

**Remedial Investigation/Feasibility Study
for the Clinch River/Poplar Creek
Operable Unit**

Volume 2. Appendixes A, B, C, D



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Energy Systems Environmental Restoration Program
ORNL Environmental Restoration Program

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for the Clinch River/Poplar Creek
Operable Unit**

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Prepared by
Environmental Sciences Division
Oak Ridge National Laboratory

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Appendix A

WATER CHARACTERIZATION

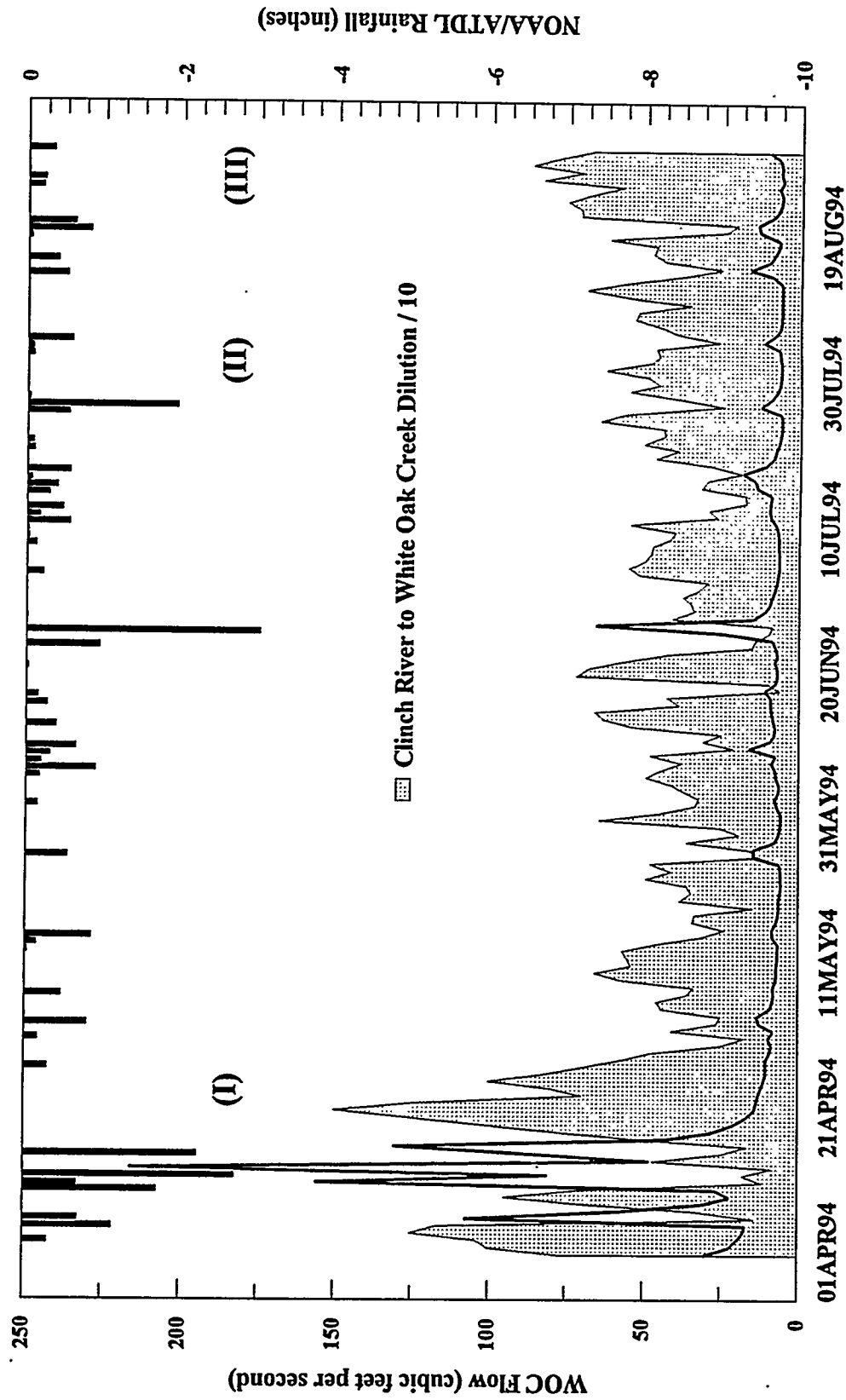


Fig. A1. Rainfall at NOAA/ATDL (top), flow rates at White Oak Dam (solid line), dilution of WOC water by the Clinch River (shading), and sampling events (roman numerals) April through August, 1994

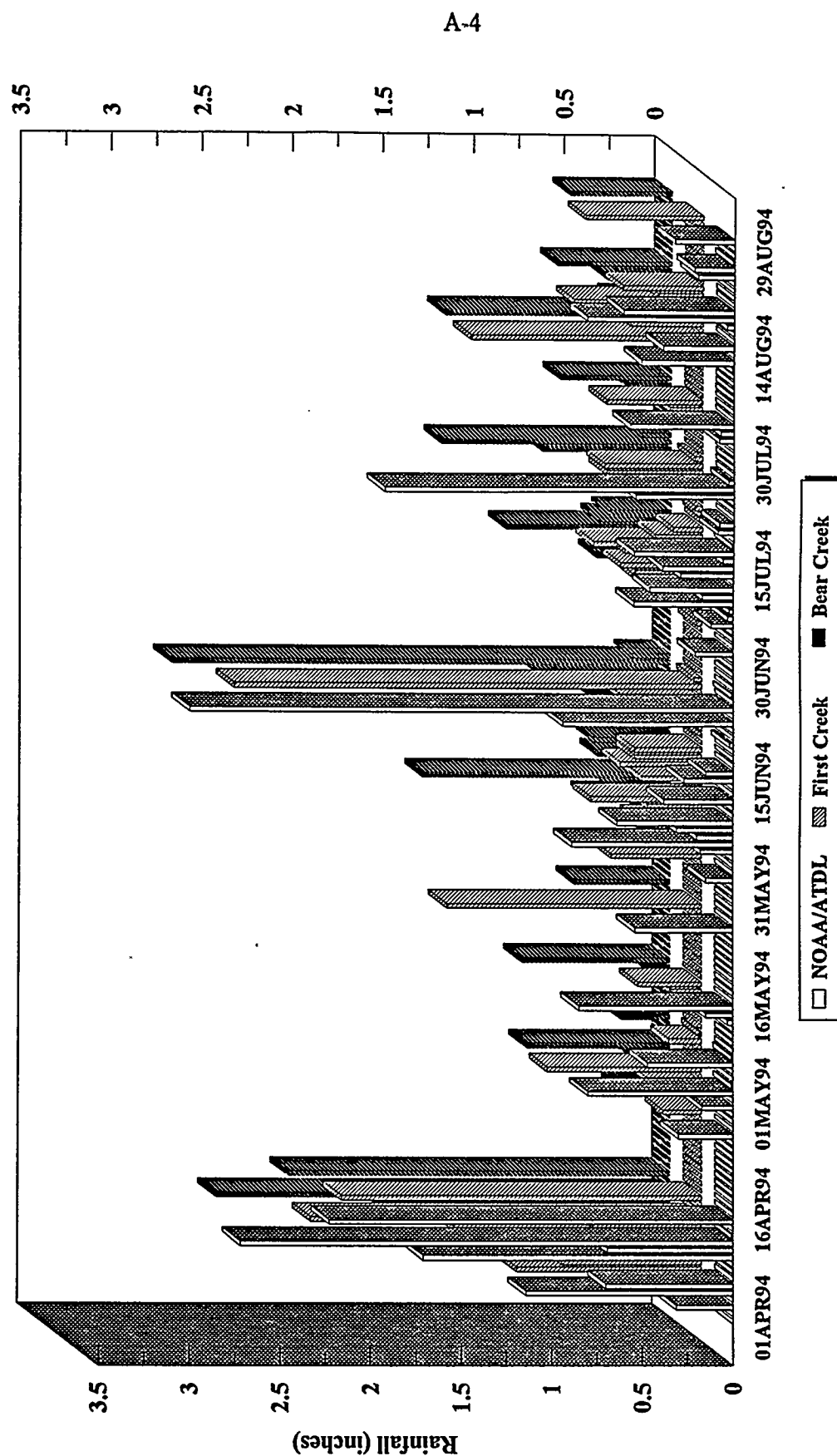


Fig. A2. Plots of rainfall, April through August 1994, at three gauge stations (see legend) located on the Oak Ridge Reservation

Table A1. Analytical results for the study of the distribution of contaminants downstream from the CNF (PCM 3.4)

Distance downstream (m)	Media	Analyte	Qtr full	Half full	Full Channel	units
LOW FLOW PCM 3.4						
1	WHOL	Alkalinity as C	1.30E+00	1.40E+00	1.30E+00	MEQ/L
1	WHOL	Gross Alpha act	2.53E+00	1.24E+00	2.23E+00	PCI/L
10	WHOL	Gross Alpha act	1.34E+00	.	1.24E+00	PCI/L
100	WHOL	Gross Alpha act	1.62E+00	1.41E+00	1.19E+00	PCI/L
1000	WHOL	Gross Alpha act	1.90E+00	.	1.73E+00	PCI/L
1	WHOL	Gross Beta acti	3.99E+00	1.98E+00	1.70E+00	PCI/L
10	WHOL	Gross Beta acti	1.76E+00	.	2.24E+00	PCI/L
100	WHOL	Gross Beta acti	3.48E+00	2.85E+00	1.74E+00	PCI/L
1000	WHOL	Gross Beta acti	2.79E+00	.	1.98E+00	PCI/L
1	WHOL	pH	7.80E+00	7.60E+00	7.60E+00	
1	RE	Suspend partiel	3.40E+00	8.00E-01	8.00E-01	MG/L
10	RE	Suspend partiel	2.20E+00	.	6.00E-01	MG/L
100	RE	Suspend partiel	2.20E+00	2.00E+00	1.00E+00	MG/L
1000	RE	Suspend partiel	1.20E+00	.	1.60E+00	MG/L
1	WHOL	Turbidity	9.00E+00	3.90E+00	3.40E+00	NTU
10	WHOL	Turbidity	3.90E+00	.	3.50E+00	NTU
100	WHOL	Turbidity	3.60E+00	3.50E+00	3.30E+00	NTU
1000	WHOL	Turbidity	3.60E+00	.	3.80E+00	NTU
HIGH FLOW PCM 3.4						
1	WHOL	Gross Alpha act	2.51E+00	1.99E+00	2.00E+00	PCI/L
10	WHOL	Gross Alpha act	1.60E+00	.	1.29E+00	PCI/L
100	WHOL	Gross Alpha act	1.85E+00	2.25E+00	1.82E+00	PCI/L
1000	WHOL	Gross Alpha act	1.80E+00	.	1.58E+00	PCI/L
1	WHOL	Gross Beta acti	3.57E+00	4.94E+00	1.74E+00	PCI/L
10	WHOL	Gross Beta acti	2.69E+00	.	2.25E+00	PCI/L
100	WHOL	Gross Beta acti	2.50E+00	2.84E+00	6.99E+00	PCI/L
1000	WHOL	Gross Beta acti	2.17E+00	.	2.37E+00	PCI/L
1	RE	Suspend partiel	2.60E+01	1.92E+01	1.96E+01	MG/L
10	RE	Suspend partiel	2.08E+01	.	2.08E+01	MG/L
100	RE	Suspend partiel	2.28E+01	2.08E+01	2.04E+01	MG/L
1000	RE	Suspend partiel	1.96E+01	.	3.20E+01	MG/L
1	WHOL	Turbidity	.	2.10E+01	2.20E+01	NTU
10	WHOL	Turbidity	2.30E+01	.	2.00E+01	NTU
100	WHOL	Turbidity	2.10E+01	2.40E+01	2.20E+01	NTU
1000	WHOL	Turbidity	2.20E+01	.	.	NTU

Table A2. Analytical results for the study of the distribution of contaminants downstream from the mouth of Mitchell Branch (PCM 4.6)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
LOW FLOW						
1	WHOL	Alkalinity as C	1.80E+00	1.50E+00	1.50E+00	MEQ/L
1	WHOL	Gross Alpha act	2.82E+00	2.65E+00	9.81E-01	PCI/L
10	WHOL	Gross Alpha act	2.03E+00	.	1.74E+00	PCI/L
100	WHOL	Gross Alpha act	2.72E+00	1.98E+00	1.92E+00	PCI/L
1000	WHOL	Gross Alpha act	1.62E+00	.	2.22E+00	PCI/L
1	WHOL	Gross Beta acti	4.34E+00	4.00E+00	2.10E+00	PCI/L
10	WHOL	Gross Beta acti	6.13E+00	.	3.72E+00	PCI/L
100	WHOL	Gross Beta acti	3.42E+00	5.92E+00	4.46E+00	PCI/L
1000	WHOL	Gross Beta acti	2.10E+00	.	9.39E+00	PCI/L
1	WHOL	pH	7.60E+00	7.60E+00	7.60E+00	
10	WHOL	pH	7.30E+00	.	7.32E+00	
100	WHOL	pH	7.39E+00	7.41E+00	7.46E+00	
1000	WHOL	pH	7.49E+00	.	7.50E+00	
1	RE	Suspend particl	4.20E+00	4.20E+00	4.00E+00	MG/L
10	RE	Suspend particl	4.80E+00	.	4.80E+00	MG/L
100	RE	Suspend particl	4.00E+00	4.80E+00	5.20E+00	MG/L
1000	RE	Suspend particl	5.20E+00	.	5.80E+00	MG/L
1	WHOL	Turbidity	4.10E+00	4.00E+00	4.40E+00	NTU
10	WHOL	Turbidity	4.10E+00	.	4.00E+00	NTU
100	WHOL	Turbidity	4.10E+00	4.50E+00	4.40E+00	NTU
1000	WHOL	Turbidity	4.20E+00	.	4.60E+00	NTU

Table A3. Analytical results for the study of the distribution of contaminants downstream from the mouth of East Fork Poplar Creek (PCM 5.5)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
LOW FLOW, PCM 5.5						
1	WHOL	Alkalinity as C	2.40E+00	1.80E+00	1.20E+00	MEQ/L
1	WHOL	Aluminum	5.05E-02	1.44E-01	1.60E-01	MG/L
10	WHOL	Aluminum	1.32E-01	.	2.06E-01	MG/L
100	WHOL	Aluminum	1.43E-01	1.91E-01	1.86E-01	MG/L
1000	WHOL	Aluminum	1.83E-01	.	1.40E-01	MG/L
1	WHOL	Antimony	1.00E-03	1.00E-03	1.00E-03	MG/L
1	WHOL	Barium	3.34E-02	3.39E-02	3.45E-02	MG/L
10	WHOL	Barium	3.33E-02	.	3.45E-02	MG/L
100	WHOL	Barium	3.35E-02	3.40E-02	3.43E-02	MG/L
1000	WHOL	Barium	3.33E-02	.	3.35E-02	MG/L
1	WHOL	Boron	4.11E-02	2.01E-02	1.69E-02	MG/L
10	WHOL	Boron	1.99E-02	.	3.00E-03	MG/L
100	WHOL	Boron	5.20E-03	3.01E-02	2.32E-02	MG/L
1000	WHOL	Boron	1.65E-02	.	7.00E-03	MG/L
1	WHOL	Calcium	4.45E+01	2.83E+01	2.31E+01	MG/L
10	WHOL	Calcium	3.17E+01	.	2.52E+01	MG/L
100	WHOL	Calcium	3.05E+01	2.94E+01	2.82E+01	MG/L
1000	WHOL	Calcium	3.07E+01	.	2.84E+01	MG/L
1	WHOL	Chromium	1.79E-03	1.70E-03	1.60E-03	MG/L
10	WHOL	Chromium	1.60E-03	.	1.50E-03	MG/L
100	WHOL	Chromium	1.30E-03	2.10E-03	1.40E-03	MG/L
1000	WHOL	Chromium	1.70E-03	.	1.30E-03	MG/L
1	WHOL	Copper	1.86E-03	2.00E-03	2.20E-03	MG/L
10	WHOL	Copper	1.40E-03	.	1.40E-03	MG/L
100	WHOL	Copper	1.60E-03	1.50E-03	1.70E-03	MG/L
1000	WHOL	Copper	1.60E-03	.	1.40E-03	MG/L
1	WHOL	Iron	4.41E-01	4.24E-01	4.44E-01	MG/L
10	WHOL	Iron	4.49E-01	.	4.55E-01	MG/L
100	WHOL	Iron	4.55E-01	4.52E-01	4.47E-01	MG/L
1000	WHOL	Iron	4.68E-01	.	4.51E-01	MG/L
1	WHOL	Magnesium	7.66E+00	6.89E+00	6.88E+00	MG/L
10	WHOL	Magnesium	7.25E+00	.	7.06E+00	MG/L
100	WHOL	Magnesium	7.13E+00	7.30E+00	7.28E+00	MG/L
1000	WHOL	Magnesium	7.24E+00	.	7.28E+00	MG/L
1	WHOL	Manganese	2.43E-02	7.53E-02	9.35E-02	MG/L
10	WHOL	Manganese	6.71E-02	.	9.03E-02	MG/L
100	WHOL	Manganese	6.88E-02	7.57E-02	7.99E-02	MG/L
1000	WHOL	Manganese	6.98E-02	.	7.82E-02	MG/L
1	WHOL	Mercury	6.89E-05	5.33E-05	4.69E-06	MG/L

Table A3 (continued)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
10	WHOL	Mercury	4.56E-05	.	1.61E-05	MG/L
100	WHOL	Mercury	3.50E-05	2.42E-05	2.10E-05	MG/L
1000	WHOL	Mercury	3.23E-05	.	2.71E-05	MG/L
1	WHOL	Methyl Mercury	1.54E-07	1.09E-07	5.00E-08	MG/L
10	WHOL	Methyl Mercury	1.04E-07	.	6.50E-08	MG/L
100	WHOL	Methyl Mercury	1.01E-07	8.20E-08	7.70E-08	MG/L
1000	WHOL	Methyl Mercury	1.08E-07	.	9.40E-08	MG/L
1	WHOL	Nickel	3.53E-03	4.40E-03	4.10E-03	MG/L
10	WHOL	Nickel	3.90E-03	.	4.30E-03	MG/L
100	WHOL	Nickel	4.40E-03	4.30E-03	4.30E-03	MG/L
1000	WHOL	Nickel	4.20E-03	.	4.20E-03	MG/L
1	WHOL	pH	7.75E+00	7.66E+00	7.47E+00	
10	WHOL	pH	7.37E+00	.	7.19E+00	
100	WHOL	pH	7.50E+00	7.47E+00	7.50E+00	
1000	WHOL	pH	7.53E+00	.	7.59E+00	
1	WHOL	Potassium	1.76E+00	1.24E+00	1.06E+00	MG/L
10	WHOL	Potassium	1.32E+00	.	1.14E+00	MG/L
100	WHOL	Potassium	1.32E+00	1.31E+00	1.28E+00	MG/L
1000	WHOL	Potassium	1.32E+00	.	1.24E+00	MG/L
1	WHOL	Sodium	1.02E+01	4.98E+00	3.27E+00	MG/L
10	WHOL	Sodium	6.03E+00	.	3.76E+00	MG/L
100	WHOL	Sodium	5.62E+00	5.13E+00	4.79E+00	MG/L
1000	WHOL	Sodium	5.53E+00	.	4.84E+00	MG/L
1	RE	Suspend particl	8.00E-01	2.20E+00	3.00E+00	MG/L
10	RE	Suspend particl	2.20E+00	.	3.40E+00	MG/L
100	RE	Suspend particl	3.20E+00	2.80E+00	2.80E+00	MG/L
1000	RE	Suspend particl	3.20E+00	.	2.80E+00	MG/L
1	WHOL	Uranium	1.03E-02	2.70E-03	1.00E-03	MG/L
10	WHOL	Uranium	4.00E-03	.	1.00E-03	MG/L
100	WHOL	Uranium	3.50E-03	2.70E-03	2.10E-03	MG/L
1000	WHOL	Uranium	3.50E-03	.	2.30E-03	MG/L
1	WHOL	Zinc	9.69E-03	6.60E-03	7.00E-03	MG/L
10	WHOL	Zinc	5.40E-03	.	5.90E-03	MG/L
100	WHOL	Zinc	6.20E-03	5.90E-03	6.10E-03	MG/L
1000	WHOL	Zinc	6.10E-03	.	6.00E-03	MG/L
HIGH FLOW						
1	WHOL	Alkalinity as C	1.30E+00	1.20E+00	6.00E-01	MEQ/L
10	WHOL	Alkalinity as C	1.00E+00	.	8.00E-01	MEQ/L
100	WHOL	Alkalinity as C	8.00E-01	8.00E-01	7.00E-01	MEQ/L
1000	WHOL	Alkalinity as C	1.30E+00	.	6.00E-01	MEQ/L
1	WHOL	Aluminum	6.97E-01	6.34E-01	1.00E+00	MG/L

Table A3 (continued)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
10	WHOL	Aluminum	6.15E-01	.	7.19E-01	MG/L
100	WHOL	Aluminum	8.20E-01	7.39E-01	8.73E-01	MG/L
1000	WHOL	Aluminum	9.14E-01	.	1.18E+00	MG/L
1	WHOL	Barium	3.06E-02	2.82E-02	3.25E-02	MG/L
10	WHOL	Barium	3.04E-02	.	3.10E-02	MG/L
100	WHOL	Barium	3.17E-02	3.18E-02	3.30E-02	MG/L
1000	WHOL	Barium	3.19E-02	.	3.37E-02	MG/L
1	WHOL	Boron	7.00E-03	7.00E-03	7.00E-03	MG/L
10	WHOL	Boron	7.00E-03	.	7.00E-03	MG/L
100	WHOL	Boron	7.00E-03	8.50E-03	7.00E-03	MG/L
1000	WHOL	Boron	7.00E-03	.	7.00E-03	MG/L
1	WHOL	Calcium	2.30E+01	1.98E+01	1.13E+01	MG/L
10	WHOL	Calcium	2.01E+01	.	1.46E+01	MG/L
100	WHOL	Calcium	1.49E+01	1.53E+01	1.29E+01	MG/L
1000	WHOL	Calcium	1.54E+01	.	1.27E+01	MG/L
1	WHOL	Chromium	1.90E-03	2.00E-03	2.90E-03	MG/L
10	WHOL	Chromium	1.80E-03	.	2.10E-03	MG/L
100	WHOL	Chromium	1.90E-03	2.30E-03	1.90E-03	MG/L
1000	WHOL	Chromium	2.00E-03	.	2.40E-03	MG/L
1	WHOL	Cobalt	1.00E-03	1.00E-03	1.70E-03	MG/L
10	WHOL	Cobalt	1.00E-03	.	1.20E-03	MG/L
100	WHOL	Cobalt	1.20E-03	1.20E-03	1.30E-03	MG/L
1000	WHOL	Cobalt	1.00E-03	.	1.30E-03	MG/L
1	WHOL	Copper	5.72E-03	4.00E-03	4.50E-03	MG/L
10	WHOL	Copper	5.00E-03	.	4.80E-03	MG/L
100	WHOL	Copper	3.90E-03	4.70E-03	4.60E-03	MG/L
1000	WHOL	Copper	4.40E-03	.	4.80E-03	MG/L
1	WHOL	Iron	9.37E-01	1.04E+00	1.68E+00	MG/L
10	WHOL	Iron	9.69E-01	.	1.23E+00	MG/L
100	WHOL	Iron	1.33E+00	1.34E+00	1.47E+00	MG/L
1000	WHOL	Iron	1.33E+00	.	1.62E+00	MG/L
1	WHOL	Lead	2.70E-03	2.20E-03	2.50E-03	MG/L
10	WHOL	Lead	2.00E-03	.	2.30E-03	MG/L
100	WHOL	Lead	2.40E-03	2.20E-03	1.90E-03	MG/L
1000	WHOL	Lead	1.80E-03	.	2.10E-03	MG/L
1	WHOL	Magnesium	4.26E+00	4.08E+00	4.41E+00	MG/L
10	WHOL	Magnesium	4.25E+00	.	4.19E+00	MG/L
100	WHOL	Magnesium	4.38E+00	4.24E+00	4.48E+00	MG/L
1000	WHOL	Magnesium	4.41E+00	.	4.59E+00	MG/L
1	WHOL	Manganese	4.86E-02	5.94E-02	1.24E-01	MG/L
10	WHOL	Manganese	6.63E-02	.	9.52E-02	MG/L
100	WHOL	Manganese	9.80E-02	9.57E-02	1.12E-01	MG/L

Table A3 (continued)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
1000	WHOL	Manganese	9.43E-02	.	1.13E-01	MG/L
1	WHOL	Mercury	5.52E-04	3.74E-04	7.27E-06	MG/L
10	WHOL	Mercury	2.26E-04	.	2.20E-04	MG/L
100	WHOL	Mercury	1.09E-04	1.39E-04	5.16E-05	MG/L
1000	WHOL	Mercury	1.30E-04	.	3.84E-05	MG/L
1	WHOL	Methyl Mercury	2.39E-07	2.27E-07	6.70E-08	MG/L
10	WHOL	Methyl Mercury	4.94E-07	.	1.27E-07	MG/L
100	WHOL	Methyl Mercury	2.21E-07	2.52E-07	1.23E-07	MG/L
1000	WHOL	Methyl Mercury	3.13E-07	.	8.70E-08	MG/L
1	WHOL	Nickel	4.33E-03	4.40E-03	6.70E-03	MG/L
10	WHOL	Nickel	5.30E-03	.	4.90E-03	MG/L
100	WHOL	Nickel	5.60E-03	5.10E-03	5.80E-03	MG/L
1000	WHOL	Nickel	5.00E-03	.	5.60E-03	MG/L
1	WHOL	pH	7.60E+00	7.60E+00	7.30E+00	
10	WHOL	pH	7.20E+00	.	7.90E+00	
100	WHOL	pH	7.80E+00	7.80E+00	7.60E+00	
1000	WHOL	pH	7.50E+00	.	7.80E+00	
1	WHOL	Potassium	1.46E+00	1.37E+00	1.49E+00	MG/L
10	WHOL	Potassium	1.42E+00	.	1.40E+00	MG/L
100	WHOL	Potassium	1.41E+00	1.40E+00	1.49E+00	MG/L
1000	WHOL	Potassium	1.43E+00	.	1.51E+00	MG/L
1	WHOL	Sodium	3.96E+00	3.49E+00	2.91E+00	MG/L
10	WHOL	Sodium	3.87E+00	.	3.24E+00	MG/L
100	WHOL	Sodium	3.01E+00	3.69E+00	3.11E+00	MG/L
1000	WHOL	Sodium	3.22E+00	.	3.15E+00	MG/L
1	RE	Suspend particl	2.12E+01	1.80E+01	1.52E+01	MG/L
10	RE	Suspend particl	1.92E+01	.	3.24E+01	MG/L
100	RE	Suspend particl	3.40E+01	3.52E+01	3.56E+01	MG/L
1000	RE	Suspend particl	3.20E+01	.	3.80E+01	MG/L
1	WHOL	Thallium	1.00E-03	1.00E-03	1.00E-03	MG/L
10	WHOL	Thallium	1.00E-03	.	1.00E-03	MG/L
100	WHOL	Thallium	1.00E-03	1.00E-03	1.00E-03	MG/L
1000	WHOL	Thallium	1.00E-03	.	1.00E-03	MG/L
1	WHOL	Turbidity	1.60E+01	1.90E+01	2.10E+01	NTU
10	WHOL	Turbidity	1.80E+01	.	2.20E+01	NTU
100	WHOL	Turbidity	1.70E+01	2.20E+01	2.60E+01	NTU
1000	WHOL	Turbidity	1.80E+01	.	1.80E+01	NTU
1	WHOL	Uranium	7.45E-03	5.60E-03	1.00E-03	MG/L
10	WHOL	Uranium	4.90E-03	.	2.30E-03	MG/L
100	WHOL	Uranium	2.40E-03	2.40E-03	1.00E-03	MG/L
1000	WHOL	Uranium	2.30E-03	.	1.00E-03	MG/L
1	WHOL	Vanadium	1.18E-03	1.50E-03	2.40E-03	MG/L

Table A3 (continued)

Distance downstream (m)	media	Analyte	Qtr full	Half full	Full Channel	units
10	WHOL	Vanadium	1.40E-03	.	2.00E-03	MG/L
100	WHOL	Vanadium	1.20E-03	1.70E-03	1.30E-03	MG/L
1000	WHOL	Vanadium	1.90E-03	.	2.30E-03	MG/L
1	WHOL	Zinc	1.63E-02	1.36E-02	2.24E-02	MG/L
10	WHOL	Zinc	2.13E-02	.	1.86E-02	MG/L
100	WHOL	Zinc	2.05E-02	2.34E-02	2.40E-02	MG/L
1000	WHOL	Zinc	1.96E-02	.	2.45E-02	MG/L

Table A4. Analytes that were below detection limits (mg/L), with exceptions, for surface water analyses from Oak Ridge Reservation Environmental Monitoring data from 14 locations collected bimonthly from March 1993 through September 1994 (BCM=Bear Creek Mile, EFM=East Fork Poplar Creek Mile, CRM=Clinch River Mile, MIM=Mitchell Branch Mile, PCM=Poplar Creek Mile, WCM=White Oak Creek Mile)

ANALYTE		EXCEPTIONS	DETECTION LIMIT (MG/L)
INORGANICS			
Antimony			0.05
Arsenic		CRM 52.2 (11/11/93, 0.05 mg/l) PCM 13.7 (8/10/93, 0.0531 mg/l) EFM 3.4 (8/10/93, 0.0545 mg/l)	0.05
Beryllium		CRM 49.7 (5/3/94, 0.0014 mg/l) CRM 52.2 (5/3/94, 0.0012 mg/l) BCM 0.4 (5/4/94, 0.001 mg/l)	0.001
Cadmium			0.005
Chromium		CRM 41.0 (12/8/93, 0.0053 mg/l; 4/12/94, 0.0042 mg/l) CRM 49.7 (5/11/93, 0.012 mg/l; 11/11/93, 0.0089 mg/l; 3/8/94, 0.0076 mg/l) CRM 52.2 (5/11/93, 0.012 mg/l; 11/11/93, 0.0093 mg/l; 3/8/94, 0.0079 mg/l) CRM 19.9 (12/8/93, 0.032 mg/l) PCM 1.4 (12/6/93, 0.0046mg/l; 4/12/94, 0.0046 mg/l) PCM 13.7 (12/8/93, 0.001 mg/l) BCM 0.4 (5/13/93, 0.014 mg/l; 11/10/93, 0.013 mg/l; 3/8/94, 0.0098 mg/l) MIM 0.1 (6 of 9 observations above detection limit) MIM 0.9 (8/10/93, 0.0194 mg/l; 12/7/93, 0.0047 mg/l; 4/12/94, 0.013 mg/l) WCM 0.6 (all 10 observation above the detection limit)	0.004

Table 1. (cont.)

Cobalt	CRM 41.0 (4/12/94, 0.0045 mg/l) CRM 19.9 (4/5/94, 0.0045 mg/l) PCM 1.4 (4/12/94, 0.0052 mg/l) MIM 0.9 (8/10/93, 0.0153 mg/l; 4/12/94, 0.0042 mg/l) WCM 0.6 (11/16/93, 0.0077 mg/l)	0.004

Table A4 (continued)

ANALYTE	EXCEPTIONS	DETECTION LIMIT (MG/L)
Copper	MIM 0.1 (4/5/93, 0.0125 mg/l; 6/15/94, 0.012 mg/l) MIM 0.9 (4/5/93, 0.013 mg/l; 8/10/93, 0.0201 mg/l)	0.007
Cyanide		0.002
Lead		0.05
Mercury	CRM 36.0 (8/8/94, 0.000064 mg/l) CRM 41.0 (12/8/93, 0.000083 mg/l; 6/15/94, 0.000058 mg/l) CRM 49.7 (7/18/94, 0.000074 mg/l; 9/12/94, 0.000068 mg/l) CRM 52.2 (3/8/94, 0.000055 mg/l) CRM 14.3 (8/8/94, 0.000054 mg/l) CRM 19.9 (8/8/94, 0.000069 mg/l) CRM 9.9 (8/4/94, 0.000088 mg/l) PCM 1.4 (10/13/93, 0.000051 mg/l; 8/3/94, 0.000097 mg/l) PCM 13.7 (8/3/94; 0.000057 mg/l) BCM 0.4 (3/8/94, 0.000095 mg/l; 9/7/94, 0.000098 mg/l) EFM 3.4 (5 of 9 observations above detection limit) MIM 0.1 (12/6/93, 0.000065 mg/l; 8/3/94, 0.000087 mg/l) MIM 0.9 (8/8/94, 0.000076 mg/l) WCM 0.6 (9/9/93, 0.000095 mg/l; 9/8/94, 0.00021 mg/l)	0.00005
Nickel	CRM 49.7 (5/3/94, 0.01 mg/l) CRM 19.9 (12/8/93, 0.014 mg/l) MIM 0.1 (4 out of 9 observations above detection limit) MIM 0.9 (8/10/93, 0.064 mg/l)	0.01
Selenium		0.05
Silver	MIM 0.9 (8/8/94, 0.011 mg/l)	0.005
Thallium	CRM 36.0 (6/15/94, 1.1 mg/l) PCM 1.4 (10/13/93, 0.007 mg/l) BCM 0.4 (3/8/94, 0.0056 mg/l)	0.005
ORGANICS		

Table A4 (continued)

ANALYTE	EXCEPTIONS	DETECTION LIMIT (MG/L)
1,1,1-Trichloroethane		0.005
1,1,2,2-Tetrachloroethane		0.005
1,1,2-Trichloroethane		0.005
1,1-Dichloroethane	MIM 0.1 (8/10/93, 0.0012 mg/l; 10/12/93, 0.0012 mg/l)	0.005
1,1-Dichloroethene		0.005
1,2-Dichloroethane		0.005
1,2-Dichloroethene	MIM 0.1 (above detection limits 8 out of 9 times)	0.005
1,2-Dichloropropane		0.005
2-Butanone	CRM 36.0 (8/8/94, 0.002 mg/l) CRM 41.0 (8/8/94, 0.001 mg/l) CRM 49.7 (7/18/94, 0.011 mg/l; 9/12/94, 0.0062 mg/l) CRM 52.2 (7/18/94, 0.012 mg/l; 9/12/94, 0.0065 mg/l) CRM 19.9 (8/8/94, 0.002 mg/l) PCM 1.4 (8/3/94, 0.002 mg/l) CRM 9.9 (8/4/94, 0.003 mg/l) BCM 0.4 (7/14/94, 0.0096 mg/l; 9/7/94, 0.003 mg/l) EFM 3.4 (8/3/94, 0.002 mg/l) MIM 0.9 (8/8/94, 0.001 mg/l)	0.01
2-Hexanone		0.01
4-Methyl-2-pentanone		0.01

Table A4 (continued)

ANALYTE	EXCEPTIONS	DETECTION LIMIT (MG/L)
Acetone	CRM 49.7 (9/12/94, 0.007 mg/l) CRM 52.2 (9/12/94, 0.0097 mg/l) CRM 19.9 (8/11/93, 0.014 mg/l) PCM 1.4 (2/1/94, 0.013 mg/l) PCM 13.7 (4/5/93, 0.045 mg/l) BCM 0.4 (9/7/94, 0.003 mg/l) WCM 0.6 (9/9/93, 0.0078 mg/l)	0.01
Benzene		0.005
Bromodichloromethane		0.005
Bromoform		0.005
Bromoethane		0.01
Carbon disulfide	CRM 14.3 (4/5/93, 0.01 mg/l) PCM 1.4 (4/5/93, 0.004 mg/l; 2/1/94, 0.02 mg/l) PCM 13.7 (4/5/93, 0.024 mg/l)	0.005
Carbon tetrachloride		0.005
Chlorobenzene		0.005
Chloroethane		0.01
Chloroform	PCM 1.4 (2/1/94, 0.004 mg/l) MIM 0.1 (6 of 9 observations above detection limit)	0.005
Chloromethane		0.01
cis-1,3-Dichloropropene	MIM 0.1 (12/6/93, 0.025 mg/l)	0.005
Dibromochloromethane		0.005
Dimethylbenzene	CRM 49.7 (9/12/94, 0.0014 mg/l)	0.005

Table A4 (continued)

ANALYTE	EXCEPTIONS	DETECTION LIMIT (MG/L)
Ethylbenzene		0.005
Methylene chloride	BCM 0.4 (9/14/93, 0.0026 mg/l)	0.005
Styrene		0.005
Tetrachloroethene	MIM 0.1 (8/10/93, 0.0012 mg/l; 10/12/93, 0.0013 mg/l)	0.005
Toluene	CRM 14.3 (8/8/94, 0.001 mg/l)	0.005
trans-1,3-Dichloropropene		0.005
Trichloroethene	CRM 19.9 (8/11/93, 0.003 mg/l) MIM 0.1 (8 of 9 observations above detection limit)	0.005
Vinyl chloride	MIM 0.1 (4 of 9 observations above detection limit)	0.01
PHYSICAL		
Biological Oxygen Demand	PCM 1.4 (6/15/94, 7.1 mg/l; 8/3/94, 13 mg/l) EFM 3.4 (4/5/93, 8 mg/l) WCM 0.6 (4 of 9 observations above detection limit)	5

Table A5. Summary data for the ORREM project, 1993 and 1994

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Summary statistics for CRM 52.2							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	10	10	90, 113	101.1	2.62657	105.915	99
Aluminum	10	10	0.067, 1.1	0.372	0.08859	0.535	0.3
Ammonium Nitrogen	10	10	0.035, 0.08	0.05	0.00519	0.06	0.044
Barium	10	10	0.026, 0.187	0.05	0.01582	0.079	0.032
Chloride	10	10	2.4, 3.8	3.23	0.149	3.503	3.35
Chromium	10	3	<0.004, 0.012	0.008	0.00049	0.009	0.008
Iron	10	10	0.12, 1.4	0.419	0.11488	0.629	0.299
Manganese	10	10	0.031, 0.16	0.082	0.01395	0.107	0.074
Nitrate	10	10	1.3, 3.8	2.43	0.225	2.843	2.4
Phosphorus	10	7	<0.2, 0.51	0.286	0.03342	0.347	0.268
Sulfate	10	10	14, 25	19.93	1.117	21.977	21
Total Hardness	10	10	100, 131	116.5	3.12072	122.221	114
Uranium	9	6	0, 0.001	0	0.00005	0	0
Vanadium	10	3	<0.002, 0.024	0.005	0.00248	0.009	0.003
Zinc	10	3	<0.005, 0.038	0.01	0.0036	0.016	0.006
PHYSICAL							
Chemical Oxygen Demand (mg/l)	10	2	<5, 16	6.1	1.47580	8.805	5
Total dissolved solids (mg/l)	10	10	129, 182	149.9	6.60547	162.009	144
Total suspended particles (mg/l)	10	7	<5, 29	9.2	2.43352	13.661	6
RADIONUCLIDES (PCI/L)							
Cesium-137	10	10	-27.03, 2.162	-2.1624	2.779	2.933	0.4055
Cobalt-60	10	10	-2.703, 3.784	1.3623	0.711	2.666	1.4056
Gross Alpha activity	10	10	0, 2.703	1.1488	0.304	1.707	0.9055

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Gross Beta activity	10	10	1.433, 4.055	2.717	0.28307	3.235	2.595
Strontium-90	10	10	-0.27, 3.244	1.122	0.36754	1.795	0.865
Technetium-99	10	10	-2.703, 6.487	1.8759	1.156	3.995	1.757
Tritium	10	10	-486.54, 351.39	-32.436	102.318	155.125	40.545
Radioactive Uranium	10	10	0.027, 2.973	0.851	0.28261	1.37	0.541
Summary statistics for CRM 49.7							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	10	10	75, 110	97.2	4.02437	104.577	99
Aluminum	10	9	<0.05, 0.62	0.265	0.06025	0.375	0.215
Ammonium Nitrogen	10	10	0.03, 0.09	0.052	0.00733	0.066	0.042
Barium	10	10	0.023, 0.092	0.036	0.00637	0.048	0.031
Chloride	10	10	2.4, 3.8	3.16	0.1514	3.438	3.3
Chromium	10	3	<0.004, 0.012	0.008	0.00052	0.009	0.008
Iron	10	10	0.073, 0.69	0.287	0.06942	0.414	0.233
Manganese	10	10	0.022, 0.12	0.062	0.01059	0.081	0.057
Nitrate	10	10	1.6, 25	4.65	2.2682	8.808	2.75
Phosphorus	10	6	<0.2, 0.52	0.286	0.03588	0.352	0.25
Sulfate	10	10	16.4, 24	19.84	0.8737	21.442	19.5
Total Hardness	10	10	89, 150	120.2	5.07674	129.506	121
Uranium	9	6	0, 0.002	0	0.00016	0.001	0
Vanadium	10	4	<0.002, 0.023	0.004	0.00228	0.008	0.002
Zinc	10	4	<0.005, 0.02	0.007	0.00157	0.01	0.006
PHYSICAL							
Chemical Oxygen Demand (mg/l)	10	3	<5, 22	8.6	1.73378	11.778	7
Total dissolved solids (mg/L)	10	10	114, 180	146.5	7.52514	160.294	142.5
Total suspended particles	10	7	<5, 15	8.3	0.92978	10.004	7.5

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¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
RADIONUCLIDES (PCI/L)							
Cesium-137	10	10	-1.081, 2.703	1.081	0.4049	1.824	1.216
Cobalt-60	10	10	-1.352, 5.676	2.438	0.7304	3.777	2.973
Gross Alpha activity	10	10	-0.649, 2.649	0.97	0.278	1.48	1.054
Gross Beta activity	10	10	0.811, 7.568	3.706	0.72427	5.033	4.325
Strontium-90	10	10	-0.811, 3.244	1.308	0.41007	2.06	1.122
Technetium-99	10	10	-3.784, 5.406	1.892	0.9993	3.724	2.703
Tritium	10	10	-324.36, 540.6	170.289	99.3595	352.426	216.24
Radioactive Uranium	10	10	-0.622, 3.514	0.851	0.32904	1.455	0.649
Summary statistics for CRM 41.0							
INORGANICS (mg/L)							
Alkalinity as CaCO3	9	9	83, 115	97.111	3.97368	104.5	95
Aluminum	9	9	0.073, 1.8	0.406	0.18937	0.758	0.19
Ammonium Nitrogen	9	9	0.03, 0.08	0.04	0.00525	0.05	0.036
Barium	9	9	0.026, 0.04	0.032	0.00149	0.035	0.031
Chloride	9	9	2.7, 5	3.567	0.246	4.02	3.3
Iron	9	6	<0.05, 2.3	0.48	0.24894	0.943	0.122
Manganese	9	8	<0.001, 0.08	0.04	0.00715	0.054	0.034
Nitrate	9	9	1.6, 3.9	2.378	0.253	2.85	2.1
Phosphorus	9	6	<0.17, 0.49	0.293	0.04402	0.375	0.3
Sulfate	9	9	15, 26	21.111	1.252	23.44	22
Total Hardness	9	9	100, 130	117.889	3.42152	124.251	117
Uranium	8	6	0, 0.001	0	0.00012	0.001	0
Vanadium	9	3	<0.002, 0.005	0.003	0.0003	0.004	0.003
Zinc	9	2	<0.005, 0.014	0.007	0.0012	0.009	0.006
PHYSICAL							

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Chemical Oxygen Demand (mg/l)	9	3	<5, 9	6.642	0.39021	7.170	6
Total dissolved solids (mg/l)	9	9	120, 185	151.778	7.96307	166.585	154
Total suspended particles (mg/l)	9	4	<5, 36	10.556	3.59749	17.245	6
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	-4.055, 2.97	0.03	0.693	1.32	0.5406
Cobalt-60	9	9	-0.811, 6.49	1.351	0.822	2.88	0.5406
Gross Alpha activity	9	9	0.081, 1.65	0.7	0.181	1.04	0.5947
Gross Beta activity	9	9	1.703, 5.136	3.445	0.48046	4.338	3.514
Strontium-90	9	9	-0.405, 2.676	0.985	0.26993	1.487	0.946
Technetium-99	9	9	-0.27, 23.25	5.007	2.459	9.58	1.8921
Tritium	9	9	-432.48, 2973.3	393.437	353.007	1049.87	0
Radioactive Uranium	9	9	0.081, 2.054	0.916	0.23917	1.361	1.027
Summary statistics for CRM 36.0							
INORGANICS (mg/L)							
Alkalinity as CaCO3	9	9	73, 116	98	4.84195	107.004	100
Aluminum	9	9	0.071, 1.6	0.355	0.16525	0.663	0.115
Ammonium Nitrogen	9	8	<0.03, 0.06	0.039	0.00335	0.045	0.039
Barium	9	9	0.024, 0.041	0.032	0.00177	0.035	0.031
Chloride	9	9	2.8, 5.3	3.5	0.253	3.97	3.3
Iron	9	8	<0.05, 1.4	0.337	0.15516	0.626	0.087
Manganese	9	9	0.019, 0.069	0.043	0.00638	0.054	0.042
Nitrate	9	9	0.82, 13	3.269	1.245	5.583	2.3
Phosphorus	9	6	<0.13, 0.48	0.256	0.04635	0.342	0.28
Sulfate	9	9	14, 30	21.444	1.625	24.467	21
Total Hardness	9	9	91, 130	114.333	4.6398	122.961	118

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Uranium	8	5	0, 0.001	0	0.00012	0	0
Vanadium	9	3	<0.002, 0.004	0.003	0.00009	0.003	0.003
Zinc	9	2	<0.005, 0.017	0.015	0.0003	0.015	0.015
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	3	<5, 12	8.89	0.679	10.15	8
Total dissolved solids (mg/l)	9	9	105, 160	140.111	6.3562	151.931	148
Total suspended particles (mg/l)	9	5	<5, 30	10	2.9866	15.554	5
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	-4.055, 2.973	0.06	0.874	1.686	0.2703
Cobalt-60	9	9	-1.352, 14.867	2.55	1.599	5.523	1.6218
Gross Alpha activity	9	9	0.27, 2.973	1.063	0.291	1.605	0.7298
Gross Beta activity	9	9	1.703, 8.65	3.64	0.71269	4.965	2.703
Strontium-90	9	9	0.027, 1.622	0.76	0.21214	1.154	0.649
Technetium-99	9	9	-1.081, 7.568	2.006	0.979	3.826	0.8109
Tritium	9	9	-459.51, 648.72	111.123	119.908	334.098	81.09
Radioactive Uranium	9	9	0.159, 3.514	0.835	0.34858	1.483	0.432
Summary statistics for WCM 0.6							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	10	10	63, 130	104.2	5.6663	114.587	104
Aluminum	10	10	0.067, 2.15	1.023	0.2119	1.411	1
Ammonium Nitrogen	10	10	0.045, 0.11	0.062	0.0065	0.074	0.056
Barium	10	10	0.028, 0.173	0.054	0.0135	0.079	0.045
Chloride	10	10	2.5, 22	9.39	1.71	12.52	9.75
Chromium	10	10	0.007, 0.023	0.014	0.0019	0.018	0.013
Iron	10	10	0.17, 1.8	0.925	0.1559	1.21	0.91

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Manganese	10	10	0.038, 0.22	0.118	0.0179	0.151	0.125
Nitrate	10	9	<0.56, 2.6	1.57	0.25	2.04	1.25
Phosphorus	10	8	<0.2, 0.5	0.361	0.0262	0.409	0.35
Sulfate	10	10	14, 64	44.1	5.31	53.83	41.5
Total Hardness	10	10	74, 170	134.9	8.2965	150.108	137
Uranium	9	9	0, 0.01	0.003	0.0009	0.005	0.002
Vanadium	10	9	<0.002, 0.004	0.003	0.0002	0.003	0.003
Zinc	10	9	<0.005, 0.004	0.023	0.0022	0.027	0.023
PHYSICAL							
Chemical Oxygen Demand (mg/l)	10	6	<5, 24	9.9	1.7213	13.055	7.5
Total dissolved solids (mg/l)	10	10	92, 265	198.5	15.9215	227.686	199.5
Total suspended particles (mg/l)	10	10	5, 49	23.1	5.1	32.449	17
RADIONUCLIDES (pCi/L)							
Cesium-137	10	10	11.08, 137.85	57.06	12.31	79.63	44.6
Cobalt-60	10	10	0.81, 5.95	4.05	0.59	5.14	4.46
Gross alpha activity	10	10	1.73, 12.43	5.44	0.89	7.08	5.27
Gross Beta activity	10	10	324.36, 540.6	421.668	23.9062	465.491	391.935
Plutonium-238	2	2	0.27, 0.35	0.31	0.04	0.57	0.31
Plutonium-239	2	2	0.14, 0.27	0.2	0.07	0.63	0.2
Strontium-90	10	10	108.12, 210.834	178.398	9.5268	195.862	186.507
Technetium-99	10	10	4.32, 35.14	16.92	2.82	22.08	16.62
Tritium	10	10	37842, 240567	135960.9	21393.96	175178.44	136501.5
Radioactive Uranium	10	10	2.189, 6.217	4.652	0.4087	5.401	4.865
Uranium-234	8	8	2.46, 5.41	3.82	0.36	4.51	3.51
Uranium-235	8	8	-0.01, 0.32	0.18	0.04	0.25	0.18

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¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

A-23

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Uranium-238	8	8	0.541, 1.406	0.878	0.1057	1.079	0.811
Summary statistics for CRM 19.9							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	83, 118	101.333	3.55512	107.944	100
Aluminum	9	9	0.114, 1.2	0.27	0.11829	0.49	0.13
Ammonium Nitrogen	9	9	0.03, 0.16	0.059	0.01374	0.084	0.04
Barium	9	9	0.025, 0.046	0.032	0.00202	0.036	0.03
Chloride	9	9	3, 5.3	3.811	0.237	4.25	3.6
Iron	9	7	<0.05, 1.1	0.275	0.11073	0.481	0.15
Manganese	9	9	0.01, 0.091	0.043	0.00782	0.057	0.04
Nitrate	9	9	1, 5.6	2.822	0.472	3.7	2.3
Phosphorus	9	7	<0.18, 0.47	0.267	0.03202	0.326	0.25
Sulfate	9	9	17, 27	20.556	0.973	22.37	21
Total Hardness	9	9	100, 130	115.556	4.0487	123.084	118
Uranium	8	4	0, 0.003	0.001	0.00043	0.002	0
Vanadium	9	4	<0.002, 0.003	0.002	0.00016	0.003	0.002
Zinc	9	3	<0.005, 0.029	0.009	0.00297	0.014	0.006
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	4	<5, 11	5.778	0.72072	7.118	5
Total dissolved solids (mg/l)	9	9	108, 174	139.111	6.5605	151.311	146
Total suspended particles (mg/l)	9	6	<5, 25	9.556	2.40439	14.027	6
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	-2.703, 2.97	-0.06	0.569	1	0.27
Cobalt-60	9	9	-2.973, 5.41	0.631	0.813	2.14	0.27
Gross Beta activity	9	9	2.162, 12.704	6.187	1.27057	8.55	4.325

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Gross Alpha activity	9	9	-0.162, 2.97	0.988	0.321	1.58	0.757
Strontium-90	9	9	-0.189, 4.865	1.946	0.50289	2.881	2.162
Technetium-99	9	9	-1.622, 8.92	3.652	1.178	5.84	3.784
Tritium	9	9	189.21, 2973.3	985.093	311.338	1564.04	567.63
Radioactive Uranium	9	9	0.216, 1.379	0.592	0.13013	0.834	0.405
Summary Statistics for CRM 14.3							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	83, 115	100.333	4.2947	108.32	105
Aluminum	9	9	0.1, 0.47	0.256	0.03871	0.328	0.23
Ammonium Nitrogen	9	8	<0.02, 0.09	0.048	0.00756	0.062	0.05
Barium	9	8	<0.001, 0.041	0.027	0.00166	0.033	0.029
Chloride	9	9	3, 5.1	3.689	0.2189	4.096	3.5
Iron	9	8	<0.05, 0.68	0.329	0.06622	0.452	0.263
Manganese	9	9	0.02, 0.38	0.085	0.0378	0.155	0.047
Nitrate	9	9	1, 5.3	2.778	0.4515	3.617	2.4
Phosphorus	9	7	<0.2, 0.48	0.3	0.03256	0.361	0.26
Sulfate	9	9	16, 26	19.778	0.9969	21.632	20
Total Hardness	9	9	100, 128	116.278	3.58538	122.945	118
Uranium	8	5	0, 0.001	0	0.00009	0	0
Vanadium	9	2	<0.002, 0.002	0.002	0	0.002	0.002
Zinc	9	3	<0.005, 0.008	0.006	0.00037	0.007	0.006
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	4	<5, 6	5.22	0.160	5.52	5
Total dissolved solids (mg/l)	9	9	118, 165	143.111	4.50137	151.482	143
Total suspended particles (mg/l)	9	8	<5, 40	13.667	3.77498	20.686	9
RADIONUCLIDES (PCI/L)							

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Cesium-137	9	9	-0.5406, 5.676	1.952	0.7372	3.323	1.892
Cobalt-60	9	9	-2.703, 5.406	0.12	0.8772	1.751	0
Gross Beta activity	9	9	2.352, 6.217	3.655	0.4117	4.421	3.514
Gross Alpha activity	9	9	-0.027, 2.703	0.829	0.272	1.335	0.541
Strontium-90	9	9	-0.757, 2.973	1.12	0.4151	1.892	1
Technetium-99	9	9	-1.8651, 13.245	3.307	1.4087	5.926	2.162
Tritium	9	9	-54.06, 783.87	336.373	87.019	498.189	324.36
Radioactive Uranium	9	9	0.135, 1.595	0.64	0.14146	0.903	0.64
Summary Statistics for CRM 14.3							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	83, 115	100.333	4.2947	108.32	105
Aluminum	9	9	0.1, 0.47	0.256	0.03871	0.328	0.23
Ammonium Nitrogen	9	8	<0.02, 0.09	0.048	0.00756	0.062	0.05
Barium	9	8	<0.001, 0.041	0.027	0.00166	0.033	0.029
Chloride	9	9	3, 5.1	3.689	0.2189	4.096	3.5
Iron	9	8	<0.05, 0.68	0.329	0.06622	0.452	0.263
Manganese	9	9	0.02, 0.38	0.085	0.0378	0.155	0.047
Nitrate	9	9	1, 5.3	2.778	0.4515	3.617	2.4
Phosphorus	9	7	<0.2, 0.48	0.3	0.03256	0.361	0.26
Sulfate	9	9	16, 26	19.778	0.9969	21.632	20
Total Hardness	9	9	100, 128	116.278	3.58538	122.945	118
Uranium	8	5	0, 0.001	0	0.00009	0	0
Vanadium	9	2	<0.002, 0.002	0.002	0	0.002	0.002
Zinc	9	3	<0.005, 0.008	0.006	0.00037	0.007	0.006
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	4	<5, 6	5.22	0.160	5.52	5

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Total dissolved solids (mg/l)	9	9	118, 165	143.111	4.50137	151.482	143
Total suspended particles (mg/l)	9	8	<5, 40	13.667	3.77498	20.686	9
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	-0.5406, 5.676	1.952	0.7372	3.323	1.892
Cobalt-60	9	9	-2.703, 5.406	0.12	0.8772	1.751	0
Gross Beta activity	9	9	2.352, 6.217	3.655	0.4117	4.421	3.514
Gross Alpha activity	9	9	-0.027, 2.703	0.829	0.272	1.335	0.541
Strontium-90	9	9	-0.757, 2.973	1.12	0.4151	1.892	1
Technetium-99	9	9	-1.8651, 13.245	3.307	1.4087	5.926	2.162
Tritium	9	9	-54.06, 783.87	336.373	87.019	498.189	324.36
Radioactive Uranium	9	9	0.135, 1.595	0.64	0.14146	0.903	0.64
Summary Statistics for BCM 0.4							
INORGANICS (mg/L)							
Alkalinity as CaCO3	10	10	85, 160	126.7	9.5348	144.178	131.5
Aluminum	10	10	0.061, 0.48	0.216	0.048	0.304	0.191
Ammonium Nitrogen	10	9	<0.03, 0.084	0.049	0.0067	0.061	0.039
Barium	10	10	0.044, 0.138	0.074	0.0088	0.09	0.067
Chloride	10	10	4.5, 29	8.33	2.344	12.627	5.65
Chromium	10	3	<0.004, 0.014	0.011	0.0006	0.012	0.01
Iron	10	10	0.082, 0.49	0.207	0.0416	0.283	0.145
Manganese	10	9	<0.001, 0.054	0.025	0.0044	0.033	0.026
Nitrate	10	10	3.4, 23	11	2.155	14.95	9.25
Phosphorus	10	4	<0.2, 0.5	0.263	0.0393	0.335	0.2
Sulfate	10	10	15, 51	26.64	3.792	33.591	20.5
Total Hardness	10	10	105, 213	161.8	12.5537	184.812	168
Uranium	9	8	0, 0.038	0.022	0.0024	0.027	0.022

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Vanadium	10	2	<0.002, 0.023	0.005	0.0028	0.01	0.003
Zinc	10	3	<0.005, 0.06	0.018	0.0061	0.03	0.011
PHYSICAL							
Chemical Oxygen Demand (mg/l)	10	2	<5, 19	6.4	1.8783	9.843	5
Total dissolved solids (mg/l)	10	10	105, 285	213.5	17.2493	245.12	226
Total suspended particles (mg/l)	10	2	<5, 10	5.5	0.6708	6.73	5
RADIONUCLIDES (PCI/L)							
Cesium-137	10	10	-4.325, 2.43	-0.054	0.628	1.097	0.27
Cobalt-60	10	10	-1.081, 5.14	1.811	0.596	2.904	1.487
Gross Alpha activity	10	10	5.406, 12.16	9.515	0.627	10.663	9.866
Gross Beta activity	10	10	6.217, 20.543	13.326	1.4849	16.048	12.028
Plutonium-238	2	2	-0.108, 0.54	0.216	0.324	2.264	0.27
Plutonium-239	2	2	-0.122, 0.14	0.007	0.128	0.817	0.068
Strontium-90	10	10	-0.676, 3.514	1.619	0.4399	2.425	1.649
Technetium-99	10	10	0.541, 25.41	11.839	2.395	16.23	10.407
Tritium	10	10	-594.66, 1270.41	302.736	165.539	606.188	202.725
Radioactive Uranium	10	10	7.839, 22.705	10.812	1.4132	13.402	9.055
Uranium-234	9	9	2.271, 8.38	3.946	0.604	5.069	3.244
Uranium-235	9	9	-0.27, 0.68	0.245	0.095	0.421	0.216
Uranium-238	9	9	4.595, 14.326	6.788	0.9997	8.647	5.947
Summary statistics for EFM 3.4							
INORGANICS (mg/L)							
Alkalinity as CaCO3	9	9	98, 125	113.778	3.3615	120.029	120
Aluminum	9	7	<0.05, 0.707	0.213	0.0723	0.347	0.11
Ammonium Nitrogen	9	9	0.04, 0.24	0.073	0.0215	0.113	0.047

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Barium	9	8	<0.001, 0.039	0.032	0.0015	0.034	0.032
Chloride	9	9	8.2, 23	15.011	1.651	18.081	14
Iron	9	7	<0.05, 0.605	0.19	0.0575	0.297	0.12
Manganese	9	8	<0.001, 0.065	0.021	0.0058	0.032	0.016
Nitrate	9	9	7, 37	18.1	3.149	23.956	17
Phosphorus	9	8	<0.2, 0.92	0.489	0.0796	0.637	0.48
Sulfate	9	9	20, 41	31.889	2.771	37.042	32
Total Hardness	9	9	114.5, 172	148.167	5.9055	159.148	154
Uranium	8	7	0, 0.015	0.008	0.0011	0.01	0.007
Zinc	9	6	<0.005, 0.021	0.011	0.0021	0.015	0.012
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	4	<5, 12	6.444	0.962	8.233	5
Total suspended particles (mg/l)	9	5	<5, 33	9.222	3.1367	15.055	6
Total dissolved solids (mg/l)	9	9	146, 284	219.667	15.268	248.058	226
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	1.081, 7.84	2.493	0.776	3.936	1.6218
Cobalt-60	9	9	-1.081, 2.43	0.841	0.412	1.606	0.8109
Gross Alpha activity	9	9	1.973, 10.81	4.634	0.868	6.249	4.3248
Gross Beta activity	9	9	0.811, 8.65	6.307	0.9342	8.044	7.839
Strontium-90	9	9	0.541, 2.216	1.484	0.2017	1.859	1.243
Technetium-99	9	9	0.541, 10.27	5.106	1.165	7.272	5.406
Tritium	9	9	-432.48, 2973.3	228.253	361.612	900.688	0
Radioactive Uranium	9	9	0.001, 5.406	3.724	0.5326	4.715	4.055
Uranium-234	7	7	1.324, 2.16	1.714	0.124	1.956	1.6218
Uranium-235	7	7	0.003, 0.43	0.177	0.055	0.284	0.1676
Uranium-238	7	7	1.649, 3.784	2.483	0.256	2.98	2.514

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Summary statistics for MIM 0.9							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	33, 100	67.111	8.1857	82.333	68
Aluminum	9	9	0.093, 11.2	1.714	1.1931	3.932	0.43
Ammonium Nitrogen	9	7	<0.03, 0.07	0.044	0.0056	0.055	0.039
Barium	9	8	<0.001, 0.176	0.058	0.0153	0.086	0.046
Chloride	9	9	1.2, 2.5	1.8444	0.129	2.085	1.9
Chromium	9	3	<0.004, 0.019	0.007	0.002	0.011	0.005
Iron	9	9	0.11, 16.8	2.668	1.7803	5.978	0.77
Manganese	9	9	0.047, 1.7	0.342	0.1781	0.673	0.101
Nitrate	9	6	<0.1, 9.5	1.813	1.0234	3.716	0.45
Phosphorus	9	6	<0.2, 0.43	0.327	0.0161	0.357	0.3
Sulfate	9	9	13, 40	22.1111	3.155	27.979	19
Total Hardness	9	9	41, 181	89.611	14.0579	115.752	79
Vanadium	9	3	<0.002, 0.019	0.005	0.002	0.009	0.003
Zinc	9	4	<0.005, 0.14	0.027	0.016	0.057	0.008
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	6	<5, 15	8.444	1.1561	10.594	7
Total dissolved solids (mg/l)	9	9	51, 183	116.667	14.7902	144.17	115
Total suspended particles (mg/l)	9	4	<5, 415	66	48.1975	155.626	12
RADIONUCLIDES (PCI/L)							
Cesium-137	9	9	-2.162, 8.92	2.4327	1.169	4.606	3.2436
Cobalt-60	9	9	-1.622, 3.514	0.9611	0.591	2.06	0.2703
Gross Alpha activity	9	9	-0.081, 2.514	1.0992	0.312	1.68	0.919
Gross Beta activity	9	9	2.1894, 12.704	5.499	1.1042	7.552	4.055
Strontium-90	9	9	-0.5947, 1.784	0.613	0.2688	1.112	0.514

