.725	0.549	0.1	0.582	0.205	2.11	<0.122	<0.686
Maximum flood tide	Semivolatiles	Bis(2-ethylhexyl) phthalate	µg/L	30	0	0/30 (0%)	<1.96	0.0669	0.0122	<2	--	--	<1.9	<2.1
Maximum flood tide	Semivolatiles	Hexachlorobenzene	µg/L	60	6	6/60 (10%)	0.0477	0.0486	0.00628	<0.19	0.000117	0.052	<0.000273	<0.21

Notes:

Non-detects included at the 1/2 reporting limit for mean, standard deviation, and standard error estimates.

Non-detects evaluated at full reporting limit for median estimate.

If all sample results are non-detect, non-detects evaluated at full reporting limit.

Acronyms and Abbreviations:

BHC = hexachlorocyclohexane

DDT = dichlorodiphenyltrichloroethane

HPAHs = high molecular weight polycyclic aromatic hydrocarbons

LPAHs = low molecular weight polycyclic aromatic hydrocarbon

ng/L = nanogram per liter

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

pg/L = picogram per liter

SIM = selective ion monitoring

µg/L = microgram per liter

% = percent