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

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ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Technetium-99	9	9	0.27, 10.001	4.0755	1.157	6.226	2.9733
Tritium	9	9	-810.9, 675.75	-51.6573	147.808	223.199	0
Radioactive Uranium	9	9	0.2703, 6.758	1.445	0.6931	2.733	0.487
Summary statistics for MIM 0.1							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	48, 153	119.778	11.263	140.722	128
Aluminum	9	8	<0.05, 1.17	0.395	0.1349	0.646	0.163
Ammonium Nitrogen	9	9	0.05, 0.086	0.068	0.0042	0.076	0.07
Barium	9	8	<0.001, 0.044	0.038	0.0016	0.041	0.038
Chloride	9	9	3.1, 26	12.311	2.5083	16.975	12
Chromium	9	6	<0.004, 0.01	0.006	0.0006	0.007	0.005
Iron	9	8	<0.021, 1.66	0.585	0.1886	0.936	0.357
Manganese	9	9	0.11, 0.2	0.149	0.0106	0.169	0.147
Nickel	9	4	<0.01, 0.016	0.014	0.0004	0.015	0.014
Nitrate	9	8	<1, 2.6	1.622	0.172	1.942	1.6
Phosphorus	9	7	<0.2, 0.46	0.306	0.0361	0.373	0.26
Sulfate	9	9	16, 46	29.378	3.1453	35.227	29
Total Hardness	9	9	88.5, 192	151.278	11.947	173.494	164
Uranium	8	8	0.005, 0.018	0.012	0.0017	0.015	0.013
Vanadium	9	3	<0.002, 0.003	0.003	0.0001	0.003	0.003
Zinc	9	6	<0.005, 0.032	0.011	0.0031	0.016	0.007
ORGANICS (MG/L)							
1,2-Dichloroethene	9	8	<0.005, 0.04	0.023	0.0044	0.031	0.02
Chloroform	9	6	<0.001, 0.005	0.002	0.0004	0.003	0.002
Trichloroethene	9	8	<0.005, 0.05	0.028	0.0053	0.038	0.027
Vinyl chloride	9	4	<0.002, 0.01	0.004	0.0008	0.005	0.004

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
PHYSICAL							
Chemical Oxygen Demand(mg/l)	9	4	<5, 10	7.778	0.4361	8.589	7
Total dissolved solids (mg/l)	9	9	135, 301	203.889	17.4017	236.248	199
Total suspended particles (mg/l)	9	5	<5, 39	10.667	3.9047	17.928	5
RADIONUCLIDES (PC/L)							
Cesium-137	9	9	-1.892, 2.703	0.541	0.5368	1.539	0.27
Cobalt-60	9	9	-6.487, 4.055	0.631	1.0362	2.557	0.27
Gross Alpha activity	9	9	9.19, 15.137	12.133	0.6986	13.432	12.434
Gross Beta activity	9	9	12.434, 40.545	21.774	3.4566	28.202	21.354
Strontium-90	9	9	-0.108, 2.325	1.072	0.2292	1.498	1.027
Technetium-99	9	9	13.785, 32.436	20.032	2.1099	23.956	18.651
Tritium	9	9	-243.27, 540.6	111.123	85.5291	270.169	135.15
Radioactive Uranium	9	9	4.055, 14.326	10.542	1.173	12.723	10.812
Uranium-234	8	8	4.325, 10.542	7.67	0.7695	9.128	7.568
Uranium-235	8	8	0.119, 0.649	0.345	0.0638	0.465	0.297
Uranium-238	8	8	2.243, 4.595	3.321	0.258	3.81	3.108
Summary statistics for PCM 1.4							
INORGANICS (mg/L)							
Alkalinity as CaCO3	9	9	35, 113	78.444	8.8633	94.926	85
Aluminum	9	9	0.18, 1.45	0.706	0.1619	1.007	0.53
Ammonium Nitrogen	9	9	0.03, 0.069	0.047	0.0042	0.055	0.05
Barium	9	8	<0.001, 0.047	0.035	0.0018	0.039	0.035
Chloride	9	9	1.6, 11	5.956	1.041	7.89	6.1
Iron	9	9	0.27, 1.6	0.823	0.1645	1.129	0.68
Manganese	9	9	0.058, 0.12	0.085	0.0068	0.098	0.082
Nitrate	9	9	1.2, 9.6	3.589	0.799	5.07	3

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Phosphorus	9	6	<0.2, 0.48	0.298	0.0369	0.366	0.23
Sulfate	9	9	17, 35	25.889	2.044	29.69	29
Total Hardness	9	9	49, 150	104.389	10.6744	124.238	110
Uranium	8	7	<0.0001, 0.003	0.002	0.0003	0.003	0.003
Vanadium	9	4	<0.002, 0.004	0.003	0.0002	0.003	0.002
Zinc	9	6	<0.005, 0.014	0.009	0.001	0.011	0.008
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	5	<5, 16	9.667	0.9623	11.456	8
Total dissolved solids (mg/l)	9	9	66, 201	136	14.091	162.203	132
Total suspended particles (mg/l)	9	9	7, 23	17.222	1.4979	20.008	18
RADIONUCLIDES (PC/L)							
Cesium-137	9	9	-1.081, 4.87	2.042	0.533	3.03	1.8921
Cobalt-60	9	9	-2.162, 4.05	1.502	0.451	2.34	1.0812
Gross Alpha activity	9	9	0.919, 5.68	2.147	0.505	3.09	1.8651
Gross Beta activity	9	9	0.2973, 12.434	5.226	1.2291	7.511	5.136
Strontium-90	9	9	-0.8109, 2.216	0.94	0.2166	1.343	0.892
Technetium-99	9	9	-4.055, 8.38	3.634	1.145	5.76	3.2436
Tritium	9	9	-540.6, 2973.3	423.47	324.36	1026.63	54.06
Radioactive Uranium	9	9	0.0002, 2.216	1.364	0.254	1.836	1.243
Uranium-234	2	2	1.135, 1.87	1.5	0.365	3.8	1.5002
Uranium-235	2	2	0.035, 0.07	0.054	0.019	0.17	0.0541
Uranium-238	2	2	1, 1.62	1.311	0.311	3.27	1.311
Summary statistics for CRM 9.9							
INORGANICS (mg/L)							
Alkalinity as CaCO ₃	9	9	58, 108	91.111	5.20268	100.786	95
Aluminum	9	9	0.093, 1.3	0.445	0.13862	0.703	0.24

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A5 (continued)

ANALYTE	N	DETECTS ¹	RANGE	MEAN	SE ²	95% UCB ³	MEDIAN
Ammonium Nitrogen	9	8	<0.03, 0.09	0.052	0.00613	0.063	0.05
Barium	9	8	<0.001, 0.044	0.032	0.00209	0.036	0.031
Chloride	9	9	2.2, 5.3	3.5778	0.287	4.111	3.5
Iron	9	8	<0.05, 1.5	0.486	0.16792	0.798	0.27
Manganese	9	9	0.0031, 0.13	0.051	0.01168	0.072	0.05
Nitrate	9	9	1.5, 10	2.6556	0.92	4.366	1.8
Phosphorus	9	6	<0.16, 0.49	0.278	0.04316	0.358	0.3
Sulfate	9	9	11, 27	18.4444	1.51	21.253	18
Total Hardness	9	9	67, 150	111.444	7.66506	125.698	108
Uranium	8	7	<0.0001, 0.001	0	0.0001	0.001	0
Vanadium	9	2	<0.002, 0.004	0.002	0.00027	0.003	0.002
Zinc	9	2	<0.005, 0.012	0.008	0.00061	0.009	0.008
PHYSICAL							
Chemical Oxygen Demand (mg/l)	9	3	<5, 21	9.556	2.010	13.29	7
Total dissolved solids (mg/l)	9	9	77, 169	138.333	9.04771	155.158	147
Total suspended particles (mg/l)	9	6	<5, 45	15.111	4.62664	23.715	7
RADIONUCLIDES (PC/L)							
Cesium-137	9	9	-2.433, 4.325	0.6607	0.903	2.341	0.2703
Cobalt-60	9	9	-6.758, 5.406	0.8109	1.302	3.232	1.8921
Gross Alpha activity	9	9	-0.135, 1.649	0.88	0.186	1.226	0.8379
Gross Beta activity	9	9	1.5407, 6.758	4.226	0.53102	5.213	3.784
Strontium-90	9	9	-1.0542, 2.541	0.76	0.36915	1.446	0.676
Technetium-99	9	9	-2.703, 5.947	1.9221	0.909	3.613	2.9733
Tritium	9	9	-567.63, 540.6	48.0533	116.677	265.019	81.09
Radioactive Uranium	9	9	0.3514, 5.406	1.117	0.5394	2.12	0.541

¹ Number of observations above the detection limit² Standard error³ Upper confidence bound

Table A6. Description of subtasks, listing of requested analyses, locations and sample collection frequency during the Phase 2 RI on the Clinch River and Poplar Creek Operable Units

Description	Analytical Classes ^A	Locations (reach)	Number of sites sampled
Water contaminant concentrations and water quality in Poplar Creek	Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ + NO ₄ , TSP, Alkalinity, NTU, pH,	PCM 1 (3.04)	n = 12 ^C (includes 3 W1.1T for TOX)
		PCM 2.9 (3.03)	n = 14 ^C (includes 3 W1.1T for TOX)
		PCM 4.3 (3.02)	n = 14 ^C (includes 3 W1.1T for TOX)
		PCM 5.1 (3.01)	n = 13 ^C (includes 3 W1.1T for TOX)
		PCM 6 (13)	n = 14 ^C (includes 3 W1.1T for TOX)
		PCM 6.5 (13)	n = 12 ^C
		PCM 7 (13)	n = 12 ^C
		PCM 7.5 (13)	n = 11 ^C
Water contaminant concentrations and ambient toxicity testing	W1.1T: Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ + NO ₄ , TSP, Alkalinity, NTU, pH W2: <i>C. dubia</i> , Fathead minnow, Japanese medaka, chromatost ^P	CRM 22 (2.01)	W1.1T n = 3, W2, n = 6
		CRM 19 (2.03)	W1.1T n = 3, W2 n = 6
		PCM 5.1 (3.01)	W1.1T see above, W2 n = 6
		PCM 4.3 (3.02)	W1.1T see above, W2 n = 6
		PCM 2.9 (3.03)	W1.1T see above, W2 n = 6
		PCM 1 (3.04)	W1.1T see above, W2 n = 6
		CRM 9 (4.01)	W1.1T n = 3, W2 n = 6
		PCM 6 (13)	W1.1T see above, W2 n = 6
		PCM 11.3 (13)	W2 n = 6

Table A6 (continued)

Description	Analytical Classes ^A	Locations (reach)	Number of sites sampled
		MBM 0.2 (7.02)	W1.1T n=2, W2 n=2 ^F
		MBM 0.4 (7.01)	W1.1Tn=2, W2 n=2 ^F
		Walker Branch (WBM) 0.4 (8)	W1.1T n=2, W2 n=2 ^F
Mixing of contaminants with distance from EFPC (PCM 5.5)	Total ICP-MS metals, Hg-spec, TSP, Alkalinity, NTU, pH	PCM 5.5: 10 sites (transects at 0, 10, 100 and 1000 m)	n=20 (1 set during winter low flow and 1 during winter high flow)
Mixing of contaminants with distance from Mitchell Branch (PCM 4.6)	Gross Alpha- Beta, TSP, Alkalinity, NTU, pH	PCM 4.6: 10 sites (transects at 0, 10, 100 and 1000 m)	n=10 (1 set during winter low flow)
Mixing of contaminants with distance from CNF outfall (PCM 3.4)	Gross Alpha- Beta, TSP, Alkalinity, NTU, pH	PCM 3.4:10 sites, (transects at 0, 10, 100 and 1000 m)	n=20 (1 set during winter low flow and 1 during winter high flow)
Biased Event Sampling, McCoy Branch	Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ +NO ₄ , TSP, Alkalinity, NTU, pH	CRM 36.9B ^E (1)	n=3, April 19, July 28, August 29
		MBM 0.2A (7.02)	n=3, April 19, July 28, August 29
		MBM 0.2B (7.02)	n=3, April 19, July 28, August 29
		MBM 0.2C (7.02)	n=3, April 19, July 28, August 29
		MBM 0.4B (7.01)	n=3, April 19, July 28, August 29
Biased Event Sampling, White Oak Creek	Total + Filtered (SVOA, PPCB, ICP-MS metals, Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ +NO ₄ , TSP, Alkalinity, NTU, pH Note: no mercury speciation data were collected at this source.	CRM 19B (2.03)	n=3, April 19, July 28, August 29
		CRM 20.2A (2.02)	n=3, April 19, July 28, August 29
		CRM 20.2B (2.02)	n=3, April 19, July 28, August 29

Table A6 (continued)

Description	Analytical Classes ^A	Locations (reach)	Number of sites sampled
Biased Event Sampling, Poplar Creek	Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ +NO ₄ , TSP, Alkalinity, NTU, pH	CRM 20.2C (2.02)	n=3, April 19, July 28, August 29
		WOCM 0B (2.02)	n=3, April 19, July 28, August 29
		CRM 9B (4.01)	n=3, April 20, July 29, August 30
		CRM 11.8A (4.01)	n=3, April 20, July 29, August 30
		CRM 11.8B (4.01)	n=3, April 20, July 29, August 30
		CRM 11.8C (4.01)	n=3, April 20, July 29, August 30
		PCM 0.25B (3.04)	n=3, April 20, July 29, August 30

Table A6 (continued)

Description	Analytical Classes ^A	Locations (reach)	Number of sites sampled
Biased Event Sampling, Reference area	Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ +NO ₂ , TSP, Alkalinity, NTU, pH	CRM 41.5B (1)	n=3, April 20, July 29, August 30
		CRM 43B (1)	n=3, April 20, July 29, August 30
		CRM 46B (1)	n=3, April 20, July 29, August 30
		CRM 1B (4.04)	n=3, April 20, July 29, August 30
Contaminant remobilization from sediments (samples collected from 1m above sediment surface)	Total + Filtered (SVOA, PPCB, ICP-MS metals, Hg-spec., Cyanide, Gamma spec.), Gross Alpha-Beta, ³ H, ⁹⁰ Sr, Anions, Ammonia, NO ₃ +NO ₂ , TSP, Alkalinity, NTU, pH	CRM 41.5 (1)	n=6, 3 samples per season ^F
		MBM 0.2 (7.02)	n=6, 3 samples per season ^F
		CRM 6 (4.02)	n=6, 3 samples per season ^F
		CRM 1 (4.04)	n=6, 3 samples per season ^F
Oak Ridge Reservation Environmental Monitoring Program	General water quality, total metals, radionuclides, including ²⁴¹ Am, ²⁴⁴ Cm, ²³⁹ Pu, ²³⁵ Pu, ⁹⁹ Tc, ²³⁴ U, ²³⁵ U and total U activity, volatile organic analytes.	see DOE/OR-1066	see DOE/OR-1066
TVA Collection of water samples from source areas to Melton Hill and Watts Bar Reservoir (Task 4.2 of DE-A105-91OR22007)	Total + Filtered (ICP metals, AA metals, CVAA - Hg, Cyanide), ³ H, TSP	see Task 4.2 of DE-A105-91OR22007	once per site

^A See Appendix B in ORNL/ER-218 for analytical methods. Applicable to all listed subtasks except for non-CR-ERP and Historic data.

^C Winter, spring and summer seasons sampled.

^D See DOE/OR/01-1111&D3 for toxicity testing information.

^E Letter designation following location indicates lateral position in the stream channel relative to the outfall position: "A" = one-quarter distance from outfall shore to mid-channel, "B" = mid-channel, "C" = three-quarters distance from outfall shore to opposite shore.

^F Spring and summer seasons sampled.

Table A7. Unfiltered and filtered metal concentrations (mg/L) for biased sampling events (April 18-19, 1994, July 28-29, 1994, and August 29-30, 1994). One sample per site per event. Analytes at a given site that were below detection for all events were omitted from this table.

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
McCoy	MBM 0.4B	Unfiltered	Arsenic	3.300E-03	5.400E-03	2.400E-03
McCoy	MBM 0.4B	Unfiltered	Barium	3.440E-02	3.240E-02	3.110E-02
McCoy	MBM 0.4B	Unfiltered	Boron	8.520E-02	6.130E-02	3.000E-02
McCoy	MBM 0.4B	Unfiltered	Chromium	<0.002	<0.001	1.900E-03
McCoy	MBM 0.4B	Unfiltered	Copper	5.300E-03	1.700E-03	2.360E-02
McCoy	MBM 0.4B	Unfiltered	Iron	2.910E-01	2.000E-01	1.440E-01
McCoy	MBM 0.4B	Unfiltered	Lead	1.200E-03	<0.001	1.300E-03
McCoy	MBM 0.4B	Unfiltered	Manganese	4.240E-02	5.100E-02	6.040E-02
McCoy	MBM 0.4B	Unfiltered	Molybdenum	1.500E-03	<0.005	<0.005
McCoy	MBM 0.4B	Unfiltered	Nickel	3.000E-03	<0.001	5.500E-03
McCoy	MBM 0.4B	Unfiltered	Vanadium	1.300E-03	1.600E-03	<0.001
McCoy	MBM 0.4B	Unfiltered	Zinc	1.550E-02	7.200E-03	1.750E-02
McCoy	MBM 0.4B	Filtered	Aluminum	<0.0010	<0.006	1.140E-02
McCoy	MBM 0.4B	Filtered	Antimony	5.600E-03	4.400E-03	6.900E-03
McCoy	MBM 0.4B	Filtered	Arsenic	3.400E-03	5.100E-03	1.700E-03
McCoy	MBM 0.4B	Filtered	Barium	2.910E-02	2.730E-02	2.630E-02
McCoy	MBM 0.4B	Filtered	Boron	6.630E-02	5.160E-02	3.350E-02
McCoy	MBM 0.4B	Filtered	Chromium	<0.002	<0.001	1.400E-03
McCoy	MBM 0.4B	Filtered	Copper	2.100E-03	2.700E-03	4.000E-03
McCoy	MBM 0.4B	Filtered	Iron	2.140E-02	<0.0018	<0.0018
McCoy	MBM 0.4B	Filtered	Manganese	2.080E-02	<0.001	2.500E-03
McCoy	MBM 0.4B	Filtered	Molybdenum	1.600E-03	<0.005	<0.005
McCoy	MBM 0.4B	Filtered	Nickel	2.900E-03	1.000E-02	1.200E-03
McCoy	MBM 0.4B	Filtered	Vanadium	<0.001	1.300E-03	<0.001
McCoy	MBM 0.4B	Filtered	Zinc	4.200E-03	5.500E-03	3.800E-03
McCoy	MBM 0.2A	Unfiltered	Aluminum	2.590E-01	3.350E-02	1.010E-01
McCoy	MBM 0.2A	Unfiltered	Arsenic	1.300E-03	1.000E-03	<0.001
McCoy	MBM 0.2A	Unfiltered	Barium	2.640E-02	2.850E-02	3.240E-02
McCoy	MBM 0.2A	Unfiltered	Boron	4.190E-02	1.130E-01	5.200E-02
McCoy	MBM 0.2A	Unfiltered	Chromium	<0.002	<0.001	1.900E-03
McCoy	MBM 0.2A	Unfiltered	Copper	5.600E-03	1.400E-03	2.270E-02
McCoy	MBM 0.2A	Unfiltered	Iron	4.340E-01	3.230E-02	1.460E-01
McCoy	MBM 0.2A	Unfiltered	Lead	1.500E-03	<0.001	1.300E-03
McCoy	MBM 0.2A	Unfiltered	Manganese	4.560E-02	3.120E-02	6.540E-02
McCoy	MBM 0.2A	Unfiltered	Nickel	2.800E-03	<0.001	5.500E-03
McCoy	MBM 0.2A	Unfiltered	Vanadium	1.100E-03	<0.001	<0.001
McCoy	MBM 0.2A	Unfiltered	Zinc	1.180E-02	6.200E-03	2.250E-02
McCoy	MBM 0.2A	Filtered	Aluminum	1.420E-02	1.020E-02	8.800E-03
McCoy	MBM 0.2A	Filtered	Antimony	1.900E-03	1.300E-03	3.000E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
McCoy	MBM 0.2A	Filtered	Arsenic	<0.001	1.500E-03	1.000E-03
McCoy	MBM 0.2A	Filtered	Barium	2.070E-02	3.210E-02	2.520E-02
McCoy	MBM 0.2A	Filtered	Boron	5.350E-02	1.100E-01	3.380E-02
McCoy	MBM 0.2A	Filtered	Chromium	<0.002	<0.001	1.700E-03
McCoy	MBM 0.2A	Filtered	Copper	9.500E-03	2.500E-03	3.700E-03
McCoy	MBM 0.2A	Filtered	Iron	3.300E-02	1.800E-02	<0.0018
McCoy	MBM 0.2A	Filtered	Manganese	5.900E-03	<0.001	1.500E-03
McCoy	MBM 0.2A	Filtered	Nickel	1.800E-03	1.400E-03	1.400E-03
McCoy	MBM 0.2A	Filtered	Zinc	8.600E-03	2.700E-03	3.800E-03
McCoy	MBM 0.2B	Unfiltered	Aluminum	2.870E-01	4.810E-02	6.580E-02
McCoy	MBM 0.2B	Unfiltered	Barium	2.340E-02	2.830E-02	2.810E-02
McCoy	MBM 0.2B	Unfiltered	Boron	4.120E-02	9.250E-02	4.100E-02
McCoy	MBM 0.2B	Unfiltered	Chromium	<0.002	<0.001	1.900E-03
McCoy	MBM 0.2B	Unfiltered	Copper	5.100E-03	1.300E-03	3.220E-02
McCoy	MBM 0.2B	Unfiltered	Iron	4.640E-01	4.860E-02	1.080E-01
McCoy	MBM 0.2B	Unfiltered	Lead	<0.001	<0.001	1.300E-03
McCoy	MBM 0.2B	Unfiltered	Manganese	4.050E-02	2.870E-02	4.130E-02
McCoy	MBM 0.2B	Unfiltered	Nickel	1.500E-03	<0.001	8.700E-03
McCoy	MBM 0.2B	Unfiltered	Zinc	8.200E-03	3.000E-03	2.340E-02
McCoy	MBM 0.2B	Filtered	Aluminum	1.200E-02	<0.006	1.350E-02
McCoy	MBM 0.2B	Filtered	Antimony	2.800E-03	<0.001	3.800E-03
McCoy	MBM 0.2B	Filtered	Arsenic	1.100E-03	<0.001	<0.001
McCoy	MBM 0.2B	Filtered	Barium	2.070E-02	2.800E-02	2.520E-02
McCoy	MBM 0.2B	Filtered	Boron	3.340E-02	1.160E-01	4.780E-02
McCoy	MBM 0.2B	Filtered	Chromium	<0.002	<0.001	1.800E-03
McCoy	MBM 0.2B	Filtered	Copper	2.900E-03	3.000E-03	4.200E-03
McCoy	MBM 0.2B	Filtered	Iron	2.690E-02	<0.0018	<0.0018
McCoy	MBM 0.2B	Filtered	Manganese	4.800E-03	<0.001	1.500E-03
McCoy	MBM 0.2B	Filtered	Nickel	1.400E-03	4.200E-03	1.100E-03
McCoy	MBM 0.2B	Filtered	Selenium	3.200E-03	<0.001	<0.001
McCoy	MBM 0.2B	Filtered	Zinc	5.100E-03	2.000E-03	3.900E-03
McCoy	MBM 0.2C	Unfiltered	Aluminum	5.330E-01	5.370E-02	6.940E-02
McCoy	MBM 0.2C	Unfiltered	Barium	2.890E-02	2.890E-02	3.010E-02
McCoy	MBM 0.2C	Unfiltered	Boron	4.508E-02	1.120E-01	4.320E-02
McCoy	MBM 0.2C	Unfiltered	Chromium	<0.002	2.500E-03	2.100E-03
McCoy	MBM 0.2C	Unfiltered	Copper	5.260E-03	1.800E-03	3.680E-02
McCoy	MBM 0.2C	Unfiltered	Iron	4.400E-01	5.670E-02	1.040E-01
McCoy	MBM 0.2C	Unfiltered	Lead	1.440E-03	<0.001	1.700E-03
McCoy	MBM 0.2C	Unfiltered	Manganese	3.829E-02	2.890E-02	3.840E-02
McCoy	MBM 0.2C	Unfiltered	Nickel	3.620E-03	<0.001	1.000E-02

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
McCoy	MBM 0.2C	Unfiltered	Selenium	<0.003	<0.001	1.100E-03
McCoy	MBM 0.2C	Unfiltered	Zinc	1.683E-02	3.900E-03	1.590E-02
McCoy	MBM 0.2C	Filtered	Aluminum	<0.0010	<0.006	6.000E-03
McCoy	MBM 0.2C	Filtered	Antimony	5.300E-03	<0.001	2.400E-03
McCoy	MBM 0.2C	Filtered	Arsenic	1.300E-03	<0.001	<0.001
McCoy	MBM 0.2C	Filtered	Barium	2.170E-02	2.790E-02	2.300E-02
McCoy	MBM 0.2C	Filtered	Boron	2.610E-02	6.820E-02	4.040E-02
McCoy	MBM 0.2C	Filtered	Chromium	<0.002	<0.001	1.500E-03
McCoy	MBM 0.2C	Filtered	Copper	3.000E-03	2.000E-03	3.200E-03
McCoy	MBM 0.2C	Filtered	Iron	3.460E-02	<0.0018	<0.0018
McCoy	MBM 0.2C	Filtered	Manganese	3.700E-03	1.200E-03	<0.001
McCoy	MBM 0.2C	Filtered	Nickel	1.300E-03	4.300E-03	1.100E-03
McCoy	MBM 0.2C	Filtered	Zinc	2.000E-03	<0.002	3.700E-03
McCoy	CRM 39.6B	Unfiltered	Aluminum	2.070E-01	6.730E-02	7.140E-02
McCoy	CRM 39.6B	Unfiltered	Barium	2.690E-02	2.790E-02	2.420E-02
McCoy	CRM 39.6B	Unfiltered	Boron	4.310E-02	9.980E-02	6.430E-02
McCoy	CRM 39.6B	Unfiltered	Chromium	<0.002	1.100E-03	2.400E-03
McCoy	CRM 39.6B	Unfiltered	Copper	6.500E-03	2.100E-03	2.900E-03
McCoy	CRM 39.6B	Unfiltered	Iron	3.770E-01	7.560E-02	7.400E-02
McCoy	CRM 39.6B	Unfiltered	Lead	1.400E-03	<0.001	<0.001
McCoy	CRM 39.6B	Unfiltered	Manganese	8.630E-02	5.000E-02	3.690E-02
McCoy	CRM 39.6B	Unfiltered	Nickel	2.100E-03	<0.001	1.300E-03
McCoy	CRM 39.6B	Unfiltered	Zinc	1.800E-02	4.300E-03	5.400E-03
McCoy	CRM 39.6B	Filtered	Aluminum	<0.0010	3.371E-02	3.188E-02
McCoy	CRM 39.6B	Filtered	Antimony	4.600E-03	<0.001	3.520E-03
McCoy	CRM 39.6B	Filtered	Barium	2.320E-02	2.505E-02	2.215E-02
McCoy	CRM 39.6B	Filtered	Boron	3.690E-02	7.463E-02	8.393E-02
McCoy	CRM 39.6B	Filtered	Chromium	<0.002	1.360E-03	2.260E-03
McCoy	CRM 39.6B	Filtered	Copper	7.400E-03	2.520E-03	5.080E-03
McCoy	CRM 39.6B	Filtered	Iron	3.910E-02	<0.0018	<0.0018
McCoy	CRM 39.6B	Filtered	Manganese	1.200E-02	<0.001	1.650E-03
McCoy	CRM 39.6B	Filtered	Nickel	1.800E-03	1.660E-03	1.860E-03
McCoy	CRM 39.6B	Filtered	Zinc	1.490E-02	4.790E-03	8.260E-03
Poplar Cr.	PCM 0.1 B	Unfiltered	Aluminum	1.320E-01	2.260E-01	1.480E-01
Poplar Cr.	PCM 0.1 B	Unfiltered	Antimony	1.900E-03	<0.001	<0.001
Poplar Cr.	PCM 0.1 B	Unfiltered	Arsenic	1.400E-03	<0.001	<0.001
Poplar Cr.	PCM 0.1 B	Unfiltered	Barium	3.050E-02	2.990E-02	2.440E-02
Poplar Cr.	PCM 0.1 B	Unfiltered	Boron	2.250E-02	9.260E-02	1.080E-01
Poplar Cr.	PCM 0.1 B	Unfiltered	Chromium	<0.002	1.300E-03	1.600E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
Poplar Cr.	PCM 0.1 B	Unfiltered	Copper	2.100E-03	3.300E-03	1.900E-03
Poplar Cr.	PCM 0.1 B	Unfiltered	Iron	3.220E-01	3.060E-01	1.670E-01
Poplar Cr.	PCM 0.1 B	Unfiltered	Lead	<0.001	1.300E-03	<0.001
Poplar Cr.	PCM 0.1 B	Unfiltered	Manganese	6.230E-02	5.250E-02	4.530E-02
Poplar Cr.	PCM 0.1 B	Unfiltered	Nickel	3.700E-03	1.900E-03	1.400E-03
Poplar Cr.	PCM 0.1 B	Unfiltered	Uranium	1.600E-03	<0.001	<0.001
Poplar Cr.	PCM 0.1 B	Unfiltered	Zinc	1.410E-02	1.980E-02	2.700E-03
Poplar Cr.	PCM 0.1 B	Filtered	Aluminum	2.190E-02	3.060E-02	1.450E-02
Poplar Cr.	PCM 0.1 B	Filtered	Antimony	1.300E-03	2.600E-03	8.400E-03
Poplar Cr.	PCM 0.1 B	Filtered	Arsenic	1.100E-03	<0.001	1.100E-03
Poplar Cr.	PCM 0.1 B	Filtered	Barium	2.820E-02	2.620E-02	2.310E-02
Poplar Cr.	PCM 0.1 B	Filtered	Boron	3.550E-02	1.300E-02	6.120E-02
Poplar Cr.	PCM 0.1 B	Filtered	Chromium	<0.002	<0.001	1.100E-03
Poplar Cr.	PCM 0.1 B	Filtered	Copper	1.200E-03	6.120E-02	7.900E-03
Poplar Cr.	PCM 0.1 B	Filtered	Iron	1.710E-01	<0.0018	<0.0018
Poplar Cr.	PCM 0.1 B	Filtered	Manganese	4.930E-02	6.300E-03	2.000E-03
Poplar Cr.	PCM 0.1 B	Filtered	Nickel	3.400E-03	1.600E-03	2.200E-03
Poplar Cr.	PCM 0.1 B	Filtered	Uranium	1.600E-03	<0.001	<0.001
Poplar Cr.	PCM 0.1 B	Filtered	Zinc	3.700E-03	1.280E-01	3.600E-03
Poplar Cr.	CRM 11.8 A	Unfiltered	Aluminum	9.870E-02	3.560E-01	1.120E-01
Poplar Cr.	CRM 11.8 A	Unfiltered	Barium	2.610E-02	3.080E-02	2.440E-02
Poplar Cr.	CRM 11.8 A	Unfiltered	Boron	1.800E-02	6.030E-02	5.390E-02
Poplar Cr.	CRM 11.8 A	Unfiltered	Chromium	<0.002	1.300E-03	1.500E-03
Poplar Cr.	CRM 11.8 A	Unfiltered	Copper	1.200E-03	8.140E-02	1.700E-03
Poplar Cr.	CRM 11.8 A	Unfiltered	Iron	3.200E-01	4.390E-01	1.320E-01
Poplar Cr.	CRM 11.8 A	Unfiltered	Lead	<0.001	2.400E-03	<0.001
Poplar Cr.	CRM 11.8 A	Unfiltered	Manganese	5.080E-02	5.380E-02	4.080E-02
Poplar Cr.	CRM 11.8 A	Unfiltered	Nickel	3.200E-03	2.500E-03	1.100E-03
Poplar Cr.	CRM 11.8 A	Unfiltered	Zinc	4.100E-03	1.860E-01	3.000E-03
Poplar Cr.	CRM 11.8 A	Filtered	Aluminum	2.350E-02	3.800E-02	9.000E-03
Poplar Cr.	CRM 11.8 A	Filtered	Antimony	<0.001	3.400E-03	7.300E-03
Poplar Cr.	CRM 11.8 A	Filtered	Barium	2.220E-02	2.640E-02	2.390E-02
Poplar Cr.	CRM 11.8 A	Filtered	Boron	2.780E-02	2.090E-02	5.130E-02
Poplar Cr.	CRM 11.8 A	Filtered	Chromium	3.000E-03	<0.001	1.300E-03
Poplar Cr.	CRM 11.8 A	Filtered	Copper	2.200E-03	6.570E-02	3.200E-03
Poplar Cr.	CRM 11.8 A	Filtered	Iron	2.350E-01	<0.0018	1.800E-02
Poplar Cr.	CRM 11.8 A	Filtered	Manganese	9.400E-03	3.500E-03	2.100E-03
Poplar Cr.	CRM 11.8 A	Filtered	Nickel	3.000E-03	1.700E-03	1.800E-03
Poplar Cr.	CRM 11.8 A	Filtered	Zinc	4.300E-03	1.280E-01	2.800E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Aluminum	9.310E-02	5.230E-01	9.430E-02

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain	Summer Rain	Summer Dry
				mg/L	mg/L	mg/L
Poplar Cr.	CRM 11.8 B	Unfiltered	Antimony	<0.001	<0.001	1.700E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Arsenic	<0.001	<0.001	1.000E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Barium	2.390E-02	3.390E-01	2.500E-02
Poplar Cr.	CRM 11.8 B	Unfiltered	Boron	<0.0018	7.590E-02	5.880E-02
Poplar Cr.	CRM 11.8 B	Unfiltered	Chromium	<0.002	2.200E-03	1.700E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Copper	1.100E-03	5.100E-03	2.000E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Iron	2.960E-01	6.990E-01	1.170E-01
Poplar Cr.	CRM 11.8 B	Unfiltered	Lead	<0.001	2.100E-03	<0.001
Poplar Cr.	CRM 11.8 B	Unfiltered	Manganese	4.560E-02	6.460E-02	4.130E-02
Poplar Cr.	CRM 11.8 B	Unfiltered	Nickel	2.800E-03	2.900E-03	1.200E-03
Poplar Cr.	CRM 11.8 B	Unfiltered	Uranium	<0.001	1.500E-03	<0.001
Poplar Cr.	CRM 11.8 B	Unfiltered	Vanadium	<0.001	1.400E-03	<0.001
Poplar Cr.	CRM 11.8 B	Unfiltered	Zinc	2.800E-03	3.290E-02	4.200E-03
Poplar Cr.	CRM 11.8 B	Filtered	Aluminum	1.570E-02	2.970E-02	1.100E-02
Poplar Cr.	CRM 11.8 B	Filtered	Antimony	<0.001	4.600E-03	6.300E-03
Poplar Cr.	CRM 11.8 B	Filtered	Arsenic	1.100E-03	<0.001	<0.001
Poplar Cr.	CRM 11.8 B	Filtered	Barium	2.090E-02	2.740E-02	2.320E-02
Poplar Cr.	CRM 11.8 B	Filtered	Boron	1.800E-02	8.150E-02	7.130E-02
Poplar Cr.	CRM 11.8 B	Filtered	Chromium	<0.002	1.600E-03	<0.001
Poplar Cr.	CRM 11.8 B	Filtered	Copper	1.200E-03	1.030E-02	3.400E-03
Poplar Cr.	CRM 11.8 B	Filtered	Iron	2.130E-01	2.280E-02	<0.0018
Poplar Cr.	CRM 11.8 B	Filtered	Manganese	3.600E-03	1.000E-02	1.900E-03
Poplar Cr.	CRM 11.8 B	Filtered	Nickel	2.900E-03	3.700E-03	2.600E-03
Poplar Cr.	CRM 11.8 B	Filtered	Selenium	<0.005	1.100E-03	1.200E-03
Poplar Cr.	CRM 11.8 B	Filtered	Uranium	<0.001	1.500E-03	<0.001
Poplar Cr.	CRM 11.8 B	Filtered	Zinc	4.800E-03	7.400E-03	3.800E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Aluminum	9.310E-02	8.610E-01	2.840E-01
Poplar Cr.	CRM 11.8 C	Unfiltered	Arsenic	<0.001	<0.001	1.300E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Barium	2.480E-02	3.630E-02	2.920E-02
Poplar Cr.	CRM 11.8 C	Unfiltered	Boron	4.450E-02	8.620E-02	6.830E-02
Poplar Cr.	CRM 11.8 C	Unfiltered	Chromium	<0.002	2.300E-03	2.000E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Copper	1.700E-03	8.320E-02	1.800E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Iron	3.060E-01	9.710E-01	3.230E-01
Poplar Cr.	CRM 11.8 C	Unfiltered	Lead	<0.001	3.200E-03	<0.001
Poplar Cr.	CRM 11.8 C	Unfiltered	Manganese	4.500E-02	7.340E-02	6.540E-02
Poplar Cr.	CRM 11.8 C	Unfiltered	Nickel	2.800E-03	4.300E-03	1.700E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Uranium	<0.001	2.000E-03	1.300E-03
Poplar Cr.	CRM 11.8 C	Unfiltered	Vanadium	<0.001	1.900E-03	<0.001
Poplar Cr.	CRM 11.8 C	Unfiltered	Zinc	7.900E-03	2.000E-01	4.700E-03
Poplar Cr.	CRM 11.8 C	Filtered	Aluminum	1.750E-02	2.770E-02	1.090E-02
Poplar Cr.	CRM 11.8 C	Filtered	Antimony	<0.001	4.100E-03	7.100E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
Poplar Cr.	CRM 11.8 C	Filtered	Arsenic	1.200E-03	<0.001	1.200E-03
Poplar Cr.	CRM 11.8 C	Filtered	Barium	2.290E-02	2.910E-02	2.600E-02
Poplar Cr.	CRM 11.8 C	Filtered	Boron	<0.0018	6.050E-02	8.030E-02
Poplar Cr.	CRM 11.8 C	Filtered	Chromium	<0.002	4.900E-03	1.200E-03
Poplar Cr.	CRM 11.8 C	Filtered	Copper	1.000E-03	9.700E-03	4.000E-03
Poplar Cr.	CRM 11.8 C	Filtered	Iron	2.260E-01	5.340E-02	1.800E-02
Poplar Cr.	CRM 11.8 C	Filtered	Lead	1.400E-03	1.300E-03	<0.001
Poplar Cr.	CRM 11.8 C	Filtered	Manganese	3.800E-03	1.500E-02	2.900E-03
Poplar Cr.	CRM 11.8 C	Filtered	Nickel	4.000E-03	5.200E-03	1.700E-03
Poplar Cr.	CRM 11.8 C	Filtered	Selenium	<0.005	<0.001	1.100E-03
Poplar Cr.	CRM 11.8 C	Filtered	Uranium	<0.001	1.700E-03	1.100E-03
Poplar Cr.	CRM 11.8 C	Filtered	Zinc	3.800E-03	1.740E-02	4.100E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Aluminum	1.120E-01	1.050E-01	9.500E-02
Poplar Cr.	CRM 9.0 B	Unfiltered	Antimony	<0.001	<0.001	2.000E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Arsenic	<0.001	<0.001	1.100E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Barium	2.660E-02	2.820E-02	2.470E-02
Poplar Cr.	CRM 9.0 B	Unfiltered	Boron	<0.0018	4.130E-02	1.270E-01
Poplar Cr.	CRM 9.0 B	Unfiltered	Chromium	<0.002	1.400E-03	1.700E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Copper	1.300E-03	2.840E-02	2.300E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Iron	3.590E-01	1.190E-01	9.120E-02
Poplar Cr.	CRM 9.0 B	Unfiltered	Lead	<0.001	1.800E-03	<0.001
Poplar Cr.	CRM 9.0 B	Unfiltered	Manganese	5.160E-02	3.530E-02	3.640E-02
Poplar Cr.	CRM 9.0 B	Unfiltered	Molybdenum	1.800E-03	<0.005	<0.005
Poplar Cr.	CRM 9.0 B	Unfiltered	Nickel	2.900E-03	2.500E-03	1.200E-03
Poplar Cr.	CRM 9.0 B	Unfiltered	Zinc	3.800E-03	6.390E-02	3.400E-03
Poplar Cr.	CRM 9.0 B	Filtered	Aluminum	1.560E-02	3.280E-02	1.631E-02
Poplar Cr.	CRM 9.0 B	Filtered	Antimony	<0.001	4.720E-03	7.730E-03
Poplar Cr.	CRM 9.0 B	Filtered	Arsenic	1.200E-03	<0.001	<0.001
Poplar Cr.	CRM 9.0 B	Filtered	Barium	2.130E-02	2.518E-02	2.421E-02
Poplar Cr.	CRM 9.0 B	Filtered	Boron	2.040E-02	2.145E-02	6.587E-02
Poplar Cr.	CRM 9.0 B	Filtered	Chromium	<0.002	<0.001	1.450E-03
Poplar Cr.	CRM 9.0 B	Filtered	Copper	1.400E-03	5.605E-02	3.730E-03
Poplar Cr.	CRM 9.0 B	Filtered	Iron	2.570E-01	1.800E-02	3.219E-02
Poplar Cr.	CRM 9.0 B	Filtered	Manganese	5.200E-03	<0.001	2.520E-03
Poplar Cr.	CRM 9.0 B	Filtered	Nickel	3.300E-03	1.610E-03	1.950E-03
Poplar Cr.	CRM 9.0 B	Filtered	Zinc	3.300E-03	1.116E-01	4.820E-03
Reference	CRM 46.0 B	Unfiltered	Aluminum	6.470E-02	9.370E-02	8.900E-02
Reference	CRM 46.0 B	Unfiltered	Arsenic	<0.001	<0.001	1.100E-03
Reference	CRM 46.0 B	Unfiltered	Barium	2.440E-02	2.620E-02	2.940E-02

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
Reference	CRM 46.0 B	Unfiltered	Boron	<0.0018	1.160E-02	7.780E-02
Reference	CRM 46.0 B	Unfiltered	Chromium	<0.002	1.600E-03	5.100E-03
Reference	CRM 46.0 B	Unfiltered	Copper	1.500E-03	6.900E-03	8.800E-03
Reference	CRM 46.0 B	Unfiltered	Iron	3.410E-01	1.320E-01	1.200E-01
Reference	CRM 46.0 B	Unfiltered	Lead	<0.001	1.400E-03	2.500E-03
Reference	CRM 46.0 B	Unfiltered	Manganese	5.010E-02	5.780E-02	6.050E-02
Reference	CRM 46.0 B	Unfiltered	Nickel	3.000E-03	2.600E-03	4.700E-03
Reference	CRM 46.0 B	Unfiltered	Zinc	3.900E-03	2.640E-02	2.550E-02
Reference	CRM 46.0 B	Filtered	Aluminum	1.910E-02	3.200E-02	5.670E-02
Reference	CRM 46.0 B	Filtered	Antimony	<0.001	4.700E-03	8.400E-03
Reference	CRM 46.0 B	Filtered	Arsenic	<0.001	<0.001	1.700E-03
Reference	CRM 46.0 B	Filtered	Barium	2.250E-02	2.300E-02	2.810E-02
Reference	CRM 46.0 B	Filtered	Boron	2.180E-02	2.570E-02	6.720E-02
Reference	CRM 46.0 B	Filtered	Chromium	<0.002	1.500E-03	5.500E-03
Reference	CRM 46.0 B	Filtered	Copper	1.100E-03	3.600E-03	2.040E-02
Reference	CRM 46.0 B	Filtered	Iron	2.560E-01	<0.0018	5.100E-02
Reference	CRM 46.0 B	Filtered	Lead	<0.001	<0.001	3.000E-03
Reference	CRM 46.0 B	Filtered	Manganese	1.090E-02	6.200E-03	2.380E-02
Reference	CRM 46.0 B	Filtered	Molybdenum	2.200E-03	<0.005	<0.005
Reference	CRM 46.0 B	Filtered	Nickel	3.200E-03	2.000E-03	8.000E-03
Reference	CRM 46.0 B	Filtered	Zinc	4.200E-03	5.500E-03	3.450E-02
Reference	CRM 43.0 B	Unfiltered	Aluminum	8.720E-02	1.250E-01	8.750E-02
Reference	CRM 43.0 B	Unfiltered	Arsenic	<0.001	<0.001	1.100E-03
Reference	CRM 43.0 B	Unfiltered	Barium	4.710E-02	2.680E-02	2.770E-02
Reference	CRM 43.0 B	Unfiltered	Boron	2.880E-02	5.000E-02	7.330E-02
Reference	CRM 43.0 B	Unfiltered	Chromium	<0.002	1.300E-03	4.300E-03
Reference	CRM 43.0 B	Unfiltered	Copper	1.700E-03	8.290E-02	1.380E-02
Reference	CRM 43.0 B	Unfiltered	Iron	3.390E-01	1.370E-01	1.250E-01
Reference	CRM 43.0 B	Unfiltered	Lead	<0.001	2.600E-03	1.700E-03
Reference	CRM 43.0 B	Unfiltered	Manganese	7.670E-02	6.620E-02	5.260E-02
Reference	CRM 43.0 B	Unfiltered	Nickel	3.500E-03	2.800E-03	4.000E-03
Reference	CRM 43.0 B	Unfiltered	Zinc	4.000E-03	1.910E-01	2.350E-02
Reference	CRM 43.0 B	Filtered	Aluminum	1.640E-02	8.400E-03	2.770E-02
Reference	CRM 43.0 B	Filtered	Antimony	<0.001	2.200E-03	6.100E-03
Reference	CRM 43.0 B	Filtered	Arsenic	<0.001	<0.001	1.300E-03
Reference	CRM 43.0 B	Filtered	Barium	2.470E-02	2.310E-02	2.490E-02
Reference	CRM 43.0 B	Filtered	Boron	3.040E-02	3.460E-02	6.800E-02
Reference	CRM 43.0 B	Filtered	Chromium	<0.002	1.200E-03	3.000E-03
Reference	CRM 43.0 B	Filtered	Copper	2.200E-03	2.400E-03	1.440E-02
Reference	CRM 43.0 B	Filtered	Iron	2.530E-01	1.800E-02	3.430E-02
Reference	CRM 43.0 B	Filtered	Lead	<0.001	<0.001	1.200E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
Reference	CRM 43.0 B	Filtered	Manganese	1.080E-02	<0.001	1.730E-02
Reference	CRM 43.0 B	Filtered	Nickel	3.400E-03	1.100E-03	3.600E-03
Reference	CRM 43.0 B	Filtered	Zinc	7.300E-03	2.100E-03	1.900E-02
Reference	CRM 41.5 B	Unfiltered	Aluminum	6.660E-02	8.550E-02	9.560E-02
Reference	CRM 41.5 B	Unfiltered	Arsenic	<0.001	<0.001	1.500E-03
Reference	CRM 41.5 B	Unfiltered	Barium	5.630E-02	2.640E-02	2.860E-02
Reference	CRM 41.5 B	Unfiltered	Boron	4.160E-02	1.120E-01	1.070E-01
Reference	CRM 41.5 B	Unfiltered	Chromium	<0.002	2.600E-03	3.900E-03
Reference	CRM 41.5 B	Unfiltered	Copper	3.100E-03	6.100E-03	1.180E-02
Reference	CRM 41.5 B	Unfiltered	Iron	3.390E-01	1.000E-01	1.340E-01
Reference	CRM 41.5 B	Unfiltered	Lead	<0.001	1.300E-03	1.300E-03
Reference	CRM 41.5 B	Unfiltered	Manganese	6.490E-02	4.780E-02	5.050E-02
Reference	CRM 41.5 B	Unfiltered	Nickel	3.500E-03	2.800E-03	3.100E-03
Reference	CRM 41.5 B	Unfiltered	Zinc	6.700E-03	1.420E-02	2.050E-02
Reference	CRM 41.5 B	Filtered	Aluminum	1.524E-02	2.248E-02	1.360E-02
Reference	CRM 41.5 B	Filtered	Antimony	1.240E-03	3.820E-03	8.700E-03
Reference	CRM 41.5 B	Filtered	Arsenic	<0.001	<0.001	1.200E-03
Reference	CRM 41.5 B	Filtered	Barium	2.150E-02	2.270E-02	2.020E-02
Reference	CRM 41.5 B	Filtered	Boron	2.576E-02	7.410E-02	5.160E-02
Reference	CRM 41.5 B	Filtered	Chromium	<0.002	1.850E-03	1.700E-03
Reference	CRM 41.5 B	Filtered	Copper	<0.001	3.880E-03	1.010E-02
Reference	CRM 41.5 B	Filtered	Iron	2.352E-01	<0.0018	<0.0018
Reference	CRM 41.5 B	Filtered	Manganese	1.043E-02	<0.001	8.400E-03
Reference	CRM 41.5 B	Filtered	Nickel	2.950E-03	1.880E-03	2.100E-03
Reference	CRM 41.5 B	Filtered	Zinc	1.444E-02	3.390E-03	3.700E-03
Reference	CRM 41.5 B	Unfiltered	Aluminum	9.640E-02	1.240E-01	1.190E-01
Reference	CRM 41.5 B	Unfiltered	Arsenic	1.400E-03	1.000E-03	2.800E-03
Reference	CRM 41.5 B	Unfiltered	Barium	2.520E-02	2.700E-02	2.860E-02
Reference	CRM 41.5 B	Unfiltered	Boron	1.800E-02	3.490E-02	1.130E-01
Reference	CRM 41.5 B	Unfiltered	Chromium	<0.002	2.500E-03	8.200E-03
Reference	CRM 41.5 B	Unfiltered	Copper	1.800E-03	6.000E-03	1.200E-02
Reference	CRM 41.5 B	Unfiltered	Iron	2.920E-01	1.820E-01	1.730E-01
Reference	CRM 41.5 B	Unfiltered	Lead	<0.001	1.400E-03	1.800E-03
Reference	CRM 41.5 B	Unfiltered	Manganese	4.540E-02	4.760E-02	5.690E-02
Reference	CRM 41.5 B	Unfiltered	Nickel	3.000E-03	2.500E-03	5.600E-03
Reference	CRM 41.5 B	Unfiltered	Vanadium	<0.001	1.400E-03	1.200E-03
Reference	CRM 41.5 B	Unfiltered	Zinc	3.900E-03	2.620E-02	2.310E-02
Reference	CRM 41.5 B	Filtered	Aluminum	2.690E-02	2.770E-02	3.380E-02
Reference	CRM 41.5 B	Filtered	Antimony	<0.001	3.600E-03	4.400E-03
Reference	CRM 41.5 B	Filtered	Arsenic	1.700E-03	<0.001	2.300E-03
Reference	CRM 41.5 B	Filtered	Barium	2.330E-02	2.240E-02	2.810E-02

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
Reference	CRM 41.5 B	Filtered	Boron	5.140E-02	8.040E-02	7.790E-02
Reference	CRM 41.5 B	Filtered	Chromium	<0.002	1.400E-03	4.700E-03
Reference	CRM 41.5 B	Filtered	Copper	1.800E-03	3.400E-03	1.120E-02
Reference	CRM 41.5 B	Filtered	Iron	2.120E-01	<0.0018	3.330E-02
Reference	CRM 41.5 B	Filtered	Lead	<0.001	<0.001	1.600E-03
Reference	CRM 41.5 B	Filtered	Manganese	1.800E-02	1.400E-03	4.700E-03
Reference	CRM 41.5 B	Filtered	Nickel	3.400E-03	1.600E-03	3.400E-03
Reference	CRM 41.5 B	Filtered	Selenium	<0.005	<0.001	1.600E-03
Reference	CRM 41.5 B	Filtered	Zinc	5.700E-03	4.600E-03	2.400E-02
Reference	CRM 1.0 B	Unfiltered	Aluminum	9.640E-02	1.240E-01	1.190E-01
Reference	CRM 1.0 B	Unfiltered	Arsenic	1.400E-03	1.000E-03	2.800E-03
Reference	CRM 1.0 B	Unfiltered	Barium	2.520E-02	2.700E-02	2.860E-02
Reference	CRM 1.0 B	Unfiltered	Boron	1.800E-02	3.490E-02	1.130E-01
Reference	CRM 1.0 B	Unfiltered	Chromium	<0.002	2.500E-03	8.200E-03
Reference	CRM 1.0 B	Unfiltered	Copper	1.800E-03	6.000E-03	1.200E-02
Reference	CRM 1.0 B	Unfiltered	Iron	2.920E-01	1.820E-01	1.730E-01
Reference	CRM 1.0 B	Unfiltered	Lead	<0.001	1.400E-03	1.800E-03
Reference	CRM 1.0 B	Unfiltered	Manganese	4.540E-02	4.760E-02	5.690E-02
Reference	CRM 1.0 B	Unfiltered	Nickel	3.000E-03	2.500E-03	5.600E-03
Reference	CRM 1.0 B	Unfiltered	Potassium	1.310E+00	1.420E+00	1.700E+00
Reference	CRM 1.0 B	Unfiltered	Sodium	2.630E+00	5.950E+00	6.700E+00
Reference	CRM 1.0 B	Unfiltered	Vanadium	<0.001	1.400E-03	1.200E-03
Reference	CRM 1.0 B	Unfiltered	Zinc	3.900E-03	2.620E-02	2.310E-02
Reference	CRM 1.0 B	Filtered	Aluminum	2.690E-02	2.770E-02	3.380E-02
Reference	CRM 1.0 B	Filtered	Antimony	<0.001	3.600E-03	4.400E-03
Reference	CRM 1.0 B	Filtered	Arsenic	1.700E-03	<0.001	2.300E-03
Reference	CRM 1.0 B	Filtered	Barium	2.330E-02	2.240E-02	2.810E-02
Reference	CRM 1.0 B	Filtered	Boron	5.140E-02	8.040E-02	7.790E-02
Reference	CRM 1.0 B	Filtered	Cadmium	<0.001	<0.001	<0.001
Reference	CRM 1.0 B	Filtered	Chromium	<0.002	1.400E-03	4.700E-03
Reference	CRM 1.0 B	Filtered	Copper	1.800E-03	3.400E-03	1.120E-02
Reference	CRM 1.0 B	Filtered	Iron	2.120E-01	<0.0018	3.330E-02
Reference	CRM 1.0 B	Filtered	Lead	<0.001	<0.001	1.600E-03
Reference	CRM 1.0 B	Filtered	Manganese	1.800E-02	1.400E-03	4.700E-03
Reference	CRM 1.0 B	Filtered	Nickel	3.400E-03	1.600E-03	3.400E-03
Reference	CRM 1.0 B	Filtered	Selenium	<0.005	<0.001	1.600E-03
Reference	CRM 1.0 B	Filtered	Zinc	5.700E-03	4.600E-03	2.400E-02
White Oak	WOCM 0.0B	Unfiltered	Aluminum	4.350E-01	1.360E-01	1.550E-01
White Oak	WOCM 0.0B	Unfiltered	Arsenic	<0.001	<0.001	1.100E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
White Oak	WOCM 0.0B	Unfiltered	Barium	2.740E-02	2.820E-02	3.630E-02
White Oak	WOCM 0.0B	Unfiltered	Boron	2.600E-02	0.000E+00	4.080E-02
White Oak	WOCM 0.0B	Unfiltered	Chromium	<0.002	<0.001	1.700E-03
White Oak	WOCM 0.0B	Unfiltered	Copper	4.100E-03	1.400E-03	5.900E-03
White Oak	WOCM 0.0B	Unfiltered	Iron	6.080E-01	1.660E-01	1.950E-01
White Oak	WOCM 0.0B	Unfiltered	Lead	1.600E-03	<0.001	1.000E-03
White Oak	WOCM 0.0B	Unfiltered	Manganese	6.310E-02	6.210E-02	7.550E-02
White Oak	WOCM 0.0B	Unfiltered	Nickel	3.200E-03	1.300E-03	1.900E-03
White Oak	WOCM 0.0B	Unfiltered	Vanadium	1.300E-03	<0.001	<0.001
White Oak	WOCM 0.0B	Unfiltered	Zinc	1.620E-02	4.100E-03	1.810E-02
White Oak	WOCM 0.0B	Filtered	Aluminum	2.190E-02	<0.006	1.000E-02
White Oak	WOCM 0.0B	Filtered	Antimony	3.500E-03	5.300E-03	6.800E-03
White Oak	WOCM 0.0B	Filtered	Barium	2.200E-02	2.570E-02	2.740E-02
White Oak	WOCM 0.0B	Filtered	Boron	3.670E-02	0.000E+00	6.290E-02
White Oak	WOCM 0.0B	Filtered	Chromium	<0.002	<0.001	1.200E-03
White Oak	WOCM 0.0B	Filtered	Copper	2.300E-03	2.500E-03	5.900E-03
White Oak	WOCM 0.0B	Filtered	Iron	2.600E-02	<0.0018	<0.0018
White Oak	WOCM 0.0B	Filtered	Manganese	2.480E-02	7.400E-03	8.100E-03
White Oak	WOCM 0.0B	Filtered	Nickel	2.300E-03	2.200E-03	1.200E-03
White Oak	WOCM 0.0B	Filtered	Zinc	4.900E-03	4.000E-03	4.700E-03
White Oak	CRM 20.2A	Unfiltered	Aluminum	5.050E-01	9.100E-02	6.530E-02
White Oak	CRM 20.2A	Unfiltered	Barium	2.770E-02	2.850E-02	2.620E-02
White Oak	CRM 20.2A	Unfiltered	Boron	2.780E-02	0.000E+00	4.310E-02
White Oak	CRM 20.2A	Unfiltered	Chromium	<0.002	1.100E-03	1.900E-03
White Oak	CRM 20.2A	Unfiltered	Copper	5.000E-03	4.700E-03	2.700E-03
White Oak	CRM 20.2A	Unfiltered	Iron	7.050E-01	1.420E-01	8.180E-02
White Oak	CRM 20.2A	Unfiltered	Lead	1.600E-03	<0.001	<0.001
White Oak	CRM 20.2A	Unfiltered	Manganese	5.850E-02	5.850E-02	4.020E-02
White Oak	CRM 20.2A	Unfiltered	Nickel	2.600E-03	2.900E-03	<0.001
White Oak	CRM 20.2A	Unfiltered	Vanadium	1.200E-03	<0.001	<0.001
White Oak	CRM 20.2A	Unfiltered	Zinc	1.780E-02	2.640E-02	4.200E-03
White Oak	CRM 20.2A	Filtered	Aluminum	1.120E-02	<0.006	7.300E-03
White Oak	CRM 20.2A	Filtered	Antimony	1.130E-02	5.400E-03	7.400E-03
White Oak	CRM 20.2A	Filtered	Barium	2.020E-02	2.690E-02	2.380E-02
White Oak	CRM 20.2A	Filtered	Boron	2.530E-02	0.000E+00	4.220E-02
White Oak	CRM 20.2A	Filtered	Chromium	<0.002	2.200E-03	1.100E-03
White Oak	CRM 20.2A	Filtered	Copper	1.700E-03	3.600E-03	5.300E-03
White Oak	CRM 20.2A	Filtered	Iron	1.760E-02	4.080E-01	1.800E-02
White Oak	CRM 20.2A	Filtered	Manganese	4.200E-03	3.400E-03	1.800E-03
White Oak	CRM 20.2A	Filtered	Nickel	2.200E-03	5.700E-03	1.200E-03
White Oak	CRM 20.2A	Filtered	Uranium	3.100E-03	0.000E+00	<0.001

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
White Oak	CRM 20.2A	Filtered	Zinc	2.800E-03	4.800E-03	3.000E-03
White Oak	CRM 20.2B	Unfiltered	Aluminum	5.530E-01	4.620E-02	5.900E-02
White Oak	CRM 20.2B	Unfiltered	Barium	2.670E-02	2.760E-02	3.000E-02
White Oak	CRM 20.2B	Unfiltered	Boron	2.590E-02	0.000E+00	6.060E-02
White Oak	CRM 20.2B	Unfiltered	Chromium	<0.002	1.500E-03	1.700E-03
White Oak	CRM 20.2B	Unfiltered	Copper	4.500E-03	4.800E-03	2.010E-02
White Oak	CRM 20.2B	Unfiltered	Iron	6.180E-01	7.080E-02	8.580E-02
White Oak	CRM 20.2B	Unfiltered	Lead	1.700E-03	<0.001	1.000E-03
White Oak	CRM 20.2B	Unfiltered	Manganese	5.850E-02	4.470E-02	4.080E-02
White Oak	CRM 20.2B	Unfiltered	Nickel	3.000E-03	3.400E-03	4.900E-03
White Oak	CRM 20.2B	Unfiltered	Vanadium	1.200E-03	<0.001	<0.001
White Oak	CRM 20.2B	Unfiltered	Zinc	1.100E-02	1.670E-02	1.810E-02
White Oak	CRM 20.2B	Filtered	Aluminum	1.930E-02	<0.006	2.040E-02
White Oak	CRM 20.2B	Filtered	Antimony	1.190E-02	5.300E-03	6.300E-03
White Oak	CRM 20.2B	Filtered	Barium	1.980E-02	2.520E-02	2.610E-02
White Oak	CRM 20.2B	Filtered	Boron	2.480E-02	0.000E+00	1.500E-01
White Oak	CRM 20.2B	Filtered	Chromium	<0.002	<0.001	2.600E-03
White Oak	CRM 20.2B	Filtered	Copper	2.600E-03	2.500E-03	4.400E-03
White Oak	CRM 20.2B	Filtered	Iron	2.470E-02	<0.0018	<0.0018
White Oak	CRM 20.2B	Filtered	Manganese	5.300E-03	1.100E-03	2.100E-03
White Oak	CRM 20.2B	Filtered	Nickel	2.400E-03	4.900E-03	<0.001
White Oak	CRM 20.2B	Filtered	Zinc	4.000E-03	3.500E-03	<0.002
White Oak	CRM 20.2C	Unfiltered	Aluminum	4.920E-01	4.680E-02	4.550E-02
White Oak	CRM 20.2C	Unfiltered	Barium	2.630E-02	2.790E-02	2.560E-02
White Oak	CRM 20.2C	Unfiltered	Boron	3.350E-02	0.000E+00	5.280E-02
White Oak	CRM 20.2C	Unfiltered	Chromium	<0.002	<0.001	2.300E-03
White Oak	CRM 20.2C	Unfiltered	Copper	1.050E-02	5.300E-03	2.000E-03
White Oak	CRM 20.2C	Unfiltered	Iron	6.670E-01	7.980E-02	4.860E-02
White Oak	CRM 20.2C	Unfiltered	Lead	1.500E-03	1.400E-03	<0.001
White Oak	CRM 20.2C	Unfiltered	Manganese	5.990E-02	4.280E-02	3.220E-02
White Oak	CRM 20.2C	Unfiltered	Nickel	3.200E-03	5.300E-03	<0.001
White Oak	CRM 20.2C	Unfiltered	Vanadium	1.200E-03	<0.001	<0.001
White Oak	CRM 20.2C	Unfiltered	Zinc	1.500E-02	3.710E-02	4.500E-03
White Oak	CRM 20.2C	Filtered	Aluminum	1.860E-02	<0.006	1.330E-02
White Oak	CRM 20.2C	Filtered	Antimony	7.200E-03	4.200E-03	5.100E-03
White Oak	CRM 20.2C	Filtered	Arsenic	<0.001	<0.001	1.100E-03
White Oak	CRM 20.2C	Filtered	Barium	2.000E-02	2.580E-02	2.580E-02
White Oak	CRM 20.2C	Filtered	Boron	4.100E-02	0.000E+00	4.940E-02
White Oak	CRM 20.2C	Filtered	Chromium	<0.002	<0.001	1.700E-03
White Oak	CRM 20.2C	Filtered	Copper	2.500E-03	1.600E-03	3.000E-03

Table A7 (continued)

Source	Site	Process	Analyte	Spring Rain mg/L	Summer Rain mg/L	Summer Dry mg/L
White Oak	CRM 20.2C	Filtered	Iron	2.030E-02	<0.0018	1.800E-02
White Oak	CRM 20.2C	Filtered	Manganese	5.100E-03	<0.001	1.400E-03
White Oak	CRM 20.2C	Filtered	Nickel	2.600E-03	1.800E-03	<0.001
White Oak	CRM 20.2C	Filtered	Zinc	5.000E-03	5.200E-03	3.300E-03
White Oak	CRM 19.0 B	Unfiltered	Aluminum	5.100E-01	4.560E-02	6.420E-02
White Oak	CRM 19.0 B	Unfiltered	Barium	2.920E-02	2.840E-02	3.140E-02
White Oak	CRM 19.0 B	Unfiltered	Boron	4.190E-02	0.000E+00	5.970E-02
White Oak	CRM 19.0 B	Unfiltered	Chromium	<0.002	<0.001	2.300E-03
White Oak	CRM 19.0 B	Unfiltered	Copper	6.200E-03	3.900E-03	2.210E-02
White Oak	CRM 19.0 B	Unfiltered	Iron	7.230E-01	7.870E-02	9.700E-02
White Oak	CRM 19.0 B	Unfiltered	Lead	1.900E-03	<0.001	1.700E-03
White Oak	CRM 19.0 B	Unfiltered	Manganese	6.040E-02	4.590E-02	4.020E-02
White Oak	CRM 19.0 B	Unfiltered	Nickel	2.900E-03	3.200E-03	7.300E-03
White Oak	CRM 19.0 B	Unfiltered	Zinc	2.020E-02	2.040E-02	1.330E-02
White Oak	CRM 19.0 B	Filtered	Aluminum	1.270E-02	<0.006	6.190E-03
White Oak	CRM 19.0 B	Filtered	Antimony	8.600E-03	6.380E-03	9.670E-03
White Oak	CRM 19.0 B	Filtered	Barium	2.050E-02	2.437E-02	2.516E-02
White Oak	CRM 19.0 B	Filtered	Boron	3.480E-02	0.000E+00	4.137E-02
White Oak		Filtered	Chromium	<0.002	1.280E-03	1.510E-03
White Oak	CRM 19.0 B	Filtered	Copper	1.700E-03	1.950E-03	6.100E-03
White Oak	CRM 19.0 B	Filtered	Iron	2.270E-02	<0.0018	1.800E-02
White Oak	CRM 19.0 B	Filtered	Manganese	3.900E-03	1.120E-03	2.690E-03
White Oak	CRM 19.0 B	Filtered	Nickel	2.100E-03	4.170E-03	1.110E-03
White Oak	CRM 19.0 B	Filtered	Zinc	5.600E-03	5.460E-03	3.340E-03

Table A8. Organic analytes detected (mg/L) in association with the water biased event study

Reach	River Mile	Season	Analyte	Process	Result
1	CRM 41.5	summer	Bis(2-ethylhexyl)phthalate	Filtered	2.70E-02
4.02	CRM 6	spring	Bis(2-ethylhexyl)phthalate	Filtered	1.00E-03
4.04	CRM 1	summer	Bis(2-ethylhexyl)phthalate	Filtered	3.00E-02
7.02	MBM 0.2	summer	Bis(2-ethylhexyl)phthalate	Total	6.00E-03
1	CRM 41.5	spring	Di-n-butylphthalate	Filtered	1.00E-03
4.02	CRM 6	summer	Di-n-butylphthalate	Filtered	1.00E-03
7.02	MBM 0.2	spring	Di-n-butylphthalate	Filtered	1.00E-03
1	CRM 41.5	spring	Di-n-butylphthalate	Total	1.00E-03
7.02	MBM 0.2	summer	Di-n-butylphthalate	Total	4.00E-03
7.02	MBM 0.2	spring	alpha-BHC	Filtered	1.80E-05
7.02	MBM 0.2	spring	alpha-BHC	Total	1.30E-05

Table A9. Radionuclide concentrations for the water biased event study

Subreach	Site	Analyte	Total or Dissolved	Spring		Summer		Summer		Units
				Rain	Det. Limit	Rain	Det. Limit	Dry	Det. Limit	
Source: MCoy Branch										
1	CRM 36.9B	Particle associated Co-60		-5.57E+00	3.53E+01	-6.33E+01	1.60E+02	7.97E+00	2.56E+02	PCI/G
1	CRM 36.9B	Particle associated Cs-137		1.22E+01	3.77E+01	7.39E+01	1.62E+02	-4.50E+00	2.39E+02	PCI/G
1	CRM 36.9B	Cesium-137	Dissolved	1.18E+01	1.25E+01	7.30E-01	4.95E+00	-4.03E+00	5.16E+00	PCI/L
1	CRM 36.9B	Cobalt-60	Dissolved	-7.10E-01	9.05E+00	1.41E+00	4.34E+00	2.38E+00	4.69E+00	PCI/L
1	CRM 36.9B	Cesium-137	Residue	2.20E-01	6.80E-01	3.70E-01	8.10E-01	-1.00E-02	7.20E-01	PCI/L
1	CRM 36.9B	Cobalt-60	Residue	-1.00E-01	6.30E-01	-3.20E-01	8.00E-01	2.00E-02	7.70E-01	PCI/L
1	CRM 36.9B	Gross alpha activity	Total	1.15E+00	5.70E-01	-6.56E+00	2.36E+00	-4.26E+00	3.06E+00	PCI/L
1	CRM 36.9B	Gross beta activity	Total	7.12E+00	1.37E+00	5.88E+00	2.98E+00	4.32E+00	4.66E+00	PCI/L
1	CRM 36.9B	Strontium-90	Total	9.50E-01	1.93E+00	2.40E+00	1.30E+00	2.10E-01	2.31E+00	PCI/L
1	CRM 36.9B	Tritium	Total	0.00E+00	2.20E+02	4.30E+01	2.56E+02	-7.19E+01	2.43E+02	PCI/L
7.01	MBM 0.4B	Particle associated Co-60		2.44E+01	6.25E+01	-2.72E+01	9.67E+01	-2.47E+01	1.22E+02	PCI/G
7.01	MBM 0.4B	Particle associated Cs-137		1.81E+00	5.85E+01	-2.39E+01	8.64E+01	-1.57E+01	1.06E+02	PCI/G
7.01	MBM 0.4B	Cesium-137	Dissolved	-3.63E+00	1.07E+01	6.26E+00	1.12E+01	-2.00E+00	1.08E+01	PCI/L
7.01	MBM 0.4B	Cobalt-60	Dissolved	4.14E+00	1.01E+01	8.90E-01	1.00E+01	5.75E+00	1.05E+01	PCI/L
7.01	MBM 0.4B	Cesium-137	Residue	2.00E-02	6.80E-01	-1.70E-01	6.20E-01	-9.00E-02	6.30E-01	PCI/L
7.01	MBM 0.4B	Cobalt-60	Residue	2.80E-01	7.20E-01	-2.00E-01	7.00E-01	-1.50E-01	7.30E-01	PCI/L
7.01	MBM 0.4B	Gross alpha activity	Total	1.27E+00	7.40E-01	-7.34E+00	2.47E+00	-6.50E-01	3.16E+00	PCI/L
7.01	MBM 0.4B	Gross beta activity	Total	1.56E+00	1.39E+00	6.63E+00	2.86E+00	3.57E+00	4.51E+00	PCI/L
7.01	MBM 0.4B	Strontium-90	Total	6.90E-01	2.65E+00	1.42E+00	1.49E+00	1.30E+00	1.75E+00	PCI/L
7.01	MBM 0.4B	Tritium	Total	1.13E+02	2.19E+02	2.04E+02	2.56E+02	-1.53E+01	2.43E+02	PCI/L
7.02	MBM 0.2A	Particle associated Co-60		9.12E+00	2.35E+01	-6.00E+01	1.44E+02	-3.43E+01	1.91E+02	PCI/G
7.02	MBM 0.2A	Particle associated Cs-137								PCI/G
7.02	MBM 0.2A	Cesium-137	Dissolved	6.30E-01	1.03E+01	7.00E-01	5.92E+00	-1.12E+00	5.61E+00	PCI/L

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring Rain	Spring Det. Limit	Summer Rain	Summer Det. Limit	Summer Dry	Summer Det. Limit	Summer	Units
7.02	MBM 0.2A	Cobalt-60	Dissolved	4.19E+00	8.72E+00	2.08E+00	5.15E+00	-1.41E+00	4.94E+00	PCi/L	
7.02	MBM 0.2A	Cesium-137	Residue	0.00E+00	2.90E-01	-3.10E-01	7.50E-01	1.00E-01	7.70E-01	PCi/L	
7.02	MBM 0.2A	Cobalt-60	Residue	1.10E-01	3.00E-01	-2.80E-01	6.60E-01	-1.60E-01	8.80E-01	PCi/L	
7.02	MBM 0.2A	Gross alpha activity	Total	3.40E-01	9.20E-01	-5.60E+00	2.46E+00	-3.29E+00	3.15E+00	PCi/L	
7.02	MBM 0.2A	Gross beta activity	Total	9.90E-01	1.33E+00	1.00E+01	2.87E+00	4.54E+00	4.51E+00	PCi/L	
7.02	MBM 0.2A	Strontium-90	Total	4.20E-01	2.63E+00	1.43E+00	1.32E+00	-2.11E+00	1.96E+00	PCi/L	
7.02	MBM 0.2A	Tritium	Total	0.00E+00	2.19E+02	1.77E+02	2.56E+02	9.16E+01	2.43E+02	PCi/L	
7.02	MBM 0.2B	Particle associated Co-60		-7.58E+00	3.97E+01	5.70E+01	8.83E+01	-1.48E+01	6.44E+01	PCi/G	
7.02	MBM 0.2B	Particle associated Cs-137		-1.32E+01	3.64E+01	-4.09E+00	7.97E+01	3.04E+01	6.19E+01	PCi/G	
7.02	MBM 0.2B	Cesium-137	Dissolved	-2.68E+00	5.00E+00	9.34E+00	1.16E+01	7.63E+00	1.22E+01	PCi/L	
7.02	MBM 0.2B	Cobalt-60	Dissolved	-1.91E+00	4.66E+00	3.93E+00	1.07E+01	-2.60E+00	1.07E+01	PCi/L	
7.02	MBM 0.2B	Cesium-137	Residue	-2.30E-01	6.30E-01	-2.00E-02	3.00E-01	1.50E-01	3.10E-01	PCi/L	
7.02	MBM 0.2B	Cobalt-60	Residue	-1.30E-01	6.80E-01	2.20E-01	3.40E-01	-7.00E-02	3.20E-01	PCi/L	
7.02	MBM 0.2B	Gross alpha activity	Total	4.70E-01	6.60E-01	-1.47E+01	4.65E+00	-3.42E+00	3.13E+00	PCi/L	
7.02	MBM 0.2B	Gross beta activity	Total	1.45E+00	1.65E+00	7.83E+00	3.01E+00	1.70E+00	4.55E+00	PCi/L	
7.02	MBM 0.2B	Strontium-90	Total	4.55E+00	2.62E+00	1.45E+00	1.19E+00	1.44E+00	1.93E+00	PCi/L	
7.02	MBM 0.2B	Tritium	Total	0.00E+00	2.19E+02	1.43E+02	2.56E+02	-1.09E+02	2.43E+02	PCi/L	
7.02	MBM 0.2C	Particle associated Co-60		-1.82E+00	2.15E+01	1.77E+02	2.28E+02	4.02E+01	2.23E+02	PCi/G	
7.02	MBM 0.2C	Particle associated Cs-137		-1.10E+01	1.97E+01	-6.32E+01	2.15E+02	-2.18E+01	1.76E+02	PCi/G	
7.02	MBM 0.2C	Cesium-137	Dissolved	1.22E+01	1.33E+01	2.36E+00	1.22E+01	8.32E+00	1.31E+01	PCi/L	
7.02	MBM 0.2C	Cobalt-60	Dissolved	2.53E+00	9.48E+00	1.42E+00	9.83E+00	-2.66E+00	1.03E+01	PCi/L	
7.02	MBM 0.2C	Cesium-137	Residue	-1.50E-01	2.80E-01	-2.10E-01	7.30E-01	-7.00E-02	6.00E-01	PCi/L	
7.02	MBM 0.2C	Cobalt-60	Residue	-3.00E-02	3.00E-01	6.00E-01	7.80E-01	1.40E-01	7.60E-01	PCi/L	
7.02	MBM 0.2C	Gross alpha activity	Total	6.60E-01	9.00E-01	-7.68E+00	2.35E+00	-4.85E+00	3.16E+00	PCi/L	
7.02	MBM 0.2C	Gross beta activity	Total	1.94E+00	1.20E+00	6.10E+00	2.98E+00	2.13E+00	4.50E+00	PCi/L	

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring		Summer		Summer		Summer		Units
				Rain	Det. Limit	Rain	Det. Limit	Dry	Det. Limit	Dry	Det. Limit	
7.02	MBM 0.2C	Strontium-90	Total	5.57E+00	2.28E+00	1.69E+00	1.40E+00	1.45E+00	2.57E+00			PCi/L
7.02	MBM 0.2C	Tritium	Total	0.00E+00	2.15E+02	1.44E+02	2.56E+02	-2.12E+02	2.43E+02			PCi/L
Source: Poplar Creek												
3.04	PCM 0.1B	Particle associated Co-60		4.46E+00	6.68E+01	-5.15E+00	6.60E+01	2.51E+00	6.78E+01			PCi/G
3.04	PCM 0.1B	Particle associated Cs-137		3.93E+00	6.06E+01	-2.07E+01	5.97E+01	1.93E+01	6.16E+01			PCi/G
3.04	PCM 0.1B	Cesium-137	Dissolved	-2.48E+00	1.15E+01	9.42E+00	1.20E+01	1.18E+01	1.24E+01			PCi/L
3.04	PCM 0.1B	Cobalt-60	Dissolved	-3.26E+00	8.82E+00	-5.00E-02	1.13E+01	7.94E+00	1.19E+01			PCi/L
3.04	PCM 0.1B	Cesium-137	Residue	4.00E-02	5.80E-01	-2.10E-01	6.20E-01	2.10E-01	6.60E-01			PCi/L
3.04	PCM 0.1B	Cobalt-60	Residue	4.00E-02	6.40E-01	-5.00E-02	6.90E-01	3.00E-02	7.30E-01			PCi/L
3.04	PCM 0.1B	Gross alpha activity	Total	-5.60E+00	3.01E+00	-8.40E+00	2.41E+00	1.18E+00	2.93E+00			PCi/L
3.04	PCM 0.1B	Gross beta activity	Total	-1.66E+00	3.07E+00	1.26E+01	3.01E+00	-2.67E+00	4.60E+00			PCi/L
3.04	PCM 0.1B	Strontium-90	Total	8.53E+01	1.29E+00	1.31E+00	7.90E-01	8.00E-01	1.53E+00			PCi/L
3.04	PCM 0.1B	Tritium	Total	0.00E+00	2.15E+02	9.19E+02	2.56E+02	8.06E+01	2.53E+02			PCi/L
4.01	CRM 11.8A	Particle associated Co-60		3.32E+01	7.64E+01	2.13E+00	1.55E+01	-1.26E+01	5.60E+01			PCi/G
4.01	CRM 11.8A	Particle associated Cs-137										PCi/G
4.01	CRM 11.8A	Cesium-137	Dissolved	1.08E+01	1.26E+01	-1.07E+00	5.58E+00	1.47E+00	1.05E+01			PCi/L
4.01	CRM 11.8A	Cobalt-60	Dissolved	-2.49E+00	1.02E+01	-3.70E-01	4.71E+00	1.76E+00	1.09E+01			PCi/L
4.01	CRM 11.8A	Cesium-137	Residue	2.20E-01	6.50E-01	2.30E-01	3.40E-01	-1.10E-01	6.60E-01			PCi/L
4.01	CRM 11.8A	Cobalt-60	Residue	2.50E-01	5.80E-01	4.00E-02	3.20E-01	-1.70E-01	7.50E-01			PCi/L
4.01	CRM 11.8A	Gross alpha activity	Total	1.00E+00	6.70E-01	-9.47E+00	2.53E+00	1.20E-01	3.00E+00			PCi/L
4.01	CRM 11.8A	Gross beta activity	Total	-1.90E+00	1.49E+00	1.27E+01	2.89E+00	9.70E-01	4.49E+00			PCi/L
4.01	CRM 11.8A	Strontium-90	Total	8.90E-01	1.26E+00	8.90E-01	7.90E-01	2.07E+00	1.51E+00			PCi/L
4.01	CRM 11.8A	Tritium	Total	1.05E+02	2.12E+02	4.36E+02	2.56E+02	-6.76E+01	2.53E+02			PCi/L
4.01	CRM 11.8B	Particle associated Co-60		-6.40E-01	3.18E+01	6.29E+00	3.77E+01	-9.15E+01	6.32E+01			PCi/G

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring Rain	Spring Det. Limit	Summer Rain	Summer Det. Limit	Summer Dry	Summer Det. Limit	Units
4.01	CRM 11.8B	Particle associated Cs-137		2.81E+01	3.37E+01	-1.28E+01	3.38E+01	1.76E+01	6.41E+01	PCI/G
4.01	CRM 11.8B	Cesium-137	Dissolved	1.33E+01	1.24E+01	9.83E+00	1.28E+01	1.06E+01	1.17E+01	PCI/L
4.01	CRM 11.8B	Cobalt-60	Dissolved	5.54E+00	9.85E+00	1.00E+00	9.64E+00	5.76E+00	1.05E+01	PCI/L
4.01	CRM 11.8B	Cesium-137	Residue	2.60E-01	3.10E-01	-2.30E-01	6.10E-01	2.00E-01	7.40E-01	PCI/L
4.01	CRM 11.8B	Cobalt-60	Residue	-1.00E-02	2.90E-01	1.10E-01	6.90E-01	-1.06E+00	7.30E-01	PCI/L
4.01	CRM 11.8B	Gross alpha activity	Total	2.20E-01	9.70E-01	-1.68E+01	4.93E+00	1.20E+00	4.17E+00	PCI/L
4.01	CRM 11.8B	Gross beta activity	Total	2.95E+00	1.57E+00	1.87E+01	5.91E+00	1.63E+00	3.52E+00	PCI/L
4.01	CRM 11.8B	Strontium-90	Total	0.00E+00	1.79E+00	1.74E+00	9.20E-01	1.80E+00	1.78E+00	PCI/L
4.01	CRM 11.8B	Tritium	Total	2.36E+02	2.14E+02	3.14E+02	2.56E+02	9.81E+01	2.53E+02	PCI/L
4.01	CRM 11.8C	Particle associated Co-60		4.62E+01	9.33E+01	2.52E+01	3.08E+01	-1.33E+01	6.86E+01	PCI/G
4.01	CRM 11.8C	Particle associated Cs-137		-2.52E+01	9.08E+01	4.87E+00	2.81E+01	3.19E+01	6.50E+01	PCI/G
4.01	CRM 11.8C	Cesium-137	Dissolved	6.12E+00	1.13E+01	-8.70E-01	4.64E+00	1.04E+01	1.15E+01	PCI/L
4.01	CRM 11.8C	Cobalt-60	Dissolved	-2.43E+00	9.58E+00	2.74E+00	5.04E+00	-1.22E+00	8.34E+00	PCI/L
4.01	CRM 11.8C	Cesium-137	Residue	-2.00E-01	7.10E-01	1.10E-01	6.50E-01	4.10E-01	8.30E-01	PCI/L
4.01	CRM 11.8C	Cobalt-60	Residue	3.60E-01	7.30E-01	5.80E-01	7.10E-01	-1.70E-01	8.80E-01	PCI/L
4.01	CRM 11.8C	Gross alpha activity	Total	4.60E-01	1.30E+00	-1.03E+01	2.49E+00	2.74E+00	2.94E+00	PCI/L
4.01	CRM 11.8C	Gross beta activity	Total	4.94E+00	2.68E+00	1.86E+01	2.93E+00	-5.13E+00	4.57E+00	PCI/L
4.01	CRM 11.8C	Strontium-90	Total	0.00E+00	1.51E+00	5.60E-01	1.01E+00	1.42E+00	1.49E+00	PCI/L
4.01	CRM 11.8C	Tritium	Total	1.50E+02	2.13E+02	9.05E+01	2.56E+02	5.67E+01	2.53E+02	PCI/L
4.01	CRM 9.0B	Particle associated Co-60		-4.92E+01	6.66E+01	1.72E+01	6.95E+01	2.46E+01	1.75E+02	PCI/G
4.01	CRM 9.0B	Particle associated Cs-137		1.63E+01	6.38E+01	3.85E+00	6.63E+01	1.22E+02	1.71E+02	PCI/G
4.01	CRM 9.0B	Cesium-137	Dissolved	-2.16E+00	4.76E+00	-1.29E+00	9.78E+00	-6.80E-01	1.08E+01	PCI/L
4.01	CRM 9.0B	Cobalt-60	Dissolved	1.60E-01	4.51E+00	-5.00E-02	9.04E+00	7.94E+00	9.95E+00	PCI/L
4.01	CRM 9.0B	Cesium-137	Residue	1.70E-01	6.60E-01	2.00E-02	3.00E-01	5.40E-01	7.50E-01	PCI/L
4.01	CRM 9.0B	Cobalt-60	Residue	-5.10E-01	6.90E-01	8.00E-02	3.20E-01	1.10E-01	7.70E-01	PCI/L

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring		Spring		Summer		Summer		Summer	Units
				Rain	Det. Limit	Rain	Det. Limit	Rain	Det. Limit	Dry	Det. Limit		
4.01	CRM 9.0B	Gross alpha activity	Total	7.00E-01	7.40E-01	-7.90E+00	2.35E+00	7.60E-01	2.84E+00				PCi/L
4.01	CRM 9.0B	Gross beta activity	Total	1.38E+00	1.39E+00	7.53E+00	3.09E+00	-3.28E+00	4.75E+00				PCi/L
4.01	CRM 9.0B	Strontium-90	Total	.	.	-3.70E-01	7.50E-01	1.87E+00	1.70E+00				PCi/L
4.01	CRM 9.0B	Tritium	Total	7.67E+01	2.14E+02	4.10E+02	2.56E+02	3.44E+02	2.43E+02				PCi/L
Refer + A151ence Site													
1	CRM 41.5B	Particle associated Co-60		1.75E+01	5.61E+01	9.67E+00	1.49E+02	-4.67E+01	1.69E+02				PCi/G
1	CRM 41.5B	Particle associated Cs-137		.	.	.	.	.	.				PCi/G
1	CRM 41.5B	Cesium-137	Dissolved	-1.38E+00	1.18E+01	6.23E+00	1.18E+01	8.00E-01	1.16E+01				PCi/L
1	CRM 41.5B	Cobalt-60	Dissolved	-7.60E-01	9.76E+00	-1.37E+00	8.67E+00	-1.00E+01	8.79E+00				PCi/L
1	CRM 41.5B	Cesium-137	Residue	7.00E-02	2.90E-01	1.10E-01	6.10E-01	-1.10E-01	6.70E-01				PCi/L
1	CRM 41.5B	Cobalt-60	Residue	7.00E-02	2.20E-01	5.00E-02	7.70E-01	-2.00E-01	7.10E-01				PCi/L
1	CRM 41.5B	Gross alpha activity	Total	4.20E-01	9.20E-01	-8.15E+00	2.43E+00	4.79E+00	3.08E+00				PCi/L
1	CRM 41.5B	Gross beta activity	Total	1.00E+00	1.33E+00	8.32E+00	2.99E+00	-3.60E+00	4.37E+00				PCi/L
1	CRM 41.5B	Strontium-90	Total	1.40E-01	1.09E+00	8.20E-01	8.90E-01	2.08E+00	1.70E+00				PCi/L
1	CRM 41.5B	Tritium	Total	0.00E+00	2.14E+02	1.31E+02	2.56E+02	-6.10E+01	2.53E+02				PCi/L
1	CRM 43.0B	Particle associated Co-60		5.89E+01	1.04E+02	3.91E+00	4.55E+01	3.62E+01	2.86E+02				PCi/G
1	CRM 43.0B	Particle associated Cs-137		-6.11E+00	8.64E+01	-2.03E+01	4.36E+01	1.44E+01	2.22E+02				PCi/G
1	CRM 43.0B	Cesium-137	Dissolved	2.23E+00	5.17E+00	-1.50E+00	5.24E+00	7.63E+00	1.22E+01				PCi/L
1	CRM 43.0B	Cobalt-60	Dissolved	5.82E+00	4.83E+00	-3.54E+00	4.67E+00	-1.10E-01	9.56E+00				PCi/L
1	CRM 43.0B	Cesium-137	Residue	-4.00E-02	6.20E-01	-1.50E-01	3.20E-01	4.00E-02	6.20E-01				PCi/L
1	CRM 43.0B	Cobalt-60	Residue	4.20E-01	7.50E-01	3.00E-02	3.40E-01	1.00E-01	8.00E-01				PCi/L
1	CRM 43.0B	Gross alpha activity	Total	1.23E+00	8.70E-01	-6.13E+00	2.26E+00	8.00E-02	2.95E+00				PCi/L
1	CRM 43.0B	Gross beta activity	Total	1.62E+00	1.43E+00	7.57E+00	3.20E+00	-3.83E+00	4.56E+00				PCi/L

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring Rain	Spring Det. Limit	Summer Rain	Summer Det. Limit	Summer Dry	Summer Det. Limit	Units
1	CRM 43.0B	Strontium-90	Total	3.29E+00	2.49E+00	6.70E-01	7.40E-01	-7.40E-01	1.50E+00	PCi/L
1	CRM 43.0B	Tritium	Total	1.30E+02	2.12E+02	-1.13E+01	2.68E+02	-3.92E+01	2.53E+02	PCi/L
1	CRM 46.0B	Particle associated Co-60		8.29E+01	1.25E+02	-2.42E+01	1.36E+02	6.58E+01	2.21E+02	PCi/G
1	CRM 46.0B	Particle associated Cs-137		5.05E+01	1.22E+02	5.63E+01	1.26E+02	2.64E+01	2.12E+02	PCi/G
1	CRM 46.0B	Cesium-137	Dissolved	-5.30E-01	5.00E+00	7.59E+00	8.78E+00	2.60E-01	1.12E+01	PCi/L
1	CRM 46.0B	Cobalt-60	Dissolved	1.61E+00	4.63E+00	6.87E+00	7.77E+00	7.00E-01	1.05E+01	PCi/L
1	CRM 46.0B	Cesium-137	Residue	2.70E-01	6.60E-01	3.00E-01	6.80E-01	9.00E-02	7.20E-01	PCi/L
1	CRM 46.0B	Cobalt-60	Residue	4.50E-01	6.80E-01	-1.30E-01	7.30E-01	2.20E-01	7.50E-01	PCi/L
1	CRM 46.0B	Gross alpha activity	Total	7.10E-01	6.60E-01	-6.01E+00	2.24E+00	0.00E+00	3.00E+00	PCi/L
1	CRM 46.0B	Gross beta activity	Total	1.89E+00	1.65E+00	1.92E+01	3.23E+00	-1.62E+00	4.54E+00	PCi/L
1	CRM 46.0B	Strontium-90	Total	2.99E+00	2.67E+00	1.18E+00	8.20E-01	1.90E+00	1.65E+00	PCi/L
1	CRM 46.0B	Tritium	Total	.	.	7.47E+01	2.68E+02	3.92E+01	2.53E+02	PCi/L
4.04	CRM 1.0B	Particle associated Co-60		4.21E+00	3.77E+01	1.99E+00	1.38E+02	3.97E+00	1.14E+02	PCi/G
4.04	CRM 1.0B	Particle associated Cs-137		1.34E+01	3.91E+01	5.07E+01	1.37E+02	2.96E+01	1.14E+02	PCi/G
4.04	CRM 1.0B	Cesium-137	Dissolved	3.43E+00	1.09E+01	5.05E+00	1.26E+01	-5.30E-01	6.06E+00	PCi/L
4.04	CRM 1.0B	Cobalt-60	Dissolved	-2.89E+00	9.94E+00	3.11E+00	1.08E+01	4.42E+00	5.08E+00	PCi/L
4.04	CRM 1.0B	Cesium-137	Residue	1.10E-01	3.10E-01	2.90E-01	7.90E-01	1.80E-01	6.80E-01	PCi/L
4.04	CRM 1.0B	Cobalt-60	Residue	3.00E-02	3.00E-01	1.00E-02	8.00E-01	2.00E-02	6.80E-01	PCi/L
4.04	CRM 1.0B	Gross alpha activity	Total	1.40E-01	8.90E-01	-7.07E+00	3.37E+00	-2.20E+00	3.08E+00	PCi/L
4.04	CRM 1.0B	Gross beta activity	Total	2.55E+00	1.20E+00	6.86E+00	4.25E+00	2.75E+00	4.38E+00	PCi/L
4.04	CRM 1.0B	Strontium-90	Total	0.00E+00	2.28E+00	1.56E+00	1.27E+00	1.75E+00	1.79E+00	PCi/L
4.04	CRM 1.0B	Tritium	Total	2.17E+02	2.13E+02	1.38E+02	2.68E+02	1.22E+02	2.53E+02	PCi/L
Source: White Oak Creek										
2.02	CRM 20.2A	Particle associated Co-60		8.16E+00	2.62E+01	-5.62E+01	2.08E+02	7.96E+00	2.15E+02	PCi/G

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring Rain	Spring Det. Limit	Summer Rain	Summer Det. Limit	Summer Dry	Summer Det. Limit	Units
2.02	CRM 20.2A	Particle associated Cs-137								PCI/G
2.02	CRM 20.2A	Cesium-137	Dissolved	-2.69E+00	4.69E+00	-2.05E+00	1.19E+01	-3.63E+00	9.79E+00	PCI/L
2.02	CRM 20.2A	Cobalt-60	Dissolved	4.60E-01	4.70E+00	-6.41E+00	8.22E+00	-4.15E+00	8.56E+00	PCI/L
2.02	CRM 20.2A	Cesium-137	Residue	1.10E-01	7.30E-01	4.00E-02	7.30E-01	4.00E-01	7.40E-01	PCI/L
2.02	CRM 20.2A	Cobalt-60	Residue	2.20E-01	7.00E-01	-2.00E-01	7.50E-01	3.00E-02	7.30E-01	PCI/L
2.02	CRM 20.2A	Gross alpha activity	Total	2.92E+00	6.70E-01	-8.34E+00	3.79E+00	-4.14E+00	3.18E+00	PCI/L
2.02	CRM 20.2A	Gross beta activity	Total	1.86E+00	1.49E+00	1.11E+01	3.81E+00	8.68E+00	4.48E+00	PCI/L
2.02	CRM 20.2A	Strontium-90	Total	2.87E+00	2.45E+00	5.28E+00	1.29E+00	3.29E+00	2.42E+00	PCI/L
2.02	CRM 20.2A	Tritium	Total	1.27E+03	2.17E+02	5.76E+03	2.56E+02	1.25E+03	2.43E+02	PCI/L
2.02	CRM 20.2B	Particle associated Co-60								PCI/G
2.02	CRM 20.2B	Particle associated Cs-137								PCI/G
2.02	CRM 20.2B	Cesium-137	Dissolved	-3.60E-01	1.18E+01	-2.26E+01	9.92E+01	-3.07E+02	2.87E+02	PCI/G
2.02	CRM 20.2B	Cobalt-60	Dissolved	-3.87E+00	1.14E+01	6.58E+01	9.70E+01	5.50E+01	3.01E+02	PCI/G
2.02	CRM 20.2B	Cesium-137	Residue	7.57E+00	1.21E+01	3.56E+00	1.08E+01	-2.00E-01	1.05E+01	PCI/L
2.02	CRM 20.2B	Cobalt-60	Residue	-3.29E+00	9.75E+00	-3.88E+00	1.00E+01	4.52E+00	1.12E+01	PCI/L
2.02	CRM 20.2B	Gross alpha activity	Total	-9.00E-02	2.80E-01	2.20E-01	3.30E-01	1.30E-01	7.20E-01	PCI/L
2.02	CRM 20.2B	Gross beta activity	Total	-1.00E-02	2.90E-01	-8.00E-02	3.40E-01	-7.40E-01	6.90E-01	PCI/L
2.02	CRM 20.2B	Strontium-90	Total	2.00E-02	9.60E-01	-6.90E+00	3.23E+00	-4.97E+00	3.18E+00	PCI/L
2.02	CRM 20.2B	Tritium	Total	2.36E+00	1.56E+00	8.52E+00	4.36E+00	7.15E+00	4.48E+00	PCI/L
2.02	CRM 20.2C	Particle associated Co-60								PCI/G
2.02	CRM 20.2C	Particle associated Cs-137								PCI/G
2.02	CRM 20.2C	Cesium-137	Dissolved	3.00E-02	2.24E+00	2.68E+00	1.36E+00	3.38E+00	1.60E+00	PCI/L
2.02	CRM 20.2C	Cobalt-60	Dissolved	0.00E+00	2.19E+02	1.89E+03	2.56E+02	9.81E+02	2.43E+02	PCI/L
2.02	CRM 20.2C	Cesium-137	Residue	-1.45E+01	3.37E+01	2.56E+01	1.72E+02	6.25E+01	2.85E+02	PCI/G
2.02	CRM 20.2C	Cobalt-60	Residue	1.90E-01	3.09E+01	-3.36E+01	1.82E+02	3.36E+01	2.92E+02	PCI/G
2.02	CRM 20.2C	Gross alpha activity	Total	1.18E+01	1.22E+01	7.70E-01	4.76E+00	-2.58E+00	5.75E+00	PCI/L
2.02	CRM 20.2C	Gross beta activity	Total	-8.10E-01	1.04E+01	3.98E+00	5.11E+00	7.40E-01	4.78E+00	PCI/L
2.02	CRM 20.2C	Strontium-90	Residue	0.00E+00	6.70E-01	-1.30E-01	6.90E-01	9.00E-02	7.60E-01	PCI/L
2.02	CRM 20.2C	Tritium	Residue	-3.20E-01	7.30E-01	1.00E-01	6.50E-01	1.60E-01	7.40E-01	PCI/L

Table A9 (continued)

Subreach	Site	Analyte	Total or Dissolved	Spring		Summer		Summer		Summer		Units
				Rain	Det. Limit	Rain	Det. Limit	Dry	Det. Limit	Dry	Det. Limit	
2.02	CRM 20.2C	Gross alpha activity	Total	6.70E-01	8.40E-01	-5.80E+00	2.23E+00	-5.00E-01	3.25E+00			PCI/L
2.02	CRM 20.2C	Gross beta activity	Total	1.80E+00	1.42E+00	2.32E+01	6.29E+00	3.71E+00	4.37E+00			PCI/L
2.02	CRM 20.2C	Strontium-90	Total	1.93E+00	2.13E+00	3.29E+00	1.35E+00	1.52E+00	1.73E+00			PCI/L
2.02	CRM 20.2C	Tritium	Total	0.00E+00	2.18E+02	2.94E+03	2.56E+02	9.38E+01	2.43E+02			PCI/L
2.02	WOCM 0.0B	Particle associated Co-60		1.76E+01	3.69E+01	4.37E+01	1.09E+02	-2.15E+01	9.37E+01			PCI/G
2.02	WOCM 0.0B	Particle associated Cs-137		4.11E+02	3.30E+01	1.24E+02	8.94E+01	2.38E+02	6.82E+01			PCI/G
2.02	WOCM 0.0B	Cesium-137	Dissolved	6.40E-01	4.95E+00	5.60E+00	1.12E+01	-2.59E+00	5.24E+00			PCI/L
2.02	WOCM 0.0B	Cobalt-60	Dissolved	-2.70E-01	4.67E+00	4.84E+00	1.10E+01	6.25E+00	4.99E+00			PCI/L
2.02	WOCM 0.0B	Cesium-137	Residue	7.80E+00	6.30E-01	8.00E-01	5.70E-01	1.90E+00	5.50E-01			PCI/L
2.02	WOCM 0.0B	Cobalt-60	Residue	3.30E-01	7.00E-01	2.80E-01	7.00E-01	-1.70E-01	7.50E-01			PCI/L
2.02	WOCM 0.0B	Gross alpha activity	Total	2.67E+01	7.90E-01	-2.70E-01	2.39E+00	8.20E+00	3.24E+00			PCI/L
2.02	WOCM 0.0B	Gross beta activity	Total	1.72E+02	1.40E+00	1.12E+02	2.88E+00	1.44E+02	4.39E+00			PCI/L
2.02	WOCM 0.0B	Strontium-90	Total	6.56E+01	2.28E+00	2.66E+01	8.90E-01	5.10E+01	1.56E+00			PCI/L
2.02	WOCM 0.0B	Tritium	Total	5.20E+04	2.15E+02	6.27E+04	2.56E+02	3.44E+04	2.43E+02			PCI/L
2.03	CRM 19.0B	Particle associated Co-60		5.92E+00	9.03E+00	2.02E+01	6.44E+01	1.09E+02	1.28E+02			PCI/G
2.03	CRM 19.0B	Particle associated Cs-137		3.42E+00	8.68E+00	-6.64E+00	8.21E+01	-1.92E+01	1.20E+02			PCI/G
2.03	CRM 19.0B	Cesium-137	Dissolved	3.00E-02	5.35E+00	6.40E+00	1.20E+01	9.85E+00	1.28E+01			PCI/L
2.03	CRM 19.0B	Cobalt-60	Dissolved	-9.60E-01	4.49E+00	1.52E+00	8.37E+00	1.70E+00	1.03E+01			PCI/L
2.03	CRM 19.0B	Cesium-137	Residue	1.10E-01	2.80E-01	-3.00E-02	3.10E-01	-5.00E-02	3.10E-01			PCI/L
2.03	CRM 19.0B	Cobalt-60	Residue	1.90E-01	2.90E-01	8.00E-02	2.40E-01	2.80E-01	3.30E-01			PCI/L
2.03	CRM 19.0B	Gross alpha activity	Total	4.90E-01	7.40E-01	-7.42E+00	2.25E+00	-3.44E+00	3.18E+00			PCI/L
2.03	CRM 19.0B	Gross beta activity	Total	7.91E+00	1.90E+00	8.40E+00	3.11E+00	3.16E+00	4.47E+00			PCI/L
2.03	CRM 19.0B	Strontium-90	Total	3.10E-01	1.93E+00	2.48E+00	1.52E+00	2.00E+00	1.58E+00			PCI/L
2.03	CRM 19.0B	Tritium	Total	1.56E+02	2.18E+02	3.44E+02	2.56E+02	8.06E+01	2.43E+02			PCI/L

Table A10. Filtered and total methyl mercury and mercury concentrations (ng/L) of sources from biased event sampling

Sampling Date	Filtered	Unfiltered	Filtered	Unfiltered
	Methyl Mercury (ng/L)	Methyl Mercury (ng/L)	Inorganic Mercury (ng/L)	Inorganic Mercury (ng/L)
POPLAR CREEK SOURCE				
REACH 3				
PCM 0.1B				
20APR1994	9.00E-02	1.84E-01	2.84E+00	1.02E+02
29JUL1994	9.00E-02	1.71E-01	1.40E+00	9.04E+01
30AUG1994	6.00E-02	9.00E-02	1.72E+00	6.12E+01
REACH 4.01				
CRM 11.8A				
20APR1994	3.50E-02	4.20E-02	1.79E+00	1.48E+01
29JUL1994	1.24E-01	1.47E-01	2.71E+00	6.68E+01
30AUG1994	4.90E-02	6.30E-02	1.72E+00	2.55E+01
CRM 11.8B				
20APR1994	2.80E-02	3.40E-02	2.15E+00	3.80E+00
29JUL1994	1.56E-01	2.38E-01	5.68E+00	1.82E+02
30AUG1994	7.90E-02	8.00E-02	1.88E+00	2.59E+01
CRM 11.8C				
20APR1994	3.50E-02	3.50E-02	4.83E+00	2.03E+00
29JUL1994	1.84E-01	3.01E-01	9.32E+00	2.47E+02
30AUG1994	5.40E-02	1.40E-01	4.24E+00	9.28E+01
CRM 9.0B				
20APR1994	9.90E-02	9.90E-02	8.47E+00	2.30E+00
29JUL1994	1.35E-01	1.15E-01	1.84E+00	1.23E+01
30AUG1994	9.80E-02	1.48E-01	1.72E+00	3.13E+00
MCCOY BRANCH SOURCE				
REACH 7.01				
MBM 0.4B				
19APR1994	4.80E-02	1.00E-01	1.92E+00	6.84E+00
28JUL1994	1.01E-01	1.04E-01	2.74E+00	4.30E+00
29AUG1994	1.05E-01	1.16E-01	1.39E+00	2.82E+00
REACH 7.02				
MBM 0.2A				
19APR1994	4.50E-02	3.10E-02	2.55E+00	4.32E+00
28JUL1994	7.40E-02	8.60E-02	2.24E+00	2.25E+00
29AUG1994	1.17E-01	1.05E-01	2.10E+00	1.21E+00
MBM 0.2B				
19APR1994	5.10E-02	3.90E-02	2.54E+00	7.63E+00
28JUL1994	1.33E-01	7.90E-02	1.93E+00	2.18E+00
29AUG1994	1.16E-01	5.80E-02	7.38E-01	1.97E+00

Table A10 (continued)

Sampling Date	Filtered	Unfiltered	Filtered	Unfiltered
	Methyl Mercury (ng/L)	Methyl Mercury (ng/L)	Inorganic Mercury (ng/L)	Inorganic Mercury (ng/L)
MBM 0.2C				
19APR1994	2.90E-02	3.50E-02	3.29E+00	7.17E+00
28JUL1994	7.00E-02	9.10E-02	1.78E+00	2.28E+00
29AUG1994	1.38E-01	1.04E-01	7.43E-01	2.44E+00
REACH 1				
CRM 36.9B				
19APR1994	2.80E-02	4.70E-02	2.91E+00	4.49E+00
28JUL1994	5.33E-01	8.50E-02	1.70E+00	1.37E+00
29AUG1994	1.03E-01	8.10E-02	2.35E+00	2.10E+00
REFERENCE SOURCES				
REACH 1				
CRM 46.0B				
20APR1994	3.50E-02	4.40E-02	1.80E+00	4.45E+00
29JUL1994	1.19E-01	9.20E-02	1.16E+00	3.03E+00
30AUG1994	5.00E-02	6.80E-02	1.73E+00	1.49E+00
30AUG1994	6.00E-02	6.00E-02	1.32E+00	2.17E+00
CRM 43.0B				
20APR1994	3.70E-02	3.60E-02	2.20E+00	4.35E+00
29JUL1994	1.82E-01	1.06E-01	1.24E+00	2.33E+00
30AUG1994	5.90E-02	8.00E-02	1.60E+00	1.73E+00
CRM 41.5B				
20APR1994	2.40E-02	4.30E-02	1.94E+00	2.65E+00
29JUL1994	7.70E-02	1.07E-01	1.75E+00	2.41E+00
30AUG1994	4.50E-02	5.40E-02	1.17E+00	1.24E+00
REACH 4.04				
CRM 1.0B				
20APR1994	3.40E-02	4.60E-02	2.61E+00	1.35E+01
29JUL1994	1.08E-01	1.19E-01	1.86E+00	7.47E+00
29JUL1994	1.32E-01	1.47E-01	2.82E+00	9.17E+00
30AUG1994	1.08E-01	4.00E-02	9.83E+00	1.67E+00

Table A11. Summary statistics for dissolved and total metal concentrations (mg/L) for the contaminant remobilization from sediments study by season

Analyte	Observations.	Detects	Minimum	Maximum	Mean	Standard Error	95% UCB	Median
Aluminum	12	10	7.0E-03	2.9E-02	1.5E-02	1.4E-03	1.8E-02	1.5E-02
Ammonium nitrogen	12	6	5.0E-02	1.9E-01	7.5E-02	1.3E-02	9.8E-02	5.3E-02
Antimony	12	10	1.0E-03	1.2E-02	5.1E-03	1.1E-03	7.1E-03	4.5E-03
Arsenic	12	3	1.0E-03	3.0E-03	1.8E-03	8.1E-05	2.0E-03	1.7E-03
Barium	12	12	2.2E-02	2.5E-02	2.3E-02	3.1E-04	2.4E-02	2.3E-02
Boron	12	8	1.8E-02	1.1E-01	5.1E-02	5.5E-03	6.1E-02	4.5E-02
Calcium	12	12	1.8E+01	2.9E+01	2.6E+01	9.3E-01	2.8E+01	2.7E+01
Chloride	12	12	2.3E+00	1.4E+01	3.9E+00	9.3E-01	5.6E+00	2.9E+00
Chromium	12	6	1.0E-03	4.7E-03	1.8E-03	3.9E-04	2.5E-03	1.0E-03
Copper	12	12	1.2E-03	3.6E-03	2.3E-03	2.0E-04	2.7E-03	2.3E-03
Fluoride	12	4	5.0E-02	1.5E-01	7.0E-02	8.2E-03	8.5E-02	7.0E-02
Iron	12	9	1.3E-02	7.1E-02	4.4E-02	5.8E-03	5.4E-02	4.7E-02
Lead	12	3	1.0E-03	1.7E-03	1.1E-03	9.1E-05	1.3E-03	1.0E-03
Magnesium	12	12	5.4E+00	9.0E+00	7.9E+00	2.9E-01	8.4E+00	8.1E+00
Manganese	12	11	1.0E-03	1.5E-02	5.6E-03	1.2E-03	7.8E-03	4.3E-03
Mercury (BR)	12	1	1.4E-06	8.3E-06	8.3E-06	.	.	8.3E-06
Nickel	12	12	1.3E-03	1.4E-02	4.8E-03	1.2E-03	7.0E-03	3.2E-03
Nitrate/nitrite	12	12	3.6E-01	7.5E-01	5.7E-01	3.5E-02	6.3E-01	5.7E-01
Potassium	12	12	1.2E+00	1.5E+00	1.4E+00	2.5E-02	1.4E+00	1.4E+00
Sodium	12	12	2.6E+00	3.9E+00	3.5E+00	1.0E-01	3.7E+00	3.6E+00
Sulfate	12	12	1.3E+01	1.8E+01	1.7E+01	4.6E-01	1.8E+01	1.8E+01
Zinc	12	12	3.7E-03	7.2E-03	5.5E-03	3.4E-04	6.1E-03	5.5E-03
Spring/Total								
Aluminum	12	12	4.5E-02	5.8E-01	2.3E-01	4.6E-02	3.1E-01	2.3E-01

Table A11 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Standard Error	95% UCB	Median
Arsenic	12	4	1.0E-03	3.0E-03	1.5E-03	1.2E-04	1.7E-03	1.3E-03
Barium	12	12	2.4E-02	2.9E-02	2.7E-02	4.7E-04	2.8E-02	2.6E-02
Boron	12	11	1.8E-02	7.6E-02	4.5E-02	4.8E-03	5.4E-02	4.7E-02
Calcium	12	12	1.9E+01	3.5E+01	2.7E+01	1.3E+00	2.9E+01	2.8E+01
Chromium	12	7	1.0E-03	3.1E-03	1.5E-03	1.9E-04	1.9E-03	1.2E-03
Copper	12	12	1.2E-03	6.0E-03	3.1E-03	5.1E-04	4.1E-03	2.5E-03
Iron	12	12	8.2E-02	7.8E-01	3.4E-01	6.2E-02	4.6E-01	3.4E-01
Lead	12	4	1.0E-03	3.0E-03	1.8E-03	1.8E-04	2.1E-03	1.5E-03
Magnesium	12	12	5.5E+00	9.1E+00	7.9E+00	3.0E-01	8.4E+00	8.2E+00
Manganese	12	12	2.5E-02	9.2E-02	6.4E-02	5.8E-03	7.5E-02	6.4E-02
Mercury (BR)	12	8	2.0E-06	6.6E-05	1.9E-05	6.0E-06	3.0E-05	1.1E-05
Nickel	12	12	1.1E-03	4.0E-03	2.5E-03	2.8E-04	3.0E-03	2.6E-03
Potassium	12	12	1.3E+00	1.5E+00	1.4E+00	2.3E-02	1.5E+00	1.4E+00
Sodium	12	12	3.4E+00	5.8E+00	4.3E+00	2.6E-01	4.7E+00	3.9E+00
Vanadium	12	7	1.0E-03	1.6E-03	1.2E-03	4.9E-05	1.2E-03	1.1E-03
Zinc	12	12	3.0E-03	2.2E-02	9.8E-03	2.0E-03	1.3E-02	8.0E-03
Summer/Dissolved								
Aluminum	11	7	6.0E-03	1.7E-02	1.1E-02	1.0E-03	1.3E-02	9.4E-03
Ammonium nitrogen	12	2	5.0E-02	8.1E-02	5.8E-02	2.8E-03	6.3E-02	5.6E-02
Antimony	11	10	1.0E-03	1.1E-02	5.8E-03	7.1E-04	7.1E-03	5.4E-03
Barium	11	10	1.0E-03	2.8E-02	2.5E-02	6.4E-04	2.6E-02	2.5E-02
Boron	11	6	1.1E-02	7.1E-02	2.5E-02	5.3E-03	3.5E-02	1.6E-02
Calcium	11	10	2.7E-02	2.9E+01	2.7E+01	4.0E-01	2.8E+01	2.8E+01
Chloride	12	12	2.5E+00	3.2E+01	5.3E+00	2.4E+00	9.7E+00	2.9E+00
Chromium	11	8	1.0E-03	8.1E-03	2.4E-03	6.1E-04	3.5E-03	2.0E-03
Copper	11	10	1.0E-03	1.1E-02	4.3E-03	8.0E-04	5.7E-03	3.4E-03

Table A11 (continued)

Analvte	Observations.	Detects	Minimum	Maximum	Mean	Standard Error	95% UCB	Median
Fluoride	12	11	5.0E-02	1.1E-01	7.3E-02	4.7E-03	8.2E-02	6.9E-02
Iron	11	5	1.8E-02	2.7E+00	4.1E-01	2.5E-01	8.7E-01	4.0E-02
Magnesium	11	10	9.0E-03	8.1E+00	7.2E+00	2.7E-01	7.7E+00	7.6E+00
Manganese	11	10	1.0E-03	5.7E-02	1.4E-02	5.5E-03	2.4E-02	3.7E-03
Nickel	11	5	1.0E-03	1.3E-02	2.6E-03	1.1E-03	4.5E-03	1.2E-03
Nitrate/nitrite	12	12	3.0E-01	6.4E-01	4.9E-01	3.0E-02	5.4E-01	4.9E-01
Potassium	11	10	1.3E-02	1.4E+00	1.3E+00	2.6E-02	1.4E+00	1.3E+00
Selenium	11	3	1.0E-03	7.5E-03	3.6E-03	4.6E-04	4.4E-03	3.2E-03
Sodium	11	11	2.4E-02	3.4E+00	2.9E+00	2.9E-01	3.4E+00	3.2E+00
Sulfate	12	12	1.3E+01	1.7E+01	1.6E+01	3.4E-01	1.7E+01	1.7E+01
Vanadium	11	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Zinc	11	10	2.0E-03	1.1E-02	5.7E-03	1.0E-03	7.6E-03	4.2E-03
Summer/Total								4.2E-03
Aluminum	12	11	6.0E-03	2.2E-01	1.2E-01	2.1E-02	1.6E-01	1.1E-01
Antimony	12	3	1.0E-03	1.7E-03	1.3E-03	6.0E-05	1.4E-03	1.2E-03
Barium	12	12	2.4E-02	3.0E-02	2.7E-02	6.3E-04	2.8E-02	2.7E-02
Boron	12	4	1.1E-02	3.2E-02	2.2E-02	1.9E-03	2.5E-02	2.0E-02
Calcium	12	12	2.5E+01	3.0E+01	2.8E+01	5.0E-01	2.8E+01	2.8E+01
Chromium	12	9	1.0E-03	2.4E-03	1.7E-03	1.2E-04	1.9E-03	1.6E-03
Copper	12	12	1.4E-03	3.4E-03	2.4E-03	2.1E-04	2.8E-03	2.4E-03
Iron	12	11	1.8E-02	7.9E-01	3.4E-01	8.9E-02	5.0E-01	1.7E-01
Magnesium	12	12	6.2E+00	8.4E+00	7.5E+00	2.6E-01	8.0E+00	7.9E+00
Manganese	12	11	1.0E-03	2.2E-01	8.7E-02	1.4E-02	1.1E-01	7.9E-02
Mercury (BR)	12	5	1.9E-06	3.6E-05	1.0E-05	3.4E-06	1.6E-05	3.6E-06
Nickel	12	4	1.0E-03	1.9E-03	1.3E-03	6.8E-05	1.4E-03	1.2E-03
Potassium	12	12	1.2E+00	1.5E+00	1.3E+00	2.6E-02	1.4E+00	1.4E+00

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Table A11 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Standard Error	95% UCB	Median
Sodium	12	12	2.9E+00	3.4E+00	3.2E+00	3.5E-02	3.3E+00	3.2E+00
Vanadium	12	3	1.0E-03	1.3E-03	1.0E-03	3.4E-05	1.1E-03	1.0E-03
Zinc	12	12	2.0E-03	8.7E-03	4.9E-03	6.8E-04	6.1E-03	4.7E-03

Table A 12. Summary statistics for dissolved and total metal concentrations (mg/L) for the contaminants remobilization from sediments study for each site

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
CRM 1.0/Dissolved								
Aluminum	6	4	6.0E-03	2.9E-02	1.4E-02	3.5E-03	2.1E-02	9.4E-03
Ammonium nitrogen	6	2	5.0E-02	7.5E-02	5.9E-02	4.1E-03	6.7E-02	5.6E-02
Antimony	6	6	1.1E-03	7.5E-03	4.6E-03	8.9E-04	6.4E-03	5.2E-03
Arsenic	6	1	1.0E-03	3.0E-03	2.1E-03	.	.	2.1E-03
Barium	6	6	2.2E-02	2.7E-02	2.5E-02	8.9E-04	2.6E-02	2.4E-02
Boron	6	4	1.1E-02	7.1E-02	4.3E-02	7.2E-03	5.7E-02	3.7E-02
Calcium	6	6	1.8E+01	2.8E+01	2.5E+01	1.7E+00	2.8E+01	2.7E+01
Chloride	6	6	2.3E+00	4.1E+00	3.1E+00	2.5E-01	3.6E+00	2.9E+00
Chromium	6	4	1.0E-03	4.7E-03	2.9E-03	3.8E-04	3.7E-03	2.6E-03
Copper	6	6	1.8E-03	4.5E-03	3.0E-03	3.6E-04	3.8E-03	3.1E-03
Fluoride	6	4	6.0E-02	1.5E-01	7.1E-02	4.9E-03	8.1E-02	7.0E-02
Iron	6	3	1.3E-02	5.7E-01	1.5E-01	9.3E-02	3.4E-01	6.7E-02
Magnesium	6	6	5.4E+00	8.5E+00	7.1E+00	4.6E-01	8.0E+00	7.2E+00
Manganese	6	6	1.8E-03	1.5E-02	4.7E-03	2.1E-03	8.9E-03	2.5E-03
Nickel	6	4	1.0E-03	1.4E-02	3.7E-03	2.1E-03	7.9E-03	1.5E-03
Nitrate/nitrite	6	6	3.0E-01	4.9E-01	4.1E-01	3.3E-02	4.8E-01	4.3E-01
Potassium	6	6	1.2E+00	1.4E+00	1.3E+00	2.6E-02	1.4E+00	1.4E+00
Sodium	6	6	2.6E+00	3.8E+00	3.3E+00	1.6E-01	3.6E+00	3.3E+00
Sulfate	6	6	1.3E+01	1.7E+01	1.5E+01	6.8E-01	1.6E+01	1.6E+01
Zinc	6	6	2.7E-03	1.1E-02	5.5E-03	1.3E-03	8.0E-03	4.3E-03
CRM 1.0/Total								
Aluminum	6	6	3.4E-02	5.8E-01	2.3E-01	7.9E-02	3.9E-01	2.1E-01
Arsenic	6	1	1.0E-03	3.0E-03	1.5E-03	.	.	1.5E-03
Barium	6	6	2.4E-02	2.9E-02	2.8E-02	8.2E-04	3.0E-02	2.9E-02

Table A12 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Boron	6	4	1.1E-02	5.6E-02	3.1E-02	6.9E-03	4.5E-02	2.3E-02
Calcium	6	6	1.9E+01	2.9E+01	2.5E+01	1.7E+00	2.8E+01	2.6E+01
Chromium	6	4	1.0E-03	2.4E-03	1.6E-03	2.3E-04	2.1E-03	1.4E-03
Copper	6	6	1.4E-03	5.2E-03	3.2E-03	5.0E-04	4.2E-03	3.2E-03
Iron	6	6	7.5E-02	7.9E-01	4.2E-01	1.3E-01	6.7E-01	3.7E-01
Lead	6	1	1.0E-03	1.5E-03	1.5E-03	.	.	1.5E-03
Magnesium	6	6	5.5E+00	8.3E+00	7.0E+00	4.8E-01	8.0E+00	7.1E+00
Manganese	6	6	4.2E-02	8.6E-02	6.7E-02	6.8E-03	8.1E-02	6.8E-02
Mercury (BR)	6	6	1.7E-05	3.6E-05	2.8E-05	3.7E-06	3.5E-05	2.8E-05
Nickel	6	4	1.0E-03	3.2E-03	2.1E-03	3.2E-04	2.7E-03	1.7E-03
Potassium	6	6	1.3E+00	1.5E+00	1.4E+00	2.3E-02	1.4E+00	1.4E+00
Sodium	6	6	3.2E+00	4.9E+00	3.7E+00	2.7E-01	4.2E+00	3.4E+00
Vanadium	6	4	1.0E-03	1.6E-03	1.2E-03	9.5E-05	1.4E-03	1.2E-03
Zinc	6	6	2.7E-03	2.0E-02	8.5E-03	2.5E-03	1.4E-02	7.3E-03
CRM 41.5/Dissolved								
Aluminum	5	4	7.0E-03	1.6E-02	1.5E-02	3.0E-04	1.6E-02	1.5E-02
Ammonium nitrogen	6	3	5.0E-02	1.3E-01	6.7E-02	1.4E-02	9.5E-02	5.3E-02
Antimony	5	4	1.0E-03	1.1E-02	6.9E-03	1.9E-03	1.1E-02	6.6E-03
Barium	5	5	2.1E-02	2.5E-02	2.3E-02	6.8E-04	2.5E-02	2.4E-02
Boron	5	2	1.1E-02	6.3E-02	4.6E-02	5.5E-03	5.8E-02	4.2E-02
Calcium	5	5	2.5E+01	2.8E+01	2.7E+01	5.9E-01	2.8E+01	2.7E+01
Chloride	6	6	2.7E+00	3.2E+01	9.7E+00	4.8E+00	1.9E+01	3.4E+00
Chromium	5	4	1.0E-03	3.8E-03	1.9E-03	5.6E-04	3.1E-03	1.3E-03
Copper	5	5	1.9E-03	1.1E-02	4.2E-03	1.7E-03	7.8E-03	3.0E-03
Fluoride	6	3	5.0E-02	1.5E-01	6.0E-02	7.5E-03	7.5E-02	5.5E-02
Iron	5	4	1.8E-02	5.1E-01	1.3E-01	9.8E-02	3.4E-01	5.1E-02
Lead	5	2	1.0E-03	1.7E-03	1.1E-03	1.7E-04	1.5E-03	1.0E-03

Table A12 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Magnesium	5	5	6.4E+00	8.8E+00	7.8E+00	4.2E-01	8.7E+00	8.1E+00
Manganese	5	5	7.7E-03	2.7E-02	1.4E-02	3.7E-03	2.1E-02	8.9E-03
Mercury (BR)	6	1	1.4E-06	8.3E-06	8.3E-06	.	.	8.3E-06
Nickel	5	4	1.0E-03	9.3E-03	3.5E-03	1.5E-03	6.8E-03	2.7E-03
Nitrate/nitrite	6	6	5.9E-01	7.4E-01	6.3E-01	2.4E-02	6.8E-01	6.1E-01
Potassium	5	5	1.2E+00	1.5E+00	1.3E+00	5.4E-02	1.5E+00	1.4E+00
Selenium	5	1	1.0E-03	3.2E-03	3.2E-03	.	.	3.2E-03
Sodium	5	5	3.0E+00	3.7E+00	3.4E+00	1.3E-01	3.7E+00	3.5E+00
Sulfate	6	6	1.7E+01	1.8E+01	1.7E+01	2.1E-01	1.8E+01	1.7E+01
Zinc	5	5	4.2E-03	7.2E-03	6.0E-03	6.2E-04	7.3E-03	6.6E-03
CRM 41.5/Total								
Aluminum	6	6	7.1E-02	3.3E-01	1.8E-01	4.0E-02	2.6E-01	1.6E-01
Arsenic	6	1	1.0E-03	3.0E-03	1.6E-03	.	.	1.6E-03
Barium	6	6	2.4E-02	2.7E-02	2.5E-02	4.5E-04	2.6E-02	2.6E-02
Boron	6	4	1.1E-02	7.6E-02	4.3E-02	9.8E-03	6.3E-02	3.0E-02
Calcium	6	6	2.5E+01	2.9E+01	2.7E+01	7.2E-01	2.9E+01	2.8E+01
Chromium	6	5	1.0E-03	3.1E-03	1.9E-03	3.1E-04	2.5E-03	1.6E-03
Copper	6	6	1.5E-03	6.0E-03	2.8E-03	6.7E-04	4.2E-03	2.6E-03
Iron	6	6	1.3E-01	7.4E-01	3.5E-01	9.8E-02	5.5E-01	2.9E-01
Lead	6	1	1.0E-03	3.0E-03	3.0E-03	.	.	3.0E-03
Magnesium	6	6	6.4E+00	8.5E+00	7.7E+00	3.2E-01	8.4E+00	7.9E+00
Manganese	6	6	6.4E-02	1.2E-01	8.8E-02	7.9E-03	1.0E-01	8.6E-02
Mercury (BR)	6	2	1.9E-06	3.6E-06	3.0E-06	1.5E-07	3.3E-06	2.9E-06
Nickel	6	4	1.0E-03	3.2E-03	2.0E-03	3.0E-04	2.6E-03	1.7E-03
Potassium	6	6	1.2E+00	1.5E+00	1.4E+00	5.5E-02	1.5E+00	1.3E+00
Sodium	6	6	2.9E+00	5.8E+00	3.6E+00	4.3E-01	4.5E+00	3.2E+00
Vanadium	6	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03

Table A12 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Zinc	6	6	2.2E-03	2.2E-02	8.3E-03	3.1E-03	1.4E-02	6.1E-03
CRM 6.0/Dissolved								
Aluminum	6	4	6.0E-03	1.7E-02	1.2E-02	1.5E-03	1.5E-02	1.0E-02
Antimony	6	6	3.9E-03	9.5E-03	5.7E-03	9.3E-04	7.6E-03	4.7E-03
Arsenic	6	1	1.0E-03	3.0E-03	1.7E-03	.	.	1.7E-03
Barium	6	6	2.2E-02	2.6E-02	2.4E-02	7.2E-04	2.6E-02	2.4E-02
Boron	6	5	1.6E-02	5.0E-02	2.9E-02	6.5E-03	4.2E-02	2.3E-02
Calcium	6	6	2.6E+01	2.9E+01	2.7E+01	5.4E-01	2.8E+01	2.7E+01
Chloride	6	6	2.7E+00	3.2E+00	2.9E+00	7.3E-02	3.0E+00	2.9E+00
Chromium	6	3	1.0E-03	2.6E-03	1.4E-03	2.7E-04	1.9E-03	1.1E-03
Copper	6	6	1.2E-03	3.6E-03	2.4E-03	4.0E-04	3.2E-03	2.2E-03
Fluoride	6	4	5.9E-02	1.5E-01	7.5E-02	1.2E-02	9.9E-02	6.5E-02
Iron	6	4	1.3E-02	5.3E-01	1.3E-01	8.6E-02	3.0E-01	4.0E-02
Magnesium	6	6	6.3E+00	8.6E+00	7.8E+00	3.1E-01	8.4E+00	8.0E+00
Manganese	6	6	1.6E-03	5.8E-03	3.5E-03	6.5E-04	4.8E-03	3.2E-03
Nickel	6	4	1.0E-03	4.5E-03	2.8E-03	5.8E-04	3.9E-03	2.1E-03
Nitrate/nitrite	6	6	4.0E-01	6.9E-01	5.1E-01	4.4E-02	6.0E-01	5.0E-01
Potassium	6	6	1.3E+00	1.4E+00	1.4E+00	2.0E-02	1.4E+00	1.4E+00
Selenium	6	1	1.0E-03	3.3E-03	3.3E-03	.	.	3.3E-03
Sodium	6	6	3.2E+00	3.8E+00	3.4E+00	1.1E-01	3.6E+00	3.3E+00
Sulfate	6	6	1.6E+01	1.8E+01	1.7E+01	3.7E-01	1.8E+01	1.7E+01
Zinc	6	6	2.9E-03	9.4E-03	5.1E-03	9.8E-04	7.1E-03	4.7E-03
CRM 6.0/Total								
Aluminum	6	6	4.2E-02	4.1E-01	1.5E-01	5.9E-02	2.7E-01	9.3E-02
Antimony	6	2	1.0E-03	1.7E-03	1.6E-03	2.2E-05	1.7E-03	1.6E-03
Arsenic	6	1	1.0E-03	3.0E-03	1.3E-03	.	.	1.3E-03
Barium	6	6	2.5E-02	3.0E-02	2.8E-02	6.3E-04	2.9E-02	2.8E-02

Table A12 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Boron	6	4	1.1E-02	4.7E-02	3.4E-02	3.3E-03	4.1E-02	3.0E-02
Calcium	6	6	2.6E+01	3.0E+01	2.8E+01	8.1E-01	3.0E+01	2.8E+01
Chromium	6	4	1.0E-03	2.1E-03	1.5E-03	2.0E-04	1.9E-03	1.4E-03
Copper	6	6	1.2E-03	5.4E-03	2.4E-03	6.3E-04	3.7E-03	1.9E-03
Iron	6	6	7.1E-02	6.7E-01	3.0E-01	1.1E-01	5.3E-01	1.9E-01
Lead	6	1	1.0E-03	2.8E-03	2.8E-03			2.8E-03
Magnesium	6	6	6.3E+00	8.6E+00	8.0E+00	3.5E-01	8.7E+00	8.4E+00
Manganese	6	6	2.5E-02	8.0E-02	5.4E-02	7.7E-03	6.9E-02	5.7E-02
Mercury (BR)	6	4	1.3E-05	6.6E-05	3.0E-05	8.0E-06	4.6E-05	2.0E-05
Nickel	6	4	1.0E-03	4.0E-03	1.9E-03	5.3E-04	2.9E-03	1.2E-03
Potassium	6	6	1.3E+00	1.5E+00	1.4E+00	2.6E-02	1.5E+00	1.4E+00
Sodium	6	6	3.2E+00	5.4E+00	3.9E+00	3.5E-01	4.6E+00	3.5E+00
Vanadium	6	3	1.0E-03	1.2E-03	1.2E-03	0.0E+00	1.2E-03	1.2E-03
Zinc	6	6	3.3E-03	1.2E-02	5.8E-03	1.3E-03	8.4E-03	5.0E-03
MBM 0.2/Dissolved								
Aluminum	6	5	6.0E-03	1.6E-02	1.3E-02	8.0E-04	1.5E-02	1.3E-02
Ammonium nitrogen	6	3	5.0E-02	1.9E-01	9.7E-02	2.1E-02	1.4E-01	7.8E-02
Antimony	6	4	1.0E-03	1.2E-02	5.7E-03	1.3E-03	8.4E-03	4.0E-03
Arsenic	6	1	1.0E-03	3.0E-03	2.2E-03			2.2E-03
Barium	6	5	1.0E-03	2.8E-02	2.4E-02	9.3E-04	2.6E-02	2.3E-02
Boron	6	3	1.1E-02	1.1E-01	5.0E-02	1.3E-02	7.6E-02	3.7E-02
Calcium	6	5	2.7E-02	2.9E+01	2.7E+01	4.7E-01	2.8E+01	2.7E+01
Chloride	6	6	2.5E+00	3.0E+00	2.8E+00	8.3E-02	2.9E+00	2.9E+00
Chromium	6	3	1.0E-03	8.1E-03	3.1E-03	1.1E-03	5.3E-03	2.0E-03
Copper	6	5	1.0E-03	6.8E-03	3.4E-03	9.0E-04	5.3E-03	2.8E-03
Fluoride	6	4	6.7E-02	1.5E-01	8.2E-02	5.5E-03	9.3E-02	8.5E-02
Iron	6	3	1.3E-02	2.7E+00	4.8E-01	4.9E-01	1.5E+00	4.6E-02

Table A12 (continued)

Analyte	Observations.	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Lead	6	1	1.0E-03	1.7E-03	1.7E-03	.	.	1.7E-03
Magnesium	6	5	9.0E-03	9.0E+00	7.6E+00	4.8E-01	8.6E+00	8.0E+00
Manganese	6	4	1.0E-03	5.7E-02	1.7E-02	9.8E-03	3.7E-02	4.7E-03
Nickel	6	5	1.0E-03	1.3E-02	5.3E-03	2.1E-03	9.5E-03	2.8E-03
Nitrate/nitrite	6	6	4.2E-01	7.5E-01	5.6E-01	4.5E-02	6.5E-01	5.5E-01
Potassium	6	5	1.3E-02	1.4E+00	1.3E+00	4.2E-02	1.4E+00	1.3E+00
Selenium	6	1	1.0E-03	7.5E-03	7.5E-03	.	.	7.5E-03
Sodium	6	6	2.4E-02	3.9E+00	2.9E+00	5.9E-01	4.1E+00	3.3E+00
Sulfate	6	6	1.6E+01	1.8E+01	1.7E+01	3.1E-01	1.8E+01	1.7E+01
Vanadium	6	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Zinc	6	5	2.0E-03	1.1E-02	6.1E-03	1.1E-03	8.3E-03	5.5E-03
MBM 0.2/Total								
Aluminum	6	5	6.0E-03	2.5E-01	1.4E-01	3.8E-02	2.2E-01	1.5E-01
Antimony	6	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Arsenic	6	1	1.0E-03	3.0E-03	2.2E-03	.	.	2.2E-03
Barium	6	6	2.4E-02	3.0E-02	2.6E-02	8.3E-04	2.8E-02	2.6E-02
Boron	6	3	1.1E-02	5.3E-02	3.6E-02	4.9E-03	4.6E-02	2.9E-02
Calcium	6	6	2.6E+01	3.5E+01	3.0E+01	1.3E+00	3.2E+01	2.9E+01
Chromium	6	3	1.0E-03	2.1E-03	1.6E-03	1.1E-04	1.8E-03	1.5E-03
Copper	6	6	1.7E-03	5.0E-03	2.8E-03	5.0E-04	3.8E-03	2.3E-03
Iron	6	5	1.8E-02	7.6E-01	2.9E-01	1.1E-01	5.1E-01	2.2E-01
Lead	6	1	1.0E-03	2.2E-03	2.2E-03	.	.	2.2E-03
Magnesium	6	6	6.4E+00	9.1E+00	8.0E+00	3.7E-01	8.8E+00	8.2E+00
Manganese	6	5	1.0E-03	2.2E-01	9.4E-02	2.7E-02	1.5E-01	7.3E-02
Mercury (BR)	6	1	2.0E-06	7.1E-06	2.0E-06	.	.	2.0E-06
Nickel	6	4	1.0E-03	3.9E-03	1.9E-03	4.8E-04	2.9E-03	1.3E-03
Potassium	6	6	1.3E+00	1.5E+00	1.4E+00	3.7E-02	1.5E+00	1.4E+00

Table A12 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Sodium	6	6	3.1E+00	5.6E+00	3.8E+00	3.8E-01	4.5E+00	3.5E+00
Vanadium	6	2	1.0E-03	1.1E-03	1.0E-03	2.2E-05	1.1E-03	1.0E-03
Zinc	6	6	2.0E-03	1.7E-02	6.9E-03	2.3E-03	1.2E-02	5.0E-03

Table A13. Summary statistics for dissolved and total metal concentrations (mg/L) for the contaminant remobilization from sediments study for each site by season

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
CRM 1.0/Spring/Dissolved								
Aluminum	3	2	7.0E-03	2.9E-02	2.1E-02	4.5E-03	3.4E-02	1.7E-02
Ammonium nitrogen	3	1	5.0E-02	7.5E-02	7.5E-02	.	.	7.5E-02
Antimony	3	3	1.1E-03	5.2E-03	3.8E-03	1.4E-03	7.7E-03	5.1E-03
Arsenic	3	1	1.0E-03	3.0E-03	2.1E-03	.	.	2.1E-03
Barium	3	3	2.2E-02	2.4E-02	2.3E-02	6.3E-04	2.5E-02	2.3E-02
Boron	3	2	1.8E-02	5.2E-02	4.7E-02	2.7E-03	5.5E-02	4.5E-02
Calcium	3	3	1.8E+01	2.8E+01	2.3E+01	3.0E+00	3.1E+01	2.1E+01
Chloride	3	3	2.3E+00	4.1E+00	3.1E+00	5.3E-01	4.6E+00	2.9E+00
Chromium	3	2	1.0E-03	4.7E-03	3.4E-03	7.3E-04	5.6E-03	2.8E-03
Copper	3	3	1.8E-03	2.9E-03	2.5E-03	3.3E-04	3.4E-03	2.7E-03
Fluoride	3	1	7.0E-02	1.5E-01	7.0E-02	.	.	7.0E-02
Iron	3	2	1.3E-02	6.9E-02	6.7E-02	6.4E-04	6.9E-02	6.7E-02
Magnesium	3	3	5.4E+00	8.5E+00	6.9E+00	8.9E-01	9.5E+00	6.9E+00
Manganese	3	3	2.5E-03	1.5E-02	6.7E-03	4.2E-03	1.9E-02	2.5E-03
Nickel	3	3	1.8E-03	1.4E-02	6.1E-03	3.8E-03	1.7E-02	2.9E-03
Nitrate/nitrite	3	3	3.6E-01	4.9E-01	4.4E-01	4.2E-02	5.7E-01	4.8E-01
Potassium	3	3	1.2E+00	1.4E+00	1.3E+00	4.6E-02	1.4E+00	1.3E+00
Sodium	3	3	2.6E+00	3.8E+00	3.3E+00	3.6E-01	4.3E+00	3.4E+00
Sulfate	3	3	1.3E+01	1.6E+01	1.5E+01	8.8E-01	1.7E+01	1.5E+01
Zinc	3	3	3.7E-03	6.4E-03	4.9E-03	8.0E-04	7.2E-03	4.5E-03
CRM 1.0/Spring/Total								

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Aluminum	3	3	7.8E-02	5.8E-01	3.1E-01	1.4E-01	7.4E-01	2.9E-01
Arsenic	3	1	1.0E-03	3.0E-03	1.5E-03	.	.	1.5E-03
Barium	3	3	2.4E-02	2.9E-02	2.7E-02	1.7E-03	3.2E-02	2.9E-02
Boron	3	3	2.5E-02	5.6E-02	4.3E-02	9.1E-03	6.9E-02	4.7E-02
Calcium	3	3	1.9E+01	2.7E+01	2.2E+01	2.5E+00	2.9E+01	2.0E+01
Chromium	3	2	1.0E-03	2.4E-03	1.6E-03	4.6E-04	2.9E-03	1.2E-03
Copper	3	3	2.7E-03	5.2E-03	3.6E-03	7.9E-04	5.9E-03	3.0E-03
Iron	3	3	1.4E-01	7.8E-01	4.4E-01	1.8E-01	9.8E-01	4.1E-01
Lead	3	1	1.0E-03	1.5E-03	1.5E-03	.	.	1.5E-03
Magnesium	3	3	5.5E+00	8.3E+00	6.7E+00	8.3E-01	9.1E+00	6.3E+00
Manganese	3	3	4.2E-02	7.1E-02	5.9E-02	8.9E-03	8.5E-02	6.4E-02
Mercury	3	3	2.1E-05	3.6E-05	3.0E-05	4.9E-06	4.5E-05	3.5E-05
Nickel	3	3	1.5E-03	3.2E-03	2.5E-03	5.1E-04	4.0E-03	2.8E-03
Potassium	3	3	1.3E+00	1.4E+00	1.3E+00	2.5E-02	1.4E+00	1.4E+00
Sodium	3	3	3.5E+00	4.9E+00	4.1E+00	4.2E-01	5.3E+00	3.9E+00
Vanadium	3	3	1.1E-03	1.6E-03	1.3E-03	1.6E-04	1.8E-03	1.3E-03
Zinc	3	3	7.3E-03	2.0E-02	1.2E-02	4.1E-03	2.4E-02	8.8E-03
CRM 1.0/Summer/Dissolved								
Aluminum	3	2	6.0E-03	1.0E-02	9.1E-03	7.5E-04	1.1E-02	8.4E-03
Ammonium nitrogen	3	1	5.0E-02	5.6E-02	5.6E-02	.	.	5.6E-02
Antimony	3	3	3.2E-03	7.5E-03	5.4E-03	1.2E-03	8.9E-03	5.4E-03
Barium	3	3	2.5E-02	2.7E-02	2.6E-02	7.2E-04	2.8E-02	2.7E-02
Boron	3	2	1.1E-02	7.1E-02	4.3E-02	1.6E-02	9.0E-02	3.0E-02

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	3	3	2.6E+01	2.8E+01	2.7E+01	7.0E-01	2.9E+01	2.8E+01
Chloride	3	3	2.8E+00	3.4E+00	3.1E+00	1.8E-01	3.6E+00	3.0E+00
Chromium	3	2	1.0E-03	2.6E-03	2.5E-03	3.8E-05	2.6E-03	2.5E-03
Copper	3	3	3.2E-03	4.5E-03	3.6E-03	4.4E-04	4.9E-03	3.2E-03
Fluoride	3	3	6.0E-02	8.4E-02	7.1E-02	7.0E-03	9.2E-02	7.0E-02
Iron	3	1	1.8E-02	5.7E-01	5.7E-01	.	.	5.7E-01
Magnesium	3	3	6.3E+00	8.0E+00	7.3E+00	5.0E-01	8.8E+00	7.6E+00
Manganese	3	3	1.8E-03	3.5E-03	2.6E-03	5.0E-04	4.0E-03	2.5E-03
Nickel	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Nitrate/nitrite	3	3	3.0E-01	4.8E-01	3.8E-01	5.2E-02	5.4E-01	3.7E-01
Potassium	3	3	1.3E+00	1.4E+00	1.4E+00	1.8E-02	1.4E+00	1.4E+00
Sodium	3	3	3.3E+00	3.4E+00	3.3E+00	2.9E-02	3.4E+00	3.3E+00
Sulfate	3	3	1.3E+01	1.7E+01	1.5E+01	1.2E+00	1.9E+01	1.6E+01
Zinc	3	3	2.7E-03	1.1E-02	6.1E-03	2.7E-03	1.4E-02	4.1E-03
CRM 1.0/Summer/Total								
Aluminum	3	3	3.4E-02	2.2E-01	1.5E-01	6.0E-02	3.3E-01	2.0E-01
Barium	3	3	2.8E-02	2.9E-02	2.9E-02	2.4E-04	2.9E-02	2.8E-02
Boron	3	1	1.1E-02	2.0E-02	2.0E-02	.	.	2.0E-02
Calcium	3	3	2.5E+01	2.9E+01	2.7E+01	1.3E+00	3.1E+01	2.8E+01
Chromium	3	2	1.0E-03	2.2E-03	1.8E-03	2.3E-04	2.5E-03	1.6E-03
Copper	3	3	1.4E-03	3.4E-03	2.7E-03	6.5E-04	4.6E-03	3.3E-03
Iron	3	3	7.5E-02	7.9E-01	4.0E-01	2.1E-01	1.0E+00	3.2E-01
Magnesium	3	3	6.2E+00	8.1E+00	7.4E+00	6.0E-01	9.1E+00	7.9E+00

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Manganese	3	3	5.7E-02	8.6E-02	7.6E-02	9.2E-03	1.0E-01	8.4E-02
Mercury	3	3	1.7E-05	3.6E-05	2.5E-05	6.0E-06	4.2E-05	2.1E-05
Nickel	3	1	1.0E-03	1.9E-03	1.9E-03	.	.	1.9E-03
Potassium	3	3	1.4E+00	1.5E+00	1.4E+00	2.6E-02	1.5E+00	1.4E+00
Sodium	3	3	3.2E+00	3.3E+00	3.3E+00	2.5E-02	3.3E+00	3.3E+00
Vanadium	3	1	1.0E-03	1.3E-03	1.3E-03	.	.	1.3E-03
Zinc	3	3	2.7E-03	7.3E-03	4.9E-03	1.3E-03	8.8E-03	4.8E-03
CRM 41.5/Spring/Dissolved								
Aluminum	3	3	1.5E-02	1.6E-02	1.6E-02	2.9E-04	1.7E-02	1.6E-02
Ammonium nitrogen	3	3	5.3E-02	1.3E-01	8.0E-02	2.5E-02	1.5E-01	5.8E-02
Antimony	3	2	1.0E-03	1.1E-02	5.7E-03	3.3E-03	1.5E-02	2.9E-03
Barium	3	3	2.2E-02	2.5E-02	2.4E-02	9.3E-04	2.6E-02	2.4E-02
Boron	3	2	1.8E-02	6.3E-02	4.9E-02	8.4E-03	7.3E-02	4.2E-02
Calcium	3	3	2.6E+01	2.8E+01	2.7E+01	5.6E-01	2.9E+01	2.7E+01
Chloride	3	3	2.7E+00	1.4E+01	6.6E+00	3.7E+00	1.7E+01	3.2E+00
Chromium	3	2	1.0E-03	3.8E-03	1.9E-03	1.1E-03	5.0E-03	1.0E-03
Copper	3	3	1.9E-03	3.0E-03	2.3E-03	3.5E-04	3.3E-03	2.0E-03
Fluoride	3	1	5.0E-02	1.5E-01	5.0E-02	.	.	5.0E-02
Iron	3	3	2.0E-02	5.4E-02	4.2E-02	1.1E-02	7.3E-02	5.1E-02
Lead	3	2	1.0E-03	1.7E-03	1.2E-03	2.7E-04	2.0E-03	1.0E-03
Magnesium	3	3	7.4E+00	8.8E+00	8.1E+00	4.1E-01	9.3E+00	8.2E+00
Manganese	3	3	7.7E-03	8.9E-03	8.5E-03	3.8E-04	9.6E-03	8.8E-03
Nickel	3	3	1.3E-03	9.3E-03	4.4E-03	2.5E-03	1.2E-02	2.7E-03

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Nitrate/nitrite	3	3	5.9E-01	7.4E-01	6.5E-01	4.7E-02	7.8E-01	6.1E-01
Potassium	3	3	1.4E+00	1.5E+00	1.4E+00	3.7E-02	1.5E+00	1.4E+00
Sodium	3	3	3.5E+00	3.7E+00	3.6E+00	8.1E-02	3.8E+00	3.6E+00
Sulfate	3	3	1.7E+01	1.8E+01	1.8E+01	3.3E-01	1.9E+01	1.8E+01
Zinc	3	3	4.2E-03	7.2E-03	6.2E-03	9.8E-04	9.0E-03	7.1E-03
CRM 41.5/Spring/Total								
Aluminum	3	3	7.1E-02	3.3E-01	2.2E-01	7.7E-02	4.4E-01	2.4E-01
Arsenic	3	1	1.0E-03	3.0E-03	1.6E-03	.	.	1.6E-03
Barium	3	3	2.6E-02	2.7E-02	2.6E-02	3.2E-04	2.7E-02	2.6E-02
Boron	3	3	2.8E-02	7.6E-02	5.8E-02	1.5E-02	1.0E-01	6.9E-02
Calcium	3	3	2.5E+01	2.9E+01	2.8E+01	1.2E+00	3.1E+01	2.9E+01
Chromium	3	2	1.0E-03	3.1E-03	2.2E-03	5.4E-04	3.7E-03	1.7E-03
Copper	3	3	1.5E-03	6.0E-03	3.3E-03	1.4E-03	7.3E-03	2.3E-03
Iron	3	3	1.3E-01	5.1E-01	3.4E-01	1.1E-01	6.7E-01	3.9E-01
Lead	3	1	1.0E-03	3.0E-03	3.0E-03	.	.	3.0E-03
Magnesium	3	3	7.4E+00	8.5E+00	8.1E+00	3.5E-01	9.1E+00	8.4E+00
Manganese	3	3	6.4E-02	9.2E-02	7.9E-02	8.1E-03	1.0E-01	8.1E-02
Mercury	3	1	2.9E-06	3.4E-06	2.9E-06	.	.	2.9E-06
Nickel	3	3	1.8E-03	3.2E-03	2.5E-03	4.1E-04	3.7E-03	2.4E-03
Potassium	3	3	1.3E+00	1.5E+00	1.4E+00	6.2E-02	1.6E+00	1.5E+00
Sodium	3	3	3.4E+00	5.8E+00	4.2E+00	7.8E-01	6.5E+00	3.4E+00
Vanadium	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Zinc	3	3	3.4E-03	2.2E-02	1.2E-02	5.6E-03	2.8E-02	9.7E-03

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
CRM 41.5/Summer/Dissolved								
Aluminum	2	1	7.0E-03	1.5E-02	1.5E-02	.	.	1.5E-02
Antimony	2	2	6.6E-03	1.1E-02	8.7E-03	2.1E-03	2.2E-02	8.7E-03
Barium	2	2	2.1E-02	2.4E-02	2.3E-02	1.2E-03	3.0E-02	2.3E-02
Calcium	2	2	2.5E+01	2.8E+01	2.7E+01	1.6E+00	3.7E+01	2.7E+01
Chloride	3	3	2.7E+00	3.2E+01	1.3E+01	9.6E+00	4.1E+01	3.6E+00
Chromium	2	2	1.3E-03	2.6E-03	2.0E-03	6.5E-04	6.1E-03	2.0E-03
Copper	2	2	3.4E-03	1.1E-02	7.2E-03	3.8E-03	3.1E-02	7.2E-03
Fluoride	3	2	5.0E-02	8.0E-02	6.6E-02	8.1E-03	9.0E-02	5.9E-02
Iron	2	1	1.8E-02	5.1E-01	5.1E-01	.	.	5.1E-01
Magnesium	2	2	6.4E+00	8.1E+00	7.3E+00	8.7E-01	1.3E+01	7.3E+00
Manganese	2	2	1.6E-02	2.7E-02	2.1E-02	5.7E-03	5.7E-02	2.1E-02
Nickel	2	1	1.0E-03	2.8E-03	2.8E-03	.	.	2.8E-03
Nitrate/nitrite	3	3	5.9E-01	6.4E-01	6.1E-01	1.5E-02	6.5E-01	6.0E-01
Potassium	2	2	1.2E+00	1.3E+00	1.2E+00	8.0E-02	1.7E+00	1.2E+00
Selenium	2	1	1.0E-03	3.2E-03	3.2E-03	.	.	3.2E-03
Sodium	2	2	3.0E+00	3.2E+00	3.1E+00	7.0E-02	3.5E+00	3.1E+00
Sulfate	3	3	1.7E+01	1.7E+01	1.7E+01	0.0E+00	1.7E+01	1.7E+01
Zinc	2	2	4.8E-03	6.6E-03	5.7E-03	9.0E-04	1.1E-02	5.7E-03
CRM 41.5/Summer/Total								
Aluminum	3	3	1.0E-01	1.9E-01	1.4E-01	2.7E-02	2.2E-01	1.3E-01
Barium	3	3	2.4E-02	2.5E-02	2.5E-02	6.2E-04	2.7E-02	2.5E-02
Boron	3	1	1.1E-02	3.2E-02	3.2E-02	.	.	3.2E-02

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	3	3	2.5E+01	2.9E+01	2.7E+01	1.1E+00	3.0E+01	2.8E+01
Chromium	3	3	1.3E-03	2.4E-03	1.7E-03	3.5E-04	2.7E-03	1.4E-03
Copper	3	3	1.6E-03	2.8E-03	2.4E-03	3.9E-04	3.6E-03	2.8E-03
Iron	3	3	1.5E-01	7.4E-01	3.6E-01	1.9E-01	9.1E-01	2.0E-01
Magnesium	3	3	6.4E+00	8.2E+00	7.4E+00	5.3E-01	8.9E+00	7.7E+00
Manganese	3	3	7.5E-02	1.2E-01	9.8E-02	1.2E-02	1.3E-01	1.0E-01
Mercury	3	1	1.9E-06	3.6E-06	3.6E-06	.	.	3.6E-06
Nickel	3	1	1.0E-03	1.5E-03	1.5E-03	.	.	1.5E-03
Potassium	3	3	1.2E+00	1.3E+00	1.3E+00	4.7E-02	1.4E+00	1.2E+00
Sodium	3	3	2.9E+00	3.1E+00	3.0E+00	5.6E-02	3.2E+00	3.1E+00
Zinc	3	3	2.2E-03	8.7E-03	4.8E-03	2.0E-03	1.1E-02	3.4E-03
CRM 6.0/Spring/Dissolved								
Aluminum	3	2	7.0E-03	1.5E-02	1.2E-02	1.5E-03	1.7E-02	1.1E-02
Antimony	3	3	3.9E-03	9.5E-03	6.1E-03	1.7E-03	1.1E-02	4.9E-03
Arsenic	3	1	1.0E-03	3.0E-03	1.7E-03	.	.	1.7E-03
Barium	3	3	2.2E-02	2.3E-02	2.3E-02	4.5E-04	2.4E-02	2.3E-02
Boron	3	2	1.8E-02	5.0E-02	4.9E-02	5.0E-04	5.0E-02	4.8E-02
Calcium	3	3	2.6E+01	2.8E+01	2.7E+01	7.8E-01	2.9E+01	2.6E+01
Chloride	3	3	2.7E+00	3.2E+00	2.9E+00	1.5E-01	3.4E+00	2.9E+00
Chromium	3	1	1.0E-03	1.1E-03	1.1E-03	.	.	1.1E-03
Copper	3	3	1.2E-03	3.6E-03	2.3E-03	7.1E-04	4.3E-03	2.0E-03
Fluoride	3	1	7.0E-02	1.5E-01	7.0E-02	.	.	7.0E-02
Iron	3	2	1.3E-02	7.1E-02	5.0E-02	1.2E-02	8.5E-02	4.0E-02

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Magnesium	3	3	7.7E+00	8.6E+00	8.1E+00	2.6E-01	8.8E+00	8.0E+00
Manganese	3	3	2.2E-03	5.8E-03	3.6E-03	1.1E-03	6.9E-03	2.8E-03
Nickel	3	3	1.7E-03	4.5E-03	3.5E-03	9.2E-04	6.2E-03	4.4E-03
Nitrate/nitrite	3	3	4.2E-01	6.9E-01	5.6E-01	7.8E-02	7.8E-01	5.6E-01
Potassium	3	3	1.3E+00	1.4E+00	1.3E+00	4.2E-02	1.5E+00	1.4E+00
Sodium	3	3	3.3E+00	3.8E+00	3.6E+00	1.5E-01	4.0E+00	3.7E+00
Sulfate	3	3	1.6E+01	1.8E+01	1.7E+01	6.7E-01	1.9E+01	1.8E+01
Zinc	3	3	4.5E-03	6.0E-03	5.1E-03	4.6E-04	6.4E-03	4.8E-03
CRM 6.0/Spring/Total								
Aluminum	3	3	4.9E-02	4.1E-01	2.2E-01	1.0E-01	5.3E-01	2.1E-01
Arsenic	3	1	1.0E-03	3.0E-03	1.3E-03			1.3E-03
Barium	3	3	2.5E-02	2.8E-02	2.7E-02	9.7E-04	3.0E-02	2.8E-02
Boron	3	3	3.0E-02	4.7E-02	3.9E-02	4.9E-03	5.3E-02	4.1E-02
Calcium	3	3	2.6E+01	2.9E+01	2.7E+01	1.1E+00	3.1E+01	2.7E+01
Chromium	3	2	1.0E-03	1.9E-03	1.4E-03	3.1E-04	2.3E-03	1.1E-03
Copper	3	3	1.2E-03	5.4E-03	2.8E-03	1.3E-03	6.6E-03	1.7E-03
Iron	3	3	8.2E-02	6.2E-01	3.4E-01	1.6E-01	7.9E-01	3.1E-01
Lead	3	1	1.0E-03	2.8E-03	2.8E-03			2.8E-03
Magnesium	3	3	7.9E+00	8.6E+00	8.3E+00	2.1E-01	8.9E+00	8.4E+00
Manganese	3	3	2.5E-02	8.0E-02	5.4E-02	1.6E-02	1.0E-01	5.8E-02
Mercury	3	3	2.0E-05	6.6E-05	4.0E-05	1.4E-05	8.0E-05	3.3E-05
Nickel	3	3	1.1E-03	4.0E-03	2.6E-03	8.4E-04	5.0E-03	2.7E-03
Potassium	3	3	1.3E+00	1.5E+00	1.4E+00	4.7E-02	1.6E+00	1.5E+00

Table A13 (continued)

Analyte	Obs.	Defects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Sodium	3	3	3.6E+00	5.4E+00	4.4E+00	5.4E-01	6.0E+00	4.3E+00
Vanadium	3	2	1.0E-03	1.2E-03	1.2E-03	0.0E+00	1.2E-03	1.2E-03
Zinc	3	3	3.3E-03	1.2E-02	6.8E-03	2.7E-03	1.5E-02	4.9E-03
CRM 6.0/Summer/Dissolved								
Aluminum	3	2	6.0E-03	1.7E-02	1.2E-02	3.1E-03	2.1E-02	9.4E-03
Antimony	3	3	4.1E-03	7.5E-03	5.3E-03	1.1E-03	8.5E-03	4.4E-03
Barium	3	3	2.5E-02	2.6E-02	2.6E-02	4.8E-04	2.7E-02	2.6E-02
Boron	3	3	1.6E-02	2.7E-02	2.1E-02	3.3E-03	3.0E-02	1.9E-02
Calcium	3	3	2.6E+01	2.9E+01	2.8E+01	7.3E-01	3.0E+01	2.8E+01
Chloride	3	3	2.8E+00	3.0E+00	2.9E+00	6.7E-02	3.1E+00	2.8E+00
Chromium	3	2	1.0E-03	2.6E-03	1.7E-03	4.9E-04	3.2E-03	1.3E-03
Copper	3	3	1.8E-03	3.6E-03	2.6E-03	5.3E-04	4.1E-03	2.4E-03
Fluoride	3	3	5.9E-02	1.1E-01	7.6E-02	1.7E-02	1.3E-01	6.0E-02
Iron	3	2	1.8E-02	5.3E-01	2.0E-01	1.9E-01	7.6E-01	4.0E-02
Magnesium	3	3	6.3E+00	8.0E+00	7.5E+00	5.7E-01	9.1E+00	8.0E+00
Manganese	3	3	1.6E-03	4.8E-03	3.4E-03	9.4E-04	6.1E-03	3.7E-03
Nickel	3	1	1.0E-03	2.6E-03	2.6E-03	.	.	2.6E-03
Nitrate/nitrite	3	3	4.0E-01	5.2E-01	4.6E-01	3.5E-02	5.6E-01	4.7E-01
Potassium	3	3	1.3E+00	1.4E+00	1.4E+00	1.5E-02	1.4E+00	1.4E+00
Selenium	3	1	1.0E-03	3.3E-03	3.3E-03	.	.	3.3E-03
Sodium	3	3	3.2E+00	3.4E+00	3.2E+00	6.1E-02	3.4E+00	3.2E+00
Sulfate	3	3	1.6E+01	1.7E+01	1.7E+01	3.3E-01	1.8E+01	1.7E+01
Zinc	3	3	2.9E-03	9.4E-03	5.1E-03	2.1E-03	1.1E-02	3.0E-03

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
CRM 6.0/Summer/Total								
Aluminum	3	3	4.2E-02	1.4E-01	7.5E-02	3.1E-02	1.7E-01	4.5E-02
Antimony	3	2	1.0E-03	1.7E-03	1.6E-03	3.8E-05	1.7E-03	1.6E-03
Barium	3	3	2.7E-02	3.0E-02	2.8E-02	8.7E-04	3.1E-02	2.8E-02
Boron	3	1	1.1E-02	2.9E-02	2.9E-02	.	.	2.9E-02
Calcium	3	3	2.6E+01	3.0E+01	2.9E+01	1.3E+00	3.2E+01	2.9E+01
Chromium	3	2	1.0E-03	2.1E-03	1.8E-03	1.5E-04	2.3E-03	1.7E-03
Copper	3	3	1.4E-03	2.5E-03	2.0E-03	3.2E-04	2.9E-03	2.1E-03
Iron	3	3	7.1E-02	6.7E-01	2.7E-01	2.0E-01	8.5E-01	7.6E-02
Magnesium	3	3	6.3E+00	8.4E+00	7.7E+00	6.9E-01	9.7E+00	8.3E+00
Manganese	3	3	4.1E-02	6.4E-02	5.4E-02	6.8E-03	7.3E-02	5.6E-02
Mercury	3	1	1.3E-05	2.0E-05	2.0E-05	.	.	2.0E-05
Nickel	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Potassium	3	3	1.4E+00	1.5E+00	1.4E+00	3.3E-02	1.5E+00	1.4E+00
Sodium	3	3	3.2E+00	3.4E+00	3.3E+00	4.0E-02	3.4E+00	3.3E+00
Vanadium	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Zinc	3	3	3.6E-03	5.8E-03	4.8E-03	6.4E-04	6.7E-03	5.0E-03
MBM 0.2/Spring/Dissolved								
Aluminum	3	3	1.1E-02	1.5E-02	1.3E-02	1.2E-03	1.7E-02	1.3E-02
Ammonium nitrogen	3	2	5.0E-02	1.9E-01	1.2E-01	4.3E-02	2.4E-01	7.8E-02
Antimony	3	2	1.0E-03	1.2E-02	6.5E-03	2.9E-03	1.5E-02	4.0E-03
Arsenic	3	1	1.0E-03	3.0E-03	2.2E-03	.	.	2.2E-03
Barium	3	3	2.2E-02	2.4E-02	2.3E-02	5.6E-04	2.4E-02	2.3E-02

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Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Boron	3	2	1.8E-02	1.1E-01	6.6E-02	2.4E-02	1.4E-01	4.6E-02
Calcium	3	3	2.6E+01	2.9E+01	2.8E+01	7.7E-01	3.0E+01	2.8E+01
Chloride	3	3	2.8E+00	3.0E+00	2.9E+00	5.8E-02	3.1E+00	2.9E+00
Chromium	3	1	1.0E-03	2.2E-03	2.2E-03	.	.	2.2E-03
Copper	3	3	1.5E-03	2.9E-03	2.3E-03	4.3E-04	3.6E-03	2.6E-03
Fluoride	3	1	9.0E-02	1.5E-01	9.0E-02	.	.	9.0E-02
Iron	3	2	1.3E-02	4.9E-02	4.7E-02	1.0E-03	5.0E-02	4.6E-02
Lead	3	1	1.0E-03	1.7E-03	1.7E-03	.	.	1.7E-03
Magnesium	3	3	8.1E+00	9.0E+00	8.5E+00	3.0E-01	9.3E+00	8.3E+00
Manganese	3	2	1.0E-03	7.7E-03	3.6E-03	2.3E-03	1.0E-02	1.6E-03
Nickel	3	3	1.3E-03	1.1E-02	5.2E-03	2.9E-03	1.4E-02	3.5E-03
Nitrate/nitrite	3	3	5.3E-01	7.5E-01	6.2E-01	6.7E-02	8.1E-01	5.8E-01
Potassium	3	3	1.2E+00	1.4E+00	1.3E+00	7.2E-02	1.6E+00	1.4E+00
Sodium	3	3	3.5E+00	3.9E+00	3.7E+00	1.4E-01	4.1E+00	3.6E+00
Sulfate	3	3	1.7E+01	1.8E+01	1.8E+01	3.3E-01	1.9E+01	1.8E+01
Zinc	3	3	4.9E-03	6.5E-03	5.8E-03	4.7E-04	7.2E-03	6.0E-03
MBM 0.2/Spring/Total								
Aluminum	3	3	4.5E-02	2.5E-01	1.6E-01	6.1E-02	3.4E-01	2.0E-01
Arsenic	3	1	1.0E-03	3.0E-03	2.2E-03	.	.	2.2E-03
Barium	3	3	2.6E-02	2.8E-02	2.7E-02	6.5E-04	2.8E-02	2.6E-02
Boron	3	2	1.8E-02	5.3E-02	4.9E-02	2.2E-03	5.5E-02	4.7E-02
Calcium	3	3	2.9E+01	3.5E+01	3.2E+01	1.8E+00	3.7E+01	3.0E+01
Chromium	3	1	1.0E-03	1.6E-03	1.6E-03	.	.	1.6E-03

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Copper	3	3	1.7E-03	5.0E-03	2.9E-03	1.1E-03	6.0E-03	2.0E-03
Iron	3	3	9.7E-02	3.6E-01	2.5E-01	8.1E-02	4.9E-01	3.0E-01
Lead	3	1	1.0E-03	2.2E-03	2.2E-03	.	.	2.2E-03
Magnesium	3	3	8.1E+00	9.1E+00	8.5E+00	3.2E-01	9.4E+00	8.2E+00
Manganese	3	3	4.9E-02	9.0E-02	6.5E-02	1.3E-02	1.0E-01	5.5E-02
Mercury	3	1	2.0E-06	5.8E-06	2.0E-06	.	.	2.0E-06
Nickel	3	3	1.2E-03	3.9E-03	2.5E-03	7.8E-04	4.8E-03	2.5E-03
Potassium	3	3	1.4E+00	1.5E+00	1.4E+00	2.2E-02	1.5E+00	1.4E+00
Sodium	3	3	3.7E+00	5.6E+00	4.4E+00	6.1E-01	6.1E+00	3.8E+00
Vanadium	3	1	1.0E-03	1.1E-03	1.1E-03	.	.	1.1E-03
Zinc	3	3	3.0E-03	1.7E-02	8.6E-03	4.5E-03	2.2E-02	5.4E-03
MBM 0.2/Summer/Dissolved								
Aluminum	3	2	6.0E-03	1.6E-02	1.3E-02	1.2E-03	1.7E-02	1.2E-02
Ammonium nitrogen	3	1	5.0E-02	8.1E-02	8.1E-02	.	.	8.1E-02
Antimony	3	2	1.0E-03	7.0E-03	4.9E-03	1.2E-03	8.3E-03	3.9E-03
Barium	3	2	1.0E-03	2.8E-02	2.6E-02	8.9E-04	2.9E-02	2.5E-02
Boron	3	1	1.1E-02	3.7E-02	3.7E-02	.	.	3.7E-02
Calcium	3	2	2.7E-02	2.8E+01	2.7E+01	5.8E-01	2.9E+01	2.7E+01
Chloride	3	3	2.5E+00	2.9E+00	2.7E+00	1.3E-01	3.0E+00	2.6E+00
Chromium	3	2	1.0E-03	8.1E-03	4.0E-03	2.3E-03	1.1E-02	2.0E-03
Copper	3	2	1.0E-03	6.8E-03	5.9E-03	5.2E-04	7.4E-03	5.4E-03
Fluoride	3	3	6.7E-02	9.0E-02	7.9E-02	6.7E-03	9.8E-02	8.0E-02
Iron	3	1	1.8E-02	2.7E+00	2.7E+00	.	.	2.7E+00

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Magnesium	3	2	9.0E-03	8.0E+00	6.8E+00	6.8E-01	8.8E+00	6.2E+00
Manganese	3	2	1.0E-03	5.7E-02	4.1E-02	9.1E-03	6.7E-02	3.3E-02
Nickel	3	2	1.0E-03	1.3E-02	5.6E-03	4.0E-03	1.7E-02	2.1E-03
Nitrate/nitrite	3	3	4.2E-01	5.7E-01	4.9E-01	4.3E-02	6.2E-01	4.9E-01
Potassium	3	2	1.3E-02	1.3E+00	1.3E+00	2.1E-02	1.3E+00	1.2E+00
Selenium	3	1	1.0E-03	7.5E-03	7.5E-03	.	.	7.5E-03
Sodium	3	3	2.4E-02	3.1E+00	2.1E+00	1.0E+00	5.1E+00	3.1E+00
Sulfate	3	3	1.6E+01	1.7E+01	1.7E+01	3.3E-01	1.8E+01	1.7E+01
Vanadium	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Zinc	3	2	2.0E-03	1.1E-02	6.4E-03	2.6E-03	1.4E-02	4.2E-03
MBM 0.2/Summer/Total								
Aluminum	3	2	6.0E-03	2.2E-01	1.3E-01	4.7E-02	2.7E-01	9.3E-02
Antimony	3	1	1.0E-03	1.2E-03	1.2E-03	.	.	1.2E-03
Barium	3	3	2.4E-02	3.0E-02	2.6E-02	1.7E-03	3.2E-02	2.6E-02
Boron	3	1	1.1E-02	2.9E-02	2.9E-02	.	.	2.9E-02
Calcium	3	3	2.6E+01	2.8E+01	2.7E+01	5.6E-01	2.9E+01	2.8E+01
Chromium	3	2	1.0E-03	2.1E-03	1.7E-03	2.3E-04	2.4E-03	1.5E-03
Copper	3	3	2.2E-03	3.3E-03	2.6E-03	3.5E-04	3.6E-03	2.3E-03
Iron	3	2	1.8E-02	7.6E-01	3.4E-01	2.4E-01	1.0E+00	1.3E-01
Magnesium	3	3	6.4E+00	8.4E+00	7.6E+00	6.2E-01	9.4E+00	8.0E+00
Manganese	3	2	1.0E-03	2.2E-01	1.4E-01	4.2E-02	2.7E-01	1.1E-01
Nickel	3	1	1.0E-03	1.4E-03	1.4E-03	.	.	1.4E-03
Potassium	3	3	1.3E+00	1.5E+00	1.3E+00	5.8E-02	1.5E+00	1.3E+00

Table A13 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Sodium	3	3	3.1E+00	3.3E+00	3.2E+00	4.6E-02	3.3E+00	3.2E+00
Vanadium	3	1	1.0E-03	1.0E-03	1.0E-03	.	.	1.0E-03
Zinc	3	3	2.0E-03	8.7E-03	5.1E-03	1.9E-03	1.1E-02	4.7E-03

Table A14. Differences between seasons for unfiltered and filtered metals (mg/L) for the contaminant remobilization study

Analyte	Filtered or Whole	Season	Number of		Standard			95%		
			Obs.	Det.	Minimum	Maximum	Mean	Error	UCB	Median
Aluminum	FLTR	spring	12	10	0.0070	0.0286	0.0149	0.00	0.0175	0.0150
Aluminum	FLTR	summer	11	7	0.0060	0.0174	0.0111	0.00	0.0130	0.0094
Aluminum	WHOL	spring	12	12	0.0451	0.5760	0.2290	0.05	0.3121	0.2260
Aluminum	WHOL	summer	12	11	0.0060	0.2230	0.1203	0.02	0.1584	0.1137
Antimony	FLTR	spring	12	10	0.0010	0.0115	0.0052	0.00	0.0071	0.0045
Antimony	FLTR	summer	11	10	0.0010	0.0108	0.0058	0.00	0.0071	0.0054
Antimony	WHOL	spring	12	0	0.0010	0.0010				
Antimony	WHOL	summer	12	3	0.0010	0.0017	0.0013	0.00	0.0014	0.0012
Copper	FLTR	spring	12	12	0.0012	0.0036	0.0023	0.00	0.0027	0.0023
Copper	FLTR	summer	11	10	0.0010	0.0109	0.0043	0.00	0.0057	0.0034
Copper	WHOL	spring	12	12	0.0012	0.0060	0.0031	0.00	0.0041	0.0025
Copper	WHOL	summer	12	12	0.0014	0.0034	0.0024	0.00	0.0028	0.0024
Iron	FLTR	spring	12	9	0.0130	0.0707	0.0437	0.01	0.0542	0.0472
Iron	FLTR	summer	11	5	0.0180	2.6500	0.4128	0.25	0.8651	0.0397
Iron	WHOL	spring	12	12	0.0817	0.7770	0.3436	0.06	0.4557	0.3355
Iron	WHOL	summer	12	11	0.0180	0.7940	0.3375	0.09	0.4967	0.1732
Manganese	FLTR	spring	12	11	0.0010	0.0152	0.0056	0.00	0.0078	0.0043
Manganese	FLTR	summer	11	10	0.0010	0.0566	0.0138	0.01	0.0237	0.0037
Manganese	WHOL	spring	12	12	0.0252	0.0919	0.0642	0.01	0.0746	0.0639
Manganese	WHOL	summer	12	11	0.0010	0.2150	0.0869	0.01	0.1116	0.0794
Mercury	FLTR	spring	24	13	0.0000	0.0013	0.0001	0.00	0.0002	0.0000
Mercury	FLTR	summer	23	7	0.0000	0.0002	0.0000	0.00	0.0000	0.0000
Mercury	WHOL	spring	24	12	0.0000	0.0002	0.0000	0.00	0.0000	0.0000
Mercury	WHOL	summer	24	9	0.0000	0.0002	0.0000	0.00	0.0000	0.0000

Table A14 (continued)

Analyte	Filtered or Whole	Season	Number of		Maximum	Mean	Standard		95%	Median
			Obs.	Det.			Error	UCB		
Methyl Mercury	FLTR	spring	12	12	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Methyl Mercury	FLTR	summer	12	12	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Methyl Mercury	WHOL	spring	12	12	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Methyl Mercury	WHOL	summer	12	12	0.0000	0.0000	0.00	0.0000	0.0000	0.0000
Nickel	FLTR	spring	12	12	0.0013	0.0136	0.00	0.0070	0.0032	0.0032
Nickel	FLTR	summer	11	5	0.0010	0.0125	0.00	0.0045	0.0012	0.0012
Nickel	WHOL	spring	12	12	0.0011	0.0040	0.00	0.0030	0.0026	0.0026
Nickel	WHOL	summer	12	4	0.0010	0.0019	0.00	0.0014	0.0012	0.0012
Zinc	FLTR	spring	12	12	0.0037	0.0072	0.00	0.0061	0.0055	0.0055
Zinc	FLTR	summer	11	10	0.0020	0.0114	0.00	0.0076	0.0042	0.0042
Zinc	WHOL	spring	12	12	0.0030	0.0223	0.00	0.0133	0.0080	0.0080
Zinc	WHOL	summer	12	12	0.0020	0.0087	0.00	0.0061	0.0047	0.0047
Hardness	WHOL	spring	12	12	75.3231	125.9622	4.14	109.7788	104.7260	104.7260
Hardness	WHOL	summer	12	12	90.1133	110.8912	2.03	104.8712	104.1510	104.1510

Table A15. Metals summary statistics (mg/L) by reach for the contaminant remobilization from sediments study

Analyte	Filtered or		No. of		Min.	Max.	Mean	S.E.	95%	
	Whole	Sub reach	Obs.	Det.					UCB	Median
Aluminum	FLTR	1	5	4	7.00E-03	1.64E-02	1.55E-02	0	1.61E-02	1.54E-02
Aluminum	FLTR	4.02	6	4	6.00E-03	1.74E-02	1.18E-02	0	1.48E-02	1.01E-02
Aluminum	FLTR	4.04	6	4	6.00E-03	2.86E-02	1.35E-02	0	2.05E-02	9.42E-03
Aluminum	FLTR	7.02	6	5	6.00E-03	1.55E-02	1.31E-02	0	1.47E-02	1.28E-02
Aluminum	WHOL	1	6	6	7.06E-02	3.31E-01	1.77E-01	0.04	2.58E-01	1.59E-01
Aluminum	WHOL	4.02	6	6	4.19E-02	4.09E-01	1.48E-01	0.06	2.67E-01	9.29E-02
Aluminum	WHOL	4.04	6	6	3.44E-02	5.76E-01	2.34E-01	0.08	3.92E-01	2.12E-01
Aluminum	WHOL	7.02	6	5	6.00E-03	2.50E-01	1.41E-01	0.04	2.18E-01	1.46E-01
Antimony	FLTR	1	5	4	1.00E-03	1.14E-02	6.93E-03	0	1.10E-02	6.60E-03
Antimony	FLTR	4.02	6	6	3.90E-03	9.50E-03	5.72E-03	0	7.59E-03	4.65E-03
Antimony	FLTR	4.04	6	6	1.10E-03	7.46E-03	4.58E-03	0	6.37E-03	5.15E-03
Antimony	FLTR	7.02	6	4	1.00E-03	1.15E-02	5.69E-03	0	8.37E-03	3.95E-03
Antimony	WHOL	1	6	0	1.00E-03	1.00E-03	.	.	.	.
Antimony	WHOL	4.02	6	2	1.00E-03	1.70E-03	1.62E-03	0	1.66E-03	1.60E-03
Antimony	WHOL	4.04	6	0	1.00E-03	1.00E-03	.	.	.	.
Antimony	WHOL	7.02	6	1	1.00E-03	1.20E-03	1.20E-03	.	.	1.20E-03
Copper	FLTR	1	5	5	1.90E-03	1.09E-02	4.24E-03	0	7.84E-03	3.00E-03
Copper	FLTR	4.02	6	6	1.20E-03	3.60E-03	2.44E-03	0	3.25E-03	2.21E-03
Copper	FLTR	4.04	6	6	1.80E-03	4.52E-03	3.05E-03	0	3.78E-03	3.05E-03
Copper	FLTR	7.02	6	5	1.00E-03	6.75E-03	3.44E-03	0	5.25E-03	2.75E-03
Copper	WHOL	1	6	6	1.50E-03	6.00E-03	2.84E-03	0	4.19E-03	2.55E-03
Copper	WHOL	4.02	6	6	1.20E-03	5.40E-03	2.38E-03	0	3.66E-03	1.90E-03
Copper	WHOL	4.04	6	6	1.40E-03	5.20E-03	3.17E-03	0	4.18E-03	3.15E-03
Copper	WHOL	7.02	6	6	1.70E-03	5.00E-03	2.75E-03	0	3.76E-03	2.25E-03
Iron	FLTR	1	5	4	1.80E-02	5.11E-01	1.31E-01	0.1	3.41E-01	5.05E-02

Table A15 (continued)

Analyte	Filtered or		No. of		Min.	Max.	Mean	S.E.	95%	
	Whole	Sub reach	Obs.	Det.					UCB	Median
Iron	FLTR	4.02	6	4	1.30E-02	5.34E-01	1.27E-01	0.09	3.00E-01	4.00E-02
Iron	FLTR	4.04	6	3	1.30E-02	5.68E-01	1.51E-01	0.09	3.38E-01	6.69E-02
Iron	FLTR	7.02	6	3	1.30E-02	2.65E+00	4.80E-01	0.49	1.46E+00	4.58E-02
Iron	WHOL	1	6	6	1.28E-01	7.36E-01	3.51E-01	0.1	5.48E-01	2.92E-01
Iron	WHOL	4.02	6	6	7.13E-02	6.66E-01	3.03E-01	0.11	5.31E-01	1.95E-01
Iron	WHOL	4.04	6	6	7.51E-02	7.94E-01	4.20E-01	0.13	6.73E-01	3.65E-01
Iron	WHOL	7.02	6	5	1.80E-02	7.59E-01	2.92E-01	0.11	5.06E-01	2.19E-01
Manganese	FLTR	1	5	5	7.70E-03	2.71E-02	1.37E-02	0	2.14E-02	8.88E-03
Manganese	FLTR	4.02	6	6	1.60E-03	5.80E-03	3.48E-03	0	4.80E-03	3.24E-03
Manganese	FLTR	4.04	6	6	1.80E-03	1.52E-02	4.66E-03	0	8.93E-03	2.50E-03
Manganese	FLTR	7.02	6	4	1.00E-03	5.66E-02	1.70E-02	0.01	3.68E-02	4.65E-03
Manganese	WHOL	1	6	6	6.39E-02	1.18E-01	8.85E-02	0.01	1.04E-01	8.64E-02
Manganese	WHOL	4.02	6	6	2.52E-02	8.00E-02	5.39E-02	0.01	6.95E-02	5.70E-02
Manganese	WHOL	4.04	6	6	4.18E-02	8.63E-02	6.74E-02	0.01	8.12E-02	6.76E-02
Manganese	WHOL	7.02	6	5	1.00E-03	2.15E-01	9.40E-02	0.03	1.47E-01	7.26E-02
Mercury	FLTR	1	6	4	1.44E-06	8.28E-06	2.85E-06	0	5.20E-06	1.56E-06
Mercury	FLTR	4.02	6	4	1.84E-06	4.34E-06	2.66E-06	0	3.75E-06	1.85E-06
Mercury	FLTR	4.04	6	5	1.54E-06	5.16E-06	3.23E-06	0	4.58E-06	3.06E-06
Mercury	FLTR	7.02	6	6	1.35E-06	5.83E-06	2.79E-06	0	4.27E-06	2.14E-06
Mercury	WHOL	1	6	4	1.91E-06	3.60E-06	2.77E-06	0	3.45E-06	2.88E-06
Mercury	WHOL	4.02	6	6	1.31E-05	6.61E-05	2.82E-05	0	4.44E-05	1.97E-05
Mercury	WHOL	4.04	6	6	1.67E-05	3.64E-05	2.75E-05	0	3.49E-05	2.79E-05
Mercury	WHOL	7.02	6	5	2.01E-06	7.09E-06	4.18E-06	0	5.88E-06	4.09E-06
Methyl Mercury	FLTR	1	6	6	1.80E-08	1.03E-07	5.78E-08	0	8.16E-08	5.50E-08
Methyl Mercury	FLTR	4.02	6	6	4.30E-08	9.60E-08	7.00E-08	0	8.82E-08	6.65E-08

Table A15 (continued)

Analyte	Filtered or		No. of		Max.	Mean	S.E.	95%	
	Whole	Sub reach	Obs.	Det.				UCB	Median
Methyl Mercury	FLTR	4.04	6	6	1.30E-07	6.57E-08	0	9.40E-08	5.65E-08
Methyl Mercury	FLTR	7.02	6	6	7.10E-08	4.95E-08	0	6.26E-08	4.65E-08
Methyl Mercury	WHOL	1	6	6	1.43E-07	6.97E-08	0	1.01E-07	5.90E-08
Methyl Mercury	WHOL	4.02	6	6	1.66E-07	1.00E-07	0	1.34E-07	9.40E-08
Methyl Mercury	WHOL	4.04	6	6	1.40E-07	1.04E-07	0	1.29E-07	1.07E-07
Methyl Mercury	WHOL	7.02	6	6	9.40E-08	5.66E-08	0	7.67E-08	5.28E-08
Nickel	FLTR	1	5	4	9.33E-03	3.49E-03	0	6.78E-03	2.70E-03
Nickel	FLTR	4.02	6	4	4.50E-03	2.77E-03	0	3.94E-03	2.15E-03
Nickel	FLTR	4.04	6	4	1.36E-02	3.65E-03	0	7.92E-03	1.50E-03
Nickel	FLTR	7.02	6	5	1.25E-02	5.25E-03	0	9.49E-03	2.80E-03
Nickel	WHOL	1	6	4	3.20E-03	1.98E-03	0	2.58E-03	1.65E-03
Nickel	WHOL	4.02	6	4	4.00E-03	1.87E-03	0	2.93E-03	1.15E-03
Nickel	WHOL	4.04	6	4	3.20E-03	2.06E-03	0	2.70E-03	1.70E-03
Nickel	WHOL	7.02	6	4	3.90E-03	1.89E-03	0	2.85E-03	1.28E-03
Zinc	FLTR	1	5	5	7.20E-03	5.98E-03	0	7.30E-03	6.60E-03
Zinc	FLTR	4.02	6	6	9.40E-03	5.10E-03	0	7.08E-03	4.65E-03
Zinc	FLTR	4.04	6	6	1.14E-02	5.46E-03	0	8.04E-03	4.30E-03
Zinc	FLTR	7.02	6	5	1.10E-02	6.12E-03	0	8.28E-03	5.45E-03
Zinc	WHOL	1	6	6	2.23E-02	8.28E-03	0	1.45E-02	6.05E-03
Zinc	WHOL	4.02	6	6	1.21E-02	5.78E-03	0	8.44E-03	4.95E-03
Zinc	WHOL	4.04	6	6	2.02E-02	8.51E-03	0	1.35E-02	7.30E-03
Zinc	WHOL	7.02	6	6	1.74E-02	6.86E-03	0	1.15E-02	5.03E-03

Table A16. All organic analytes detected (mg/L) for the contaminant remobilization from sediments study

Reach	River Mile	Season	Analyte	Process	Result	
1	CRM	41.5	summer	Bis(2-ethylhexyl)phthalate	Filtered	2.70E-02
4.02	CRM	6	spring	Bis(2-ethylhexyl)phthalate	Filtered	1.00E-03
4.04	CRM	1	summer	Bis(2-ethylhexyl)phthalate	Filtered	3.00E-02
7.02	MBM	0.2	summer	Bis(2-ethylhexyl)phthalate	Total	6.00E-03
1	CRM	41.5	spring	Di-n-butylphthalate	Filtered	1.00E-03
4.02	CRM	6	summer	Di-n-butylphthalate	Filtered	1.00E-03
7.02	MBM	0.2	spring	Di-n-butylphthalate	Filtered	1.00E-03
1	CRM	41.5	spring	Di-n-butylphthalate	Total	1.00E-03
7.02	MBM	0.2	summer	Di-n-butylphthalate	Total	4.00E-03
7.02	MBM	0.2	spring	alpha-BHC	Filtered	1.80E-05
7.02	MBM	0.2	spring	alpha-BHC	Total	1.30E-05

Table A17. Radionuclide water data for the contaminant remobilization study by reach, site, and season

Reach	Site	Season	Analyte	Process	Obs.	Detects	Max.	Min.	Mean	95% UCB	Median	Std. Error	Units
1	CRM	41.5 spring	Cesium-137	Cart. Filter	3	1	4.26E+00	-1.44E+00	0.00E+00	.	0.00E+00	.	PCI/L
1	CRM	41.5 summer	Cesium-137	Cart. Filter	3	2	-6.00E-01	-2.71E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	PCI/L
4.02	CRM	6.0 spring	Cesium-137	Cart. Filter	3	2	6.13E+00	-1.22E+00	1.00E-02	3.00E-02	8.00E-03	1.00E-02	PCI/L
4.02	CRM	6.0 summer	Cesium-137	Cart. Filter	3	2	-1.53E+00	-3.12E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	PCI/L
4.04	CRM	1.0 spring	Cesium-137	Cart. Filter	4	2	1.12E+01	-1.12E+00	3.80E-01	1.27E+00	3.78E-01	3.80E-01	PCI/L
4.04	CRM	1.0 summer	Cesium-137	Cart. Filter	4	0	9.14E+00	0.00E+00	.	.	.	.	PCI/L
7.02	MBM	0.2 spring	Cesium-137	Cart. Filter	3	1	1.29E+01	-2.94E+00	0.00E+00	.	0.00E+00	.	PCI/L
7.02	MBM	0.2 summer	Cesium-137	Cart. Filter	4	1	7.56E+00	-2.00E+00	0.00E+00	.	0.00E+00	.	PCI/L
1	CRM	41.5 spring	Cesium-137	Cart. Filter	3	0	2.40E-01	5.00E-02	.	.	.	.	PCI/L
1	CRM	41.5 summer	Cesium-137	Cart. Filter	3	0	1.30E-01	-4.00E-02	.	.	.	.	PCI/L
4.02	CRM	6.0 spring	Cesium-137	Cart. Filter	3	0	2.10E-01	-6.00E-02	.	.	.	.	PCI/L
4.02	CRM	6.0 summer	Cesium-137	Cart. Filter	3	0	2.00E-01	3.00E-02	.	.	.	.	PCI/L
4.04	CRM	1.0 spring	Cesium-137	Cart. Filter	5	0	2.70E-01	-1.30E-01	.	.	.	.	PCI/L
4.04	CRM	1.0 summer	Cesium-137	Cart. Filter	4	1	2.10E-01	-9.00E-02	2.10E-01	.	2.12E-01	.	PCI/L
7.02	MBM	0.2 spring	Cesium-137	Cart. Filter	3	0	1.00E-01	-4.80E-01	.	.	.	.	PCI/L
7.02	MBM	0.2 summer	Cesium-137	Cart. Filter	4	0	-2.00E-02	-2.90E-01	.	.	.	.	PCI/L
1	CRM	41.5 spring	Cobalt-60	Cart. Filter	3	0	4.94E+00	7.30E-01	.	.	.	.	PCI/L
1	CRM	41.5 summer	Cobalt-60	Cart. Filter	3	0	7.60E-01	-6.81E+00	.	.	.	.	PCI/L
4.02	CRM	6.0 spring	Cobalt-60	Cart. Filter	3	0	1.12E+00	1.60E-01	.	.	.	.	PCI/L
4.02	CRM	6.0 summer	Cobalt-60	Cart. Filter	3	0	5.15E+00	2.00E-01	.	.	.	.	PCI/L
4.04	CRM	1.0 spring	Cobalt-60	Cart. Filter	4	0	1.11E+00	-3.60E+00	.	.	.	.	PCI/L
4.04	CRM	1.0 summer	Cobalt-60	Cart. Filter	4	0	4.80E+00	-1.08E+00	.	.	.	.	PCI/L
7.02	MBM	0.2 spring	Cobalt-60	Cart. Filter	3	0	5.99E+00	-4.24E+00	.	.	.	.	PCI/L
7.02	MBM	0.2 summer	Cobalt-60	Cart. Filter	4	0	5.44E+00	-2.05E+00	.	.	.	.	PCI/L
1	CRM	41.5 spring	Cobalt-60	Cart. Filter	3	0	1.50E-01	-3.30E-01	.	.	.	.	PCI/L
1	CRM	41.5 summer	Cobalt-60	Cart. Filter	3	0	-4.00E-02	-1.10E-01	.	.	.	.	PCI/L
4.02	CRM	6.0 spring	Cobalt-60	Cart. Filter	3	0	1.20E-01	-7.00E-02	.	.	.	.	PCI/L

Table A17 (continued)

Reach	Site	Season	Analyte	Process	Obs.	Detects	Max.	Min.	Mean	95% UCB	Median	Std. Error	Units
4.02	CRM 6.0	summer	Cobalt-60	Cart. Filter	3	0	-1.30E-01	-3.90E-01	.	.	.	.	PCI/L
4.04	CRM 1.0	spring	Cobalt-60	Cart. Filter	5	0	4.60E-01	-3.20E-01	.	.	.	.	PCI/L
4.04	CRM 1.0	summer	Cobalt-60	Cart. Filter	4	0	2.40E-01	-2.10E-01	.	.	.	.	PCI/L
7.02	MBM 0.2	spring	Cobalt-60	Cart. Filter	3	0	2.00E-02	-2.20E-01	.	.	.	.	PCI/L
7.02	MBM 0.2	summer	Cobalt-60	Cart. Filter	4	0	1.10E-01	-5.70E-01	.	.	.	.	PCI/L
1	CRM 41.5	spring	Gross alpha activity		3	1	1.97E+00	4.20E-01	1.97E+00	.	1.97E+00	.	PCI/L
1	CRM 41.5	summer	Gross alpha activity		3	0	6.60E-01	-8.43E+00	.	.	.	.	PCI/L
4.02	CRM 6.0	spring	Gross alpha activity		3	2	1.21E+00	6.80E-01	9.70E-01	1.37E+00	8.50E-01	1.40E-01	PCI/L
4.02	CRM 6.0	summer	Gross alpha activity		3	1	1.76E+00	-1.08E+01	0.00E+00	.	0.00E+00	.	PCI/L
4.04	CRM 1.0	spring	Gross alpha activity		4	0	8.60E-01	1.70E-01	.	.	.	.	PCI/L
4.04	CRM 1.0	summer	Gross alpha activity		3	0	2.75E+00	-1.29E+01	.	.	.	.	PCI/L
7.02	MBM 0.2	spring	Gross alpha activity		3	1	1.08E+00	2.90E-01	1.08E+00	.	1.08E+00	.	PCI/L
7.02	MBM 0.2	summer	Gross alpha activity		4	0	4.20E-01	-8.22E+00	.	.	.	.	PCI/L
1	CRM 41.5	spring	Gross alpha activity		3	2	5.79E+00	2.08E+00	4.74E+00	6.51E+00	4.22E+00	6.00E-01	PCI/L
1	CRM 41.5	summer	Gross alpha activity		3	3	1.34E+01	4.82E+00	8.91E+00	1.62E+01	8.51E+00	2.48E+00	PCI/L
4.02	CRM 6.0	spring	Gross alpha activity		3	2	5.53E+00	1.84E+00	4.86E+00	5.99E+00	4.53E+00	3.80E-01	PCI/L
4.02	CRM 6.0	summer	Gross alpha activity		3	2	7.74E+00	3.80E-01	6.91E+00	8.31E+00	6.49E+00	4.80E-01	PCI/L
4.04	CRM 1.0	spring	Gross alpha activity		4	2	2.88E+00	1.61E+00	2.46E+00	2.86E+00	2.32E+00	1.70E-01	PCI/L
4.04	CRM 1.0	summer	Gross alpha activity		3	2	8.95E+00	9.90E-01	6.35E+00	1.07E+01	5.05E+00	1.50E+00	PCI/L
7.02	MBM 0.2	spring	Gross alpha activity		3	2	6.26E+00	-2.80E-01	3.57E+00	8.11E+00	2.22E+00	1.55E+00	PCI/L
7.02	MBM 0.2	summer	Gross alpha activity		4	4	8.14E+00	3.15E+00	6.07E+00	8.63E+00	6.50E+00	1.09E+00	PCI/L
1	CRM 41.5	spring	Particle associated Co-60	Cart. Filter	3	0	8.81E+00	-3.98E+01	.	.	.	.	PCI/G
1	CRM 41.5	summer	Particle associated Co-60	Cart. Filter	3	0	-3.75E+00	-2.98E+01	.	.	.	.	PCI/G
4.02	CRM 6.0	spring	Particle associated Co-60	Cart. Filter	3	0	1.27E+01	-1.92E+01	.	.	.	.	PCI/G
4.02	CRM 6.0	summer	Particle associated Co-60	Cart. Filter	3	0	-1.80E+01	-6.55E+01	.	.	.	.	PCI/G
4.04	CRM 1.0	spring	Particle associated Co-60	Cart. Filter	3	0	5.30E+01	9.42E+00	.	.	.	.	PCI/G
4.04	CRM 1.0	summer	Particle associated Co-60	Cart. Filter	3	0	3.29E+01	0.00E+00	.	.	.	.	PCI/G

Table A17 (continued)

Reach	Site	Season	Analyte	Process	Obs.	Detects	Max.	Min.	Mean	95% UCB	Median	Std. Error	Units
7.02	MBM 0.2	spring	Particle associated Co-60	Cart. Filter	3	0	4.03E+00	-2.52E+01	.	.	.	.	PCI/G
7.02	MBM 0.2	summer	Particle associated Co-60	Cart. Filter	3	0	3.24E+01	-2.61E+00	.	.	.	.	PCI/G
1	CRM 41.5	spring	Particle associated Cs-137	Cart. Filter	3	0	2.86E+01	3.06E+00	.	.	.	.	PCI/G
1	CRM 41.5	summer	Particle associated Cs-137	Cart. Filter	3	0	3.55E+01	-6.18E+00	.	.	.	.	PCI/G
4.02	CRM 6.0	spring	Particle associated Cs-137	Cart. Filter	3	0	5.59E+01	-6.27E+00	.	.	.	.	PCI/G
4.02	CRM 6.0	summer	Particle associated Cs-137	Cart. Filter	3	0	1.44E+01	4.78E+00	.	.	.	.	PCI/G
4.04	CRM 1.0	spring	Particle associated Cs-137	Cart. Filter	3	0	2.54E+01	4.43E+00	.	.	.	.	PCI/G
4.04	CRM 1.0	summer	Particle associated Cs-137	Cart. Filter	3	0	1.16E+01	-6.12E+00	.	.	.	.	PCI/G
7.02	MBM 0.2	spring	Particle associated Cs-137	Cart. Filter	3	0	1.70E+01	-5.76E+01	.	.	.	.	PCI/G
7.02	MBM 0.2	summer	Particle associated Cs-137	Cart. Filter	3	0	-6.59E+00	-3.98E+01	.	.	.	.	PCI/G
1	CRM 41.5	spring	Strontium-90		3	0	2.47E+00	4.90E-01	.	.	.	.	PCI/L
1	CRM 41.5	summer	Strontium-90		3	0	7.90E-01	0.00E+00	.	.	.	.	PCI/L
4.02	CRM 6.0	spring	Strontium-90		3	0	1.99E+00	0.00E+00	.	.	.	.	PCI/L
4.02	CRM 6.0	summer	Strontium-90		3	1	8.16E+00	-1.40E-01	8.16E+00	.	8.16E+00	.	PCI/L
4.04	CRM 1.0	spring	Strontium-90		4	1	1.22E+01	0.00E+00	1.22E+01	.	1.22E+01	.	PCI/L
4.04	CRM 1.0	summer	Strontium-90		3	0	1.30E-01	0.00E+00	.	.	.	.	PCI/L
7.02	MBM 0.2	spring	Strontium-90		3	0	1.80E+00	0.00E+00	.	.	.	.	PCI/L
7.02	MBM 0.2	summer	Strontium-90		3	1	1.07E+00	4.70E-01	1.07E+00	.	1.07E+00	.	PCI/L
1	CRM 41.5	spring	Tritium		3	0	4.87E+01	0.00E+00	.	.	.	.	PCI/L
1	CRM 41.5	summer	Tritium		3	0	7.24E+01	-1.48E+02	.	.	.	.	PCI/L
4.02	CRM 6.0	spring	Tritium		3	3	9.52E+02	2.93E+02	7.17E+02	1.34E+03	9.06E+02	2.12E+02	PCI/L
4.02	CRM 6.0	summer	Tritium		3	1	3.44E+02	-1.03E+02	3.44E+02	.	3.44E+02	.	PCI/L
4.04	CRM 1.0	spring	Tritium		4	3	3.46E+02	1.57E+02	2.53E+02	3.34E+02	2.28E+02	3.45E+01	PCI/L
4.04	CRM 1.0	summer	Tritium		3	3	2.43E+02	-1.53E+02	8.11E+01	3.18E+02	0.00E+00	8.11E+01	PCI/L
7.02	MBM 0.2	spring	Tritium		3	0	3.52E+01	0.00E+00	.	.	.	.	PCI/L
7.02	MBM 0.2	summer	Tritium		4	0	2.88E+01	-1.91E+02	.	.	.	.	PCI/L

Table A18. TVA Source Area Sampling metals and radionuclide results. To be provided for final draft.

Table A19. Summary statistics for inorganic results (mg/L) in Poplar Creek by reach

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 3.01 /Dissolved								
Aluminum	13	13	1.00e-02	1.80e-01	3.60e-02	1.30e-02	5.80e-02	2.40e-02
Antimony	13	8	1.00e-03	7.30e-03	4.10e-03	6.10e-04	5.20e-03	2.50e-03
Arsenic	13	2	1.00e-03	3.00e-03	1.10e-03	2.70e-05	1.20e-03	1.10e-03
Barium	13	13	2.20e-02	4.80e-02	3.30e-02	3.70e-02	3.90e-02	3.40e-02
Boron	13	12	3.20e-03	1.60e-01	5.30e-02	1.30e-02	7.50e-02	4.00e-02
Calcium	13	13	1.20e+01	3.90e+01	2.60e+01	2.30e+00	3.00e+01	2.70e+01
Chromium	13	8	1.00e-03	3.80e-03	1.70e-03	2.00e-04	2.10e-03	1.30e-03
Copper	13	13	1.00e-03	6.20e-03	3.00e-03	4.30e-04	3.80e-03	2.90e-03
Iron	13	12	1.80e-02	3.80e-01	9.10e-02	2.80e-02	1.40e-01	4.90e-02
Lead	13	2	1.00e-03	1.50e-03	1.40e-03	1.30e-05	1.40e-03	1.40e-03
Magnesium	13	13	3.70e+00	9.60e+00	7.00e+00	5.20e-01	7.90e+00	7.30e+00
Manganese	13	13	1.60e-02	1.00e-01	5.20e-02	6.70e-03	6.40e-02	4.90e-02
Mercury (BR)	13	2	2.20e-07	1.40e-05	5.00e-06	9.90e-07	6.80e-06	4.30e-06
Molybdenum	13	1	1.00e-03	5.00e-03	1.20e-03	.	.	1.20e-03
Nickel	13	13	1.90e-03	9.10e-03	4.20e-03	5.50e-04	5.20e-03	3.80e-03
Potassium	13	13	9.90e-01	3.20e+00	1.80e+00	2.00e-01	2.20e+00	1.70e+00
Selenium	13	2	1.00e-03	4.70e-03	4.60e-03	1.00e-05	4.60e-03	4.60e-03
Sodium	13	13	1.80e+00	6.70e+00	4.00e+00	4.80e-01	4.90e+00	4.10e+00
Sulfate	13	13	1.80e+01	4.50e+01	2.60e+01	2.10e+00	3.00e+01	2.50e+01
Uranium	13	8	1.00e-03	2.50e-03	1.60e-03	1.20e-04	1.80e-03	1.40e-03
Zinc	13	13	3.90e-03	1.20e-02	7.30e-03	7.90e-04	8.70e-03	6.30e-03
Reach 3.01/Total								
Aluminum	13	13	1.20e-01	7.00e-01	4.00e-01	4.80e-02	4.90e-01	4.30e-01
Antimony	13	1	1.00e-03	1.40e-03	1.40e-03	.	.	1.40e-03
Barium	13	13	3.00e-02	5.10e-02	3.80e-02	1.80e-03	4.20e-02	3.90e-02
Boron	13	12	4.60e-03	1.40e-01	5.10e-02	1.20e-02	7.20e-02	3.70e-02
Calcium	13	12	2.70e-02	3.90e+01	2.50e+01	2.50e+00	2.90e+01	2.70e+01
Chromium	13	12	1.00e-03	3.10e-03	2.10e-03	1.60e-04	2.40e-03	2.20e-03
Cobalt	13	4	1.00e-03	1.60e-03	1.10e-03	5.20e-05	1.20e-03	1.00e-03
Copper	13	13	1.50e-03	1.10e-02	4.60e-03	7.20e-04	5.90e-03	5.30e-03
Iron	13	13	2.70e-01	1.20e+00	6.60e-01	7.70e-02	8.00e-01	6.80e-01

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Lead	13	8	1.00e-03	3.00e-03	1.50e-03	1.60e-04	1.80e-03	1.30e-03
Magnesium	13	12	9.00e-03	9.90e+00	6.70e+00	5.70e-01	7.70e+00	6.80e+00
Manganese	13	13	4.90e-02	1.30e-01	8.60e-02	7.90e-03	1.00e-01	7.70e-02
Mercury	13	1	2.00e-04	2.50e-04	2.50e-04			2.50e-04
Mercury (BR)	13	13	4.30e-07	1.40e-04	4.90e-05	1.10e-05	6.90e-05	3.00e-05
Methyl mercury (BR)	12	1	8.40e-08	4.30e-07	4.30e-07	.	.	4.30e-07
Molybdenum	13	2	1.00e-03	5.00e-03	1.10e-03	1.30e-05	1.10e-03	1.10e-03
Nickel	13	13	2.40e-03	5.60e-03	3.90e-03	3.10e-04	4.50e-03	3.80e-03
Potassium	13	12	1.30e-02	3.10e+00	1.80e+00	2.00e-01	2.20e+00	1.40e+00
Sodium	13	12	2.00e-02	7.20e+00	4.60e+00	4.30e-01	5.40e+00	4.80e+00
Uranium	13	9	1.00e-03	2.50e-03	1.80e-03	1.20e-04	2.00e-03	1.70e-03
Vanadium	13	7	1.00e-03	1.60e-03	1.20e-03	6.60e-05	1.30e-03	1.00e-03
Zinc	13	13	6.20e-03	4.70e-02	1.70e-02	2.90e-03	2.20e-02	1.60e-02
Reach 3.02/ Dissolved								
Aluminum	13	12	7.00e-03	4.90e-02	2.00e-02	3.10e-03	2.50e-02	1.70e-02
Antimony	13	10	1.00e-03	1.00e-02	6.30e-03	4.20e-04	7.00e-03	5.40e-03
Arsenic	13	2	1.00e-03	3.00e-03	1.30e-03	1.00e-05	1.40e-03	1.30e-03
Barium	13	13	2.10e-02	4.20e-02	3.40e-02	1.70e-03	3.70e-02	3.30e-02
Boron	13	12	8.60e-03	1.00e-01	5.00e-02	8.10e-03	6.40e-02	5.20e-02
Calcium	13	13	1.40e+01	3.90e+01	2.90e+01	2.10e+00	3.30e+01	2.80e+01
Chromium	13	9	1.00e-03	2.70e-03	1.40e-03	1.60e-04	1.60e-03	1.10e-03
Copper	13	13	1.20e-03	5.90e-03	3.20e-03	3.80e-04	3.90e-03	3.50e-03
Iron	13	11	1.30e-02	2.50e-01	8.00e-02	2.20e-02	1.20e-01	5.10e-02
Lead	13	1	1.00e-03	2.20e-03	2.20e-03	.	.	2.20e-03
Magnesium	13	13	4.30e+00	1.00e+01	7.70e+00	5.00e-01	8.60e+00	7.70e+00
Manganese	13	13	9.30e-03	9.60e-02	4.80e-02	6.90e-03	6.10e-02	4.80e-02
Mercury	13	1	2.00e-04	2.30e-04	2.30e-04			2.30e-04
Mercury (BR)	13	4	2.80e-06	8.40e-06	5.10e-06	4.30e-07	5.90e-06	4.50e-06
Molybdenum	13	2	1.00e-03	5.00e-03	1.10e-03	4.90e-05	1.20e-03	1.10e-03
Nickel	13	13	2.20e-03	8.50e-03	4.10e-03	4.50e-04	4.90e-03	4.00e-03
Potassium	13	13	9.70e-01	2.60e+00	1.80e+00	1.50e-01	2.00e+00	1.60e+00

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Selenium	13	2	1.00e-03	4.70e-03	3.70e-03	1.10e-04	3.90e-03	3.60e-03
Sodium	13	13	2.00e+00	8.70e+00	4.80e+00	5.90e-01	5.90e+00	4.20e+00
Sulfate	13	13	1.70e+01	3.90e+01	2.70e+01	1.40e+00	3.00e+01	2.70e+01
Uranium	13	12	1.00e-03	3.50e-03	2.20e-03	1.90e-04	2.50e-03	2.30e-03
Zinc	13	13	3.00e-03	1.60e-02	7.40e-03	1.00e-03	9.30e-03	7.30e-03
Reach 3.02/Total								
Aluminum	13	13	1.20e-01	1.10e+00	3.40e-01	7.60e-02	4.80e-01	2.50e-01
Antimony	13	1	1.00e-03	1.20e-03	1.20e-03	.	.	1.20e-03
Arsenic	13	1	1.00e-03	3.00e-03	1.40e-03	.	.	1.40e-03
Barium	13	13	2.80e-02	4.60e-02	3.80e-02	1.50e-03	4.00e-02	3.80e-02
Boron	13	12	1.10e-02	1.20e-01	5.00e-02	9.90e-03	6.80e-02	4.70e-02
Calcium	13	13	1.60e+01	3.80e+01	2.90e+01	1.90e+00	3.30e+01	2.80e+01
Chromium	13	11	1.00e-03	2.90e-03	1.60e-03	1.40e-04	1.90e-03	1.40e-03
Copper	13	13	1.10e-03	5.20e-03	2.80e-03	3.50e-04	3.40e-03	2.40e-03
Iron	13	13	2.20e-01	1.10e+00	5.10e-01	7.10e-02	6.40e-01	4.50e-01
Lead	13	4	1.00e-03	1.80e-03	1.20e-03	9.50e-05	1.30e-03	1.00e-03
Magnesium	13	13	4.40e+00	1.00e+01	7.80e+00	5.00e-01	8.70e+00	8.10e+00
Manganese	13	13	4.60e-02	1.20e-01	7.60e-02	6.80e-03	8.90e-02	6.50e-02
Mercury	13	1	2.00e-04	3.80e-04	3.80e-04			3.80e-04
Mercury (BR)	13	12	4.10e-06	1.40e-04	7.80e-05	1.10e-05	9.80e-05	1.00e-04
Methyl mercury (BR)	12	4	9.40e-08	4.10e-07	3.00e-07	1.40e-08	3.20e-07	2.80e-07
Molybdenum	13	2	1.00e-03	5.00e-03	1.00e-03	4.90e-05	1.10e-03	1.00e-03
Nickel	13	13	1.50e-03	5.40e-03	3.50e-03	3.60e-04	4.20e-03	4.20e-03
Potassium	13	13	1.00e+00	2.50e+00	1.80e+00	1.50e-01	2.10e+00	1.80e+00
Sodium	13	13	2.50e+00	8.70e+00	5.30e+00	5.80e-01	6.30e+00	4.90e+00
Uranium	13	13	1.10e-03	3.60e-03	2.40e-03	1.90e-04	2.70e-03	2.50e-03
Vanadium	13	3	1.00e-03	1.70e-03	1.20e-03	5.90e-05	1.30e-03	1.10e-03
Zinc	13	13	4.80e-03	2.30e-02	1.00e-02	1.40e-03	1.20e-02	8.40e-03
Reach 3.03/ Dissolved								
Aluminum	13	11	7.00e-03	3.60e-02	1.80e-02	2.00e-03	2.10e-02	1.60e-02

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Antimony	13	12	1.00e-03	1.10e-02	5.60e-03	6.20e-04	6.70e-03	4.70e-03
Arsenic	13	3	1.00e-03	3.00e-03	1.20e-03	7.00e-05	1.30e-03	1.10e-03
Barium	13	13	2.20e-02	3.80e-02	3.00e-02	1.40e-03	3.20e-02	3.00e-02
Boron	13	10	3.00e-03	8.10e-02	4.10e-02	6.70e-03	5.30e-02	4.30e-02
Calcium	13	13	1.30e+01	3.50e+01	2.50e+01	1.90e+00	2.90e+01	2.60e+01
Chromium	13	10	1.00e-03	2.50e-03	1.50e-03	1.30e-04	1.70e-03	1.30e-03
Copper	13	11	1.00e-03	6.50e-03	3.20e-03	3.70e-04	3.90e-03	2.80e-03
Iron	13	8	1.30e-02	2.90e-01	9.10e-02	2.70e-02	1.40e-01	2.60e-02
Lead	13	1	1.00e-03	1.20e-03	1.20e-03	.	.	1.20e-03
Magnesium	13	13	4.30e+00	9.10e+00	6.70e+00	4.10e-01	7.40e+00	6.90e+00
Manganese	13	13	5.10e-03	7.50e-02	4.40e-02	5.40e-03	5.40e-02	4.60e-02
Mercury	13	1	2.00e-04	7.30e-04	7.30e-04			7.30e-04
Mercury (BR)	13	2	4.10e-06	9.00e-06	6.50e-06	2.80e-07	7.00e-06	6.30e-06
Methyl mercury (BR)	13	1	5.80e-08	2.40e-07	7.10e-08	.	.	7.10e-08
Nickel	13	13	1.40e-03	1.10e-02	4.40e-03	8.40e-04	5.90e-03	3.30e-03
Potassium	13	13	1.20e+00	2.90e+00	1.80e+00	1.60e-01	2.00e+00	1.40e+00
Sodium	13	13	1.50e+00	6.90e+00	4.30e+00	4.30e-01	5.00e+00	4.30e+00
Sulfate	13	13	1.70e+01	2.90e+01	2.50e+01	1.10e+00	2.70e+01	2.70e+01
Uranium	13	10	1.00e-03	3.20e-03	2.00e-03	1.50e-04	2.30e-03	2.00e-03
Zinc	13	12	2.30e-03	1.90e-02	6.20e-03	1.30e-03	8.50e-03	4.80e-03
Reach 3.03/Total								
Aluminum	13	13	1.50e-01	8.30e-01	3.80e-01	5.60e-02	4.80e-01	3.90e-01
Arsenic	13	3	1.00e-03	3.00e-03	1.30e-03	1.00e-04	1.50e-03	1.20e-03
Barium	13	13	2.80e-02	4.40e-02	3.60e-02	1.30e-03	3.80e-02	3.50e-02
Boron	13	10	3.00e-03	9.90e-02	3.40e-02	7.30e-03	4.70e-02	3.00e-02
Calcium	13	13	1.40e+01	3.60e+01	2.60e+01	2.00e+00	3.00e+01	2.60e+01
Chromium	13	11	1.00e-03	2.90e-03	2.00e-03	1.60e-04	2.30e-03	1.90e-03
Cobalt	13	1	1.00e-03	1.30e-03	1.30e-03	.	.	1.30e-03
Copper	13	12	1.60e-03	8.80e-03	4.20e-03	6.80e-04	5.40e-03	3.30e-03
Iron	13	13	2.30e-01	1.40e+00	6.00e-01	8.90e-02	7.60e-01	5.60e-01
Lead	13	9	1.00e-03	3.00e-03	1.70e-03	1.80e-04	2.00e-03	1.60e-03
Magnesium	13	13	4.20e+00	9.20e+00	6.70e+00	4.30e-01	7.50e+00	7.10e+00

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Manganese	13	13	5.60e-02	1.20e-01	8.00e-02	5.40e-03	9.00e-02	8.10e-02
Mercury	13	3	2.00e-04	4.60e-04	2.20e-04	2.30e-05	2.60e-04	2.00e-04
Mercury (BR)	13	13	3.80e-05	2.00e-04	1.10e-04	1.60e-05	1.40e-04	1.20e-04
Methyl mercury (BR)	13	4	9.90e-08	4.60e-07	2.40e-07	2.10e-08	2.70e-07	2.20e-07
Nickel	13	13	2.00e-03	6.40e-03	3.60e-03	3.70e-04	4.20e-03	3.40e-03
Potassium	13	13	1.20e+00	3.00e+00	1.80e+00	1.60e-01	2.10e+00	1.60e+00
Sodium	13	13	3.30e+00	7.10e+00	5.30e+00	3.60e-01	5.90e+00	5.80e+00
Uranium	13	11	1.00e-03	8.50e-03	2.70e-03	5.00e-04	3.60e-03	2.10e-03
Vanadium	13	4	1.00e-03	1.70e-03	1.20e-03	6.90e-05	1.30e-03	1.10e-03
Zinc	13	12	4.90e-03	3.30e-02	1.30e-02	2.50e-03	1.80e-02	1.10e-02
Reach 3.04/ Dissolved								
Aluminum	12	11	9.50e-03	3.30e-02	1.80e-02	2.20e-03	2.10e-02	1.60e-02
Antimony	12	11	1.00e-03	1.30e-02	5.50e-03	7.60e-04	6.80e-03	5.10e-03
Arsenic	12	2	1.00e-03	3.00e-03	1.40e-03	2.50e-05	1.50e-03	1.40e-03
Barium	12	12	2.00e-02	3.80e-02	3.00e-02	1.50e-03	3.30e-02	3.00e-02
Boron	12	11	3.50e-03	1.10e-01	4.00e-02	8.20e-03	5.40e-02	3.70e-02
Calcium	12	11	2.70e-02	3.40e+01	2.50e+01	1.80e+00	2.80e+01	2.50e+01
Chromium	12	8	1.00e-03	4.60e-03	1.80e-03	2.80e-04	2.30e-03	1.60e-03
Copper	12	11	1.50e-03	5.50e-03	3.30e-03	3.70e-04	4.00e-03	3.00e-03
Iron	12	9	1.80e-02	3.20e-01	8.50e-02	2.90e-02	1.40e-01	3.20e-02
Lead	12	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Magnesium	12	11	9.00e-03	9.20e+00	6.90e+00	5.40e-01	7.80e+00	7.40e+00
Manganese	12	12	3.90e-03	8.30e-02	4.90e-02	8.00e-03	6.30e-02	5.60e-02
Mercury	12	1	2.00e-04	2.30e-04	2.30e-04			2.30e-04
Mercury (BR)	12	2	2.90e-06	3.00e-05	5.70e-06	3.00e-06	1.10e-05	3.50e-06
Nickel	12	12	1.40e-03	1.00e-02	3.90e-03	6.70e-04	5.10e-03	3.50e-03
Potassium	12	11	1.30e-02	2.70e+00	1.70e+00	1.60e-01	2.00e+00	1.40e+00
Selenium	12	1	1.00e-03	3.30e-03	3.30e-03	.	.	3.30e-03
Sodium	12	11	2.00e-02	7.50e+00	4.00e+00	4.90e-01	4.90e+00	3.90e+00
Sulfate	12	12	1.60e+01	2.80e+01	2.50e+01	1.20e+00	2.70e+01	2.60e+01
Uranium	12	10	1.00e-03	3.00e-03	1.90e-03	1.80e-04	2.20e-03	2.00e-03

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Zinc	12	11	3.90e-03	1.70e-02	6.70e-03	1.10e-03	8.60e-03	5.10e-03
Reach 3.04/Total								
Aluminum	12	12	2.50e-01	1.50e+00	4.60e-01	9.70e-02	6.40e-01	3.50e-01
Antimony	12	2	1.00e-03	1.80e-03	1.70e-03	1.10e-05	1.70e-03	1.70e-03
Arsenic	12	3	1.00e-03	3.00e-03	1.10e-03	8.50e-05	1.20e-03	1.00e-03
Barium	12	12	3.00e-02	4.10e-02	3.60e-02	9.40e-04	3.80e-02	3.60e-02
Boron	12	10	3.00e-03	1.20e-01	4.10e-02	9.80e-03	5.90e-02	3.50e-02
Calcium	12	11	2.70e-02	3.40e+01	2.60e+01	1.70e+00	2.90e+01	2.50e+01
Chromium	12	10	1.00e-03	3.10e-03	2.10e-03	2.30e-04	2.50e-03	2.20e-03
Cobalt	12	2	1.00e-03	1.50e-03	1.10e-03	4.50e-05	1.20e-03	1.10e-03
Copper	12	11	1.70e-03	1.00e-02	4.10e-03	7.20e-04	5.40e-03	4.20e-03
Iron	12	12	4.10e-01	1.90e+00	6.90e-01	1.20e-01	8.90e-01	5.50e-01
Lead	12	7	1.00e-03	4.30e-03	1.60e-03	2.70e-04	2.10e-03	1.30e-03
Magnesium	12	11	9.00e-03	9.60e+00	6.90e+00	5.10e-01	7.80e+00	7.40e+00
Manganese	12	12	7.20e-02	1.10e-01	8.70e-02	4.00e-03	9.40e-02	8.10e-02
Mercury	12	4	2.00e-04	9.00e-04	2.70e-04	6.30e-05	3.90e-04	2.10e-04
Mercury (BR)	12	12	3.00e-05	5.50e-04	1.40e-04	3.90e-05	2.10e-04	1.10e-04
Methyl mercury (BR)	11	2	7.60e-08	7.00e-07	3.30e-07	5.00e-08	4.20e-07	2.90e-07
Molybdenum	12	1	1.00e-03	5.00e-03	2.10e-03	.	.	2.10e-03
Nickel	12	12	2.00e-03	6.50e-03	3.90e-03	3.90e-04	4.60e-03	3.60e-03
Potassium	12	11	1.30e-02	2.70e+00	1.70e+00	1.70e-01	2.00e+00	1.50e+00
Sodium	12	11	2.00e-02	9.20e+00	4.90e+00	5.40e-01	5.90e+00	4.80e+00
Uranium	12	11	1.00e-03	3.20e-03	2.10e-03	1.80e-04	2.40e-03	2.10e-03
Vanadium	12	5	1.00e-03	3.20e-03	1.30e-03	2.00e-04	1.70e-03	1.10e-03
Zinc	12	11	5.50e-03	3.50e-02	1.50e-02	2.90e-03	2.00e-02	1.20e-02
Reach 13/ Dissolved								
Aluminum	46	36	7.00e-03	4.20e-01	2.50e-02	8.90e-03	4.00e-02	1.60e-02
Ammonium nitrogen	47	16	5.00e-02	1.50e-01	5.80e-02	3.00e-03	6.30e-02	5.10e-02
Antimony	46	42	1.00e-03	1.20e-02	5.00e-03	4.10e-04	5.70e-03	4.60e-03
Arsenic	46	6	1.00e-03	3.00e-03	1.10e-03	3.10e-05	1.10e-03	1.00e-03

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Barium	46	46	2.10e-02	5.20e-02	3.70e-02	1.30e-03	4.00e-02	3.60e-02
Boron	46	38	3.00e-03	9.10e-02	4.20e-02	3.20e-03	4.70e-02	3.60e-02
Cadmium	46	1	1.00e-03	2.40e-03	2.40e-03	.	.	2.40e-03
Calcium	46	46	1.00e+01	3.80e+01	2.50e+01	1.10e+00	2.70e+01	2.30e+01
Chromium	46	34	1.00e-03	3.00e-03	1.60e-03	9.30e-05	1.70e-03	1.40e-03
Copper	46	46	1.00e-03	2.00e-02	3.50e-03	4.70e-04	4.20e-03	2.80e-03
Iron	46	41	1.20e-02	1.20e+00	1.00e-01	2.70e-02	1.40e-01	4.90e-02
Lead	46	3	1.00e-03	1.40e-03	1.10e-03	6.60e-06	1.10e-03	1.10e-03
Magnesium	46	46	3.50e+00	1.30e+01	8.00e+00	3.10e-01	8.50e+00	7.90e+00
Manganese	46	46	1.70e-02	1.80e-01	7.00e-02	5.70e-03	8.00e-02	6.00e-02
Mercury	46	2	2.00e-04	6.60e-04	3.10e-04	1.10e-05	3.30e-04	3.00e-04
Mercury (BR)	46	1	7.5e-08	5.50e-06	5.50e-06			5.50e-06
Nickel	46	46	1.50e-03	1.60e-02	4.60e-03	4.80e-04	5.40e-03	3.90e-03
Potassium	46	46	9.70e-01	3.30e+00	1.80e+00	8.40e-02	1.90e+00	1.70e+00
Selenium	46	5	1.00e-03	4.80e-03	1.30e-03	1.30e-04	1.60e-03	1.10e-03
Silver	46	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Sodium	46	46	1.50e+00	4.80e+00	3.20e+00	1.20e-01	3.40e+00	3.20e+00
Sulfate	47	47	1.80e+01	4.60e+01	2.70e+01	7.70e-01	2.80e+01	2.70e+01
Zinc	46	46	2.20e-03	1.90e-02	6.00e-03	5.60e-04	6.90e-03	4.50e-03
Reach 13/Total								
Aluminum	48	48	9.60e-02	1.60e+00	4.40e-01	4.40e-02	5.10e-01	4.10e-01
Antimony	48	2	1.00e-03	2.30e-03	1.10e-03	3.50e-05	1.20e-03	1.10e-03
Arsenic	48	9	1.00e-03	3.00e-03	1.20e-03	3.80e-05	1.30e-03	1.20e-03
Barium	48	48	3.10e-02	6.00e-02	4.30e-02	1.30e-03	4.50e-02	4.10e-02
Boron	48	43	3.00e-03	1.60e-01	4.70e-02	4.20e-03	5.40e-02	3.90e-02
Calcium	48	48	1.20e+01	3.80e+01	2.50e+01	1.00e+00	2.70e+01	2.30e+01
Chromium	48	42	1.00e-03	6.70e-03	2.10e-03	1.50e-04	2.30e-03	2.10e-03
Cobalt	48	7	1.00e-03	2.00e-03	1.20e-03	3.40e-05	1.20e-03	1.10e-03
Copper	48	47	1.00e-03	2.40e-02	4.10e-03	5.70e-04	5.00e-03	2.70e-03
Iron	48	48	1.90e-01	2.70e+00	7.00e-01	6.60e-02	8.10e-01	6.30e-01
Lead	48	22	1.00e-03	3.70e-03	1.40e-03	9.30e-05	1.60e-03	1.10e-03
Magnesium	48	48	3.70e+00	1.30e+01	8.00e+00	3.20e-01	8.50e+00	7.70e+00

Table A19 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Manganese	48	48	4.80e-02	2.30e-01	1.10e-01	7.70e-03	1.30e-01	9.10e-02
Mercury	48	2	2.00e-04	2.60e-04	2.30e-04	8.70e-07	2.30e-04	2.30e-04
Mercury (BR)	48	15	9.90e-08	2.70e-05	5.40e-06	8.40e-07	6.80e-06	2.60e-06
Methyl mercury (BR)	47	3	4.50e-08	2.90e-07	1.00e-07	5.70e-09	1.10e-07	9.60e-08
Molybdenum	48	1	1.00e-03	5.00e-03	1.50e-03	.	.	1.50e-03
Nickel	48	48	1.60e-03	8.80e-03	3.90e-03	2.40e-04	4.30e-03	3.60e-03
Potassium	48	48	1.00e+00	3.30e+00	1.80e+00	8.40e-02	2.00e+00	1.90e+00
Selenium	48	1	1.00e-03	3.00e-03	1.20e-03	.	.	1.20e-03
Silver	48	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Sodium	48	48	2.50e+00	7.30e+00	4.00e+00	1.80e-01	4.30e+00	3.70e+00
Vanadium	48	24	1.00e-03	3.20e-03	1.20e-03	6.00e-05	1.30e-03	1.00e-03
Zinc	48	48	2.90e-03	4.30e-02	1.20e-02	1.20e-03	1.40e-02	8.30e-03

Table A20. Summary statistics for inorganic analysis (mg/L) in Poplar Creek by season

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Spring/ Dissolved								
Aluminum	31	22	7.00e-03	4.20e-01	2.80e-02	1.30e-02	5.00e-02	1.40e-02
Antimony	31	27	1.00e-03	1.30e-02	4.70e-03	4.90e-04	5.50e-03	4.30e-03
Arsenic	31	5	1.00e-03	3.00e-03	1.20e-03	4.10e-05	1.30e-03	1.10e-03
Barium	31	31	2.10e-02	5.00e-02	3.50e-02	1.80e-03	3.80e-02	3.40e-02
Boron	31	27	1.80e-02	1.00e-01	4.50e-02	4.90e-03	5.40e-02	3.60e-02
Cadmium	31	1	1.00e-03	2.40e-03	2.40e-03	.	.	2.40e-03
Calcium	31	31	1.10e+01	3.80e+01	2.50e+01	1.50e+00	2.80e+01	2.70e+01
Chromium	31	15	1.00e-03	3.00e-03	1.30e-03	9.20e-05	1.50e-03	1.10e-03
Copper	31	29	1.00e-03	4.70e-03	2.60e-03	1.60e-04	2.90e-03	2.40e-03
Iron	31	28	1.20e-02	4.30e-01	5.30e-02	1.30e-02	7.50e-02	3.50e-02
Lead	31	2	1.00e-03	2.20e-03	1.50e-03	3.10e-05	1.60e-03	1.50e-03
Magnesium	31	31	4.20e+00	1.10e+01	8.00e+00	4.20e-01	8.70e+00	8.50e+00
Manganese	31	31	9.30e-03	8.30e-02	3.70e-02	2.80e-03	4.20e-02	3.70e-02
Mercury (BR)	31	3	7.50e-08	6.50e-06	3.60e-06	1.10e-07	3.80e-06	3.50e-06
Molybdenum	31	2	1.00e-03	1.50e-03	1.20e-03	1.30e-05	1.20e-03	1.20e-03
Nickel	31	31	1.90e-03	1.40e-02	4.60e-03	5.50e-04	5.50e-03	3.60e-03
Potassium	31	31	1.20e+00	2.50e+00	1.60e+00	6.40e-02	1.70e+00	1.60e+00
Selenium	31	4	3.00e-03	4.80e-03	3.60e-03	6.30e-05	3.70e-03	3.50e-03
Silver	31	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Sodium	31	31	1.50e+00	8.70e+00	3.50e+00	2.80e-01	4.00e+00	3.90e+00
Sulfate	30	30	1.70e+01	3.50e+01	2.50e+01	9.50e-01	2.60e+01	2.50e+01
Uranium	31	12	1.00e-03	3.00e-03	1.50e-03	8.70e-05	1.70e-03	1.20e-03
Zinc	31	29	2.70e-03	1.90e-02	7.40e-03	7.80e-04	8.80e-03	6.10e-03
Spring/Total								
Aluminum	31	31	1.30e-01	8.80e-01	3.70e-01	3.90e-02	4.40e-01	3.40e-01
Antimony	31	1	1.00e-03	1.80e-03	1.80e-03	.	.	1.80e-03
Arsenic	31	3	1.00e-03	3.00e-03	1.20e-03	6.60e-05	1.30e-03	1.10e-03
Barium	31	31	2.80e-02	5.40e-02	3.90e-02	1.60e-03	4.20e-02	3.70e-02
Boron	31	28	1.80e-02	1.20e-01	5.10e-02	5.00e-03	5.90e-02	4.70e-02
Calcium	31	31	1.20e+01	3.80e+01	2.60e+01	1.50e+00	2.80e+01	2.80e+01
Chromium	31	20	1.00e-03	6.70e-03	1.70e-03	1.90e-04	2.00e-03	1.50e-03

Table A20 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Cobalt	31	3	1.00e-03	1.10e-03	1.00e-03	5.40e-06	1.00e-03	1.00e-03
Copper	31	28	1.00e-03	2.40e-02	4.50e-03	8.20e-04	5.90e-03	2.70e-03
Iron	31	31	2.30e-01	1.10e+00	5.60e-01	4.70e-02	6.40e-01	4.60e-01
Lead	31	17	1.00e-03	3.70e-03	1.60e-03	1.20e-04	1.80e-03	1.10e-03
Magnesium	31	31	4.20e+00	1.10e+01	8.10e+00	4.30e-01	8.80e+00	8.40e+00
Manganese	31	31	4.60e-02	1.40e-01	6.80e-02	3.80e-03	7.50e-02	6.20e-02
Mercury	31	3	2.00e-04	2.50e-04	2.10e-04	1.60e-06	2.10e-04	2.10e-04
Mercury (BR)	31	19	9.90e-08	1.90e-04	4.10e-05	1.00e-05	5.80e-05	2.00e-05
Methyl mercury (BR)	29	3	6.40e-08	4.30e-07	3.00e-07	6.50e-09	3.10e-07	2.90e-07
Molybdenum	31	3	1.00e-03	1.50e-03	1.20e-03	1.40e-05	1.20e-03	1.20e-03
Nickel	31	31	2.10e-03	8.80e-03	3.80e-03	2.10e-04	4.20e-03	3.80e-03
Potassium	31	31	1.20e+00	2.70e+00	1.70e+00	6.40e-02	1.80e+00	1.70e+00
Silver	31	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Sodium	31	31	2.80e+00	8.70e+00	4.50e+00	2.50e-01	4.90e+00	4.10e+00
Uranium	31	13	1.00e-03	3.20e-03	1.50e-03	1.10e-04	1.70e-03	1.10e-03
Vanadium	31	11	1.00e-03	2.00e-03	1.20e-03	4.70e-05	1.30e-03	1.10e-03
Zinc	31	29	4.50e-03	4.30e-02	1.30e-02	1.60e-03	1.60e-02	9.70e-03
Summer/ Dissolved								
Aluminum	33	32	7.00e-03	6.00e-02	1.50e-02	1.60e-03	1.80e-02	1.40e-02
Antimony	33	33	1.90e-03	1.10e-02	6.20e-03	4.00e-04	6.90e-03	6.40e-03
Arsenic	33	6	1.00e-03	3.00e-03	1.10e-03	3.40e-05	1.10e-03	1.00e-03
Barium	33	33	2.00e-02	5.20e-02	3.80e-02	1.30e-03	4.00e-02	3.80e-02
Boron	33	31	1.80e-02	1.60e-01	5.80e-02	4.90e-03	6.60e-02	5.50e-02
Calcium	33	32	2.70e-02	3.90e+01	2.90e+01	1.00e+00	3.10e+01	3.00e+01
Chromium	33	29	1.00e-03	4.60e-03	2.00e-03	1.40e-04	2.20e-03	1.90e-03
Copper	33	33	2.00e-03	2.00e-02	4.40e-03	5.50e-04	5.40e-03	3.70e-03
Iron	33	24	1.30e-02	1.20e+00	7.10e-02	3.40e-02	1.30e-01	2.70e-02
Lead	33	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Magnesium	33	32	9.00e-03	1.30e+01	7.70e+00	3.40e-01	8.30e+00	8.00e+00
Manganese	33	33	3.90e-03	1.80e-01	7.60e-02	7.90e-03	9.00e-02	7.70e-02
Mercury	33	5	2.00e-04	7.30e-04	2.60e-04	2.20e-05	2.90e-04	2.30e-04

Table A20 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Mercury (BR)	33	7	1.60e-06	3.00e-05	5.50e-06	8.50e-07	6.90e-06	4.30e-06
Molybdenum	33	1	1.00e-03	5.00e-03	1.10e-03	.	.	1.10e-03
Nickel	33	33	1.40e-03	1.60e-02	4.20e-03	6.30e-04	5.30e-03	2.40e-03
Potassium	33	32	1.30e-02	3.30e+00	2.30e+00	6.20e-02	2.40e+00	2.30e+00
Selenium	33	5	1.00e-03	4.70e-03	1.40e-03	1.70e-04	1.70e-03	1.10e-03
Sodium	33	32	2.00e-02	8.00e+00	4.30e+00	2.70e-01	4.70e+00	3.80e+00
Sulfate	33	33	1.60e+01	3.10e+01	2.50e+01	6.30e-01	2.60e+01	2.50e+01
Uranium	33	13	1.00e-03	3.20e-03	1.60e-03	1.10e-04	1.80e-03	1.30e-03
Zinc	33	33	2.60e-03	1.80e-02	5.30e-03	5.60e-04	6.20e-03	4.60e-03
Summer/ Total								
Aluminum	33	33	1.00e-01	1.50e+00	4.80e-01	4.80e-02	5.60e-01	4.60e-01
Antimony	33	3	1.00e-03	2.30e-03	1.20e-03	4.80e-05	1.20e-03	1.10e-03
Arsenic	33	6	1.00e-03	3.00e-03	1.20e-03	4.20e-05	1.30e-03	1.20e-03
Barium	33	33	3.60e-02	6.00e-02	4.50e-02	1.10e-03	4.70e-02	4.20e-02
Boron	33	31	1.80e-02	1.60e-01	6.50e-02	6.00e-03	7.50e-02	6.40e-02
Calcium	33	31	2.70e-02	3.80e+01	2.90e+01	1.00e+00	3.10e+01	3.00e+01
Chromium	33	33	1.30e-03	3.30e-03	2.30e-03	1.20e-04	2.50e-03	2.40e-03
Cobalt	33	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Copper	33	33	1.60e-03	1.00e-02	3.80e-03	3.70e-04	4.40e-03	2.60e-03
Iron	33	33	2.20e-01	1.90e+00	6.60e-01	5.30e-02	7.50e-01	6.40e-01
Lead	33	16	1.00e-03	4.30e-03	1.40e-03	1.30e-04	1.70e-03	1.00e-03
Magnesium	33	31	9.00e-03	1.30e+01	7.70e+00	3.60e-01	8.30e+00	7.80e+00
Manganese	33	33	8.10e-02	2.30e-01	1.30e-01	7.50e-03	1.50e-01	1.20e-01
Mercury	33	6	2.00e-04	9.00e-04	2.40e-04	2.50e-05	2.80e-04	2.00e-04
Mercury (BR)	33	24	2.50e-06	5.50e-04	7.60e-05	1.90e-05	1.10e-04	3.00e-05
Methyl mercury (BR)	33	9	5.90e-08	7.00e-07	2.50e-07	1.80e-08	2.80e-07	2.10e-07
Molybdenum	33	2	1.00e-03	5.00e-03	1.10e-03	1.20e-04	1.30e-03	1.00e-03
Nickel	33	33	1.50e-03	6.50e-03	2.90e-03	1.90e-04	3.20e-03	2.60e-03
Potassium	33	31	1.30e-02	3.30e+00	2.40e+00	5.90e-02	2.50e+00	2.30e+00
Selenium	33	1	1.00e-03	3.00e-03	1.20e-03	.	.	1.20e-03
Sodium	33	31	2.00e-02	9.20e+00	5.00e+00	2.70e-01	5.50e+00	5.10e+00

Table A20 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Uranium	33	15	1.00e-03	8.50e-03	1.90e-03	2.40e-04	2.30e-03	1.20e-03
Vanadium	33	21	1.00e-03	3.20e-03	1.30e-03	7.40e-05	1.40e-03	1.10e-03
Zinc	33	33	2.90e-03	4.70e-02	1.40e-02	1.90e-03	1.70e-02	8.20e-03
Winter/ Dissolved								
Aluminum	33	29	1.00e-02	1.80e-01	2.90e-02	5.20e-03	3.80e-02	2.40e-02
Antimony	33	23	1.00e-03	1.20e-02	4.20e-03	4.50e-04	4.90e-03	4.20e-03
Arsenic	33	4	1.00e-03	1.60e-03	1.10e-03	2.50e-05	1.20e-03	1.10e-03
Barium	33	33	2.20e-02	4.80e-02	3.10e-02	9.20e-04	3.20e-02	3.10e-02
Boron	33	25	3.00e-03	8.10e-02	2.60e-02	3.70e-03	3.20e-02	2.40e-02
Calcium	33	33	1.00e+01	3.90e+01	2.30e+01	1.00e+00	2.50e+01	2.30e+01
Chromium	33	25	1.00e-03	2.40e-03	1.40e-03	6.90e-05	1.50e-03	1.30e-03
Copper	33	32	1.00e-03	1.10e-02	2.80e-03	3.50e-04	3.40e-03	2.50e-03
Iron	33	29	1.60e-02	3.80e-01	1.50e-01	1.70e-02	1.80e-01	1.70e-01
Lead	33	5	1.00e-03	1.40e-03	1.10e-03	1.30e-05	1.10e-03	1.10e-03
Magnesium	33	33	3.50e+00	1.00e+01	6.90e+00	2.50e-01	7.30e+00	7.30e+00
Manganese	33	33	3.90e-02	1.20e-01	6.20e-02	3.00e-03	6.70e-02	5.80e-02
Mercury (BR)	33	1	1.60e-06	1.40e-05	1.40e-05	.	.	1.40e-05
Methyl mercury (BR)	32	1	4.10e-08	1.70e-07	7.10e-08	.	.	7.10e-08
Nickel	33	33	1.40e-03	6.20e-03	4.30e-03	1.70e-04	4.60e-03	4.50e-03
Potassium	33	33	9.70e-01	3.10e+00	1.40e+00	8.30e-02	1.50e+00	1.30e+00
Selenium	33	1	3.00e-03	4.70e-03	4.70e-03	.	.	4.70e-03
Sodium	33	33	1.70e+00	6.40e+00	3.50e+00	2.20e-01	3.80e+00	3.10e+00
Sulfate	35	35	1.90e+01	4.60e+01	2.90e+01	9.40e-01	3.10e+01	2.80e+01
Uranium	33	15	1.00e-03	3.50e-03	1.60e-03	1.10e-04	1.80e-03	1.20e-03
Zinc	33	33	2.20e-03	1.90e-02	6.70e-03	6.10e-04	7.80e-03	5.90e-03
Winter/ Total								
Aluminum	35	35	9.60e-02	1.60e+00	4.00e-01	5.40e-02	4.90e-01	3.00e-01
Antimony	35	2	1.00e-03	1.40e-03	1.20e-03	8.00e-06	1.20e-03	1.20e-03
Arsenic	35	7	1.00e-03	2.10e-03	1.10e-03	4.20e-05	1.20e-03	1.00e-03
Barium	35	35	3.00e-02	5.40e-02	3.60e-02	8.20e-04	3.70e-02	3.40e-02
Boron	35	28	3.00e-03	6.10e-02	2.30e-02	2.80e-03	2.80e-02	2.30e-02

Table A20 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	35	35	1.20e+01	3.90e+01	2.30e+01	9.80e-01	2.50e+01	2.30e+01
Chromium	35	33	1.00e-03	3.50e-03	1.90e-03	1.10e-04	2.10e-03	1.80e-03
Cobalt	35	10	1.00e-03	2.00e-03	1.20e-03	4.50e-05	1.30e-03	1.10e-03
Copper	35	35	1.00e-03	1.40e-02	3.80e-03	4.30e-04	4.50e-03	3.30e-03
Iron	35	35	1.90e-01	2.70e+00	7.30e-01	8.90e-02	8.80e-01	6.30e-01
Lead	35	17	1.00e-03	2.90e-03	1.40e-03	8.70e-05	1.50e-03	1.10e-03
Magnesium	35	35	3.70e+00	9.90e+00	6.70e+00	2.40e-01	7.20e+00	7.30e+00
Manganese	35	35	5.40e-02	2.10e-01	8.70e-02	5.30e-03	9.60e-02	7.80e-02
Mercury	35	2	2.00e-04	2.40e-04	2.40e-04	0.00e+00	2.40e-04	2.40e-04
Mercury (BR)	35	22	1.80e-06	1.40e-04	3.90e-05	7.50e-06	5.20e-05	1.70e-05
Methyl mercury (BR)	33	2	4.50e-08	2.80e-07	1.00e-07	6.50e-09	1.10e-07	9.60e-08
Molybdenum	35	1	1.00e-03	2.00e-03	1.10e-03	.	.	1.10e-03
Nickel	35	35	2.00e-03	7.80e-03	4.80e-03	2.30e-04	5.20e-03	5.00e-03
Potassium	35	35	1.00e+00	3.20e+00	1.40e+00	8.20e-02	1.60e+00	1.30e+00
Sodium	35	35	2.30e+00	8.70e+00	4.10e+00	2.80e-01	4.60e+00	3.40e+00
Uranium	35	16	1.00e-03	3.60e-03	2.00e-03	7.40e-05	2.10e-03	1.70e-03
Vanadium	35	11	1.00e-03	3.20e-03	1.20e-03	7.60e-05	1.30e-03	1.00e-03
Zinc	35	35	3.90e-03	2.40e-02	1.20e-02	1.00e-03	1.40e-02	1.10e-02

Table A21. Summary statistics for inorganic results (mg/L) for each season in Poplar Creek by reach

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
SPRING								
Reach 3.01 / Dissolved								
Aluminum	4	4	1.30e-02	2.60e-02	1.70e-02	3.30e-03	2.40e-02	1.40e-02
Antimony	4	3	1.00e-03	5.60e-03	3.10e-03	8.80e-04	5.20e-03	2.30e-03
Barium	4	4	2.20e-02	3.70e-02	3.00e-02	3.70e-03	3.90e-02	3.10e-02
Boron	4	4	1.80e-02	9.80e-02	5.70e-02	2.10e-02	1.10e-01	5.70e-02
Calcium	4	4	1.30e+01	3.40e+01	2.40e+01	4.90e+00	3.50e+01	2.40e+01
Chromium	4	3	1.00e-03	2.10e-03	1.60e-03	2.00e-04	2.00e-03	1.50e-03
Copper	4	4	2.10e-03	4.40e-03	2.90e-03	5.30e-04	4.10e-03	2.50e-03
Iron	4	4	1.80e-02	7.30e-02	4.10e-02	1.20e-02	6.90e-02	3.60e-02
Lead	4	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Magnesium	4	4	4.40e+00	9.60e+00	7.00e+00	1.20e+00	9.90e+00	7.10e+00
Manganese	4	4	1.60e-02	3.40e-02	2.70e-02	4.00e-03	3.60e-02	2.90e-02
Molybdenum	4	1	1.00e-03	1.20e-03	1.20e-03	.	.	1.20e-03
Nickel	4	4	2.90e-03	9.10e-03	5.00e-03	1.40e-03	8.20e-03	4.00e-03
Potassium	4	4	1.20e+00	2.10e+00	1.60e+00	2.10e-01	2.10e+00	1.50e+00
Selenium	4	1	3.00e-03	4.60e-03	4.60e-03	.	.	4.60e-03
Sodium	4	4	1.90e+00	6.10e+00	3.60e+00	9.90e-01	6.00e+00	3.30e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Sulfate	4	4	1.80e+01	3.00e+01	2.30e+01	2.80e+00	3.00e+01	2.20e+01
Uranium	4	3	1.00e-03	1.90e-03	1.50e-03	1.70e-04	1.90e-03	1.50e-03
Zinc	4	4	4.30e-03	1.10e-02	7.70e-03	1.50e-03	1.10e-02	7.90e-03
Reach 3.01 / Total								
Aluminum	4	4	2.30e-01	7.00e-01	4.20e-01	1.20e-01	7.00e-01	3.90e-01
Barium	4	4	3.00e-02	4.20e-02	3.60e-02	2.90e-03	4.20e-02	3.50e-02
Boron	4	4	2.00e-02	9.10e-02	5.70e-02	1.90e-02	1.00e-01	5.80e-02
Calcium	4	4	1.40e+01	3.50e+01	2.50e+01	5.00e+00	3.60e+01	2.50e+01
Chromium	4	3	1.00e-03	2.40e-03	1.90e-03	2.50e-04	2.50e-03	1.90e-03
Cobalt	4	1	1.00e-03	1.00e-03	1.00e-03	.	.	1.00e-03
Copper	4	4	1.80e-03	1.10e-02	5.40e-03	2.10e-03	1.00e-02	4.40e-03
Iron	4	4	3.90e-01	1.10e+00	6.20e-01	1.60e-01	1.00e+00	5.10e-01
Lead	4	3	1.00e-03	3.00e-03	1.70e-03	4.80e-04	2.80e-03	1.40e-03
Magnesium	4	4	4.40e+00	9.60e+00	7.10e+00	1.20e+00	1.00e+01	7.20e+00
Manganese	4	4	4.90e-02	7.50e-02	5.90e-02	5.70e-03	7.30e-02	5.60e-02
Mercury	8	5	4.30e-07	2.50e-04	5.50e-05	3.10e-05	1.10e-04	2.90e-05
Methyl mercury	4	1	9.30e-08	4.30e-07	4.30e-07	.	.	4.30e-07

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Molybdenum	4	1	1.00e-03	1.20e-03	1.20e-03	.	.	1.20e-03
Nickel	4	4	3.20e-03	4.60e-03	3.90e-03	2.90e-04	4.60e-03	4.00e-03
Potassium	4	4	1.30e+00	2.20e+00	1.70e+00	2.00e-01	2.10e+00	1.60e+00
Sodium	4	4	4.10e+00	6.10e+00	4.80e+00	4.50e-01	5.90e+00	4.50e+00
Uranium	4	3	1.00e-03	2.20e-03	1.70e-03	2.20e-04	2.30e-03	1.70e-03
Vanadium	4	2	1.00e-03	1.60e-03	1.40e-03	4.60e-05	1.50e-03	1.40e-03
Zinc	4	4	6.20e-03	2.30e-02	1.40e-02	3.50e-03	2.30e-02	1.40e-02
Reach 3.02 / Dissolved								
Aluminum	4	3	7.00e-03	2.70e-02	2.10e-02	3.10e-03	2.80e-02	2.00e-02
Antimony	4	3	1.00e-03	1.00e-02	6.40e-03	1.30e-03	9.50e-03	5.20e-03
Arsenic	4	1	1.00e-03	3.00e-03	1.40e-03	.	.	1.40e-03
Barium	4	4	2.10e-02	4.20e-02	3.20e-02	4.20e-03	4.20e-02	3.30e-02
Boron	4	4	3.30e-02	1.00e-01	7.00e-02	1.60e-02	1.10e-01	7.20e-02
Calcium	4	4	1.40e+01	3.80e+01	2.70e+01	4.90e+00	3.90e+01	2.90e+01
Chromium	4	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Copper	4	4	2.00e-03	4.70e-03	3.10e-03	6.20e-04	4.60e-03	2.90e-03
Iron	4	4	2.40e-02	5.10e-02	3.30e-02	6.20e-03	4.70e-02	2.80e-02

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Lead	4	1	1.00e-03	2.20e-03	2.20e-03	.	.	2.20e-03
Magnesium	4	4	4.30e+00	9.80e+00	7.70e+00	1.20e+00	1.10e+01	8.40e+00
Manganese	4	4	9.30e-03	4.80e-02	2.70e-02	7.90e-03	4.60e-02	2.60e-02
Mercury	8	1	3.70e-06	2.00e-04	5.40e-06	.	.	5.40e-06
Molybdenum	4	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Nickel	4	4	2.20e-03	4.90e-03	3.80e-03	5.90e-04	5.10e-03	4.00e-03
Potassium	4	4	1.30e+00	2.40e+00	1.70e+00	2.40e-01	2.30e+00	1.60e+00
Sodium	4	4	2.00e+00	8.70e+00	4.90e+00	1.40e+00	8.20e+00	4.40e+00
Sulfate	4	4	1.70e+01	3.00e+01	2.60e+01	3.10e+00	3.40e+01	2.90e+01
Uranium	4	3	1.00e-03	2.50e-03	2.00e-03	2.80e-04	2.70e-03	2.00e-03
Zinc	4	4	6.60e-03	1.60e-02	1.10e-02	2.10e-03	1.60e-02	1.10e-02
Reach 3.02 / Total								
Aluminum	4	4	2.10e-01	6.70e-01	3.50e-01	1.10e-01	6.00e-01	2.60e-01
Barium	4	4	2.80e-02	4.40e-02	3.60e-02	3.30e-03	4.40e-02	3.50e-02
Boron	4	4	2.80e-02	1.20e-01	7.30e-02	2.20e-02	1.30e-01	7.10e-02
Calcium	4	4	1.60e+01	3.80e+01	2.80e+01	4.60e+00	3.90e+01	3.00e+01
Chromium	4	2	1.00e-03	1.60e-03	1.50e-03	3.10e-05	1.60e-03	1.50e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Copper	4	4	2.10e-03	4.50e-03	2.90e-03	5.40e-04	4.20e-03	2.60e-03
Iron	4	4	3.10e-01	9.00e-01	5.10e-01	1.40e-01	8.30e-01	4.10e-01
Lead	4	1	1.00e-03	1.80e-03	1.80e-03	.	.	1.80e-03
Magnesium	4	4	4.40e+00	1.00e+01	8.10e+00	1.30e+00	1.10e+01	9.00e+00
Manganese	4	4	4.60e-02	6.20e-02	5.60e-02	3.50e-03	6.40e-02	5.80e-02
Mercury	8	4	4.70e-05	2.00e-04	7.90e-05	1.70e-05	1.10e-04	7.80e-05
Methyl mercury	3	1	9.40e-08	3.60e-07	3.60e-07	.	.	3.60e-07
Molybdenum	4	1	1.00e-03	1.40e-03	1.40e-03	.	.	1.40e-03
Nickel	4	4	2.40e-03	4.50e-03	3.90e-03	4.90e-04	5.00e-03	4.30e-03
Potassium	4	4	1.40e+00	2.40e+00	1.80e+00	2.20e-01	2.30e+00	1.70e+00
Sodium	4	4	4.20e+00	8.70e+00	5.50e+00	1.10e+00	8.10e+00	4.60e+00
Uranium	4	4	1.10e-03	2.70e-03	2.00e-03	4.00e-04	2.90e-03	2.00e-03
Vanadium	4	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Zinc	4	4	9.20e-03	1.30e-02	1.10e-02	8.80e-04	1.30e-02	1.00e-02
Reach 3.03 / Dissolved								
Aluminum	4	3	1.00e-02	2.40e-02	2.00e-02	1.50e-03	2.40e-02	2.00e-02
Antimony	4	4	4.10e-03	8.00e-03	5.40e-03	9.00e-04	7.50e-03	4.70e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Arsenic	4	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Barium	4	4	2.20e-02	3.10e-02	2.70e-02	2.20e-03	3.20e-02	2.70e-02
Boron	4	3	2.10e-02	4.80e-02	3.10e-02	6.50e-03	4.60e-02	3.00e-02
Calcium	4	4	1.30e+01	2.70e+01	2.10e+01	3.50e+00	2.90e+01	2.20e+01
Chromium	4	2	1.00e-03	2.00e-03	1.50e-03	1.20e-04	1.80e-03	1.40e-03
Copper	4	3	1.60e-03	2.90e-03	2.30e-03	3.50e-04	3.10e-03	2.40e-03
Iron	4	2	1.60e-02	6.60e-02	3.40e-02	1.30e-02	6.50e-02	2.30e-02
Magnesium	4	4	4.30e+00	7.70e+00	6.40e+00	7.30e-01	8.10e+00	6.80e+00
Manganese	4	4	3.70e-02	5.70e-02	4.40e-02	4.80e-03	5.60e-02	4.20e-02
Nickel	4	4	2.00e-03	6.10e-03	3.60e-03	8.90e-04	5.60e-03	3.10e-03
Potassium	4	4	1.20e+00	1.40e+00	1.30e+00	5.90e-02	1.50e+00	1.30e+00
Sodium	4	4	1.50e+00	4.30e+00	3.00e+00	6.70e-01	4.60e+00	3.10e+00
Sulfate	4	4	1.70e+01	2.70e+01	2.30e+01	2.60e+00	2.90e+01	2.30e+01
Uranium	4	3	1.00e-03	2.10e-03	1.70e-03	1.60e-04	2.10e-03	1.70e-03
Zinc	4	3	3.40e-03	5.80e-03	4.90e-03	7.40e-04	6.60e-03	5.50e-03
Reach 3.03 / Total								
Aluminum	4	4	1.60e-01	3.90e-01	3.10e-01	5.60e-02	4.40e-01	3.40e-01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Barium	4	4	2.80e-02	3.40e-02	3.00e-02	1.20e-03	3.30e-02	3.00e-02
Boron	4	3	2.30e-02	6.10e-02	3.50e-02	9.40e-03	5.70e-02	3.00e-02
Calcium	4	4	1.40e+01	2.80e+01	2.10e+01	3.40e+00	3.00e+01	2.20e+01
Chromium	4	2	1.00e-03	2.10e-03	1.60e-03	2.10e-04	2.10e-03	1.40e-03
Copper	4	3	1.60e-03	8.30e-03	3.70e-03	1.70e-03	7.60e-03	2.70e-03
Iron	4	4	2.30e-01	5.60e-01	4.30e-01	7.00e-02	5.90e-01	4.60e-01
Lead	4	3	1.00e-03	3.00e-03	2.10e-03	3.30e-04	2.90e-03	1.90e-03
Magnesium	4	4	4.20e+00	7.90e+00	6.40e+00	8.10e-01	8.30e+00	6.70e+00
Manganese	4	4	5.60e-02	7.40e-02	6.30e-02	4.30e-03	7.40e-02	6.20e-02
Mercury	8	5	3.80e-05	2.10e-04	1.00e-04	3.20e-05	1.60e-04	7.90e-05
Nickel	4	4	2.10e-03	4.90e-03	3.40e-03	5.80e-04	4.80e-03	3.30e-03
Potassium	4	4	1.20e+00	1.40e+00	1.40e+00	5.10e-02	1.50e+00	1.40e+00
Sodium	4	4	3.30e+00	4.30e+00	3.90e+00	2.30e-01	4.40e+00	4.00e+00
Uranium	4	3	1.00e-03	2.10e-03	1.80e-03	1.50e-04	2.20e-03	1.80e-03
Zinc	4	3	5.40e-03	1.50e-02	8.70e-03	2.40e-03	1.40e-02	7.60e-03
Reach 3.04 / Dissolved								
Aluminum	3	2	1.00e-02	2.40e-02	2.00e-02	2.30e-03	2.60e-02	1.80e-02

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Antimony	3	2	1.00e-03	1.30e-02	6.60e-03	3.80e-03	1.80e-02	3.30e-03
Barium	3	3	2.10e-02	3.40e-02	3.00e-02	4.10e-03	4.10e-02	3.30e-02
Boron	3	2	2.60e-02	6.30e-02	4.00e-02	1.40e-02	8.10e-02	4.00e-02
Calcium	3	3	1.60e+01	3.10e+01	2.60e+01	5.00e+00	4.10e+01	3.10e+01
Copper	3	2	2.40e-03	2.90e-03	2.50e-03	5.00e-05	2.60e-03	2.50e-03
Iron	3	2	2.40e-02	3.70e-02	2.80e-02	5.10e-03	4.30e-02	2.40e-02
Magnesium	3	3	5.80e+00	9.20e+00	7.80e+00	1.00e+00	1.10e+01	8.50e+00
Manganese	3	3	4.50e-02	8.30e-02	5.90e-02	1.20e-02	9.50e-02	4.80e-02
Mercury	6	1	3.40e-06	2.00e-04	3.50e-06	.	.	3.50e-06
Nickel	3	3	2.40e-03	3.60e-03	3.10e-03	3.50e-04	4.10e-03	3.20e-03
Potassium	3	3	1.30e+00	1.70e+00	1.50e+00	1.30e-01	1.90e+00	1.60e+00
Sodium	3	3	2.00e+00	5.00e+00	3.90e+00	9.50e-01	6.70e+00	4.70e+00
Sulfate	3	3	1.90e+01	2.80e+01	2.50e+01	2.80e+00	3.30e+01	2.70e+01
Uranium	3	3	1.40e-03	3.00e-03	2.20e-03	4.60e-04	3.60e-03	2.30e-03
Zinc	3	2	4.30e-03	1.70e-02	1.00e-02	3.70e-03	2.10e-02	6.90e-03
Reach 3.04 / Total								
Aluminum	3	3	3.40e-01	5.00e-01	4.10e-01	4.80e-02	5.40e-01	3.80e-01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Antimony	3	1	1.00e-03	1.80e-03	1.80e-03	.	.	1.80e-03
Arsenic	3	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Barium	3	3	3.00e-02	3.70e-02	3.40e-02	2.30e-03	4.10e-02	3.60e-02
Boron	3	2	3.30e-02	6.10e-02	4.20e-02	1.10e-02	7.30e-02	3.30e-02
Calcium	3	3	1.70e+01	3.20e+01	2.70e+01	4.70e+00	4.10e+01	3.10e+01
Chromium	3	1	1.00e-03	2.00e-03	1.40e-03	.	.	1.40e-03
Copper	3	2	2.50e-03	6.60e-03	2.60e-03	1.00e-04	2.90e-03	2.60e-03
Iron	3	3	4.40e-01	6.10e-01	5.30e-01	5.00e-02	6.80e-01	5.60e-01
Lead	3	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Magnesium	3	3	6.00e+00	9.60e+00	8.00e+00	1.00e+00	1.10e+01	8.40e+00
Manganese	3	3	7.20e-02	1.10e-01	8.40e-02	1.10e-02	1.20e-01	7.30e-02
Mercury	6	4	8.90e-05	2.10e-04	1.60e-04	2.60e-05	2.10e-04	1.50e-04
Methyl mercury	2	1	1.90e-07	2.90e-07	2.90e-07	.	.	2.90e-07
Nickel	3	3	3.10e-03	4.30e-03	3.80e-03	3.60e-04	4.90e-03	4.00e-03
Potassium	3	3	1.40e+00	1.80e+00	1.60e+00	1.20e-01	2.00e+00	1.70e+00
Sodium	3	3	4.10e+00	5.00e+00	4.60e+00	2.80e-01	5.40e+00	4.70e+00
Uranium	3	3	1.60e-03	3.20e-03	2.40e-03	4.60e-04	3.80e-03	2.50e-03
Vanadium	3	1	1.00e-03	1.80e-03	1.80e-03	.	.	1.80e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Zinc	3	2	7.50e-03	1.80e-02	9.40e-03	1.90e-03	1.50e-02	9.40e-03
Reach 13 / Dissolved								
Aluminum	16	10	7.00e-03	4.20e-01	3.80e-02	2.60e-02	8.30e-02	1.00e-02
Antimony	16	15	1.00e-03	8.60e-03	4.60e-03	5.20e-04	5.50e-03	4.40e-03
Arsenic	16	3	1.00e-03	3.00e-03	1.30e-03	9.80e-05	1.40e-03	1.10e-03
Barium	16	16	2.10e-02	5.00e-02	3.90e-02	2.60e-03	4.40e-02	4.30e-02
Boron	16	14	1.80e-02	9.10e-02	4.10e-02	5.80e-03	5.10e-02	3.50e-02
Cadmium	16	1	1.00e-03	2.40e-03	2.40e-03	.	.	2.40e-03
Calcium	16	16	1.10e+01	3.50e+01	2.60e+01	2.30e+00	3.00e+01	2.70e+01
Chromium	16	9	1.00e-03	3.00e-03	1.40e-03	1.60e-04	1.70e-03	1.10e-03
Copper	16	16	1.00e-03	4.30e-03	2.50e-03	2.10e-04	2.90e-03	2.30e-03
Iron	16	16	1.20e-02	4.30e-01	7.10e-02	2.50e-02	1.10e-01	4.90e-02
Magnesium	16	16	4.20e+00	1.10e+01	8.70e+00	6.30e-01	9.80e+00	9.70e+00
Manganese	16	16	1.70e-02	6.80e-02	3.70e-02	3.50e-03	4.30e-02	3.60e-02
Mercury	32	1	7.50e-08	2.00e-04	5.50e-06	.	.	5.50e-06
Nickel	16	16	1.90e-03	1.40e-02	5.30e-03	9.50e-04	7.00e-03	4.00e-03
Potassium	16	16	1.20e+00	2.50e+00	1.70e+00	9.10e-02	1.80e+00	1.70e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Selenium	16	3	3.00e-03	4.80e-03	3.60e-03	1.00e-04	3.80e-03	3.50e-03
Silver	16	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Sodium	16	16	1.50e+00	4.70e+00	3.20e+00	2.60e-01	3.70e+00	3.40e+00
Sulfate	15	15	1.80e+01	3.50e+01	2.50e+01	1.40e+00	2.80e+01	2.30e+01
Zinc	16	16	2.70e-03	1.90e-02	6.90e-03	1.10e-03	8.90e-03	5.50e-03
Reach 13 / Total								
Aluminum	16	16	1.30e-01	8.80e-01	3.80e-01	6.50e-02	4.90e-01	3.10e-01
Arsenic	16	2	1.00e-03	3.00e-03	1.80e-03	3.70e-05	1.90e-03	1.80e-03
Barium	16	16	3.10e-02	5.40e-02	4.40e-02	2.40e-03	4.80e-02	5.00e-02
Boron	16	15	1.80e-02	9.40e-02	4.90e-02	5.70e-03	5.90e-02	4.80e-02
Calcium	16	16	1.20e+01	3.50e+01	2.60e+01	2.20e+00	3.00e+01	2.80e+01
Chromium	16	12	1.00e-03	6.70e-03	2.00e-03	3.50e-04	2.60e-03	1.90e-03
Cobalt	16	2	1.00e-03	1.10e-03	1.10e-03	0.00e+00	1.10e-03	1.10e-03
Copper	16	15	1.00e-03	2.40e-02	5.10e-03	1.50e-03	7.70e-03	3.10e-03
Iron	16	16	2.60e-01	1.10e+00	6.00e-01	7.50e-02	7.30e-01	4.50e-01
Lead	16	9	1.00e-03	3.70e-03	1.60e-03	1.80e-04	1.90e-03	1.30e-03
Magnesium	16	16	4.30e+00	1.10e+01	8.80e+00	6.30e-01	9.90e+00	9.70e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Manganese	16	16	4.80e-02	1.40e-01	7.20e-02	6.50e-03	8.40e-02	6.60e-02
Mercury	32	4	9.90e-08	2.00e-04	5.40e-06	2.00e-06	8.80e-06	2.60e-06
Molybdenum	16	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Nickel	16	16	2.40e-03	8.80e-03	3.80e-03	3.70e-04	4.50e-03	3.60e-03
Potassium	16	16	1.30e+00	2.70e+00	1.80e+00	9.20e-02	1.90e+00	1.80e+00
Silver	16	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Sodium	16	16	2.80e+00	7.30e+00	4.20e+00	3.70e-01	4.90e+00	3.80e+00
Vanadium	16	7	1.00e-03	2.00e-03	1.20e-03	7.60e-05	1.40e-03	1.10e-03
Zinc	16	16	4.50e-03	4.30e-02	1.50e-02	2.80e-03	2.00e-02	9.30e-03
SUMMER							3.28e-01	
Reach 3.01 / Dissolved								
Aluminum	4	4	1.00e-02	6.00e-02	2.70e-02	1.10e-02	5.40e-02	1.90e-02
Antimony	4	4	5.40e-03	7.30e-03	6.30e-03	4.40e-04	7.30e-03	6.20e-03
Arsenic	4	2	1.00e-03	3.00e-03	1.20e-03	8.50e-05	1.40e-03	1.10e-03
Barium	4	4	3.10e-02	4.00e-02	3.60e-02	2.10e-03	4.10e-02	3.70e-02
Boron	4	3	1.80e-02	1.60e-01	8.80e-02	2.80e-02	1.50e-01	6.80e-02
Calcium	4	4	2.40e+01	3.60e+01	3.00e+01	2.40e+00	3.60e+01	3.00e+01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95 % UCB	Median
Chromium	4	3	1.00e-03	3.80e-03	2.40e-03	5.00e-04	3.60e-03	1.90e-03
Copper	4	4	3.10e-03	6.20e-03	4.50e-03	6.40e-04	6.00e-03	4.30e-03
Iron	4	3	1.80e-02	4.90e-02	3.90e-02	3.70e-03	4.70e-02	3.50e-02
Magnesium	4	4	6.00e+00	8.70e+00	7.40e+00	5.70e-01	8.80e+00	7.50e+00
Manganese	4	4	5.20e-02	1.00e-01	7.50e-02	9.90e-03	9.90e-02	7.50e-02
Mercury	8	1	4.30e-06	2.00e-04	4.30e-06	.	.	4.30e-06
Nickel	4	4	1.90e-03	7.20e-03	3.80e-03	1.20e-03	6.60e-03	3.10e-03
Potassium	4	4	1.90e+00	3.20e+00	2.40e+00	2.90e-01	3.10e+00	2.30e+00
Selenium	4	1	1.00e-03	4.70e-03	4.70e-03	.	.	4.70e-03
Sodium	4	4	3.20e+00	6.70e+00	4.70e+00	7.50e-01	6.40e+00	4.40e+00
Sulfate	4	4	1.80e+01	2.90e+01	2.40e+01	2.30e+00	3.00e+01	2.50e+01
Uranium	4	2	1.00e-03	2.00e-03	1.80e-03	9.50e-05	2.00e-03	1.70e-03
Zinc	4	4	4.90e-03	1.20e-02	7.10e-03	1.80e-03	1.10e-02	5.50e-03
Reach 3.01 / Total								
Aluminum	4	4	2.10e-01	5.00e-01	3.80e-01	6.10e-02	5.30e-01	4.10e-01
Barium	4	4	3.90e-02	4.70e-02	4.20e-02	1.90e-03	4.70e-02	4.10e-02
Boron	4	3	1.80e-02	1.40e-01	8.00e-02	2.80e-02	1.50e-01	7.00e-02

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Calcium	4	3	2.70e-02	3.20e+01	2.90e+01	1.20e+00	3.20e+01	2.80e+01
Chromium	4	4	1.40e-03	3.10e-03	2.30e-03	3.50e-04	3.10e-03	2.40e-03
Copper	4	4	2.00e-03	5.70e-03	4.40e-03	8.60e-04	6.40e-03	5.00e-03
Iron	4	4	4.10e-01	7.30e-01	5.90e-01	7.30e-02	7.60e-01	6.10e-01
Lead	4	3	1.00e-03	1.70e-03	1.50e-03	1.10e-04	1.70e-03	1.50e-03
Magnesium	4	3	9.00e-03	7.50e+00	6.90e+00	3.00e-01	7.60e+00	6.80e+00
Manganese	4	4	9.70e-02	1.30e-01	1.20e-01	7.50e-03	1.30e-01	1.20e-01
Mercury	8	4	3.00e-05	2.00e-04	6.90e-05	1.80e-05	1.00e-04	7.30e-05
Nickel	4	4	2.40e-03	3.00e-03	2.60e-03	1.30e-04	2.90e-03	2.60e-03
Potassium	4	3	1.30e-02	3.10e+00	2.40e+00	2.70e-01	3.00e+00	2.20e+00
Sodium	4	3	2.00e-02	5.60e+00	5.20e+00	2.50e-01	5.70e+00	5.20e+00
Uranium	4	3	1.00e-03	2.50e-03	2.10e-03	1.30e-04	2.40e-03	2.00e-03
Vanadium	4	2	1.00e-03	1.60e-03	1.20e-03	1.80e-04	1.60e-03	1.00e-03
Zinc	4	4	7.20e-03	4.70e-02	2.40e-02	8.30e-03	4.30e-02	2.00e-02
Reach 3.02 / Dissolved								
Aluminum	4	4	7.30e-03	1.70e-02	1.40e-02	2.30e-03	2.00e-02	1.60e-02
Antimony	4	4	6.30e-03	7.70e-03	7.00e-03	2.90e-04	7.60e-03	6.90e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Arsenic	4	1	1.30e-03	3.00e-03	1.30e-03	.	.	1.30e-03
Barium	4	4	3.10e-02	4.20e-02	3.60e-02	2.60e-03	4.20e-02	3.50e-02
Boron	4	3	1.80e-02	6.90e-02	5.90e-02	4.50e-03	7.00e-02	5.80e-02
Calcium	4	4	2.60e+01	3.90e+01	3.20e+01	3.20e+00	4.00e+01	3.20e+01
Chromium	4	3	1.00e-03	2.70e-03	1.70e-03	3.50e-04	2.50e-03	1.40e-03
Copper	4	4	3.30e-03	4.20e-03	3.70e-03	2.10e-04	4.20e-03	3.80e-03
Iron	4	3	1.30e-02	8.20e-02	4.70e-02	1.40e-02	8.10e-02	4.00e-02
Magnesium	4	4	5.90e+00	1.00e+01	7.70e+00	9.30e-01	9.90e+00	7.60e+00
Manganese	4	4	2.70e-02	9.60e-02	5.50e-02	1.50e-02	8.90e-02	4.80e-02
Mercury	8	4	4.50e-06	2.30e-04	3.40e-05	3.00e-05	9.10e-05	7.60e-06
Molybdenum	4	1	1.00e-03	5.00e-03	1.10e-03	.	.	1.10e-03
Nickel	4	4	2.30e-03	8.50e-03	4.20e-03	1.50e-03	7.60e-03	3.00e-03
Potassium	4	4	2.00e+00	2.60e+00	2.30e+00	1.40e-01	2.60e+00	2.30e+00
Selenium	4	1	1.00e-03	3.60e-03	3.60e-03	.	.	3.60e-03
Sodium	4	4	3.30e+00	8.00e+00	5.40e+00	1.10e+00	8.00e+00	5.20e+00
Sulfate	4	4	2.30e+01	2.90e+01	2.50e+01	1.30e+00	2.80e+01	2.50e+01
Uranium	4	4	1.30e-03	3.00e-03	2.20e-03	4.50e-04	3.20e-03	2.20e-03
Zinc	4	4	3.00e-03	9.10e-03	5.90e-03	1.60e-03	9.60e-03	5.70e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Reach 3.02 / Total								
Aluminum	4	4	1.60e-01	1.10e+00	4.90e-01	2.20e-01	9.90e-01	3.30e-01
Arsenic	4	1	1.40e-03	3.00e-03	1.40e-03	.	.	1.40e-03
Barium	4	4	3.80e-02	4.60e-02	4.20e-02	1.70e-03	4.60e-02	4.20e-02
Boron	4	3	1.80e-02	7.60e-02	7.10e-02	2.20e-03	7.60e-02	6.90e-02
Calcium	4	4	2.60e+01	3.80e+01	3.20e+01	2.90e+00	3.90e+01	3.20e+01
Chromium	4	4	1.30e-03	2.90e-03	1.90e-03	3.80e-04	2.70e-03	1.60e-03
Copper	4	4	2.20e-03	5.20e-03	3.10e-03	7.00e-04	4.80e-03	2.60e-03
Iron	4	4	2.20e-01	1.10e+00	5.80e-01	1.80e-01	1.00e+00	5.20e-01
Lead	4	2	1.00e-03	1.60e-03	1.20e-03	1.80e-04	1.60e-03	1.00e-03
Magnesium	4	4	6.10e+00	9.80e+00	7.80e+00	8.50e-01	9.80e+00	7.70e+00
Manganese	4	4	8.70e-02	1.20e-01	1.00e-01	7.70e-03	1.20e-01	9.80e-02
Mercury	8	5	1.00e-04	3.80e-04	1.40e-04	3.60e-05	2.10e-04	1.10e-04
Methyl mercury	4	3	2.80e-07	4.10e-07	3.30e-07	3.40e-08	4.00e-07	3.10e-07
Molybdenum	4	1	1.00e-03	5.00e-03	1.00e-03	.	.	1.00e-03
Nickel	4	4	1.50e-03	2.80e-03	2.20e-03	3.50e-04	3.00e-03	2.20e-03
Potassium	4	4	2.00e+00	2.50e+00	2.40e+00	1.10e-01	2.60e+00	2.40e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Sodium	4	4	3.80e+00	7.60e+00	5.90e+00	8.00e-01	7.80e+00	6.20e+00
Uranium	4	4	1.60e-03	3.00e-03	2.40e-03	3.10e-04	3.20e-03	2.60e-03
Vanadium	4	2	1.00e-03	1.70e-03	1.50e-03	9.20e-05	1.70e-03	1.40e-03
Zinc	4	4	4.80e-03	2.30e-02	1.10e-02	4.00e-03	2.00e-02	8.40e-03
Reach 3.03 / Dissolved								
Aluminum	5	4	7.00e-03	1.70e-02	1.30e-02	1.60e-03	1.60e-02	1.10e-02
Antimony	5	5	3.20e-03	1.10e-02	6.00e-03	1.30e-03	8.80e-03	4.70e-03
Arsenic	5	1	1.00e-03	3.00e-03	1.10e-03	.	.	1.10e-03
Barium	5	5	2.80e-02	3.80e-02	3.40e-02	1.90e-03	3.80e-02	3.50e-02
Boron	5	5	4.50e-02	7.80e-02	5.80e-02	5.70e-03	7.00e-02	5.70e-02
Calcium	5	5	2.40e+01	3.50e+01	3.10e+01	2.10e+00	3.60e+01	3.30e+01
Chromium	5	4	1.00e-03	2.50e-03	1.70e-03	3.20e-04	2.30e-03	1.30e-03
Copper	5	5	2.60e-03	6.50e-03	4.10e-03	6.50e-04	5.50e-03	3.90e-03
Iron	5	2	1.30e-02	8.10e-02	3.70e-02	1.40e-02	6.70e-02	2.60e-02
Magnesium	5	5	5.10e+00	9.10e+00	7.40e+00	7.00e-01	8.90e+00	7.80e+00
Manganese	5	5	5.10e-03	7.50e-02	3.50e-02	1.20e-02	6.10e-02	2.50e-02
Mercury	10	3	4.10e-06	7.30e-04	7.90e-05	8.40e-05	2.30e-04	6.30e-06

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Nickel	5	5	1.40e-03	1.10e-02	5.40e-03	2.10e-03	9.80e-03	2.90e-03
Potassium	5	5	2.20e+00	2.90e+00	2.40e+00	1.30e-01	2.70e+00	2.30e+00
Sodium	5	5	3.10e+00	6.90e+00	5.40e+00	6.70e-01	6.80e+00	5.60e+00
Sulfate	5	5	1.90e+01	2.70e+01	2.40e+01	1.50e+00	2.70e+01	2.50e+01
Uranium	5	5	1.80e-03	3.20e-03	2.40e-03	2.40e-04	3.00e-03	2.50e-03
Zinc	5	5	2.70e-03	9.30e-03	4.90e-03	1.20e-03	7.50e-03	4.10e-03
Reach 3.03 / Total								
Aluminum	5	5	1.60e-01	6.40e-01	4.20e-01	8.00e-02	5.90e-01	4.60e-01
Arsenic	5	1	1.00e-03	3.00e-03	1.20e-03	.	.	1.20e-03
Barium	5	5	3.70e-02	4.40e-02	4.00e-02	1.20e-03	4.30e-02	4.00e-02
Boron	5	5	2.80e-02	9.90e-02	4.90e-02	1.30e-02	7.80e-02	3.30e-02
Calcium	5	5	2.40e+01	3.60e+01	3.20e+01	2.30e+00	3.70e+01	3.40e+01
Chromium	5	5	1.40e-03	2.90e-03	2.10e-03	3.20e-04	2.80e-03	2.30e-03
Copper	5	5	2.00e-03	8.80e-03	4.30e-03	1.40e-03	7.20e-03	2.50e-03
Iron	5	5	2.50e-01	1.00e+00	5.80e-01	1.30e-01	8.60e-01	6.00e-01
Lead	5	2	1.00e-03	2.80e-03	1.80e-03	3.00e-04	2.50e-03	1.60e-03
Magnesium	5	5	5.00e+00	9.20e+00	7.50e+00	7.30e-01	9.10e+00	7.80e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Manganese	5	5	8.10e-02	1.20e-01	9.50e-02	7.30e-03	1.10e-01	9.00e-02
Mercury	10	7	1.20e-04	4.60e-04	1.90e-04	3.20e-05	2.50e-04	1.60e-04
Methyl mercury	5	3	2.20e-07	4.60e-07	2.70e-07	5.20e-08	3.80e-07	2.30e-07
Nickel	5	5	2.00e-03	4.00e-03	2.80e-03	3.90e-04	3.70e-03	2.40e-03
Potassium	5	5	2.30e+00	3.00e+00	2.50e+00	1.30e-01	2.70e+00	2.30e+00
Sodium	5	5	5.80e+00	7.10e+00	6.40e+00	2.60e-01	6.90e+00	6.40e+00
Uranium	5	5	2.10e-03	8.50e-03	3.70e-03	1.20e-03	6.30e-03	2.70e-03
Vanadium	5	3	1.00e-03	1.70e-03	1.30e-03	1.40e-04	1.60e-03	1.10e-03
Zinc	5	5	4.90e-03	3.30e-02	1.40e-02	5.50e-03	2.60e-02	6.80e-03
Reach 3.04 / Dissolved								
Aluminum	4	4	9.50e-03	2.20e-02	1.30e-02	3.00e-03	2.00e-02	1.00e-02
Antimony	4	4	3.50e-03	6.60e-03	5.00e-03	6.80e-04	6.60e-03	5.00e-03
Arsenic	4	1	1.00e-03	3.00e-03	1.40e-03	.	.	1.40e-03
Barium	4	4	2.00e-02	3.80e-02	3.00e-02	3.70e-03	3.90e-02	3.10e-02
Boron	4	4	3.70e-02	1.10e-01	6.00e-02	1.60e-02	9.70e-02	4.80e-02
Calcium	4	3	2.70e-02	3.40e+01	2.50e+01	4.90e+00	3.70e+01	2.50e+01
Chromium	4	4	1.20e-03	4.60e-03	2.50e-03	7.40e-04	4.30e-03	2.20e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Copper	4	4	3.00e-03	5.00e-03	4.20e-03	4.40e-04	5.30e-03	4.50e-03
Iron	4	2	1.80e-02	4.80e-02	3.20e-02	6.40e-03	4.70e-02	2.70e-02
Magnesium	4	3	9.00e-03	8.90e+00	6.10e+00	1.50e+00	9.50e+00	5.80e+00
Manganese	4	4	3.90e-03	3.90e-02	1.60e-02	8.00e-03	3.50e-02	1.10e-02
Mercury	8	2	3.00e-06	2.30e-04	5.40e-05	3.20e-05	1.20e-04	3.00e-05
Nickel	4	4	1.90e-03	1.00e-02	4.70e-03	1.90e-03	9.20e-03	3.30e-03
Potassium	4	3	1.30e-02	2.70e+00	2.50e+00	9.60e-02	2.70e+00	2.50e+00
Selenium	4	1	1.00e-03	3.30e-03	3.30e-03	.	.	3.30e-03
Sodium	4	3	2.00e-02	7.50e+00	4.20e+00	1.40e+00	7.50e+00	3.70e+00
Sulfate	4	4	1.60e+01	2.60e+01	2.20e+01	2.10e+00	2.60e+01	2.20e+01
Uranium	4	2	1.00e-03	2.50e-03	1.60e-03	3.70e-04	2.50e-03	1.30e-03
Zinc	4	4	3.90e-03	6.40e-03	5.00e-03	5.20e-04	6.20e-03	4.80e-03
Reach 3.04 / Total								
Aluminum	4	4	3.30e-01	1.50e+00	6.40e-01	2.90e-01	1.30e+00	3.70e-01
Antimony	4	1	1.00e-03	1.70e-03	1.70e-03	.	.	1.70e-03
Arsenic	4	1	1.00e-03	3.00e-03	1.80e-03	.	.	1.80e-03
Barium	4	4	3.60e-02	4.10e-02	3.90e-02	1.10e-03	4.20e-02	4.00e-02

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Boron	4	4	3.50e-02	1.20e-01	6.60e-02	2.00e-02	1.10e-01	5.20e-02
Calcium	4	3	2.70e-02	3.40e+01	2.60e+01	4.30e+00	3.60e+01	2.50e+01
Chromium	4	4	2.90e-03	3.10e-03	3.00e-03	4.10e-05	3.10e-03	3.00e-03
Cobalt	4	1	1.00e-03	1.50e-03	1.50e-03	.	.	1.50e-03
Copper	4	4	2.00e-03	1.00e-02	5.50e-03	1.70e-03	9.40e-03	5.10e-03
Iron	4	4	4.10e-01	1.90e+00	8.20e-01	3.40e-01	1.60e+00	5.20e-01
Lead	4	3	1.00e-03	4.30e-03	2.40e-03	6.90e-04	4.00e-03	1.80e-03
Magnesium	4	3	9.00e-03	8.60e+00	6.10e+00	1.30e+00	9.20e+00	5.90e+00
Manganese	4	4	8.10e-02	1.00e-01	9.30e-02	5.80e-03	1.10e-01	9.40e-02
Mercury	8	5	8.70e-05	9.00e-04	2.60e-04	1.10e-04	4.70e-04	1.20e-04
Methyl mercury	4	1	2.10e-07	7.00e-07	7.00e-07	.	.	7.00e-07
Molybdenum	4	1	2.10e-03	5.00e-03	2.10e-03	.	.	2.10e-03
Nickel	4	4	2.50e-03	6.50e-03	3.80e-03	9.20e-04	5.90e-03	3.00e-03
Potassium	4	3	1.30e-02	2.70e+00	2.60e+00	2.40e-02	2.70e+00	2.60e+00
Sodium	4	3	2.00e-02	9.20e+00	6.00e+00	1.10e+00	8.60e+00	4.90e+00
Uranium	4	3	1.00e-03	2.80e-03	1.70e-03	4.00e-04	2.70e-03	1.50e-03
Vanadium	4	3	1.00e-03	3.20e-03	1.80e-03	5.10e-04	3.00e-03	1.40e-03
Zinc	4	4	5.50e-03	3.50e-02	2.30e-02	6.40e-03	3.90e-02	2.70e-02

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Reach 13 / Dissolved								
Aluminum	16	16	7.40e-03	2.20e-02	1.40e-02	1.10e-03	1.60e-02	1.40e-02
Antimony	16	16	1.90e-03	1.10e-02	6.40e-03	6.90e-04	7.60e-03	6.70e-03
Arsenic	16	1	1.00e-03	3.00e-03	1.00e-03	.	.	1.00e-03
Barium	16	16	3.00e-02	5.20e-02	4.20e-02	1.80e-03	4.50e-02	4.40e-02
Boron	16	16	2.50e-02	8.90e-02	5.30e-02	5.20e-03	6.20e-02	5.70e-02
Calcium	16	16	1.80e+01	3.80e+01	2.80e+01	1.30e+00	3.00e+01	3.00e+01
Chromium	16	15	1.00e-03	2.70e-03	2.00e-03	1.50e-04	2.30e-03	2.00e-03
Copper	16	16	2.00e-03	2.00e-02	4.80e-03	1.10e-03	6.70e-03	3.50e-03
Iron	16	14	1.80e-02	1.20e+00	1.10e-01	7.10e-02	2.30e-01	4.10e-02
Lead	16	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Magnesium	16	16	5.30e+00	1.30e+01	8.30e+00	5.00e-01	9.20e+00	8.30e+00
Manganese	16	16	3.80e-02	1.80e-01	1.10e-01	8.30e-03	1.20e-01	1.10e-01
Mercury	32	2	1.60e-06	6.60e-04	3.10e-04	1.60e-05	3.40e-04	3.00e-04
Nickel	16	16	1.50e-03	1.60e-02	3.90e-03	1.00e-03	5.60e-03	2.20e-03
Potassium	16	16	2.00e+00	3.30e+00	2.30e+00	9.00e-02	2.40e+00	2.10e+00
Selenium	16	2	1.00e-03	3.20e-03	1.20e-03	1.80e-04	1.50e-03	1.10e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Sodium	16	16	2.70e+00	4.80e+00	3.60e+00	1.50e-01	3.90e+00	3.50e+00
Sulfate	16	16	1.90e+01	3.10e+01	2.60e+01	8.60e-01	2.70e+01	2.70e+01
Zinc	16	16	2.60e-03	1.80e-02	4.90e-03	9.40e-04	6.50e-03	3.70e-03
Reach 13 / Total								
Aluminum	16	16	1.00e-01	9.10e-01	4.70e-01	4.70e-02	5.50e-01	4.80e-01
Antimony	16	2	1.00e-03	2.30e-03	1.20e-03	1.00e-04	1.40e-03	1.10e-03
Arsenic	16	3	1.00e-03	3.00e-03	1.20e-03	3.20e-05	1.20e-03	1.20e-03
Barium	16	16	4.00e-02	6.00e-02	4.90e-02	1.60e-03	5.20e-02	5.20e-02
Boron	16	16	2.70e-02	1.60e-01	6.70e-02	8.40e-03	8.20e-02	6.80e-02
Calcium	16	16	2.00e+01	3.80e+01	2.90e+01	1.30e+00	3.10e+01	3.00e+01
Chromium	16	16	1.30e-03	3.30e-03	2.30e-03	1.70e-04	2.60e-03	2.40e-03
Copper	16	16	1.60e-03	6.40e-03	3.20e-03	3.80e-04	3.90e-03	2.50e-03
Iron	16	16	3.30e-01	1.10e+00	6.80e-01	4.80e-02	7.70e-01	6.80e-01
Lead	16	6	1.00e-03	3.50e-03	1.50e-03	1.50e-04	1.80e-03	1.30e-03
Magnesium	16	16	5.60e+00	1.30e+01	8.50e+00	5.20e-01	9.40e+00	8.50e+00
Manganese	16	16	9.50e-02	2.30e-01	1.70e-01	8.50e-03	1.80e-01	1.70e-01
Mercury	32	9	2.50e-06	2.60e-04	2.10e-05	1.10e-05	4.00e-05	4.70e-06

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Methyl mercury	16	2	5.90e-08	2.90e-07	2.20e-07	6.20e-09	2.30e-07	2.10e-07
Nickel	16	16	1.60e-03	6.10e-03	2.90e-03	2.70e-04	3.30e-03	2.70e-03
Potassium	16	16	1.90e+00	3.30e+00	2.40e+00	8.80e-02	2.50e+00	2.30e+00
Selenium	16	1	1.00e-03	3.00e-03	1.20e-03	.	.	1.20e-03
Sodium	16	16	3.10e+00	6.60e+00	4.30e+00	3.00e-01	4.90e+00	3.90e+00
Vanadium	16	11	1.00e-03	1.60e-03	1.20e-03	5.50e-05	1.30e-03	1.10e-03
Zinc	16	16	2.90e-03	2.10e-02	9.90e-03	1.60e-03	1.30e-02	7.00e-03
WINTER							3.28e-01	
Reach 3.01 / Dissolved								
Aluminum	5	5	2.10e-02	1.80e-01	5.70e-02	3.10e-02	1.20e-01	2.70e-02
Antimony	5	1	1.00e-03	7.00e-03	7.00e-03	.	.	7.00e-03
Barium	5	5	2.30e-02	4.80e-02	3.20e-02	4.20e-03	4.10e-02	3.10e-02
Boron	5	5	3.20e-03	4.40e-02	3.10e-02	7.20e-03	4.60e-02	3.30e-02
Calcium	5	5	1.20e+01	3.90e+01	2.40e+01	4.50e+00	3.40e+01	2.40e+01
Chromium	5	2	1.00e-03	1.80e-03	1.40e-03	1.30e-04	1.70e-03	1.30e-03
Copper	5	5	1.00e-03	4.00e-03	2.00e-03	6.00e-04	3.30e-03	1.20e-03
Iron	5	5	5.60e-02	3.80e-01	1.80e-01	5.60e-02	3.00e-01	1.70e-01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Lead	5	1	1.00e-03	1.40e-03	1.40e-03	.	.	1.40e-03
Magnesium	5	5	3.70e+00	9.60e+00	6.60e+00	9.80e-01	8.70e+00	6.60e+00
Manganese	5	5	4.00e-02	8.10e-02	5.40e-02	7.00e-03	6.90e-02	4.90e-02
Mercury	10	1	3.60e-06	2.00e-04	1.40e-05	.	.	1.40e-05
Nickel	5	5	3.00e-03	5.00e-03	4.00e-03	4.10e-04	4.90e-03	4.40e-03
Potassium	5	5	9.90e-01	3.00e+00	1.50e+00	3.60e-01	2.30e+00	1.20e+00
Sodium	5	5	1.80e+00	6.20e+00	3.70e+00	8.60e-01	5.60e+00	3.10e+00
Sulfate	5	5	1.90e+01	4.50e+01	3.00e+01	4.20e+00	3.90e+01	2.80e+01
Uranium	5	3	1.00e-03	2.50e-03	1.70e-03	2.50e-04	2.30e-03	1.40e-03
Zinc	5	5	3.90e-03	1.20e-02	7.20e-03	1.30e-03	9.80e-03	6.80e-03
Reach 3.01 / Total								
Aluminum	5	5	1.20e-01	6.40e-01	4.00e-01	8.80e-02	5.80e-01	4.30e-01
Antimony	5	1	1.00e-03	1.40e-03	1.40e-03	.	.	1.40e-03
Barium	5	5	3.20e-02	5.10e-02	3.80e-02	3.60e-03	4.50e-02	3.40e-02
Boron	5	5	4.60e-03	5.10e-02	2.80e-02	8.60e-03	4.70e-02	3.00e-02
Calcium	5	5	1.20e+01	3.90e+01	2.40e+01	4.50e+00	3.40e+01	2.30e+01
Chromium	5	5	1.40e-03	2.90e-03	2.00e-03	2.60e-04	2.60e-03	1.90e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Cobalt	5	3	1.00e-03	1.60e-03	1.20e-03	1.10e-04	1.40e-03	1.10e-03
Copper	5	5	1.50e-03	6.20e-03	4.10e-03	9.50e-04	6.10e-03	5.30e-03
Iron	5	5	2.70e-01	1.20e+00	7.50e-01	1.50e-01	1.10e+00	7.60e-01
Lead	5	2	1.00e-03	2.30e-03	1.60e-03	2.30e-04	2.10e-03	1.40e-03
Magnesium	5	5	3.70e+00	9.90e+00	6.70e+00	1.00e+00	8.90e+00	6.80e+00
Manganese	5	5	5.80e-02	1.20e-01	8.50e-02	1.10e-02	1.10e-01	7.70e-02
Mercury	10	5	1.50e-05	2.00e-04	5.10e-05	2.30e-05	9.40e-05	2.90e-05
Molybdenum	5	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Nickel	5	5	3.80e-03	5.60e-03	4.90e-03	3.30e-04	5.60e-03	5.20e-03
Potassium	5	5	1.00e+00	3.10e+00	1.60e+00	3.80e-01	2.40e+00	1.30e+00
Sodium	5	5	2.30e+00	7.20e+00	4.50e+00	9.80e-01	6.60e+00	3.40e+00
Uranium	5	3	1.00e-03	2.50e-03	1.90e-03	1.80e-04	2.20e-03	1.70e-03
Vanadium	5	3	1.00e-03	1.30e-03	1.10e-03	6.40e-05	1.20e-03	1.00e-03
Zinc	5	5	6.60e-03	2.00e-02	1.40e-02	2.50e-03	1.90e-02	1.40e-02
Reach 3.02 / Dissolved								
Aluminum	5	5	1.20e-02	4.90e-02	2.50e-02	6.60e-03	3.90e-02	2.10e-02
Antimony	5	3	1.00e-03	7.60e-03	5.70e-03	5.10e-04	6.80e-03	5.20e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Barium	5	5	2.70e-02	4.20e-02	3.30e-02	2.70e-03	3.90e-02	3.10e-02
Boron	5	5	8.60e-03	6.50e-02	3.40e-02	9.90e-03	5.50e-02	3.90e-02
Calcium	5	5	2.10e+01	3.90e+01	2.80e+01	3.20e+00	3.50e+01	2.60e+01
Chromium	5	5	1.00e-03	2.40e-03	1.40e-03	2.50e-04	2.00e-03	1.40e-03
Copper	5	5	1.20e-03	5.90e-03	2.80e-03	8.80e-04	4.70e-03	1.80e-03
Iron	5	4	1.60e-02	2.50e-01	1.60e-01	3.70e-02	2.40e-01	1.80e-01
Magnesium	5	5	5.30e+00	1.00e+01	7.60e+00	7.40e-01	9.20e+00	7.60e+00
Manganese	5	5	4.20e-02	8.10e-02	6.10e-02	8.00e-03	7.80e-02	5.10e-02
Nickel	5	5	3.60e-03	4.80e-03	4.20e-03	2.20e-04	4.70e-03	4.10e-03
Potassium	5	5	9.70e-01	2.10e+00	1.40e+00	2.00e-01	1.80e+00	1.30e+00
Selenium	5	1	3.00e-03	4.70e-03	4.70e-03	.	.	4.70e-03
Sodium	5	5	2.60e+00	6.40e+00	4.30e+00	8.20e-01	6.00e+00	3.30e+00
Sulfate	5	5	2.50e+01	3.90e+01	3.00e+01	2.60e+00	3.50e+01	2.70e+01
Uranium	5	5	1.80e-03	3.50e-03	2.40e-03	2.90e-04	3.10e-03	2.30e-03
Zinc	5	5	3.40e-03	7.70e-03	5.90e-03	7.60e-04	7.60e-03	5.70e-03
Reach 3.02 / Total								
Aluminum	5	5	1.20e-01	4.00e-01	2.20e-01	4.80e-02	3.30e-01	1.80e-01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Aluminum	4	4	1.50e-02	3.60e-02	2.30e-02	4.80e-03	3.40e-02	2.00e-02
Antimony	4	3	1.00e-03	7.90e-03	5.90e-03	8.10e-04	7.80e-03	5.50e-03
Arsenic	4	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Barium	4	4	2.40e-02	3.20e-02	2.70e-02	1.60e-03	3.10e-02	2.60e-02
Boron	4	2	3.00e-03	8.10e-02	3.10e-02	2.00e-02	7.90e-02	1.50e-02
Calcium	4	4	1.60e+01	2.60e+01	2.20e+01	2.20e+00	2.70e+01	2.30e+01
Chromium	4	4	1.20e-03	1.70e-03	1.40e-03	1.10e-04	1.70e-03	1.40e-03
Copper	4	3	1.00e-03	4.10e-03	3.20e-03	4.40e-04	4.20e-03	3.10e-03
Iron	4	4	1.70e-01	2.90e-01	2.20e-01	2.70e-02	2.80e-01	2.00e-01
Lead	4	1	1.00e-03	1.20e-03	1.20e-03	.	.	1.20e-03
Magnesium	4	4	4.60e+00	7.60e+00	6.00e+00	6.30e-01	7.50e+00	6.00e+00
Manganese	4	4	4.00e-02	7.30e-02	5.50e-02	6.80e-03	7.10e-02	5.40e-02
Methyl mercury	4	1	5.80e-08	1.00e-07	7.10e-08	.	.	7.10e-08
Nickel	4	4	1.90e-03	5.20e-03	4.10e-03	7.50e-04	5.90e-03	4.70e-03
Potassium	4	4	1.30e+00	1.50e+00	1.40e+00	4.20e-02	1.50e+00	1.40e+00
Sodium	4	4	3.20e+00	4.90e+00	4.10e+00	4.10e-01	5.10e+00	4.20e+00
Sulfate	4	4	2.30e+01	2.90e+01	2.70e+01	1.40e+00	3.10e+01	2.90e+01
Uranium	4	2	1.00e-03	2.40e-03	2.10e-03	1.20e-04	2.40e-03	2.00e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Zinc	4	4	2.30e-03	1.90e-02	9.30e-03	3.70e-03	1.80e-02	8.10e-03
Reach 3.03 / Total								
Aluminum	4	4	1.50e-01	8.30e-01	4.10e-01	1.60e-01	7.80e-01	3.30e-01
Arsenic	4	2	1.00e-03	2.10e-03	1.50e-03	2.40e-04	2.10e-03	1.30e-03
Barium	4	4	3.30e-02	3.70e-02	3.50e-02	9.70e-04	3.70e-02	3.50e-02
Boron	4	2	3.00e-03	3.90e-02	1.60e-02	9.70e-03	3.80e-02	7.60e-03
Calcium	4	4	1.60e+01	2.60e+01	2.30e+01	2.40e+00	2.90e+01	2.50e+01
Chromium	4	4	1.90e-03	2.70e-03	2.20e-03	1.90e-04	2.60e-03	2.10e-03
Cobalt	4	1	1.00e-03	1.30e-03	1.30e-03	.	.	1.30e-03
Copper	4	4	3.30e-03	5.70e-03	4.50e-03	5.40e-04	5.70e-03	4.50e-03
Iron	4	4	4.00e-01	1.40e+00	7.90e-01	2.20e-01	1.30e+00	6.70e-01
Lead	4	4	1.10e-03	2.10e-03	1.60e-03	2.10e-04	2.00e-03	1.50e-03
Magnesium	4	4	4.70e+00	7.60e+00	6.10e+00	6.10e-01	7.50e+00	6.00e+00
Manganese	4	4	6.10e-02	9.70e-02	7.90e-02	9.40e-03	1.00e-01	7.90e-02
Mercury	8	4	3.90e-05	2.00e-04	7.80e-05	1.90e-05	1.10e-04	7.20e-05
Methyl mercury	4	1	1.00e-07	2.40e-07	2.40e-07	.	.	2.40e-07
Nickel	4	4	3.00e-03	6.40e-03	4.70e-03	7.40e-04	6.40e-03	4.70e-03

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95 % UCB	Median
Potassium	4	4	1.30e+00	1.70e+00	1.50e+00	8.80e-02	1.70e+00	1.50e+00
Sodium	4	4	3.90e+00	6.70e+00	5.30e+00	6.20e-01	6.70e+00	5.30e+00
Uranium	4	3	1.00e-03	2.50e-03	2.20e-03	1.80e-04	2.60e-03	2.20e-03
Vanadium	4	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Zinc	4	4	1.10e-02	2.40e-02	1.70e-02	3.40e-03	2.50e-02	1.60e-02
Reach 3.04 / Dissolved								
Aluminum	5	5	1.40e-02	3.30e-02	2.20e-02	3.40e-03	2.90e-02	2.00e-02
Antimony	5	5	4.70e-03	5.80e-03	5.20e-03	2.00e-04	5.60e-03	5.30e-03
Arsenic	5	1	1.00e-03	1.60e-03	1.60e-03	.	.	1.60e-03
Barium	5	5	2.70e-02	3.50e-02	3.00e-02	1.40e-03	3.30e-02	2.90e-02
Boron	5	5	3.50e-03	5.70e-02	2.40e-02	9.70e-03	4.50e-02	1.70e-02
Calcium	5	5	2.30e+01	2.60e+01	2.50e+01	4.70e-01	2.60e+01	2.50e+01
Chromium	5	4	1.00e-03	2.00e-03	1.60e-03	1.20e-04	1.90e-03	1.60e-03
Copper	5	5	1.50e-03	5.50e-03	3.20e-03	6.60e-04	4.60e-03	3.00e-03
Iron	5	5	2.30e-02	3.20e-01	1.60e-01	5.10e-02	2.70e-01	1.90e-01
Lead	5	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Magnesium	5	5	5.60e+00	7.70e+00	6.90e+00	4.00e-01	7.80e+00	7.30e+00

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Manganese	5	5	6.40e-02	7.90e-02	6.90e-02	2.50e-03	7.50e-02	6.80e-02
Nickel	5	5	1.40e-03	5.10e-03	3.80e-03	6.80e-04	5.30e-03	4.20e-03
Potassium	5	5	1.10e+00	1.50e+00	1.30e+00	6.90e-02	1.50e+00	1.40e+00
Sodium	5	5	2.90e+00	5.40e+00	3.80e+00	4.80e-01	4.90e+00	3.30e+00
Sulfate	5	5	2.60e+01	2.80e+01	2.70e+01	4.90e-01	2.80e+01	2.80e+01
Uranium	5	5	1.20e-03	2.40e-03	2.00e-03	2.10e-04	2.40e-03	2.00e-03
Zinc	5	5	4.10e-03	1.20e-02	6.50e-03	1.40e-03	9.50e-03	5.20e-03
Reach 3.04 / Total								
Aluminum	5	5	2.50e-01	5.40e-01	3.50e-01	4.90e-02	4.60e-01	3.20e-01
Arsenic	5	1	1.00e-03	1.00e-03	1.00e-03	.	.	1.00e-03
Barium	5	5	3.30e-02	3.50e-02	3.40e-02	4.30e-04	3.50e-02	3.50e-02
Boron	5	4	3.00e-03	6.10e-02	2.20e-02	1.10e-02	4.50e-02	1.60e-02
Calcium	5	5	2.30e+01	2.70e+01	2.50e+01	6.50e-01	2.60e+01	2.50e+01
Chromium	5	5	1.20e-03	2.60e-03	1.90e-03	2.70e-04	2.50e-03	1.80e-03
Cobalt	5	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Copper	5	5	1.70e-03	6.70e-03	3.80e-03	9.30e-04	5.80e-03	4.20e-03
Iron	5	5	4.90e-01	9.80e-01	6.60e-01	9.50e-02	8.70e-01	5.70e-01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Lead	5	3	1.00e-03	2.10e-03	1.40e-03	2.00e-04	1.80e-03	1.10e-03
Magnesium	5	5	5.60e+00	7.70e+00	6.90e+00	3.90e-01	7.80e+00	7.30e+00
Manganese	5	5	7.50e-02	1.10e-01	8.40e-02	6.20e-03	9.70e-02	7.80e-02
Mercury	10	7	3.00e-05	2.40e-04	1.10e-04	2.60e-05	1.60e-04	1.10e-04
Nickel	5	5	2.00e-03	5.30e-03	4.10e-03	6.70e-04	5.50e-03	5.00e-03
Potassium	5	5	1.10e+00	1.50e+00	1.40e+00	7.00e-02	1.50e+00	1.40e+00
Sodium	5	5	2.80e+00	7.10e+00	4.70e+00	8.40e-01	6.50e+00	4.30e+00
Uranium	5	5	1.90e-03	2.40e-03	2.20e-03	1.00e-04	2.40e-03	2.30e-03
Vanadium	5	1	1.00e-03	1.10e-03	1.10e-03	.	.	1.10e-03
Zinc	5	5	6.30e-03	1.90e-02	1.20e-02	2.60e-03	1.80e-02	1.20e-02
Reach 13 / Dissolved								
Aluminum	14	10	1.00e-02	6.00e-02	2.60e-02	3.50e-03	3.20e-02	2.20e-02
Antimony	14	11	1.00e-03	1.20e-02	4.00e-03	8.00e-04	5.50e-03	3.30e-03
Arsenic	14	2	1.00e-03	1.40e-03	1.10e-03	2.40e-05	1.20e-03	1.10e-03
Barium	14	14	2.20e-02	3.90e-02	3.00e-02	1.10e-03	3.20e-02	3.10e-02
Boron	14	8	3.00e-03	6.00e-02	3.10e-02	3.10e-03	3.70e-02	2.40e-02
Calcium	14	14	1.00e+01	2.60e+01	2.00e+01	1.10e+00	2.20e+01	2.10e+01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median
Chromium	14	10	1.00e-03	2.10e-03	1.40e-03	1.10e-04	1.60e-03	1.20e-03
Copper	14	14	1.00e-03	1.10e-02	3.00e-03	7.10e-04	4.30e-03	2.40e-03
Iron	14	11	1.60e-02	2.50e-01	1.20e-01	2.40e-02	1.70e-01	1.50e-01
Lead	14	2	1.00e-03	1.40e-03	1.10e-03	2.10e-05	1.20e-03	1.10e-03
Magnesium	14	14	3.50e+00	8.00e+00	6.90e+00	3.40e-01	7.50e+00	7.40e+00
Manganese	14	14	3.90e-02	1.20e-01	6.40e-02	5.50e-03	7.30e-02	5.90e-02
Nickel	14	14	3.10e-03	6.20e-03	4.60e-03	2.20e-04	5.00e-03	4.50e-03
Potassium	14	14	9.70e-01	3.10e+00	1.30e+00	1.40e-01	1.50e+00	1.20e+00
Sodium	14	14	1.70e+00	4.10e+00	2.70e+00	1.40e-01	3.00e+00	2.60e+00
Sulfate	16	16	2.20e+01	4.60e+01	3.00e+01	1.40e+00	3.20e+01	3.00e+01
Zinc	14	14	2.20e-03	1.10e-02	6.20e-03	7.80e-04	7.60e-03	6.40e-03
Reach 13 / Total								
Aluminum	16	16	9.60e-02	1.60e+00	4.70e-01	1.10e-01	6.60e-01	3.10e-01
Arsenic	16	4	1.00e-03	1.60e-03	1.30e-03	2.40e-05	1.40e-03	1.30e-03
Barium	16	16	3.30e-02	5.40e-02	3.50e-02	1.30e-03	3.80e-02	3.40e-02
Boron	16	12	3.00e-03	4.50e-02	2.70e-02	2.10e-03	3.00e-02	2.70e-02
Calcium	16	16	1.20e+01	2.60e+01	2.00e+01	9.50e-01	2.20e+01	2.20e+01

Table A21 (continued)

Analyte	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95 % UCB	Median
Chromium	16	14	1.00e-03	3.50e-03	1.90e-03	2.10e-04	2.30e-03	1.70e-03
Cobalt	16	5	1.00e-03	2.00e-03	1.60e-03	4.50e-05	1.70e-03	1.50e-03
Copper	16	16	1.00e-03	1.40e-02	3.90e-03	8.20e-04	5.30e-03	2.60e-03
Iron	16	16	1.90e-01	2.70e+00	8.10e-01	1.80e-01	1.10e+00	6.20e-01
Lead	16	7	1.00e-03	2.90e-03	1.40e-03	1.60e-04	1.70e-03	1.10e-03
Magnesium	16	16	3.70e+00	7.90e+00	6.60e+00	3.30e-01	7.20e+00	7.20e+00
Manganese	16	16	5.90e-02	2.10e-01	9.60e-02	1.00e-02	1.10e-01	7.70e-02
Mercury	32	4	1.80e-06	2.00e-04	7.70e-06	1.40e-06	1.00e-05	5.90e-06
Methyl mercury	15	1	4.50e-08	1.10e-07	9.60e-08	.	.	9.60e-08
Nickel	16	16	2.20e-03	7.80e-03	5.10e-03	3.80e-04	5.70e-03	5.20e-03
Potassium	16	16	1.00e+00	3.20e+00	1.40e+00	1.30e-01	1.60e+00	1.30e+00
Sodium	16	16	2.50e+00	4.90e+00	3.40e+00	2.00e-01	3.70e+00	3.10e+00
Vanadium	16	6	1.00e-03	3.20e-03	1.30e-03	1.60e-04	1.60e-03	1.00e-03
Zinc	16	16	3.90e-03	2.30e-02	1.20e-02	1.70e-03	1.50e-02	1.00e-02

Table A22. Summary statistics of organics (mg/L) in Poplar Creek by reach

Parameter	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UB	Median
Reach 3.01/Dissolved								
Bis(2-ethylhexyl)phthalate	1	1	4.00E-03	4.00E-03	4.00E-03	.	.	4.00E-03
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Reach 3.01/Total								
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
PCB-1254	1	1	2.90E-04	2.90E-04	2.90E-04	.	.	2.90E-04
Reach 3.02/Total								
Bis(2-ethylhexyl)phthalate	2	2	2.00E-03	7.00E-03	4.50E-03	0	2.03E-02	4.50E-03
Butylbenzylphthalate	1	1	4.00E-03	4.00E-03	4.00E-03	.	.	4.00E-03
Di-n-octylphthalate	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03
Reach 3.03/Dissolved								
Diethylphthalate	1	1	3.00E-03	3.00E-03	3.00E-03	.	.	3.00E-03
Reach 3.03/Total								
Bis(2-ethylhexyl)phthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Diethylphthalate	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03
Reach 3.04/Total								
PCB-1254	1	1	1.40E-04	1.40E-04	1.40E-04	.	.	1.40E-04
Reach 13/Dissolved								
Benzoic acid	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Benzoic acid	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03
Bis(2-ethylhexyl)phthalate	1	1	3.65E-02	3.65E-02	3.65E-02	.	.	3.65E-02
Bis(2-ethylhexyl)phthalate	3	3	1.00E-03	2.30E-01	7.80E-02	0.08	3.00E-01	3.00E-03
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Diethylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03

Table A22 (continued)

Parameter	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UB	Median
Diethylphthalate	2	2	1.00E-03	2.00E-03	1.50E-03	0	4.66E-03	1.50E-03
Reach 13/Total								
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Di-n-butylphthalate	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03
Diethylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Diethylphthalate	2	2	1.00E-03	2.00E-03	1.50E-03	0	4.66E-03	1.50E-03
Diethylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
PCB-1254	1	1	4.60E-04	4.60E-04	4.60E-04	.	.	4.60E-04
PCB-1260	1	1	1.02E-03	1.02E-03	1.02E-03	.	.	1.02E-03

Table A23. Summary statistics of organics (mg/L) in Poplar Creek by season

Parameter	Obs.	Detects	Max.	Min.	Mean	Std. Error	95% UCB	Median
Winter/Dissolved								
Benzoic acid	2	2	2.00E-03	1.00E-03	1.50E-03	0	4.66E-03	1.50E-03
Bis(2-ethylhexyl)phthalate	2	2	3.65E-02	1.00E-03	1.88E-02	0.02	1.31E-01	1.88E-02
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Diethylphthalate	4	4	3.00E-03	1.00E-03	1.75E-03	0	2.88E-03	1.50E-03
Winter/Total								
Bis(2-ethylhexyl)phthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Diethylphthalate	5	5	2.00E-03	1.00E-03	1.40E-03	0	1.92E-03	1.00E-03
PCB-1254	3	3	4.60E-04	1.40E-04	2.97E-04	0	5.67E-04	2.90E-04
PCB-1260	1	1	1.02E-03	1.02E-03	1.02E-03	.	.	1.02E-03
Spring/Dissolved								
Bis(2-ethylhexyl)phthalate	2	2	4.00E-03	3.00E-03	3.50E-03	0	6.66E-03	3.50E-03
Di-n-butylphthalate	1	1	1.00E-03	1.00E-03	1.00E-03	.	.	1.00E-03
Spring/Total								
Bis(2-ethylhexyl)phthalate	1	1	7.00E-03	7.00E-03	7.00E-03	.	.	7.00E-03
Di-n-butylphthalate	2	2	2.00E-03	1.00E-03	1.50E-03	0	4.66E-03	1.50E-03
Summer/Dissolved								
Bis(2-ethylhexyl)phthalate	1	1	2.30E-01	2.30E-01	2.30E-01	.	.	2.30E-01
Summer/Total								
Bis(2-ethylhexyl)phthalate	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03
Butylbenzylphthalate	1	1	4.00E-03	4.00E-03	4.00E-03	.	.	4.00E-03
Di-n-butylphthalate	2	2	1.00E-03	1.00E-03	1.00E-03	0	1.00E-03	1.00E-03
Di-n-octylphthalate	1	1	2.00E-03	2.00E-03	2.00E-03	.	.	2.00E-03

Table A24. Summary statistics for radionuclide results for Poplar Creek by season

Analyte	Media	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median	Units
Spring										
Cesium-137	Dissolved	34	12	-4.08E+00	1.65E+01	2.20E-01	1.00E-01	3.90E-01	0.00E+00	pCi/L
Cesium-137	Residue	36	0	-3.60E-01	4.70E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	34	0	-5.34E+00	7.08E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	36	0	-9.25E+00	4.50E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	34	21	-5.70E-01	4.13E+00	1.23E+00	1.30E-01	1.46E+00	1.08E+00	pCi/L
Gross beta activity	Total	34	26	-2.17E+00	2.27E+01	3.28E+00	6.40E-01	4.36E+00	2.45E+00	pCi/L
Particle associated Co-60		31	0	-1.59E+02	6.21E+01	.	.	.	.	pCi/G
Particle associated Cs-137		28	0	-4.07E+01	4.32E+01	.	.	.	.	pCi/G
Strontium-90	Total	34	4	0.00E+00	3.80E+00	2.32E+00	6.00E-02	2.41E+00	2.24E+00	pCi/L
Tritium	Total	34	0	0.00E+00	1.99E+02	.	.	.	.	pCi/L
Summer										
Cesium-137	Dissolved	37	15	-3.54E+00	1.22E+01	3.30E-01	2.00E-01	6.70E-01	0.00E+00	pCi/L
Cesium-137	Residue	40	0	-3.50E-01	4.50E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	37	0	-5.48E+00	8.13E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	40	0	-5.10E-01	4.50E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	36	11	-7.10E+01	4.33E+00	5.80E-01	1.90E-01	9.00E-01	0.00E+00	pCi/L
Gross beta activity	Total	36	21	-4.60E-01	2.22E+01	4.66E+00	7.30E-01	5.90E+00	2.76E+00	pCi/L
Particle associated Co-60		33	0	-2.98E+01	5.49E+01	.	.	.	.	pCi/G
Particle associated Cs-137		32	0	-5.82E+01	3.98E+01	.	.	.	.	pCi/G
Strontium-90	Total	36	10	-4.35E+00	8.01E+00	2.42E+00	1.90E-01	2.74E+00	2.04E+00	pCi/L
Tritium	Total	36	2	-2.63E+02	1.12E+03	3.26E+02	3.17E+01	3.80E+02	3.03E+02	pCi/L
Winter										
Cesium-137	Dissolved	36	15	-3.17E+00	1.27E+01	3.10E-01	1.50E-01	5.60E-01	5.00E-03	pCi/L
Cesium-137	Residue	36	0	-4.40E-01	5.90E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	36	1	-6.78E+00	6.59E+00	0.00E+00	.	.	0.00E+00	pCi/L

Table A24 (continued)

Analyte	Media	Observations	Detects	Minimum	Maximum	Mean	Std. Error	95% UCB	Median	Units
Cobalt-60	Residue	36	0	-5.30E-01	6.60E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	35	14	-1.28E+00	3.66E+00	1.43E+00	1.10E-01	1.63E+00	1.08E+00	pCi/L
Gross beta activity	Total	35	17	-6.30E+00	8.80E+00	2.42E+00	2.70E-01	2.87E+00	1.50E+00	pCi/L
Particle associated Co-60		31	0	-1.10E+02	9.96E+01	.	.	.	.	pCi/G
Particle associated Cs-137		29	0	-6.55E+01	5.67E+01	.	.	.	.	pCi/G
Strontium-90	Total	38	1	0.00E+00	2.76E+00	2.76E+00	.	.	2.76E+00	pCi/L
Tritium	Total	35	2	0.00E+00	1.89E+03	8.54E+02	4.23E+01	9.26E+02	8.24E+02	pCi/L

Table A25. Summary statistics for radionuclide results for Poplar Creek subreaches

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Subreach 3.01										
Cesium-137	Dissolved	16	6	-2.25E+00	8.66E+00	2.80E-01	1.90E-01	6.20E-01	0.00E+00	pCi/L
Cesium-137	Residue	14	0	-1.90E-01	4.70E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	16	0	-3.25E+00	6.14E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	14	0	-5.10E-01	4.10E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	14	6	-1.62E+01	1.89E+00	1.30E+00	8.00E-02	1.43E+00	1.13E+00	pCi/L
Gross beta activity	Total	14	7	4.10E-01	7.21E+00	3.14E+00	4.80E-01	3.98E+00	2.02E+00	pCi/L
Particle Associated Co-60		12	0	-2.33E+01	2.51E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		12	0	-2.89E+01	3.11E+01	.	.	.	.	pCi/G
Strontium-90	Total	15	2	-1.07E+00	2.49E+00	2.14E+00	3.00E-02	2.20E+00	2.12E+00	pCi/L
Tritium	Total	15	1	-2.19E+02	1.89E+03	1.89E+03	.	.	1.89E+03	pCi/L
Subreach 3.02										
Cesium-137	Dissolved	14	7	-4.08E+00	1.65E+01	1.40E-01	1.40E-01	3.90E-01	0.00E+00	pCi/L
Cesium-137	Residue	17	0	-3.50E-01	3.50E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	14	1	-5.53E+00	3.92E+00	0.00E+00	.	.	0.00E+00	pCi/L
Cobalt-60	Residue	17	0	-4.00E-01	6.60E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	13	8	-4.72E+01	3.58E+00	1.62E+00	2.30E-01	2.02E+00	1.47E+00	pCi/L
Gross beta activity	Total	13	11	5.40E-01	8.80E+00	3.98E+00	5.90E-01	5.03E+00	3.27E+00	pCi/L
Particle Associated Co-60		12	0	-4.18E+01	5.13E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		12	0	-2.70E+01	5.43E+01	.	.	.	.	pCi/G
Strontium-90	Total	14	3	-1.33E+00	3.82E+00	2.84E+00	1.20E-01	3.06E+00	2.69E+00	pCi/L
Tritium	Total	13	1	-1.55E+02	8.24E+02	8.24E+02	.	.	8.24E+02	pCi/L

Subreach 3.03

Table A25 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Cesium-137	Dissolved	13	6	-2.40E+00	1.02E+01	3.50E-01	2.10E-01	7.20E-01	8.12E-02	pCi/L
Cesium-137	Residue	13	6	-4.40E-01	3.40E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	13	0	-5.48E+00	6.98E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	13	0	-3.00E-01	5.20E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	13	10	-1.66E+01	4.33E+00	1.67E+00	2.50E-01	2.12E+00	1.44E+00	pCi/L
Gross beta activity	Total	13	10	4.00E-02	6.46E+00	3.32E+00	3.60E-01	3.97E+00	3.12E+00	pCi/L
Particle Associated Co-60		13	0	-4.07E+01	5.67E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		13	0	-1.65E+01	6.21E+01	.	.	.	.	pCi/G
Strontium-90	Total	13	1	-2.29E+00	4.14E+00	4.14E+00	.	.	4.14E+00	pCi/L
Tritium	Total	13	0	-2.63E+02	1.09E+02	.	.	.	.	pCi/L
Subreach 3.04										
Cesium-137	Dissolved	14	6	-2.54E+00	1.18E+01	5.10E-01	2.90E-01	1.03E+00	0.00E+00	pCi/L
Cesium-137	Residue	16	0	-4.30E-01	4.40E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	14	0	-3.11E+00	7.08E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	16	0	-4.30E-01	3.90E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	14	11	-7.10E+01	3.85E+00	1.99E+00	2.30E-01	2.40E+00	1.87E+00	pCi/L
Gross beta activity	Total	14	12	1.05E+00	1.65E+01	4.33E+00	9.90E-01	6.09E+00	3.07E+00	pCi/L
Particle Associated Co-60		12	0	-3.24E+01	4.08E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		12	0	-1.66E+01	4.37E+01	.	.	.	.	pCi/G
Strontium-90	Total	14	1	-4.35E+00	3.98E+00	2.36E+00	.	.	2.37E+00	pCi/L
Tritium	Total	14	1	-2.07E+02	3.03E+02	3.03E+02	.	.	3.03E+02	pCi/L

Table A25 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Subreach 13										
Cesium-137	Dissolved	15	6	-1.30E+00	1.22E+01	1.10E-01	9.00E-02	2.60E-01	1.00E-02	pCi/L
Cesium-137	Dissolved	12	4	-3.92E+00	9.36E+00	3.40E-01	3.60E-01	9.80E-01	0.00E+00	pCi/L
Cesium-137	Dissolved	11	5	-2.74E+00	1.17E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	pCi/L
Cesium-137	Dissolved	12	2	-2.17E+00	1.33E+01	8.20E-01	1.06E+00	2.73E+00	0.00E+00	pCi/L
Cesium-137	Residue	15	0	-1.60E-01	5.90E-01	.	.	.	.	pCi/L
Cesium-137	Residue	13	0	-2.90E-01	1.90E-01	.	.	.	.	pCi/L
Cesium-137	Residue	12	0	-3.90E-01	4.50E-01	.	.	.	.	pCi/L
Cesium-137	Residue	12	0	-2.10E-01	1.80E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	15	0	-5.34E+00	6.59E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	12	0	-2.37E+00	6.09E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	11	0	-2.11E+00	8.13E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	12	0	-6.78E+00	6.11E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	15	0	-4.70E-01	4.50E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	13	0	-9.25E+00	1.90E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	12	0	-5.40E-01	5.60E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	12	0	-5.30E-01	3.60E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	14	2	-5.62E+01	1.26E+00	1.09E+00	2.00E-02	1.12E+00	1.08E+00	pCi/L
Gross alpha activity	Total	13	3	-5.39E+01	4.13E+00	1.39E+00	2.80E-01	1.89E+00	1.10E+00	pCi/L
Gross alpha activity	Total	12	3	-4.04E+00	1.23E+00	1.90E-01	1.50E-01	4.60E-01	0.00E+00	pCi/L
Gross alpha activity	Total	12	3	-2.38E+01	1.37E+00	6.70E-01	8.00E-02	8.10E-01	6.00E-01	pCi/L
Gross beta activity	Total	14	6	-3.74E+00	7.95E+00	3.09E+00	4.40E-01	3.87E+00	2.43E+00	pCi/L
Gross beta activity	Total	13	8	-1.48E+00	2.27E+01	4.97E+00	2.21E+00	8.92E+00	1.50E+00	pCi/L
Gross beta activity	Total	12	6	-6.30E+00	1.02E+01	2.99E+00	8.90E-01	4.58E+00	1.45E+00	pCi/L

Table A25 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Gross beta activity	Total	12	4	-2.17E+00	9.51E+00	2.51E+00	7.70E-01	3.90E+00	1.54E+00	pCi/L
Particle Associated Co-60		13	0	-6.15E+01	9.96E+01	.	.	.	.	pCi/G
Particle Associated Co-60		11	0	-9.95E+01	1.63E+01	.	.	.	.	pCi/G
Particle Associated Co-60		11	0	-1.59E+02	9.29E+01	.	.	.	.	pCi/G
Particle Associated Co-60		11	0	-1.10E+02	5.02E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		10	0	-4.63E+01	5.12E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		11	0	-4.87E+01	2.92E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		8	0	-6.55E+01	2.71E+01	.	.	.	.	pCi/G
Particle Associated Cs-137		11	0	-1.41E+01	4.32E+01	.	.	.	.	pCi/G
Strontium-90	Total	15	2	-2.15E+00	2.76E+00	2.47E+00	3.00E-02	2.52E+00	2.45E+00	pCi/L
Strontium-90	Total	13	2	-2.79E+00	3.21E+00	2.28E+00	5.00E-02	2.38E+00	2.24E+00	pCi/L
Strontium-90	Total	12	2	-2.13E+00	8.01E+00	3.15E+00	6.00E-01	4.23E+00	2.71E+00	pCi/L
Strontium-90	Total	12	2	-3.67E+00	3.80E+00	2.18E+00	2.00E-01	2.54E+00	2.03E+00	pCi/L
Tritium	Total	14	1	-2.48E+02	1.12E+03	1.12E+03	.	.	1.12E+03	pCi/L
Tritium	Total	12	0	-1.95E+02	1.99E+02	.	.	.	.	pCi/L
Tritium	Total	12	0	-1.86E+02	1.47E+02	.	.	.	.	pCi/L
Tritium	Total	12	0	-2.00E+02	4.47E+01	.	.	.	.	pCi/L

Table A26. Summary statistics for radionuclides by season for each Poplar Creek subreach

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Spring, Subreach 3.01										
Cesium-137	Dissolved	6	2	-2.25E+00	8.66E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Residue	6	0	-1.91E-01	4.72E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	6	0	-3.25E+00	2.74E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	6	0	-1.45E-01	2.76E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	6	4	-5.72E-01	1.89E+00	1.48E+00	0.13	1.73E+00	1.38E+00	pCi/L
Gross beta activity	Total	6	4	6.57E-01	5.21E+00	2.97E+00	0.59	4.16E+00	2.22E+00	pCi/L
Particle associated Co-60 ^a		4	0	4.30E+00	3.11E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-2.33E+01	2.51E+01	.	.	.	.	pCi/G
Strontium-90	Total	6	0	0.00E+00	3.70E-01	.	.	.	.	pCi/L
Tritium	Total	6	0	0.00E+00	1.19E+02	.	.	.	.	pCi/L
Spring, Subreach 3.02										
Cesium-137	Dissolved	4	3	-4.08E+00	1.65E+01	4.16E-01	0.42	1.40E+00	0.00E+00	pCi/L
Cesium-137	Residue	5	0	-1.80E-01	1.80E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	1.19E+00	3.92E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	5	0	-4.03E-01	1.39E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	3	9.39E-01	2.63E+00	1.81E+00	0.29	2.50E+00	1.58E+00	pCi/L
Gross beta activity	Total	4	4	2.45E+00	7.98E+00	4.26E+00	1.26	7.22E+00	3.30E+00	pCi/L
Particle associated Co-60		4	0	-1.14E+01	1.16E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-2.72E+01	2.37E+01	.	.	.	.	pCi/G
Strontium-90	Total	4	1	0.00E+00	3.66E+00	2.69E+00	.	.	2.69E+00	pCi/L
Tritium	Total	4	0	1.90E+01	1.11E+02	.	.	.	.	pCi/L

^a Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
<u>Spring, Subreach 3.03</u>										
Cesium-137	Dissolved	4	2	-5.99E-01	3.57E+00	3.51E-01	0.35	1.18E+00	3.51E-01	pCi/L
Cesium-137	Residue	4	0	-2.07E-01	-3.76E-02	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-2.82E+00	6.98E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-1.52E-01	4.47E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	4	1.02E+00	2.21E+00	1.56E+00	0.27	2.20E+00	1.50E+00	pCi/L
Gross beta activity	Total	4	4	2.20E+00	3.12E+00	2.66E+00	0.21	3.15E+00	2.66E+00	pCi/L
Particle associated Co-60		4	0	-1.41E+01	6.21E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-4.07E+01	-1.65E+00	.	.	.	.	pCi/G
Strontium-90	Total	4	0	0.00E+00	1.05E+00	.	.	.	.	pCi/L
Tritium	Total	4	0	0.00E+00	9.12E+01	.	.	.	.	pCi/L
<u>Spring, Subreach 3.04</u>										
Cesium-137	Dissolved	3	1	-2.54E+00	1.12E+01	8.72E-01	.	.	8.72E-01	pCi/L
Cesium-137	Residue	3	0	-3.37E-02	1.00E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	3	0	-7.57E-01	7.08E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	3	0	1.01E-02	2.10E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	3	3	1.39E+00	2.20E+00	1.78E+00	0.23	2.47E+00	1.76E+00	pCi/L
Gross beta activity	Total	3	3	2.76E+00	4.07E+00	3.35E+00	0.38	4.47E+00	3.23E+00	pCi/L
Particle associated Co-60		3	0	7.78E-01	2.21E+01	.	.	.	.	pCi/G
Particle associated Cs-137		3	0	-3.83E+00	8.09E+00	.	.	.	.	pCi/G
Strontium-90	Total	3	0	4.78E-01	1.55E+00	.	.	.	.	pCi/L
Tritium	Total	3	0	0.00E+00	1.58E+02	.	.	.	.	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Spring, Subreach 13										
Cesium-137	Dissolved	4	1	6.22E-01	1.06E+01	6.22E-01	.	.	6.22E-01	pCi/L
Cesium-137	Dissolved	5	2	-3.92E+00	9.36E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Dissolved	4	1	-1.15E+00	1.17E+01	0.00E+00	.	.	0.00E+00	pCi/L
Cesium-137	Dissolved	4	0	-1.60E+00	1.33E+01	.	.	.	.	pCi/L
Cesium-137	Residue	4	0	-8.82E-02	8.53E-02	.	.	.	.	pCi/L
Cesium-137	Residue	6	0	-2.14E-01	1.93E-01	.	.	.	.	pCi/L
Cesium-137	Residue	4	0	-3.61E-01	7.11E-02	.	.	.	.	pCi/L
Cesium-137	Residue	4	0	-2.12E-01	1.56E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-5.34E+00	5.00E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-2.37E+00	5.94E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-1.20E+00	3.26E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-1.39E+00	6.11E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-4.67E-01	2.80E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	6	0	-9.25E+00	1.54E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-5.42E-01	7.87E-02	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-3.58E-01	3.12E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	1	1.10E-01	1.26E+00	1.26E+00	.	.	1.26E+00	pCi/L
Gross alpha activity	Total	5	2	3.97E-01	4.13E+00	1.71E+00	0.77	3.34E+00	1.10E+00	pCi/L
Gross alpha activity	Total	4	1	-5.15E-01	1.05E+00	1.05E+00	.	.	1.05E+00	pCi/L
Gross alpha activity	Total	4	3	6.00E-01	1.37E+00	8.31E-01	0.19	1.29E+00	7.03E-01	pCi/L
Gross beta activity	Total	4	2	5.43E-01	2.86E+00	2.79E+00	0.03	2.86E+00	2.77E+00	pCi/L
Gross beta activity	Total	5	4	1.19E+00	2.27E+01	6.23E+00	4.27	1.53E+01	2.26E+00	pCi/L
Gross beta activity	Total	4	2	1.13E+00	3.51E+00	1.97E+00	0.63	3.45E+00	1.45E+00	pCi/L
Gross beta activity	Total	4	3	-2.17E+00	5.05E+00	2.45E+00	0.92	4.61E+00	1.60E+00	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Particle associated Co-60		4	0	-1.59E+02	5.89E+00	.	.	.	.	pCi/G
Particle associated Co-60		4	0	-6.15E+01	1.20E+01	.	.	.	.	pCi/G
Particle associated Co-60		4	0	-4.73E+01	1.10E+01	.	.	.	.	pCi/G
Particle associated Co-60		4	0	-4.42E+01	1.79E+01	.	.	.	.	pCi/G
Particle associated Cs-137		2	0	-9.80E+00	-1.80E+00	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-3.14E+01	1.38E+01	.	.	.	.	pCi/G
Particle associated Cs-137		3	0	-3.84E+01	4.44E+00	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-1.22E+01	4.32E+01	.	.	.	.	pCi/G
Strontium-90	Total	4	0	0.00E+00	9.23E-01	.	.	.	.	pCi/L
Strontium-90	Total	5	1	0.00E+00	2.24E+00	2.24E+00	.	.	2.24E+00	pCi/L
Strontium-90	Total	4	1	0.00E+00	2.71E+00	2.71E+00	.	.	2.71E+00	pCi/L
Strontium-90	Total	4	1	2.24E-01	3.80E+00	3.80E+00	.	.	3.80E+00	pCi/L
Tritium	Total	4	0	2.70E+01	1.01E+02	.	.	.	.	pCi/L
Tritium	Total	5	0	0.00E+00	1.99E+02	.	.	.	.	pCi/L
Tritium	Total	4	0	0.00E+00	1.47E+02	.	.	.	.	pCi/L
Tritium	Total	4	0	0.00E+00	3.84E+01	.	.	.	.	pCi/L
Summer, Subreach 3.01										
Cesium-137	Dissolved	4	2	-1.70E+00	1.46E+00	4.43E-01	0.51	1.65E+00	0.00E+00	pCi/L
Cesium-137	Residue	4	0	-5.26E-02	4.25E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-8.64E-01	6.14E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-5.09E-01	4.08E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	1	-1.62E+01	1.60E+00	1.60E+00	.	.	1.60E+00	pCi/L
Gross beta activity	Total	4	2	7.51E-01	7.21E+00	4.24E+00	1.21	7.09E+00	3.25E+00	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95 % UCB	Median	Units
Particle associated Co-60		4	0	-2.89E+01	2.27E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-4.27E+00	2.41E+01	.	.	.	.	pCi/G
Strontium-90	Total	4	2	-1.07E+00	2.49E+00	2.21E+00	0.11	2.48E+00	2.12E+00	pCi/L
Tritium	Total	4	0	-2.19E+02	7.73E+01	.	.	.	.	pCi/L
Summer, Subreach 3.02										
Cesium-137	Dissolved	5	2	-3.54E+00	9.14E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Residue	6	0	-3.52E-01	3.49E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-1.17E+00	1.68E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	6	0	-5.96E-02	3.27E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	2	-4.72E+01	1.76E+00	1.19E+00	0.23	1.74E+00	1.00E+00	pCi/L
Gross beta activity	Total	4	2	5.43E-01	5.06E+00	4.03E+00	0.42	5.02E+00	3.69E+00	pCi/L
Particle associated Co-60		4	0	8.72E-01	5.11E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-1.22E+01	3.33E+01	.	.	.	.	pCi/G
Strontium-90	Total	4	2	-1.33E+00	3.82E+00	3.72E+00	0.04	3.82E+00	3.68E+00	pCi/L
Tritium	Total	4	0	-1.55E+02	4.31E+01	.	.	.	.	pCi/L
Summer, Subreach 3.03										
Cesium-137	Dissolved	5	2	-2.40E+00	5.96E+00	8.12E-02	0.08	2.54E-01	8.12E-02	pCi/L
Cesium-137	Residue	5	0	-7.41E-02	3.43E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-5.48E+00	1.79E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	5	0	-2.95E-01	4.34E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	5	3	-1.66E+01	4.33E+00	2.17E+00	0.61	3.48E+00	1.44E+00	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Gross beta activity	Total	5	4	9.51E-01	6.46E+00	4.36E+00	0.64	5.73E+00	4.00E+00	pCi/L
Particle associated Co-60		5	0	-1.65E+01	5.05E+01	.	.	.	.	pCi/G
Particle associated Cs-137		5	0	-4.31E+00	3.98E+01	.	.	.	.	pCi/G
Strontium-90	Total	5	1	-2.29E+00	4.14E+00	4.14E+00	.	.	4.14E+00	pCi/L
Tritium	Total	5	0	-2.63E+02	9.95E+01	.	.	.	.	pCi/L
Summer, Subreach 3.04										
Cesium-137	Dissolved	5	3	-1.76E+00	7.93E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Residue	6	0	-1.05E-01	2.90E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-2.32E+00	5.80E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	6	0	-3.63E-01	1.77E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	5	3	-7.10E+01	3.85E+00	1.97E+00	0.55	3.14E+00	1.27E+00	pCi/L
Gross beta activity	Total	5	4	2.46E+00	1.65E+01	6.54E+00	2.65	1.22E+01	4.56E+00	pCi/L
Particle associated Co-60		4	0	-2.98E+01	1.28E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-1.82E+00	2.10E+01	.	.	.	.	pCi/G
Strontium-90	Total	5	1	-4.35E+00	3.98E+00	2.36E+00	.	.	2.37E+00	pCi/L
Tritium	Total	5	1	-2.07E+02	3.03E+02	3.03E+02	.	.	3.03E+02	pCi/L
Summer, Subreach 13										
Cobalt-60	Dissolved	4	0	-2.11E+00	8.13E+00	.	.	.	.	pCi/L
Cesium-137	Dissolved	5	1	-1.30E+00	1.22E+01	0.00E+00	.	.	0.00E+00	pCi/L
Cesium-137	Dissolved	4	1	1.08E+00	4.18E+00	2.02E+00	.	.	2.02E+00	pCi/L
Cesium-137	Dissolved	4	2	-7.04E-01	5.91E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Dissolved	5	2	-2.17E+00	8.57E+00	1.65E+00	1.9	5.70E+00	0.00E+00	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Cesium-137	Residue	5	0	-1.57E-01	1.58E-01	.	.	.	.	pCi/L
Cesium-137	Residue	4	0	-1.87E-01	1.05E-01	.	.	.	.	pCi/L
Cesium-137	Residue	5	0	-3.26E-01	4.54E-01	.	.	.	.	pCi/L
Cesium-137	Residue	5	0	-1.28E-01	1.83E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-3.98E+00	2.60E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-4.18E-01	3.06E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	0	-4.75E+00	1.93E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	5	0	-2.78E-01	4.50E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	-7.84E-02	1.95E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	5	0	-1.82E-01	2.51E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	5	0	-2.12E-01	3.63E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	5	0	-5.62E+01	9.93E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	0	-5.39E+01	2.06E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	2	-4.04E+00	1.23E+00	3.08E-01	0.38	1.19E+00	0.00E+00	pCi/L
Gross alpha activity	Total	5	0	-2.38E+01	9.27E-01	.	.	.	.	pCi/L
Gross beta activity	Total	5	3	-4.59E-01	7.95E+00	4.23E+00	1.14	6.65E+00	2.71E+00	pCi/L
Gross beta activity	Total	4	2	1.18E-01	2.22E+01	7.06E+00	6.18	2.16E+01	2.01E+00	pCi/L
Gross beta activity	Total	4	3	5.85E-01	1.02E+01	5.75E+00	2.06	1.06E+01	5.16E+00	pCi/L
Gross beta activity	Total	5	1	3.26E-01	9.51E+00	9.51E+00	.	.	9.51E+00	pCi/L
Particle associated Co-60		4	0	-1.04E+01	5.49E+01	.	.	.	.	pCi/G
Particle associated Co-60		4	0	-4.00E+00	9.80E+00	.	.	.	.	pCi/G
Particle associated Co-60		4	0	-4.97E+00	4.03E+01	.	.	.	.	pCi/G
Particle associated Co-60		4	0	1.28E+00	5.02E+01	.	.	.	.	pCi/G
Particle associated Cs-137		3	0	-7.68E+00	1.56E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-9.56E+00	5.82E+00	.	.	.	.	pCi/G

• Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Particle associated Cs-137		4	0	-5.82E+01	2.70E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-1.41E+01	1.09E+01	.	.	.	.	pCi/G
Strontium-90	Total	5	1	-2.15E+00	2.45E+00	2.45E+00	.	.	2.45E+00	pCi/L
Strontium-90	Total	4	1	-2.79E+00	3.21E+00	2.71E+00	.	.	2.71E+00	pCi/L
Strontium-90	Total	4	1	-2.13E+00	8.01E+00	8.01E+00	.	.	8.01E+00	pCi/L
Strontium-90	Total	5	1	-3.67E+00	2.03E+00	2.03E+00	.	.	2.03E+00	pCi/L
Tritium	Total	5	1	-2.48E+02	1.12E+03	1.12E+03	.	.	1.12E+03	pCi/L
Tritium	Total	4	0	-1.95E+02	0.00E+00	.	.	.	.	pCi/L
Tritium	Total	4	0	-1.86E+02	0.00E+00	.	.	.	.	pCi/L
Tritium	Total	5	0	-2.00E+02	0.00E+00	.	.	.	.	pCi/L
Winter, Subreach 3.01										
Cesium-137	Dissolved	6	2	5.14E-03	8.00E+00	3.06E-01	0.35	1.01E+00	1.00E-02	pCi/L
Cesium-137	Residue	4	0	-1.66E-02	9.16E-02	.	.	.	.	pCi/L
Cobalt-60	Dissolved	6	0	-1.14E+00	2.18E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	1.48E-02	1.88E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	1	-6.86E-01	1.13E+00	1.13E+00	.	.	1.13E+00	pCi/L
Gross beta activity	Total	4	1	4.06E-01	5.54E+00	5.54E+00	.	.	5.54E+00	pCi/L
Particle associated Co-60		4	0	1.45E+00	1.81E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-7.61E-01	1.99E+01	.	.	.	.	pCi/G
Strontium-90	Total	5	0	0.00E+00	1.68E+00	.	.	.	.	pCi/L
Tritium	Total	5	1	0.00E+00	1.89E+03	1.89E+03	.	.	1.89E+03	pCi/L
Winter, Subreach 3.02										

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95 % UCB	Median	Units
Cesium-137	Dissolved	5	2	-3.17E+00	5.47E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Residue	6	0	-3.17E-01	2.48E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	5	1	-5.53E+00	1.87E+00	0.00E+00	.	.	0.00E+00	pCi/L
Cobalt-60	Residue	6	0	-2.21E-01	6.60E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	5	3	3.14E-01	3.58E+00	2.23E+00	0.38	3.03E+00	1.81E+00	pCi/L
Gross beta activity	Total	5	5	2.51E+00	8.80E+00	4.20E+00	1.2	6.75E+00	2.90E+00	pCi/L
Particle associated Co-60		4	0	-2.70E+01	5.43E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-4.18E+01	5.13E+01	.	.	.	.	pCi/G
Strontium-90	Total	6	0	0.00E+00	1.61E+00	.	.	.	.	pCi/L
Tritium	Total	5	1	0.00E+00	8.24E+02	8.24E+02	.	.	8.24E+02	pCi/L
Winter, Subreach 3.03										
Cesium-137	Dissolved	4	2	-4.72E-01	1.02E+01	6.17E-01	0.62	2.07E+00	6.17E-01	pCi/L
Cesium-137	Residue	4	0	-4.37E-01	2.38E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	4	0	-1.11E+00	4.26E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	4	0	3.18E-02	5.15E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	4	3	7.75E-01	1.65E+00	1.42E+00	0.09	1.65E+00	1.38E+00	pCi/L
Gross beta activity	Total	4	2	4.01E-02	4.17E+00	3.40E+00	0.32	4.14E+00	3.14E+00	pCi/L
Particle associated Co-60		4	0	2.15E+00	4.83E+01	.	.	.	.	pCi/G
Particle associated Cs-137		4	0	-9.76E+00	5.67E+01	.	.	.	.	pCi/G
Strontium-90	Total	4	0	0.00E+00	5.23E-01	.	.	.	.	pCi/L
Tritium	Total	4	0	0.00E+00	1.09E+02	.	.	.	.	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Winter, Subreach 3.04										
Cesium-137	Dissolved	6	2	6.95E-01	1.18E+01	1.29E+00	0.68	2.66E+00	6.95E-01	pCi/L
Cesium-137	Residue	7	0	-4.27E-01	4.37E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	6	0	-3.11E+00	2.84E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	7	0	-4.28E-01	3.92E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	6	5	1.11E+00	3.66E+00	2.13E+00	0.36	2.86E+00	1.98E+00	pCi/L
Gross beta activity	Total	6	5	1.05E+00	4.86E+00	3.08E+00	0.47	4.02E+00	2.64E+00	pCi/L
Particle associated Co-60		5	0	-3.24E+01	4.08E+01	.	.	.	.	pCi/G
Particle associated Cs-137		5	0	-1.66E+01	4.37E+01	.	.	.	.	pCi/G
Strontium-90	Total	6	0	0.00E+00	6.73E-01	.	.	.	.	pCi/L
Tritium	Total	6	0	0.00E+00	1.04E+02	.	.	.	.	pCi/L
Winter, Subreach 13										
Cesium-137	Dissolved	6	4	-1.59E-01	4.74E+00	3.47E-02	0.02	7.23E-02	3.40E-02	pCi/L
Cesium-137	Dissolved	3	1	-1.90E+00	8.12E+00	0.00E+00	.	.	0.00E+00	pCi/L
Cesium-137	Dissolved	3	2	-2.74E+00	5.13E+00	0.00E+00	0	0.00E+00	0.00E+00	pCi/L
Cesium-137	Dissolved	3	0	2.29E+00	1.27E+01	.	.	.	.	pCi/L
Cesium-137	Residue	6	0	-1.48E-01	5.88E-01	.	.	.	.	pCi/L
Cesium-137	Residue	3	0	-2.92E-01	1.17E-01	.	.	.	.	pCi/L
Cesium-137	Residue	3	0	-3.93E-01	1.74E-01	.	.	.	.	pCi/L
Cesium-137	Residue	3	0	-4.18E-03	1.56E-01	.	.	.	.	pCi/L
Cobalt-60	Dissolved	6	0	-3.55E+00	6.59E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	3	0	5.62E-01	6.09E+00	.	.	.	.	pCi/L
Cobalt-60	Dissolved	3	0	1.03E+00	3.42E+00	.	.	.	.	pCi/L

• Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Cobalt-60	Dissolved	3	0	-6.78E+00	1.61E+00	.	.	.	.	pCi/L
Cobalt-60	Residue	6	0	-5.97E-02	3.19E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	3	0	-3.98E-01	9.81E-02	.	.	.	.	pCi/L
Cobalt-60	Residue	3	0	-7.08E-02	5.58E-01	.	.	.	.	pCi/L
Cobalt-60	Residue	3	0	-5.27E-01	1.86E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	5	1	-2.01E-01	1.08E+00	1.08E+00	.	.	1.08E+00	pCi/L
Gross alpha activity	Total	4	1	3.73E-01	1.87E+00	1.87E+00	.	.	1.87E+00	pCi/L
Gross alpha activity	Total	4	0	2.51E-01	6.76E-01	.	.	.	.	pCi/L
Gross alpha activity	Total	3	0	-1.28E+00	9.99E-02	.	.	.	.	pCi/L
Gross beta activity	Total	5	1	-3.74E+00	2.43E+00	2.43E+00	.	.	2.43E+00	pCi/L
Gross beta activity	Total	4	2	-1.48E+00	1.91E+00	1.60E+00	0.13	1.90E+00	1.50E+00	pCi/L
Gross beta activity	Total	4	1	-6.30E+00	1.65E+00	1.65E+00	.	.	1.65E+00	pCi/L
Gross beta activity	Total	3	0	2.49E-02	1.45E+00	.	.	.	.	pCi/L
Particle associated Co-60		5	0	1.82E+00	9.96E+01	.	.	.	.	pCi/G
Particle associated Co-60		3	0	-9.95E+01	1.63E+01	.	.	.	.	pCi/G
Particle associated Co-60		3	0	-2.21E+01	9.29E+01	.	.	.	.	pCi/G
Particle associated Co-60		3	0	-1.10E+02	1.91E+01	.	.	.	.	pCi/G
Particle associated Cs-137		5	0	-4.63E+01	5.12E+01	.	.	.	.	pCi/G
Particle associated Cs-137		3	0	-4.87E+01	2.92E+01	.	.	.	.	pCi/G
Particle associated Cs-137		1	0	-6.55E+01	-6.55E+01	.	.	.	.	pCi/G
Particle associated Cs-137		3	0	-8.71E-01	3.54E+01	.	.	.	.	pCi/G
Strontium-90	Total	6	1	0.00E+00	2.76E+00	2.76E+00	.	.	2.76E+00	pCi/L
Strontium-90	Total	4	0	0.00E+00	0.00E+00	.	.	.	.	pCi/L
Strontium-90	Total	4	0	0.00E+00	6.82E-01	.	.	.	.	pCi/L
Strontium-90	Total	3	0	0.00E+00	7.09E-02	.	.	.	.	pCi/L

Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A26 (continued)

Analyte	Media	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median	Units
Tritium	Total	5	0	0.00E+00	1.31E+02	.	.	.	.	pCi/L
Tritium	Total	3	0	0.00E+00	9.15E+01	.	.	.	.	pCi/L
Tritium	Total	4	0	0.00E+00	6.67E+01	.	.	.	.	pCi/L
Tritium	Total	3	0	0.00E+00	4.47E+01	.	.	.	.	pCi/L

a Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A27. Inorganic concentrations associated with the water toxicity subtask.
Nondetectable results are not included. Poplar Creek sites are not included as they are
already included in the Poplar Creek Contaminant Study results.

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	19	2.03	spring	Antimony	Dissolved	4.20e-03
CRM	19	2.03	spring	Barium	Dissolved	2.11e-02
CRM	19	2.03	spring	Boron	Dissolved	7.48e-02
CRM	19	2.03	spring	Calcium	Dissolved	2.74e+01
CRM	19	2.03	spring	Chloride	Dissolved	7.10e+00
CRM	19	2.03	spring	Chromium	Dissolved	2.00e-03
CRM	19	2.03	spring	Copper	Dissolved	3.60e-03
CRM	19	2.03	spring	Iron	Dissolved	3.63e-02
CRM	19	2.03	spring	Lead	Dissolved	1.50e-03
CRM	19	2.03	spring	Magnesium	Dissolved	7.51e+00
CRM	19	2.03	spring	Manganese	Dissolved	5.30e-03
CRM	19	2.03	spring	Nickel	Dissolved	2.60e-03
CRM	19	2.03	spring	Nitrate/nitrite	Dissolved	7.10e-01
CRM	19	2.03	spring	Potassium	Dissolved	1.32e+00
CRM	19	2.03	spring	Sodium	Dissolved	3.41e+00
CRM	19	2.03	spring	Sulfate	Dissolved	1.60e+01
CRM	19	2.03	spring	Zinc	Dissolved	4.40e-03
CRM	19	2.03	summer	Aluminum	Dissolved	9.70e-03
CRM	19	2.03	summer	Antimony	Dissolved	3.20e-03
CRM	19	2.03	summer	Barium	Dissolved	2.43e-02
CRM	19	2.03	summer	Calcium	Dissolved	2.47e+01
CRM	19	2.03	summer	Chloride	Dissolved	3.40e+00
CRM	19	2.03	summer	Chromium	Dissolved	2.70e-03
CRM	19	2.03	summer	Copper	Dissolved	3.20e-03
CRM	19	2.03	summer	Fluoride	Dissolved	7.00e-02
CRM	19	2.03	summer	Iron	Dissolved	4.69e-01
CRM	19	2.03	summer	Magnesium	Dissolved	6.31e+00
CRM	19	2.03	summer	Manganese	Dissolved	1.60e-03
CRM	19	2.03	summer	Nickel	Dissolved	8.30e-03
CRM	19	2.03	summer	Nitrate/nitrite	Dissolved	4.40e-01
CRM	19	2.03	summer	Potassium	Dissolved	1.23e+00
CRM	19	2.03	summer	Selenium	Dissolved	5.00e-03
CRM	19	2.03	summer	Sodium	Dissolved	3.15e+00
CRM	19	2.03	summer	Sulfate	Dissolved	1.70e+01
CRM	19	2.03	summer	Zinc	Dissolved	5.10e-03
CRM	19	2.03	winter	Antimony	Dissolved	5.90e-03
CRM	19	2.03	winter	Barium	Dissolved	2.81e-02
CRM	19	2.03	winter	Calcium	Dissolved	3.33e+01
CRM	19	2.03	winter	Chloride	Dissolved	5.70e+00
CRM	19	2.03	winter	Chromium	Dissolved	1.30e-03
CRM	19	2.03	winter	Copper	Dissolved	3.10e-03

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	19	2.03	winter	Iron	Dissolved	2.20e-01
CRM	19	2.03	winter	Magnesium	Dissolved	9.73e+00
CRM	19	2.03	winter	Manganese	Dissolved	6.00e-03
CRM	19	2.03	winter	Nickel	Dissolved	2.70e-03
CRM	19	2.03	winter	Nitrate/nitrite	Dissolved	3.90e-01
CRM	19	2.03	winter	Potassium	Dissolved	1.54e+00
CRM	19	2.03	winter	Sodium	Dissolved	5.37e+00
CRM	19	2.03	winter	Sulfate	Dissolved	2.30e+01
CRM	19	2.03	winter	Zinc	Dissolved	4.20e-03
CRM	19	2.03	spring	Alkalinity as CaCO3	Total	1.70e+00
CRM	19	2.03	spring	Aluminum	Total	2.84e-01
CRM	19	2.03	spring	Barium	Total	2.66e-02
CRM	19	2.03	spring	Boron	Total	6.69e-02
CRM	19	2.03	spring	Calcium	Total	2.93e+01
CRM	19	2.03	spring	Chromium	Total	3.40e-03
CRM	19	2.03	spring	Copper	Total	6.00e-03
CRM	19	2.03	spring	Iron	Total	4.12e-01
CRM	19	2.03	spring	Lead	Total	2.20e-03
CRM	19	2.03	spring	Magnesium	Total	7.88e+00
CRM	19	2.03	spring	Manganese	Total	4.76e-02
CRM	19	2.03	spring	Nickel	Total	3.10e-03
CRM	19	2.03	spring	Potassium	Total	1.47e+00
CRM	19	2.03	spring	Sodium	Total	5.53e+00
CRM	19	2.03	spring	Zinc	Total	1.74e-02
CRM	19	2.03	summer	Alkalinity as CaCO3	Total	1.80e+00
CRM	19	2.03	summer	Aluminum	Total	3.89e-02
CRM	19	2.03	summer	Barium	Total	2.62e-02
CRM	19	2.03	summer	Calcium	Total	2.56e+01
CRM	19	2.03	summer	Chromium	Total	1.60e-03
CRM	19	2.03	summer	Copper	Total	2.10e-03
CRM	19	2.03	summer	Iron	Total	5.13e-01
CRM	19	2.03	summer	Magnesium	Total	6.62e+00
CRM	19	2.03	summer	Manganese	Total	3.44e-02
CRM	19	2.03	summer	Potassium	Total	1.27e+00
CRM	19	2.03	summer	Sodium	Total	3.24e+00
CRM	19	2.03	summer	Zinc	Total	4.70e-03
CRM	19	2.03	winter	Alkalinity as CaCO3	Total	2.10e+00
CRM	19	2.03	winter	Aluminium	Total	7.89e-02
CRM	19	2.03	winter	Barium	Total	3.06e-02
CRM	19	2.03	winter	Calcium	Total	3.42e+01
CRM	19	2.03	winter	Chromium	Total	1.40e-03
CRM	19	2.03	winter	Copper	Total	1.90e-03
CRM	19	2.03	winter	Iron	Total	3.27e-01

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	19	2.03	winter	Magnesium	Total	9.98e+00
CRM	19	2.03	winter	Manganese	Total	3.19e-02
CRM	19	2.03	winter	Nickel	Total	2.40e-03
CRM	19	2.03	winter	Potassium	Total	1.54e+00
CRM	19	2.03	winter	Sodium	Total	5.33e+00
CRM	19	2.03	winter	Zinc	Total	6.30e-03
CRM	22	2.01	spring	Aluminum	Dissolved	1.70e-02
CRM	22	2.01	spring	Antimony	Dissolved	3.90e-03
CRM	22	2.01	spring	Barium	Dissolved	2.12e-02
CRM	22	2.01	spring	Boron	Dissolved	1.01e-01
CRM	22	2.01	spring	Calcium	Dissolved	2.76e+01
CRM	22	2.01	spring	Chloride	Dissolved	3.30e+00
CRM	22	2.01	spring	Chromium	Dissolved	1.20e-03
CRM	22	2.01	spring	Copper	Dissolved	3.60e-03
CRM	22	2.01	spring	Iron	Dissolved	3.82e-02
CRM	22	2.01	spring	Lead	Dissolved	2.50e-03
CRM	22	2.01	spring	Magnesium	Dissolved	7.65e+00
CRM	22	2.01	spring	Manganese	Dissolved	5.40e-03
CRM	22	2.01	spring	Nickel	Dissolved	3.70e-03
CRM	22	2.01	spring	Nitrate/nitrite	Dissolved	7.30e-01
CRM	22	2.01	spring	Potassium	Dissolved	1.37e+00
CRM	22	2.01	spring	Sodium	Dissolved	3.46e+00
CRM	22	2.01	spring	Sulfate	Dissolved	1.70e+01
CRM	22	2.01	spring	Zinc	Dissolved	1.26e-02
CRM	22	2.01	summer	Aluminum	Dissolved	3.72e-02
CRM	22	2.01	summer	Antimony	Dissolved	2.90e-03
CRM	22	2.01	summer	Barium	Dissolved	2.27e-02
CRM	22	2.01	summer	Boron	Dissolved	2.22e-02
CRM	22	2.01	summer	Calcium	Dissolved	2.33e+01
CRM	22	2.01	summer	Chloride	Dissolved	3.60e+00
CRM	22	2.01	summer	Chromium	Dissolved	3.17e-03
CRM	22	2.01	summer	Copper	Dissolved	3.04e-03
CRM	22	2.01	summer	Fluoride	Dissolved	1.00e-01
CRM	22	2.01	summer	Iron	Dissolved	4.50e-01
CRM	22	2.01	summer	Magnesium	Dissolved	5.88e+00
CRM	22	2.01	summer	Manganese	Dissolved	1.62e-03
CRM	22	2.01	summer	Nickel	Dissolved	8.49e-03
CRM	22	2.01	summer	Nitrate/nitrite	Dissolved	4.20e-01
CRM	22	2.01	summer	Potassium	Dissolved	1.18e+00
CRM	22	2.01	summer	Selenium	Dissolved	3.20e-03
CRM	22	2.01	summer	Sodium	Dissolved	3.11e+00
CRM	22	2.01	summer	Sulfate	Dissolved	1.80e+01
CRM	22	2.01	summer	Zinc	Dissolved	3.94e-03

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	22	2.01	winter	Aluminum	Dissolved	1.16e-02
CRM	22	2.01	winter	Barium	Dissolved	2.94e-02
CRM	22	2.01	winter	Calcium	Dissolved	3.37e+01
CRM	22	2.01	winter	Chloride	Dissolved	4.70e+00
CRM	22	2.01	winter	Chromium	Dissolved	1.20e-03
CRM	22	2.01	winter	Copper	Dissolved	1.30e-03
CRM	22	2.01	winter	Iron	Dissolved	2.23e-01
CRM	22	2.01	winter	Magnesium	Dissolved	9.54e+00
CRM	22	2.01	winter	Manganese	Dissolved	5.60e-03
CRM	22	2.01	winter	Nickel	Dissolved	2.40e-03
CRM	22	2.01	winter	Nitrate/nitrite	Dissolved	3.90e-01
CRM	22	2.01	winter	Potassium	Dissolved	1.48e+00
CRM	22	2.01	winter	Sodium	Dissolved	5.14e+00
CRM	22	2.01	winter	Sulfate	Dissolved	2.30e+01
CRM	22	2.01	winter	Zinc	Dissolved	5.20e-03
CRM	22	2.01	spring	Alkalinity as CaCO3	Total	1.70e+00
CRM	22	2.01	spring	Aluminum	Total	2.43e-01
CRM	22	2.01	spring	Barium	Total	2.51e-02
CRM	22	2.01	spring	Boron	Total	9.02e-02
CRM	22	2.01	spring	Calcium	Total	2.91e+01
CRM	22	2.01	spring	Chromium	Total	2.70e-03
CRM	22	2.01	spring	Copper	Total	5.80e-03
CRM	22	2.01	spring	Iron	Total	3.64e-01
CRM	22	2.01	spring	Lead	Total	2.70e-03
CRM	22	2.01	spring	Magnesium	Total	7.61e+00
CRM	22	2.01	spring	Manganese	Total	4.65e-02
CRM	22	2.01	spring	Nickel	Total	3.60e-03
CRM	22	2.01	spring	Potassium	Total	1.41e+00
CRM	22	2.01	spring	Sodium	Total	5.36e+00
CRM	22	2.01	spring	Zinc	Total	1.36e-02
CRM	22	2.01	summer	Alkalinity as CaCO3	Total	1.80e+00
CRM	22	2.01	summer	Aluminum	Total	6.04e-02
CRM	22	2.01	summer	Antimony	Total	1.30e-03
CRM	22	2.01	summer	Barium	Total	2.75e-02
CRM	22	2.01	summer	Calcium	Total	2.71e+01
CRM	22	2.01	summer	Chromium	Total	1.20e-03
CRM	22	2.01	summer	Copper	Total	2.00e-03
CRM	22	2.01	summer	Iron	Total	5.65e-01
CRM	22	2.01	summer	Magnesium	Total	6.68e+00
CRM	22	2.01	summer	Manganese	Total	4.01e-02
CRM	22	2.01	summer	Potassium	Total	1.33e+00
CRM	22	2.01	summer	Sodium	Total	3.58e+00
CRM	22	2.01	summer	Zinc	Total	3.60e-03

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	22	2.01	winter	Alkalinity as CaCO3	Total	2.10e+00
CRM	22	2.01	winter	Aluminum	Total	6.03e-02
CRM	22	2.01	winter	Barium	Total	3.32e-02
CRM	22	2.01	winter	Calcium	Total	3.56e+01
CRM	22	2.01	winter	Chromium	Total	3.00e-03
CRM	22	2.01	winter	Copper	Total	4.60e-03
CRM	22	2.01	winter	Iron	Total	3.11e-01
CRM	22	2.01	winter	Lead	Total	1.00e-03
CRM	22	2.01	winter	Magnesium	Total	9.55e+00
CRM	22	2.01	winter	Manganese	Total	3.14e-02
CRM	22	2.01	winter	Nickel	Total	1.07e-02
CRM	22	2.01	winter	Potassium	Total	1.57e+00
CRM	22	2.01	winter	Sodium	Total	7.36e+00
CRM	22	2.01	winter	Zinc	Total	1.34e-02
CRM	9	4.01	spring	Aluminum	Dissolved	1.70e-02
CRM	9	4.01	spring	Ammonium nitrogen	Dissolved	5.70e-02
CRM	9	4.01	spring	Antimony	Dissolved	2.44e-03
CRM	9	4.01	spring	Barium	Dissolved	1.94e-02
CRM	9	4.01	spring	Calcium	Dissolved	2.29e+01
CRM	9	4.01	spring	Chloride	Dissolved	2.70e+00
CRM	9	4.01	spring	Magnesium	Dissolved	7.00e+00
CRM	9	4.01	spring	Manganese	Dissolved	5.45e-03
CRM	9	4.01	spring	Nickel	Dissolved	2.74e-03
CRM	9	4.01	spring	Nitrate/nitrite	Dissolved	6.20e-01
CRM	9	4.01	spring	Potassium	Dissolved	1.41e+00
CRM	9	4.01	spring	Sodium	Dissolved	2.56e+00
CRM	9	4.01	spring	Sulfate	Dissolved	1.40e+01
CRM	9	4.01	summer	Antimony	Dissolved	3.50e-03
CRM	9	4.01	summer	Barium	Dissolved	2.44e-02
CRM	9	4.01	summer	Calcium	Dissolved	2.47e+01
CRM	9	4.01	summer	Chloride	Dissolved	4.10e+00
CRM	9	4.01	summer	Chromium	Dissolved	1.40e-03
CRM	9	4.01	summer	Copper	Dissolved	3.50e-03
CRM	9	4.01	summer	Iron	Dissolved	4.42e-01
CRM	9	4.01	summer	Magnesium	Dissolved	6.14e+00
CRM	9	4.01	summer	Manganese	Dissolved	1.70e-03
CRM	9	4.01	summer	Nickel	Dissolved	7.20e-03
CRM	9	4.01	summer	Nitrate/nitrite	Dissolved	4.20e-01
CRM	9	4.01	summer	Potassium	Dissolved	1.22e+00
CRM	9	4.01	summer	Selenium	Dissolved	3.90e-03
CRM	9	4.01	summer	Sodium	Dissolved	3.01e+00
CRM	9	4.01	summer	Sulfate	Dissolved	1.70e+01
CRM	9	4.01	summer	Zinc	Dissolved	5.80e-03

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
CRM	9	4.01	spring	Alkalinity as CaCO3	Total	1.60e+00
CRM	9	4.01	spring	Aluminum	Total	4.91e-01
CRM	9	4.01	spring	Barium	Total	2.58e-02
CRM	9	4.01	spring	Calcium	Total	2.41e+01
CRM	9	4.01	spring	Iron	Total	6.78e-01
CRM	9	4.01	spring	Lead	Total	1.60e-03
CRM	9	4.01	spring	Magnesium	Total	7.44e+00
CRM	9	4.01	spring	Manganese	Total	6.33e-02
CRM	9	4.01	spring	Mercury	Total	1.86e-05
CRM	9	4.01	spring	Nickel	Total	2.90e-03
CRM	9	4.01	spring	Potassium	Total	1.56e+00
CRM	9	4.01	spring	Sodium	Total	4.83e+00
CRM	9	4.01	spring	Vanadium	Total	1.20e-03
CRM	9	4.01	summer	Alkalinity as CaCO3	Total	1.80e+00
CRM	9	4.01	summer	Aluminum	Total	5.80e-02
CRM	9	4.01	summer	Barium	Total	2.62e-02
CRM	9	4.01	summer	Calcium	Total	2.58e+01
CRM	9	4.01	summer	Chromium	Total	1.60e-03
CRM	9	4.01	summer	Copper	Total	3.20e-03
CRM	9	4.01	summer	Iron	Total	5.18e-01
CRM	9	4.01	summer	Lead	Total	1.60e-03
CRM	9	4.01	summer	Magnesium	Total	6.34e+00
CRM	9	4.01	summer	Manganese	Total	3.23e-02
CRM	9	4.01	summer	Mercury	Total	1.19e-05
CRM	9	4.01	summer	Potassium	Total	1.31e+00
CRM	9	4.01	summer	Sodium	Total	3.14e+00
CRM	9	4.01	summer	Zinc	Total	5.70e-03
MBM	0.2	7.02	spring	Antimony	Dissolved	3.30e-03
MBM	0.2	7.02	spring	Barium	Dissolved	2.53e-02
MBM	0.2	7.02	spring	Calcium	Dissolved	2.91e+01
MBM	0.2	7.02	spring	Chloride	Dissolved	3.40e+00
MBM	0.2	7.02	spring	Copper	Dissolved	3.60e-03
MBM	0.2	7.02	spring	Fluoride	Dissolved	7.00e-02
MBM	0.2	7.02	spring	Iron	Dissolved	1.16e-02
MBM	0.2	7.02	spring	Magnesium	Dissolved	8.00e+00
MBM	0.2	7.02	spring	Nickel	Dissolved	2.00e-03
MBM	0.2	7.02	spring	Nitrate/nitrite	Dissolved	2.90e-01
MBM	0.2	7.02	spring	Potassium	Dissolved	1.44e+00
MBM	0.2	7.02	spring	Sodium	Dissolved	3.67e+00
MBM	0.2	7.02	spring	Sulfate	Dissolved	2.10e+01
MBM	0.2	7.02	spring	Zinc	Dissolved	5.50e-03
MBM	0.2	7.02	summer	Barium	Dissolved	2.64e-02
MBM	0.2	7.02	summer	Calcium	Dissolved	3.09e+01

Table A27 (continued)

Site	Reach	Season	Analyte	Type	Concentration (mg/L)	
MBM	0.2	7.02	summer	Chloride	Dissolved	2.80e+00
MBM	0.2	7.02	summer	Copper	Dissolved	2.50e-03
MBM	0.2	7.02	summer	Fluoride	Dissolved	7.00e-02
MBM	0.2	7.02	summer	Magnesium	Dissolved	8.53e+00
MBM	0.2	7.02	summer	Manganese	Dissolved	1.90e-03
MBM	0.2	7.02	summer	Nitrate/nitrite	Dissolved	2.10e-01
MBM	0.2	7.02	summer	Potassium	Dissolved	1.44e+00
MBM	0.2	7.02	summer	Sodium	Dissolved	3.22e+00
MBM	0.2	7.02	summer	Sulfate	Dissolved	1.60e+01
MBM	0.2	7.02	summer	Zinc	Dissolved	3.70e-03
MBM	0.2	7.02	spring	Alkalinity as CaCO3	Total	1.90c+00
MBM	0.2	7.02	spring	Aluminum	Total	8.37e-02
MBM	0.2	7.02	spring	Barium	Total	2.92e-02
MBM	0.2	7.02	spring	Calcium	Total	3.13e+01
MBM	0.2	7.02	spring	Chromium	Total	1.30e-03
MBM	0.2	7.02	spring	Copper	Total	4.30e-03
MBM	0.2	7.02	spring	Iron	Total	1.33e-01
MBM	0.2	7.02	spring	Lead	Total	1.30e-03
MBM	0.2	7.02	spring	Magnesium	Total	8.60e+00
MBM	0.2	7.02	spring	Manganese	Total	1.86e-02
MBM	0.2	7.02	spring	Nickel	Total	4.00e-03
MBM	0.2	7.02	spring	Potassium	Total	1.56e+00
MBM	0.2	7.02	spring	Sodium	Total	6.73e+00
MBM	0.2	7.02	spring	Uranium	Total	5.40e-03
MBM	0.2	7.02	spring	Zinc	Total	2.54e-02
MBM	0.2	7.02	summer	Alkalinity as CaCO3	Total	1.90e+00
MBM	0.2	7.02	summer	Aluminum	Total	1.80e-02
MBM	0.2	7.02	summer	Barium	Total	2.69e-02
MBM	0.2	7.02	summer	Boron	Total	1.74e-02
MBM	0.2	7.02	summer	Calcium	Total	3.03e+01
MBM	0.2	7.02	summer	Copper	Total	1.10e-03
MBM	0.2	7.02	summer	Iron	Total	3.90e-02
MBM	0.2	7.02	summer	Magnesium	Total	8.33e+00
MBM	0.2	7.02	summer	Manganese	Total	6.16e-02
MBM	0.2	7.02	summer	Potassium	Total	1.42e+00
MBM	0.2	7.02	summer	Sodium	Total	3.22e+00
MBM	0.2	7.02	summer	Zinc	Total	2.40e-03
MBM	0.4	7.01	spring	Ammonium nitrogen	Dissolved	9.80e-02
MBM	0.4	7.01	spring	Antimony	Dissolved	3.40e-03
MBM	0.4	7.01	spring	Arsenic	Dissolved	5.30e-03
MBM	0.4	7.01	spring	Barium	Dissolved	3.97e-02
MBM	0.4	7.01	spring	Boron	Dissolved	2.83e-02
MBM	0.4	7.01	spring	Calcium	Dissolved	3.15e+01

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
MBM	0.4	7.01	spring	Chloride	Dissolved	3.50e+00
MBM	0.4	7.01	spring	Copper	Dissolved	7.80e-03
MBM	0.4	7.01	spring	Fluoride	Dissolved	6.00e-02
MBM	0.4	7.01	spring	Iron	Dissolved	2.02e-02
MBM	0.4	7.01	spring	Magnesium	Dissolved	7.89e+00
MBM	0.4	7.01	spring	Manganese	Dissolved	2.40e-03
MBM	0.4	7.01	spring	Molybdenum	Dissolved	1.20e-03
MBM	0.4	7.01	spring	Nickel	Dissolved	3.00e-03
MBM	0.4	7.01	spring	Nitrate/nitrite	Dissolved	2.50e-01
MBM	0.4	7.01	spring	Potassium	Dissolved	1.56e+00
MBM	0.4	7.01	spring	Silver	Dissolved	1.60e-03
MBM	0.4	7.01	spring	Sodium	Dissolved	3.46e+00
MBM	0.4	7.01	spring	Sulfate	Dissolved	1.80e+01
MBM	0.4	7.01	spring	Vanadium	Dissolved	1.20e-03
MBM	0.4	7.01	spring	Zinc	Dissolved	8.50e-03
MBM	0.4	7.01	summer	Antimony	Dissolved	5.70e-03
MBM	0.4	7.01	summer	Arsenic	Dissolved	4.20e-03
MBM	0.4	7.01	summer	Barium	Dissolved	2.67e-02
MBM	0.4	7.01	summer	Calcium	Dissolved	3.20e+01
MBM	0.4	7.01	summer	Chloride	Dissolved	4.10e+00
MBM	0.4	7.01	summer	Copper	Dissolved	3.40e-03
MBM	0.4	7.01	summer	Fluoride	Dissolved	7.00e-02
MBM	0.4	7.01	summer	Magnesium	Dissolved	8.61e+00
MBM	0.4	7.01	summer	Manganese	Dissolved	1.20e-03
MBM	0.4	7.01	summer	Potassium	Dissolved	1.49e+00
MBM	0.4	7.01	summer	Sodium	Dissolved	3.10e+00
MBM	0.4	7.01	summer	Sulfate	Dissolved	1.60e+01
MBM	0.4	7.01	summer	Vanadium	Dissolved	1.30e-03
MBM	0.4	7.01	summer	Zinc	Dissolved	2.30e-03
MBM	0.4	7.01	spring	Alkalinity as CaCO3	Total	2.00e+00
MBM	0.4	7.01	spring	Aluminum	Total	1.34e-01
MBM	0.4	7.01	spring	Arsenic	Total	4.60e-03
MBM	0.4	7.01	spring	Barium	Total	3.98e-02
MBM	0.4	7.01	spring	Calcium	Total	3.20e+01
MBM	0.4	7.01	spring	Chromium	Total	1.00e-03
MBM	0.4	7.01	spring	Copper	Total	4.60e-03
MBM	0.4	7.01	spring	Iron	Total	2.87e-01
MBM	0.4	7.01	spring	Lead	Total	1.70e-03
MBM	0.4	7.01	spring	Magnesium	Total	8.25e+00
MBM	0.4	7.01	spring	Manganese	Total	4.30e-02
MBM	0.4	7.01	spring	Nickel	Total	2.60e-03
MBM	0.4	7.01	spring	Potassium	Total	1.64e+00
MBM	0.4	7.01	spring	Sodium	Total	6.77e+00

Table A27 (continued)

Site		Reach	Season	Analyte	Type	Concentration (mg/L)
MBM	0.4	7.01	spring	Uranium	Total	2.10e-03
MBM	0.4	7.01	spring	Vanadium	Total	1.50e-03
MBM	0.4	7.01	spring	Zinc	Total	2.67e-02
MBM	0.4	7.01	summer	Alkalinity as CaCO3	Total	1.90e+00
MBM	0.4	7.01	summer	Aluminum	Total	3.44e-02
MBM	0.4	7.01	summer	Arsenic	Total	4.70e-03
MBM	0.4	7.01	summer	Barium	Total	3.04e-02
MBM	0.4	7.01	summer	Calcium	Total	3.26e+01
MBM	0.4	7.01	summer	Copper	Total	1.10e-03
MBM	0.4	7.01	summer	Iron	Total	7.00e-02
MBM	0.4	7.01	summer	Magnesium	Total	8.59e+00
MBM	0.4	7.01	summer	Manganese	Total	5.39e-02
MBM	0.4	7.01	summer	Potassium	Total	1.53e+00
MBM	0.4	7.01	summer	Sodium	Total	3.16e+00
MBM	0.4	7.01	summer	Vanadium	Total	1.40e-03
MBM	0.4	7.01	summer	Zinc	Total	4.10e-03
WBM	0.4	8	spring	Antimony	Dissolved	3.40e-03
WBM	0.4	8	spring	Barium	Dissolved	2.23e-02
WBM	0.4	8	spring	Calcium	Dissolved	2.53e+01
WBM	0.4	8	spring	Chloride	Dissolved	2.60e+00
WBM	0.4	8	spring	Copper	Dissolved	4.30e-03
WBM	0.4	8	spring	Fluoride	Dissolved	7.00e-02
WBM	0.4	8	spring	Iron	Dissolved	1.71e-02
WBM	0.4	8	spring	Magnesium	Dissolved	8.40e+00
WBM	0.4	8	spring	Nickel	Dissolved	5.20e-03
WBM	0.4	8	spring	Nitrate/nitrite	Dissolved	1.50e-01
WBM	0.4	8	spring	Potassium	Dissolved	1.45e+00
WBM	0.4	8	spring	Selenium	Dissolved	4.20e-03
WBM	0.4	8	spring	Sodium	Dissolved	3.43e+00
WBM	0.4	8	spring	Sulfate	Dissolved	1.70e+01
WBM	0.4	8	spring	Zinc	Dissolved	6.00e-03
WBM	0.4	8	summer	Aluminum	Dissolved	2.22e-02
WBM	0.4	8	summer	Barium	Dissolved	2.65e-02
WBM	0.4	8	summer	Boron	Dissolved	1.17e-02
WBM	0.4	8	summer	Calcium	Dissolved	3.13e+01
WBM	0.4	8	summer	Chloride	Dissolved	3.00e+00
WBM	0.4	8	summer	Fluoride	Dissolved	7.00e-02
WBM	0.4	8	summer	Iron	Dissolved	5.13e-02
WBM	0.4	8	summer	Magnesium	Dissolved	8.50e+00
WBM	0.4	8	summer	Manganese	Dissolved	7.10e-02
WBM	0.4	8	summer	Potassium	Dissolved	1.40e+00
WBM	0.4	8	summer	Sodium	Dissolved	3.24e+00
WBM	0.4	8	summer	Sulfate	Dissolved	1.60e+01

Table A27 (continued)

Site	Reach	Season	Analyte	Type	Concentration (mg/L)	
WBM	0.4	8	spring	Alkalinity as CaCO3	Total	1.80e+00
WBM	0.4	8	spring	Aluminum	Total	9.43e-02
WBM	0.4	8	spring	Barium	Total	2.64e-02
WBM	0.4	8	spring	Calcium	Total	2.74e+01
WBM	0.4	8	spring	Chromium	Total	1.00e-03
WBM	0.4	8	spring	Copper	Total	1.87e-02
WBM	0.4	8	spring	Iron	Total	1.43e-01
WBM	0.4	8	spring	Lead	Total	2.30e-03
WBM	0.4	8	spring	Magnesium	Total	8.63e+00
WBM	0.4	8	spring	Manganese	Total	1.85e-02
WBM	0.4	8	spring	Nickel	Total	2.90e-03
WBM	0.4	8	spring	Potassium	Total	1.55e+00
WBM	0.4	8	spring	Sodium	Total	6.78e+00
WBM	0.4	8	spring	Zinc	Total	3.38e-02
WBM	0.4	8	summer	Alkalinity as CaCO3	Total	1.50e+00
WBM	0.4	8	summer	Aluminum	Total	3.25e-02
WBM	0.4	8	summer	Barium	Total	2.54e-02
WBM	0.4	8	summer	Calcium	Total	2.84e+01
WBM	0.4	8	summer	Iron	Total	6.40e-02
WBM	0.4	8	summer	Magnesium	Total	8.56e+00
WBM	0.4	8	summer	Manganese	Total	4.16e-02
WBM	0.4	8	summer	Mercury	Total	6.75e-06
WBM	0.4	8	summer	Potassium	Total	1.48e+00
WBM	0.4	8	summer	Sodium	Total	3.38e+00
WBM	0.4	8	summer	Zinc	Total	2.20e-03

Table A28. Filtered and total organic concentrations (ug/L) by season for the toxicity testing subtask

Sampling Date	River Mile	Reach	Season	Analyte	Process	Result
06JUN1994	MBM 0.4	7.01	spring	4-Chlorobenzenamine	Total	1.00E-03
20JUL1994	CRM 19	2.03	summer	Bis(2-ethylhexyl)phthalate	Filtered	2.00E-03
20JUL1994	CRM 22	2.01	summer	Bis(2-ethylhexyl)phthalate	Filtered	1.00E-03
20JUL1994	CRM 9	4.01	summer	Di-n-butylphthalate	Filtered	1.00E-03
20JUL1994	CRM 9	4.01	summer	Di-n-butylphthalate	Total	1.00E-03

Table A29. Values for radionuclides in water corresponding to sample collections for aqueous toxicity testing. One observation for each site and season.

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
winter	2.01	CRM 22.0	Cesium-137	Dissolved	9.12E+00	3.39E+00	1.16E+01	pCi/L
winter	2.01	CRM 22.0	Cesium-137	Residue	-2.00E-01	2.30E-01	6.10E-01	pCi/L
winter	2.01	CRM 22.0	Cobalt-60	Dissolved	-8.30E-01	4.16E+00	8.94E+00	pCi/L
winter	2.01	CRM 22.0	Cobalt-60	Residue	2.90E-01	2.40E-01	7.00E-01	pCi/L
winter	2.01	CRM 22.0	Gross alpha activity	Total	2.60E-01	3.10E-01	1.05E+00	pCi/L
winter	2.01	CRM 22.0	Gross beta activity	Total	3.43E+00	5.80E-01	1.83E+00	pCi/L
winter	2.01	CRM 22.0	Particle associated Co-60 ^a		1.32E+02	1.10E+02	3.19E+02	pCi/G
winter	2.01	CRM 22.0	Particle associated Cs-137		-8.90E+01	1.06E+02	2.76E+02	pCi/G
winter	2.01	CRM 22.0	Strontium-90	Total	0.00E+00	7.80E-01	2.66E+00	pCi/L
winter	2.01	CRM 22.0	Tritium	Total	0.00E+00	5.88E+01	1.95E+02	pCi/L
spring	2.01	CRM 22.0	Cesium-137	Dissolved	1.48E+01	3.79E+00	1.34E+01	pCi/L
spring	2.01	CRM 22.0	Cesium-137	Residue	2.00E-02	2.40E-01	6.80E-01	pCi/L
spring	2.01	CRM 22.0	Cobalt-60	Dissolved	1.60E+00	3.87E+00	1.06E+01	pCi/L
spring	2.01	CRM 22.0	Cobalt-60	Residue	-4.00E-02	3.10E-01	7.40E-01	pCi/L
spring	2.01	CRM 22.0	Gross alpha activity	Total	2.24E+00	5.70E-01	1.74E+00	pCi/L
spring	2.01	CRM 22.0	Gross beta activity	Total	6.51E+00	8.00E-01	2.31E+00	pCi/L
spring	2.01	CRM 22.0	Particle associated Co-60		-6.79E+00	5.38E+01	1.27E+02	pCi/G
spring	2.01	CRM 22.0	Particle associated Cs-137		3.61E+00	4.17E+01	1.17E+02	pCi/G
spring	2.01	CRM 22.0	Strontium-90	Total	2.30E-01	5.40E-01	2.47E+00	pCi/L
spring	2.01	CRM 22.0	Tritium	Total	0.00E+00	6.43E+01	2.15E+02	pCi/L
summer	2.01	CRM 22.0	Cesium-137	Dissolved	6.14E+00	3.83E+00	1.20E+01	pCi/L
summer	2.01	CRM 22.0	Cesium-137	Residue	1.40E-01	2.50E-01	7.40E-01	pCi/L
summer	2.01	CRM 22.0	Cobalt-60	Dissolved	-2.27E+00	4.94E+00	1.09E+01	pCi/L
summer	2.01	CRM 22.0	Cobalt-60	Residue	5.70E-01	2.50E-01	6.50E-01	pCi/L
summer	2.01	CRM 22.0	Gross alpha activity	Total	5.37E+00	4.50E-01	1.19E+00	pCi/L

^a Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A29 (continued)

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
summer	2.01	CRM 22.0	Gross beta activity	Total	4.00E+01	8.90E-01	2.02E+00	pCi/L
summer	2.01	CRM 22.0	Particle associated Co-60		1.43E+02	6.22E+01	1.63E+02	pCi/G
summer	2.01	CRM 22.0	Particle associated Cs-137		3.59E+01	6.33E+01	1.84E+02	pCi/G
summer	2.01	CRM 22.0	Strontium-90	Total	1.56E+01	1.06E+00	3.68E+00	pCi/L
summer	2.01	CRM 22.0	Tritium	Total	1.45E+04	1.03E+02	1.64E+02	pCi/L
winter	2.03	CRM 19.0	Cesium-137	Dissolved	7.18E+00	3.57E+00	1.16E+01	pCi/L
winter	2.03	CRM 19.0	Cesium-137	Residue	-2.00E-02	2.30E-01	6.40E-01	pCi/L
winter	2.03	CRM 19.0	Cobalt-60	Dissolved	9.30E-01	3.19E+00	8.94E+00	pCi/L
winter	2.03	CRM 19.0	Cobalt-60	Residue	-3.00E-01	2.90E-01	6.60E-01	pCi/L
winter	2.03	CRM 19.0	Gross alpha activity	Total	1.51E+00	3.90E-01	1.24E+00	pCi/L
winter	2.03	CRM 19.0	Gross beta activity	Total	9.72E+00	7.50E-01	2.27E+00	pCi/L
winter	2.03	CRM 19.0	Particle associated Co-60		-2.12E+02	2.10E+02	4.71E+02	pCi/G
winter	2.03	CRM 19.0	Particle associated Cs-137		-1.19E+01	1.64E+02	4.57E+02	pCi/G
winter	2.03	CRM 19.0	Strontium-90	Total	5.30E-01	8.10E-01	2.73E+00	pCi/L
winter	2.03	CRM 19.0	Tritium	Total	0.00E+00	5.98E+01	1.98E+02	pCi/L
spring	2.03	CRM 19.0	Cesium-137	Dissolved	1.06E+01	4.03E+00	1.32E+01	pCi/L
spring	2.03	CRM 19.0	Cesium-137	Residue	4.40E-01	1.30E-01	4.00E-01	pCi/L
spring	2.03	CRM 19.0	Cobalt-60	Dissolved	2.26E+00	3.14E+00	9.64E+00	pCi/L
spring	2.03	CRM 19.0	Cobalt-60	Residue	-1.00E-02	1.70E-01	4.00E-01	pCi/L
spring	2.03	CRM 19.0	Gross alpha activity	Total	1.05E+00	4.30E-01	1.54E+00	pCi/L
spring	2.03	CRM 19.0	Gross beta activity	Total	6.23E+00	8.20E-01	2.53E+00	pCi/L
spring	2.03	CRM 19.0	Particle associated Co-60		-7.40E-01	2.29E+01	5.33E+01	pCi/G
spring	2.03	CRM 19.0	Particle associated Cs-137		5.81E+01	1.66E+01	5.29E+01	pCi/G
spring	2.03	CRM 19.0	Strontium-90	Total	0.00E+00	5.60E-01	2.56E+00	pCi/L

Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A29 (continued)

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
spring	2.03	CRM 19.0	Tritium	Total	1.66E+02	6.53E+01	2.14E+02	pCi/L
summer	2.03	CRM 19.0	Cesium-137	Dissolved	5.89E+00	3.56E+00	1.13E+01	pCi/L
summer	2.03	CRM 19.0	Cesium-137	Residue	-9.00E-02	2.50E-01	6.60E-01	pCi/L
summer	2.03	CRM 19.0	Cobalt-60	Dissolved	-1.85E+00	4.96E+00	9.71E+00	pCi/L
summer	2.03	CRM 19.0	Cobalt-60	Residue	1.20E-01	2.20E-01	6.50E-01	pCi/L
summer	2.03	CRM 19.0	Gross alpha activity	Total	-3.00E-02	2.60E-01	1.10E+00	pCi/L
summer	2.03	CRM 19.0	Gross beta activity	Total	9.90E-01	5.60E-01	2.18E+00	pCi/L
summer	2.03	CRM 19.0	Particle associated Co-60		2.95E+01	5.56E+01	1.62E+02	pCi/G
summer	2.03	CRM 19.0	Particle associated Cs-137		-2.24E+01	6.14E+01	1.66E+02	pCi/G
summer	2.03	CRM 19.0	Strontium-90	Total	0.00E+00	5.30E-01	2.35E+00	pCi/L
summer	2.03	CRM 19.0	Tritium	Total	1.14E+03	5.56E+01	1.64E+02	pCi/L
spring	4.01	CRM 9.0	Cesium-137	Dissolved	-1.12E+00	1.77E+00	6.22E+00	pCi/L
spring	4.01	CRM 9.0	Cesium-137	Residue	2.10E-01	1.00E-01	3.10E-01	pCi/L
spring	4.01	CRM 9.0	Cobalt-60	Dissolved	9.00E-01	1.93E+00	4.57E+00	pCi/L
spring	4.01	CRM 9.0	Cobalt-60	Residue	6.00E-02	1.30E-01	3.00E-01	pCi/L
spring	4.01	CRM 9.0	Gross alpha activity	Total	1.56E+00	2.70E-01	8.40E-01	pCi/L
spring	4.01	CRM 9.0	Gross beta activity	Total	2.76E+00	4.20E-01	1.43E+00	pCi/L
spring	4.01	CRM 9.0	Particle associated Co-60		2.16E+00	4.94E+00	1.16E+01	pCi/G
spring	4.01	CRM 9.0	Particle associated Cs-137		8.24E+00	4.06E+00	1.19E+01	pCi/G
spring	4.01	CRM 9.0	Strontium-90	Total	9.00E-02	4.20E-01	1.88E+00	pCi/L
spring	4.01	CRM 9.0	Tritium	Total	7.42E+00	6.73E+01	2.23E+02	pCi/L
summer	4.01	CRM 9.0	Cesium-137	Dissolved	-2.56E+00	4.22E+00	1.12E+01	pCi/L
summer	4.01	CRM 9.0	Cesium-137	Residue	-6.00E-02	2.20E-01	6.00E-01	pCi/L
summer	4.01	CRM 9.0	Cobalt-60	Dissolved	4.01E+00	3.31E+00	1.05E+01	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A29 (continued)

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
summer	4.01	CRM 9.0	Cobalt-60	Residue	-4.20E-01	3.30E-01	7.10E-01	pCi/L
summer	4.01	CRM 9.0	Gross alpha activity	Total	1.04E+00	3.10E-01	1.11E+00	pCi/L
summer	4.01	CRM 9.0	Gross beta activity	Total	8.31E+00	5.80E-01	1.83E+00	pCi/L
summer	4.01	CRM 9.0	Particle associated Co-60		-8.76E+01	6.91E+01	1.49E+02	pCi/G
summer	4.01	CRM 9.0	Particle associated Cs-137		-1.17E+01	4.56E+01	1.25E+02	pCi/G
summer	4.01	CRM 9.0	Strontium-90	Total	2.63E+00	4.50E-01	1.83E+00	pCi/L
summer	4.01	CRM 9.0	Tritium	Total	6.46E+01	4.97E+01	1.65E+02	pCi/L
spring	7.01	MBM 0.4	Cesium-137	Dissolved	-1.47E+00	2.90E+00	1.08E+01	pCi/L
spring	7.01	MBM 0.4	Cesium-137	Residue	-1.90E-01	2.40E-01	6.30E-01	pCi/L
spring	7.01	MBM 0.4	Cobalt-60	Dissolved	5.58E+00	3.34E+00	1.12E+01	pCi/L
spring	7.01	MBM 0.4	Cobalt-60	Residue	1.00E-01	2.60E-01	6.80E-01	pCi/L
spring	7.01	MBM 0.4	Gross alpha activity	Total	8.60E-01	2.50E-01	8.90E-01	pCi/L
spring	7.01	MBM 0.4	Gross beta activity	Total	3.35E+00	4.30E-01	1.51E+00	pCi/L
spring	7.01	MBM 0.4	Particle associated Co-60		1.06E+01	2.74E+01	7.25E+01	pCi/G
spring	7.01	MBM 0.4	Particle associated Cs-137		-2.00E+01	2.56E+01	6.69E+01	pCi/G
spring	7.01	MBM 0.4	Strontium-90	Total	0.00E+00	5.60E-01	2.23E+00	pCi/L
spring	7.01	MBM 0.4	Tritium	Total	7.24E+01	2.81E+01	9.19E+01	pCi/L
summer	7.01	MBM 0.4	Cesium-137	Dissolved	9.36E+00	3.20E+00	1.08E+01	pCi/L
summer	7.01	MBM 0.4	Cesium-137	Residue	-1.00E-02	2.50E-01	7.00E-01	pCi/L
summer	7.01	MBM 0.4	Cobalt-60	Dissolved	4.36E+00	3.33E+00	1.03E+01	pCi/L
summer	7.01	MBM 0.4	Cobalt-60	Residue	1.60E-01	2.60E-01	7.00E-01	pCi/L
summer	7.01	MBM 0.4	Gross alpha activity	Total	-5.51E+00	9.30E-01	3.25E+00	pCi/L
summer	7.01	MBM 0.4	Gross beta activity	Total	6.72E+00	1.35E+00	4.34E+00	pCi/L
summer	7.01	MBM 0.4	Particle associated Co-60		2.63E+01	4.21E+01	1.12E+02	pCi/G

^a Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A29 (continued)

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
summer	7.01	MBM 0.4	Particle associated Cs-137		-1.07E+00	4.04E+01	1.13E+02	pCi/G
summer	7.01	MBM 0.4	Strontium-90	Total	-1.10E+00	7.50E-01	2.52E+00	pCi/L
summer	7.01	MBM 0.4	Tritium	Total	-4.07E+01	7.96E+01	2.69E+02	pCi/L
spring	7.02	MBM 0.2	Cesium-137	Dissolved	1.27E+01	3.65E+00	1.28E+01	pCi/L
spring	7.02	MBM 0.2	Cesium-137	Residue	-2.90E-01	2.40E-01	6.10E-01	pCi/L
spring	7.02	MBM 0.2	Cobalt-60	Dissolved	-1.66E+00	4.12E+00	1.02E+01	pCi/L
spring	7.02	MBM 0.2	Cobalt-60	Residue	-5.00E-02	2.70E-01	6.40E-01	pCi/L
spring	7.02	MBM 0.2	Gross alpha activity	Total	2.50E-01	2.90E-01	1.15E+00	pCi/L
spring	7.02	MBM 0.2	Gross beta activity	Total	2.32E+00	5.20E-01	1.95E+00	pCi/L
spring	7.02	MBM 0.2	Particle associated Co-60		-7.79E+00	3.92E+01	9.48E+01	pCi/G
spring	7.02	MBM 0.2	Particle associated Cs-137		-4.33E+01	3.56E+01	8.93E+01	pCi/G
spring	7.02	MBM 0.2	Strontium-90	Total	1.60E+00	4.60E-01	1.68E+00	pCi/L
spring	7.02	MBM 0.2	Tritium	Total	0.00E+00	2.83E+01	9.46E+01	pCi/L
summer	7.02	MBM 0.2	Cesium-137	Dissolved	-8.20E-01	3.20E+00	8.61E+00	pCi/L
summer	7.02	MBM 0.2	Cesium-137	Residue	-3.00E-02	1.10E-01	3.00E-01	pCi/L
summer	7.02	MBM 0.2	Cobalt-60	Dissolved	3.16E+00	3.54E+00	9.78E+00	pCi/L
summer	7.02	MBM 0.2	Cobalt-60	Residue	-1.00E-02	1.30E-01	3.20E-01	pCi/L
summer	7.02	MBM 0.2	Gross alpha activity	Total	-6.22E+00	9.20E-01	3.23E+00	pCi/L
summer	7.02	MBM 0.2	Gross beta activity	Total	5.07E+00	1.35E+00	4.37E+00	pCi/L
summer	7.02	MBM 0.2	Particle associated Co-60		-1.51E+00	3.06E+01	7.57E+01	pCi/G
summer	7.02	MBM 0.2	Particle associated Cs-137		-6.44E+00	2.68E+01	7.16E+01	pCi/G
summer	7.02	MBM 0.2	Strontium-90	Total	-4.70E-01	8.80E-01	3.01E+00	pCi/L
summer	7.02	MBM 0.2	Tritium	Total	4.53E+01	8.06E+01	2.69E+02	pCi/L
spring	8	WBM 0.4	Cesium-137	Dissolved	8.53E+00	3.74E+00	1.22E+01	pCi/L

* Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A29 (continued)

Season	Subreach	Site	Analyte	Media	Result	Uncertainty	Detect. Limit	Unit
spring	8	WBM 0.4	Cesium-137	Residue	1.20E-01	1.00E-01	2.90E-01	pCi/L
spring	8	WBM 0.4	Cobalt-60	Dissolved	4.70E-01	3.98E+00	1.07E+01	pCi/L
spring	8	WBM 0.4	Cobalt-60	Residue	4.00E-02	1.20E-01	3.00E-01	pCi/L
spring	8	WBM 0.4	Gross alpha activity	Total	8.20E-01	2.80E-01	1.03E+00	pCi/L
spring	8	WBM 0.4	Gross beta activity	Total	2.04E+00	4.60E-01	1.73E+00	pCi/L
spring	8	WBM 0.4	Particle associated Co-60		6.77E+00	1.86E+01	4.72E+01	pCi/G
spring	8	WBM 0.4	Particle associated Cs-137		1.85E+01	1.62E+01	4.60E+01	pCi/G
spring	8	WBM 0.4	Strontium-90	Total	3.00E-02	4.80E-01	1.93E+00	pCi/L
spring	8	WBM 0.4	Tritium	Total	5.50E+01	2.80E+01	9.22E+01	pCi/L
summer	8	WBM 0.4	Cesium-137	Dissolved	4.62E+00	3.25E+00	1.00E+01	pCi/L
summer	8	WBM 0.4	Cesium-137	Residue	-1.00E-02	2.50E-01	7.00E-01	pCi/L
summer	8	WBM 0.4	Cobalt-60	Dissolved	3.80E-01	3.91E+00	8.86E+00	pCi/L
summer	8	WBM 0.4	Cobalt-60	Residue	6.00E-02	2.60E-01	7.00E-01	pCi/L
summer	8	WBM 0.4	Gross alpha activity	Total	-7.39E+00	9.00E-01	3.20E+00	pCi/L
summer	8	WBM 0.4	Gross beta activity	Total	7.75E+00	1.37E+00	4.41E+00	pCi/L
summer	8	WBM 0.4	Particle associated Co-60		8.12E+00	3.68E+01	9.97E+01	pCi/G
summer	8	WBM 0.4	Particle associated Cs-137		-9.60E-01	3.61E+01	1.01E+02	pCi/G
summer	8	WBM 0.4	Strontium-90	Total	1.47E+00	1.06E+00	3.36E+00	pCi/L
summer	8	WBM 0.4	Tritium	Total	-1.14E+01	8.00E+01	2.69E+02	pCi/L

^a Particle associated radionuclides calculated by dividing residue portion of specific radionuclide by suspended solid load.

Table A30. Fathead minnow survival in the Clinch River, Poplar Creek, McCoy Branch and Walker Branch Test Sites

Test Date	Site ID ^a	Survival				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/22-29/93	Control	100.0	0.0	100	100	NA	NA	17.6	NA
	PCM 1.0	100.0	0.0	100	100	0.0	NA	17.6	NA
	PCM 2.9	97.5	5.0	90	100	-2.5	NA	14.7	NA
	PCM 4.3	90.0	0.0	90	90	-10.0	NA	5.9	NA
	PCM 5.1	80.0	18.3	60	100	-20.0	NA	-5.9	NA
	PCM 11.3	85.0	12.9	70	100	-15.0	NA	NA	NA
	CRM 9.0	100.0	0.0	100	100	0.0	NA	NA	NA
7/22-29/93	Control	90.0	14.1	70	100	NA	9.1	12.5	-10.0
	PCM 1.0	67.5	17.1	50	90	-25.0	-18.2	-15.6	NA
	PCM 2.9	72.5	15.0	60	90	-19.4	-12.1	-9.4	NA
	PCM 4.3	65.0	10.0	60	80	-27.8	-21.2	-18.8	NA
	PCM 5.1	80.0	0.0	80	80	-11.1	-3.0	0.0	NA
	PCM 6.0	82.5	9.6	70	90	-8.33	NA	3.1	NA
	PCM 11.3	80.0	21.6	50	100	-11.1	-3.0	NA	NA
	CRM 9.0	90.0	8.2	80	100	0.0	NA	NA	-10.0
CRM 19.0	95.0	5.8	90	100	5.6	NA	NA	-5.0	
CRM 22.0	100.0	0.0	100	100	11.1	NA	NA	NA	

Table A30 (continued)

Test Date	Site ID ^a	Survival				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
10/21-28/93	Control	87.5	12.6	70	100	NA	34.6	25.0	0.0
	PCM 1.0	60.0	14.1	50	80	-31.4	-7.7	-14.3	NA
	PCM 2.9	62.5	9.6	50	70	-28.6	-3.8	-10.7	NA
	PCM 4.3	87.5	9.6	80	100	0.0	34.6	25.0	NA
	PCM 5.1	65.0	12.9	50	80	-25.7	0.0	-7.1	NA
	PCM 6.0	65.0	17.3	40	80	-25.7	NA	-7.1	NA
	PCM 11.3	70.0	24.5	50	100	-20.0	7.7	NA	NA
	CRM 9.0	82.5	5.0	80	90	-5.7	NA	NA	-5.7
	CRM 19.0	77.5	26.3	40	100	-11.4	NA	NA	-11.4
	CRM 22.0	87.5	5.0	80	90	0.0	NA	NA	NA
1/25-2/1/94	Control	100.0	0.0	100	100	NA	60.0	21.2	2.6
	PCM 1.0	75.0	28.9	50	100	-25.0	20.0	-9.1	NA
	PCM 2.9	82.5	17.1	60	100	-17.5	32.0	0.0	NA
	PCM 4.3	75.0	31.1	30	100	-25.0	20.0	-9.1	NA
	PCM 5.1	77.5	26.3	40	100	-22.5	24.0	-6.1	NA
	PCM 6.0	62.5	27.5	30	90	-37.5	NA	-24.2	NA
	PCM 11.3	82.5	28.7	40	100	-17.5	32.0	NA	NA
	CRM 9.0	95.0	5.8	90	100	-5.0	NA	NA	-2.6
	CRM 19.0	95.0	5.8	90	100	-5.0	NA	NA	-2.6

Table A30 (continued)

Test Date	Site ID ^a	Survival			Percent Difference				
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/14-21/94	CRM 22.0	97.5	5.0	90	100	-2.5	NA	NA	NA
	Control	97.5	5.0	90	100	NA	69.6	25.8	18.2
	PCM 1.0	45.0	17.3	20	60	-53.8	-21.7	-41.9	NA
	PCM 2.9	52.5	17.1	30	70	-46.2	-8.7	-32.3	NA
	PCM 4.3	42.5	9.6	30	50	-56.4	-26.1	-45.2	NA
	PCM 5.1	52.5	33.0	20	90	-46.2	-8.7	-32.3	NA
	PCM 6.0	57.5	15.0	40	70	-41.0	NA	-25.8	NA
	PCM 11.3	77.5	26.3	40	100	-20.5	34.8	NA	NA
	CRM 9.0	45.0	30.0	30	90	-53.8	NA	NA	-45.5
7/21-28/94	CRM 19.0	75.0	5.8	70	80	-23.1	NA	NA	-9.1
	CRM 22.0	82.5	12.6	70	100	-15.4	NA	NA	NA
	Control	80.0	14.1	60	90	NA	-17.9	-8.6	14.3
	PCM 1.0	90.0	11.5	80	100	12.5	-7.7	2.9	NA
	PCM 2.9	92.5	5.0	90	100	15.6	-5.1	5.7	NA
	PCM 4.3	90.0	8.2	80	100	12.5	-7.7	2.9	NA
	PCM 5.1	82.5	15.0	60	90	3.1	-15.4	-5.7	NA
	PCM 6.0	97.5	5.0	90	100	21.9	NA	11.4	NA
	PCM 11.3	87.5	5.0	80	90	9.4	-10.3	NA	NA
	CRM 9.0	72.5	23.6	40	90	-9.4	NA	NA	3.6

Table A30 (continued)

Test Date	Site ID ^a	Survival				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
	CRM 19.0	95.0	5.8	90	100	18.8	NA	NA	35.7
	CRM 22.0	70.0	24.5	50	100	-12.5	NA	NA	NA
Test Date	Site ID ^a	Survival				Percent Difference			
		Mean	SD	Min.	Max.	Control	WBM 0.4 ^b		
6/2-9/94	Control	92.5	5.0	90	100	NA	-2.6		
	MBM 0.2	92.5	5.0	90	100	0.0	-2.6		
	MBM 0.4	92.5	5.0	90	100	0.0	-2.6		
	WBM 0.4	95.0	10.0	80	100	2.7	NA		
8/11-18/94	Control	95.0	5.8	90	100	NA	8.6		
	MBM 0.2	75.0	23.8	40	90	-21.1	-14.3		
	MBM 0.4	97.5	5.0	90	100	2.6	11.4		
	WBM 0.4	87.5	9.6	80	100	-7.9	NA		

^aPCM = Poplar Creek mile; CRM = Clinch River mile, MBM = McCoy Branch mile; WBM = Walker Branch mile^bReference site

NA = Not Applicable

Table A31. Fathead minnow growth (per surviving larvae) in the Clinch River, Poplar Creek, McCoy Branch and Walker Branch Embayment Areas.

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/22-29/93	Control	0.42	0.06	0.35	0.47	NA	NA	10.53	NA
	PCM 1.0	0.40	0.02	0.37	0.43	-4.76	NA	5.26	NA
	PCM 2.9	0.41	0.04	0.36	0.45	-2.38	NA	7.89	NA
	PCM 4.3	0.39	0.02	0.36	0.41	-7.14	NA	2.63	NA
	PCM 5.1	0.43	0.04	0.38	0.48	2.38	NA	13.16	NA
	PCM 11.3	0.38	0.04	0.34	0.42	-9.52	NA	NA	NA
	CRM 9.0	0.38	0.03	0.34	0.41	-9.52	NA	NA	NA
7/22-29/93	Control	0.33	0.07	0.28	0.43	NA	6.45	3.13	-8.33
	PCM 1.0	0.42	0.10	0.31	0.55	27.27	35.48	31.25	NA
	PCM 2.9	0.37	0.06	0.33	0.45	12.12	19.35	15.63	NA
	PCM 4.3	0.36	0.08	0.25	0.43	9.09	16.13	12.50	NA
	PCM 5.1	0.38	0.04	0.32	0.41	15.15	22.58	18.75	NA
	PCM 6.0	0.31	0.05	0.25	0.37	-6.06	NA	-3.12	NA
	PCM 11.3	0.32	0.09	0.19	0.41	-3.03	3.23	NA	NA
CRM 9.0	0.30	0.06	0.21	0.36	-9.09	NA	NA	-16.67	

^a PCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WBM = Walker Branch mile

^b Reference site

NA = Not Applicable

Table A31 (continued)

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
10/21-28/93	CRM 19.0	0.34	0.02	0.31	0.35	3.03	NA	NA	-5.56
	CRM 22.0	0.36	0.05	0.31	0.41	9.09	NA	NA	NA
	Control	0.39	0.06	0.33	0.47	NA	-30.36	-27.78	-25.00
	PCM 1.0	0.39	0.08	0.33	0.51	0.00	-30.36	-27.78	NA
	PCM 2.9	0.51	0.10	0.39	0.63	30.77	-8.93	-5.56	NA
	PCM 4.3	0.46	0.05	0.39	0.51	17.95	-17.86	-14.81	NA
	PCM 5.1	0.42	0.09	0.29	0.49	7.69	-25.00	-22.22	NA
	PCM 6.0	0.56	0.12	0.41	0.66	43.59	NA	3.70	NA
	PCM 11.3	0.54	0.11	0.38	0.64	38.46	-3.57	NA	NA
	CRM 9.0	0.51	0.09	0.43	0.64	30.77	NA	NA	-1.92
1/25-2/1/94	CRM 19.0	0.54	0.03	0.51	0.58	38.46	NA	NA	3.85
	CRM 22.0	0.52	0.02	0.48	0.53	33.33	NA	NA	NA
	Control	0.41	0.05	0.35	0.46	NA	-25.45	-8.89	-10.87
	PCM 1.0	0.56	0.07	0.48	0.64	36.59	1.82	24.44	NA
	PCM 2.9	0.54	0.06	0.49	0.62	31.71	-1.82	20.00	NA
	PCM 4.3	0.56	0.09	0.46	0.67	36.59	1.82	24.44	NA

^a PCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WBM = Walker Branch mile^b Reference site

NA = Not Applicable

Table A31 (continued)

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/14-21/94	PCM 5.1	0.48	0.12	0.38	0.65	17.07	-12.73	6.67	NA
	PCM 6.0	0.55	0.12	0.46	0.72	34.15	NA	22.22	NA
	PCM 11.3	0.45	0.04	0.40	0.50	9.76	-18.18	NA	NA
	CRM 9.0	0.49	0.02	0.46	0.51	19.51	NA	NA	6.52
	CRM 19.0	0.49	0.10	0.42	0.64	19.51	NA	NA	6.52
	CRM 22.0	0.46	0.06	0.38	0.53	12.20	NA	NA	NA
	Control	0.23	0.04	0.17	0.26	NA	-20.69	-14.81	-28.13
	PCM 1.0	0.28	0.05	0.20	0.32	21.74	-3.45	3.70	NA
	PCM 2.9	0.33	0.09	0.24	0.42	43.48	13.79	22.22	NA
	PCM 4.3	0.31	0.05	0.27	0.37	34.78	6.90	14.81	NA
	PCM 5.1	0.31	0.04	0.26	0.34	34.78	6.90	14.81	NA
	PCM 6.0	0.29	0.05	0.22	0.33	26.09	NA	7.41	NA
	PCM 11.3	0.27	0.09	0.19	0.39	17.39	-6.90	NA	NA
	CRM 9.0	0.39	0.04	0.34	0.44	69.57	NA	NA	21.88
	CRM 19.0	0.30	0.03	0.26	0.34	30.43	NA	NA	-6.25
	CRM 22.0	0.32	0.07	0.27	0.42	39.13	NA	NA	NA

^a PCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WBM = Walker Branch mile^b Reference site

NA = Not Applicable

Table A31 (continued)

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference			
		Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
7/21-28/94	Control	0.55	0.08	0.44	0.63	NA	-14.06	-12.70	1.85
	PCM 1.0	0.60	0.04	0.57	0.66	9.09	-6.25	-4.76	NA
	PCM 2.9	0.64	0.10	0.56	0.78	16.36	0.00	1.59	NA
	PCM 4.3	0.52	0.12	0.38	0.65	-5.45	-18.75	-17.46	NA
	PCM 5.1	0.60	0.06	0.53	0.66	9.09	-6.25	-4.76	NA
	PCM 6.0	0.64	0.08	0.53	0.70	16.36	NA	1.59	NA
	PCM 11.3	0.63	0.17	0.49	0.83	14.55	-1.56	NA	NA
	CRM 9.0	0.64	0.06	0.59	0.73	16.36	NA	NA	18.52
	CRM 19.0	0.57	0.05	0.52	0.62	3.64	NA	NA	5.56
	CRM 22.0	0.54	0.16	0.31	0.69	-1.82	NA	NA	NA

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference	
		Mean	SD	Min.	Max.	Control	WBM 0.4 ^b
6/2-9/94	Control	0.43	0.06	0.36	0.48	NA	-18.87
	MBM 0.2	0.55	0.10	0.45	0.69	27.91	3.77
	MBM 0.4	0.57	0.05	0.51	0.64	32.56	7.55
	WBM 0.4	0.53	0.05	0.47	0.59	23.26	NA

^a PCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WBM = Walker Branch mile^b Reference site

NA = Not Applicable

Table A31 (continued)

Test Date	Site ID ^a	Growth (weight in mg)				Percent Difference	
		Mean	SD	Min.	Max.	Control	WBM 0.4 ^b
8/11-18/94	Control	0.48	0.10	0.39	0.57	NA	-15.79
	MBM 0.2	0.46	0.18	0.19	0.57	-4.17	-19.30
	MBM 0.4	0.52	0.05	0.46	0.58	8.33	-8.77
	WBM 0.4	0.57	0.04	0.52	0.61	18.75	NA

^a PCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WBM = Walker Branch mile^b Reference site

NA = Not Applicable

Table A32. *Ceriodaphnia dubia* reproduction per surviving female in Clinch River, Poplar Creek, McCoy Branch and Walker Branch Embayment Areas

Test Date	Site ID ^a	Percent Survival	Reproduction			Percent Difference				
			Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/22-29/93	Control	90	27.1	6.8	14	37	NA	NA	3.0	NA
	PCM 1.0	100	26.8	4.7	21	38	-1.1	NA	1.9	NA
	PCM 2.9	80	26.5	9.5	7	37	-2.2	NA	0.8	NA
	PCM 4.3	90	30.6	7.0	20	42	12.9	NA	16.4	NA
	PCM 5.1	100	27.7	6.7	13	38	2.2	NA	5.3	NA
	PCM 11.3	100	26.3	7.5	17	40	-3.0	NA	NA	NA
	CRM 9.0	100	30.1	3.3	27	36	11.1	NA	NA	NA
7/22-29/93	Control	80	28.4	4.9	21	34	NA	-18.9	-7.8	-12.1
	PCM 1.0	100	31.7	6.1	21	43	11.6	-9.4	2.9	NA
	PCM 2.9	90	33.8	3.9	28	40	19.0	-3.4	9.7	NA
	PCM 4.3	80	33.3	5.3	27	44	17.3	-4.9	8.1	NA
	PCM 5.1	100	31.0	11.8	0	41	9.2	-11.4	0.7	NA
	PCM 6.0	100	35.0	4.3	27	42	23.2	NA	13.6	NA
	PCM 11.3	100	30.8	6.4	14	38	8.5	-12.0	NA	NA
	CRM 9.0	100	35.3	6.7	20	44	24.3	NA	NA	9.3
	CRM 19.0	100	28.4	9.8	10	38	0.0	NA	NA	-12.7

^aPCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WMB = Walker Branch mile

^bReference site

NA = Not Applicable

Table A32 (continued)

Test Date	Site ID ^a	Percent Survival	Reproduction				Percent Difference			
			Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
	CRM 22.0	100	32.3	6.5	19	42	13.7	NA	NA	NA
10/21-28/93	Control	100	29.4	1.6	27	32	NA	-10.1	-10.4	-8.1
	PCM 1.0	100	39.0	5.9	32	52	32.7	19.3	18.9	NA
	PCM 2.9	100	35.3	6.1	30	51	20.1	8.0	7.6	NA
	PCM 4.3	100	31.6	4.8	25	42	7.5	-3.4	-3.7	NA
	PCM 5.1	100	33.0	3.3	28	38	12.2	0.9	0.6	NA
	PCM 6.0	100	32.7	2.9	29	39	11.2	NA	-0.3	NA
	PCM 11.3	100	32.8	4.8	27	41	11.6	0.3	NA	NA
	CRM 9.0	100	31.2	4.2	22	36	6.1	NA	NA	-2.5
	CRM 19.0	100	31.2	3.2	25	35	6.1	NA	NA	-2.5
	CRM 22.0	90	32.0	4.8	27	40	8.8	NA	NA	NA
1/25-2/1/94	Control	100	18.4	3.4	13	25	NA	15.0	53.3	21.1
	PCM 1.0	100	18.6	3.6	12	25	1.1	16.3	55.0	NA
	PCM 2.9	90	17.3	4.0	9	21	-6.0	8.1	44.2	NA
	PCM 4.3	90	13.3	3.8	6	18	-27.7	-16.9	10.8	NA
	PCM 5.1	100	15.4	2.1	13	19	-16.3	-3.8	28.3	NA

^aPCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WMB = Walker Branch mile^bReference site

NA = Not Applicable

Table A32 (continued)

Test Date	Site ID ^a	Percent Survival	Reproduction				Percent Difference			
			Mean	SD	Min.	Max.	Control	PCM 6.0 ^b	PCM 11.3 ^b	CRM 22.0 ^b
4/14-21/94	PCM 6.0	100	16.0	2.7	10	19	-13.0	NA	33.3	NA
	PCM 11.3	90	12.0	4.7	4	18	-34.8	-25.0	NA	NA
	CRM 9.0	100	18.2	1.8	16	21	-1.1	NA	NA	19.7
	CRM 19.0	100	17.3	1.4	15	20	-6.0	NA	NA	13.8
	CRM 22.0	100	15.2	4.2	5	19	-17.4	NA	NA	NA
	Control	100	18.7	3.2	16	26	NA	-15.4	11.3	3.9
7/21-28/94	PCM 1.0	100	20.8	4.8	10	26	11.2	-5.9	23.8	NA
	PCM 2.9	100	20.7	2.6	18	27	10.7	-6.3	23.2	NA
	PCM 4.3	100	20.8	4.6	11	27	11.2	-5.9	23.8	NA
	PCM 5.1	100	22.6	3.4	18	31	20.9	2.3	34.5	NA
	PCM 6.0	100	22.1	3.0	17	26	18.2	NA	31.6	NA
	PCM 11.3	100	16.8	7.5	1	25	-10.2	-24.0	NA	NA
	CRM 9.0	90	16.6	4.7	9	23	-11.2	NA	NA	-7.8
	CRM 19.0	100	18.4	5.6	9	26	-1.6	NA	NA	2.2
	CRM 22.0	100	18.0	4.9	8	23	-3.7	NA	NA	NA
	Control	90	24.4	5.8	14	36	NA	-12.9	-15.9	7.0
	PCM 1.0	100	28.1	3.4	23	33	15.2	0.4	-3.1	NA
	PCM 2.9	90	25.3	2.1	23	29	3.7	-9.6	-12.8	NA
	PCM 4.3	100	28.9	2.6	25	34	18.4	3.2	-0.3	NA
	PCM 5.1	100	28.0	6.8	13	36	14.8	0.0	-3.5	NA

^aPCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WMB = Walker Branch mile^bReference site

NA = Not Applicable

Table A32 (continued)

Test Date	Site ID ^a	Percent Survival	Reproduction			Percent Difference		
			Mean	SD	Min.	Max.	Control	PCM 6.0 ^b PCM 11.3 ^b CRM 22.0 ^b
	PCM 6.0	100	28.0	3.9	22	35	14.8	NA -3.5 NA
	PCM 11.3	90	29.0	5.5	20	37	18.9	3.6 NA NA
	CRM 9.0	100	24.2	8.4	9	39	-0.8	NA NA 6.1
	CRM 19.0	100	21.8	6.7	4	28	-10.7	NA NA -4.4
	CRM 22.0	80	22.8	6.2	11	31	-6.6	NA NA NA

Test Date	Site ID ^a	Percent Survival	Reproduction			Percent Difference		
			Mean	SD	Min.	Max.	Control	WBM 0.4 ^b
6/2-8/94	Control	100	20.5	2.4	16	23	NA	-30.5
	MBM 0.2	90	26.4	5.0	19	34	28.8	-10.5
	MBM 0.4	100	24.9	2.8	20	30	21.5	-15.6
	WMB 0.4	100	29.5	3.3	26	35	43.9	NA
8/11-17/94	Control	100	20.3	4.6	13	28	NA	-13.3
	MBM 0.2	100	24.6	4.8	17	31	21.2	5.1
	MBM 0.4	100	9.7	4.0	3	16	-52.2	-58.6
	WBM 0.4	100	23.4	4.4	15	30	15.3	NA

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^aPCM = Poplar Creek mile; CRM = Clinch River mile; MBM = McCoy Branch mile; WMB = Walker Branch mile^bReference site

NA = Not Applicable

Table A33. Results of Quarterly Medaka Embryo-larval Tests of Surface Water from the Clinch River and Poplar Creek Conducted for the CR-ERP between July 1993 and July 1994^{a, b}

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
7/21/93	Control	91	-	-	91	-	-	82	-	-
	CRM 22.0	96	-5	-	96	-5	-	100	-22	-
	CRM 19.0	86	5	10	81	11	16	81	1	19*
	CRM 9.0	100	-10	-4	87	4	9	87	-6	13*
	PCM 11.3	4	96*	-	4	96*	-	79	4	-
	PCM 6.0	5	95*	-25	5	95*	-25	67	18	15
	PCM 5.1	0	100*	100	0	100*	100	83	-1	-5
	PCM 4.3	4	96*	0	4	96*	0	57	30*	28
	PCM 2.9	9	90*	-125	9	90*	-125	74	10	6
	PCM 1.0	76	16	-1800	76	16	-1800	76	7	4

^an=21 - 25 individually incubated embryos per site per test

^bAsterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or the appropriate reference site (CRM 22.0 for Clinch River sites, PCM 11.3 for Poplar Creek sites)

^cCRM = Clinch River Mile; PCM = Poplar Creek Mile

^dPercent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A33 (continued)

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
10/21/9	Control	83	-	-	74	-	-	79	-	-
	CRM 22.0	92	-11	-	92	-24	-	100	-27	-
	CRM 19.0	88	-6	4	88	-19	4	84	-6	16*
	CRM 9.0	83	0	10	78	-5	15	91	-15	9
	PCM 11.3	40	52*	-	40	46*	-	72	9	-
	PCM 6.0	8	90*	80*	8	89*	80*	37	53*	49*
	PCM 5.1	20	76*	50	20	73*	50	52	34*	28
	PCM 4.3	8	90*	80*	13	82*	68*	46	42*	36*
	PCM 2.9	20	76*	50	24	68*	40	76	4	-6
	PCM 1.0	13	84*	68*	13	82*	68*	58	27	19
1/25/94	Control	92	-	-	92	-	-	87	-	-

^an=21 - 25 individually incubated embryos per site per test^bAsterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or the appropriate reference site (CRM 22.0 for Clinch River sites, PCM 11.3 for Poplar Creek sites)^cCRM = Clinch River Mile; PCM = Poplar Creek Mile^dPercent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A33 (continued)

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
	CRM 22.0	92	-1050	-	83	-538	-	96	-10	-
	CRM 19.0	100	-1150	-9	92	-608	-11	96	-10	0
	CRM 9.0	88	-1000	4	79	-508	5	87	0	9
	PCM 11.3	100	-1150	-	92	-608	-	96	-10	-
	PCM 6.0	96	-1100	4	79	-508	14	96	-10	0
	PCM 5.1	92	-1050	8	76	-485	17	84	3	12
	PCM 4.3	83	-938	17*	83	-538	10	67	23*	30*
	PCM 2.9	63	-688	37*	63	32*	32*	58	33*	40*
	PCM 1.0	36	61*	64*	40	57*	57*	48	45*	50*
4/14/94	Control	96	-	-	64	-	-	100	-	-
	CRM 22.0	92	0	-	92	-21	-	96	4	-

^an=21 - 25 individually incubated embryos per site per test^bAsterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or the appropriate reference site (CRM 22.0 for Clinch River sites, PCM 11.3 for Poplar Creek sites)^cCRM = Clinch River Mile; PCM = Poplar Creek Mile^dPercent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A33 (continued)

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
7/21/94	CRM 19.0	80	17*	13	80	-5	13	92	8	4
	CRM 9.0	92	0	0	92	-21	0	100	0	-4
	PCM 11.3	92	0	-	92	-21	-	100	0	-
	PCM 6.0	84	9	9	84	-11	9	96	4	4
	PCM 5.1	92	0	0	92	-21	0	96	4	4
	PCM 4.3	84	9	9	88	-16	4	92	8	8
	PCM 2.9	92	0	0	92	-21	0	100	0	0
	PCM 1.0	84	9	9	88	-16	4	96	4	4
	Control	96	-	-	84	-	-	92	-	-
	CRM 22.0	36	63*	-	44	48*	-	68	26*	-
	CRM 19.0	16	83*	56	24	71*	45	68	26*	0

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^an=21 - 25 individually incubated embryos per site per test^bAsterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or the appropriate reference site (CRM 22.0 for Clinch River sites, PCM 11.3 for Poplar Creek sites)^cCRM = Clinch River Mile; PCM = Poplar Creek Mile^dPercent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A33 (continued)

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
	CRM 9.0	79	18*	-119	83	10	-89	96	-4	-41
	PCM 11.3	71	26*	-	79	14	-	75	18	-
	PCM 6.0	84	9	-18	84	9	-6	84	9	-12
	PCM 5.1	52	46*	27	52	38*	34*	72	22*	4
	PCM 4.3	40	58*	44*	40	52*	49*	64	30*	15
	PCM 2.9	16	83*	77*	16	81*	80*	56	39*	25
	PCM 1.0	12	88*	83*	12	86*	85*	80	13	-7

^an=21 - 25 individually incubated embryos per site per test^bAsterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or the appropriate reference site (CRM 22.0 for Clinch River sites, PCM 11.3 for Poplar Creek sites)^cCRM = Clinch River Mile; PCM = Poplar Creek Mile^dPercent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A34. Results of Medaka Embryo-larval Tests of Surface Water from the Clinch River and Poplar Creek Conducted for the K-25 Site Biological Monitoring and Abatement Program (BMAP) during October 1994 and January 1995^{a,b}

Date	Site ^c	Survival			Hatch			Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Decrease from Reference (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
10/13/94	Control	96	--	--	83	--	--	96	--	--
	CRM 9.0	100	-4	--	96	??	--	100	-4	--
	PCM 11.3	32	67*	--	32	61*	--	56	42*	--
	PCM 5.1	13	86*	59	13	84*	??	21	78*	63*
	PCM 4.3	24	75*	25	24	71*	??	12	88*	79*
	PCM 2.9	24	75*	25	28	66*	??	8	92*	86*
	PCM 1.0	12	88*	63*	12	86*	63*	20	79*	64*
1/19/95	Control	85	--	--	85	--	--	85	--	--
	CRM 9.0	80	6	--	80	??	--	85	0	--
	PCM 11.3	90	-6	--	95	??	--	90	-6	--
	PCM 5.1	53	38*	41*	58	32*	39*	47	45*	48*
	PCM 4.3	50	41*	44*	50	41*	47*	35	59*	61*
	PCM 2.9	42	51*	53*	42	51*	56*	53	38*	41*
	PCM 1.0	25	71*	72*	30	65*	68*	10	88*	89*

^a n = 23 - 25 individually incubated embryos per site for 10/94 test; 19-20 embryos per site for 1/95 test

^b Asterisks signify a significant difference in percent survival, hatch, or normal development between a site and a control or appropriate reference site (PCM 11.3 for Poplar Creek sites)

^c CRM = Clinch River Mile; PCM = Poplar Creek Mile

^d Percent of embryos not exhibiting any obvious developmental abnormality (other than delayed hatching) during the course of the test

Table A35. Results of Medaka Embryo-larval Tests of Surface Water from McCoy Branch and Walker Branch Conducted for the CR-ERP during June 1994 and August 1994^{a,b}

Date	Site ^c	Survival			Hatch		Developmental Abnormalities		
		Percent Survival	Decrease from Control (%)	Decrease from Reference (%)	Percent Hatch	Decrease from Control (%)	Percent Normal ^d	Decrease from Control (%)	Decrease from Reference (%)
6/2/94	Control	100	-	-	88	-	92	-	-
	WBM 0.4	88	12*	-	88	0	96	9	-
	MBM 0.4	96	4	-9	96	-9	96	9	0
	MBM 0.2	96	4	-9	100	-14	96	9	0
8/11/94	Control	92	-	-	56	-	100	-	-
	WBM 0.4	100	-9	-	100	-79	100	0	-
	MBM 0.4	92	0	8	92	-64	98	4	4
	MBM 0.2	84	9	16*	88	-57	96	8	8

^a n = 24-25 individually incubated embryos per site per test.

^b Asterisks signify a significant difference in % survival, hatch, or normal development between a site and either the control or the reference site (WBM 0.4)

^c WBM = McCoy Branch Mile; WBM = Walker Branch Mile

^d Percent of embryos that did not exhibit any obvious developmental abnormalities (other than delayed hatching) during the course of a test

Table A36. Comparison of Medaka and Redbreast Sunfish Embryo-larval Test of Surface Water from Selected Sites on the Clinch River and Poplar Creek.^{a, b, c}

Species	Site ^d	Survival		Hatch		Developmental Abnormalities ^e	
		Percent Survival	Decrease From Reference (%)	Percent Hatch	Decrease From Reference (%)	Percent Normal	Decrease From Reference (%)
Medaka	CRM 22.0	80		85		90	-
	CRM 9.0	85	-6	85	0	80	11
	PCM 11.3	70		75		95	-
	PCM 6.0	45	36	50	33	70	26*
	PCM 4.3	11	84*	11	85*	50	47*
	PCM 1.0	11	84*	11	85*	42	56*
Sunfish (Pair 1)	CRM 22.0	91		91		96	-
	CRM 9.0	83	9	100	-10	92	4
	PCM 11.3	96		100		91	-
	PCM 6.0	80	17*	96	4	96	-6
	PCM 4.3	36	63*	96	4	84	8
	PCM 1.0	50	48*	100	0	92	-1
Sunfish (Pair 2)	CRM 22.0	87		96		91	-
	CRM 9.0	92	-6	100	-4	84	8
	PCM 11.3	96		100		91	-
	PCM 6.0	92	4	96	4	92	-1
	PCM 4.3	57	41*	100	0	95	-4
	PCM 1.0	88	8	100	0	100	-10
Sunfish (Pair 3)	CRM 22.0	79		96		96	-
	CRM 9.0	88	-11	96	0	100	4
	PCM 11.3	96		96		96	-
	PCM 6.0	78	19*	96	0	91	5
	PCM 4.3	63	34*	96	0	92	4
	PCM 1.0	72	25*	100	-4	96	0

^a test initiated 7/28/94

^b n = 18-20 embryos per site per test for medaka; n = 21-25 embryos per site per redbreast sunfish pairing.

^c Asterisks signify a significant difference in % survival, hatch, or incidence of developmental abnormalities between a site and either the control or appropriate reference site (PCM 11.3 for Poplar Creek sites)

^d CRM = Clinch River Mile; PCM = Poplar Creek Mile

^e Percent of embryos not exhibiting any developmental abnormality (other than delayed hatching) during the course of the test

Table A37. Summary of Individual Survival Statistics for Largemouth Bass Embryo-larval Tests of Surface Water from the Clinch River and Poplar Creek Conducted for the CR-ERP during April 1994^{a,b}

Site ^c	Pair 1			Pair 2			Pair 3			Pair 4			Pair 5		
	%	Control	Ref	%	Control	Ref	%	Control	Ref	%	Control	Ref	%	Control	Ref
Control	90			88			80			86			94		
CRM 22.0	85	6		92	-5		94	-18		94	-9		92	2	
CRM 19.0	88	2	-4	98	-11	-7	96	-20	-2	94	-9	0	94	0	-2
CRM 9.0	76	16*	11	96	-9	-4	96	-20	-2	96	-12	-2	78	17*	15*
TRM 547	90	0	-6	94	-7	-2	90	-13	4	92	-7	2	88	6	4
PCM 11.3	90	0		94	-7		90	-13		80	7		72	23*	
PCM 6.0	88	2	2	96	-9	-2	88	-10	2	62	28*	23*	64	32*	11
PCM 5.1	74	18*	18*	98	-11	-4	84	-5	7	64	26*	20*	90	4	-25
PCM 4.3	86	4	4	96	-9	-2	92	-15	-2	66	23*	18	94	0	-31
PCM 2.9	94	-4	-4	96	-9	-2	88	-10	2	72	16*	10	82	13*	-14
PCM 1.0	94	-4	-4	98	-11	-4	96	-20	-7	76	12	5	90	4	-25

^aTest initiated 4/21/94; expressed as percent decrease from control or appropriate reference (PCM 11.3 for Poplar Creek sites, CRM 22.0 for Clinch River and Tenness River sites) in the % survival of an initial 50 embryos per site per each of five different largemouth bass pairings; eggs were fertilized in vitro with sperm derived from testes minced in a saline solution

^bAsterisks signify a significant difference in % survival between a site and the control or appropriate reference site

^cCRM = Clinch River Mile, TRM = Tennessee River Mile, and PCM = Poplar Creek Mile

Table A38. Summary of Developmental Abnormality Statistics for Largemouth Bass Embryo-larval Tests of Surface Water from the Clinch River and Poplar Creek Conducted for the CR-ERP during April 1994 ^{a,b}

Site ^c	Pair 1			Pair 2			Pair 3			Pair 4			Pair 5		
	% ^d	Control	Ref	% ^d	Control	Ref	% ^d	Control	Ref	% ^d	Control	Ref	% ^d	Control	Ref
Control	94	--	--	78	--	--	95	--	--	92	--	--	100	--	--
CRM 22.0	96	-2	--	98	-26	--	96	-1	--	90	2	--	96	4	--
CRM 19.0	92	2	4	100	-28	-2	98	-3	-2	100	-9	-11	96	4	0
CRM 9.0	96	-2	0	98	-26	0	94	1	2	94	-2	-4	89	11*	7
TRM 547	98	-4	-2	94	-20	4	96	-1	0	96	-4	-7	88	12*	8
PCM 11.3	100	-6	--	96	-23	--	98	-3	--	88	4	--	92	8*	--
PCM 6.0	100	-6	0	100	-28	-4	96	-1	0	96	-4	-9	90	10*	2
PCM 5.1	92	2	8*	96	-23	0	98	-3	-2	88	4	0	92	8*	0
PCM 4.3	98	-4	2	86	-10	10*	90	5	6	92	0	-4	90	10*	2
PCM 2.9	94	0	6*	96	-23	0	96	-1	0	96	-4	-9	86	14*	6
PCM 1.0	98	-4	2	96	-23	0	100	-5	-4	86	6	2	90	10*	2

^aTest initiated 4/21/94; expressed as percent decrease from control or appropriate reference (PCM 11.3 for Poplar Creek sites, CRM 22.0 for Clinch River and Tenness River sites) in the % normal embryos of an initial 50 embryos per site per each of five different largemouth bass pairings; eggs were fertilized in vitro with sperm derived from testes minced in a saline solution

^bAsterisks signify a significant difference in % normal between a site and the control or appropriate reference site

^cCRM = Clinch River Mile, TRM = Tennessee River Mile, and PCM = Poplar Creek Mile

^dPercent of embryos that did not exhibit any obvious developmental abnormality (other than delayed hatching) during the course of the test

Table A39. Organic compounds that were not detected in any Phase 2 water sample

Parameter name		
1,2,4-Trichlorobenzene	Benzo(ghi)perylene	N-Nitrosodiphenylamine
2-Chloronaphthalene	Benzo(k)fluoranthene	PCB-1016
2-Chlorophenol	Benzyl alcohol	PCB-1221
2-Methyl-4,6-dinitrophenol	beta-BHC	PCB-1232
2-Methylnaphthalene	Bis(2-chloroethoxy)methane	PCB-1232
2-Methylphenol	Bis(2-chloroethyl) ether	PCB-1242
2-Nitroaniline	Carbazole	PCB-1248
2-Nitrophenol	Chrysene	Pentachlorophenol
2,2'-oxybis(1-Chloropropanol)	delta-BHC	Phenanthrene
2,4-Dichlorophenol	Dibenzofuran	Phenol
2,4-Dimethylphenol	Dibenz(a,h)anthracene	Pyrene
2,4-Dinitrophenol	Dieldrin	Toxaphene
2,4-Dinitrotoluene	Dimethylphthalate	
2,4,5-Trichlorophenol	Endosulfan I	
2,4,6-Trichlorophenol	Endosulfan II	
2,6-Dinitrotoluene	Endosulfan sulfate	
3-Nitroaniline	Endrin	
3,3'-Dichlorobenzidine	Endrin aldehyde	
4-Bromophenyl phenyl ethene	Endrin ketone	
4-Chloro-3-methylphenol	Fluoranthene	
4-Chlorophenylphenyl ethene	Fluorene	
4-Methylphenol	gamma-Chlordane	
4-Nitroaniline	Heptachlor	
4-Nitrophenol	Heptachlor epoxide	
4,4'-DDD	Hexachlorobenzene	
4,4'-DDE	Hexachlorobutadiene	
4,4'-DDT	Hexachlorocyclopentadiene	
Acenaphthene	Hexachloroethane	
Acenaphthylene	Indeno(1,2,3-cd)pyrene	
Aldrin	Isophorone	
alpha-Chlordane	Lindane	
Anthracene	Methoxychlor	
Benzo(a)anthracene	Naphthalene	
Benzo(a)pyrene	Nitrobenzene	
Benzo(b)fluoranthene	N-Nitroso-di-n-propylamine	

Appendix B
SEDIMENT CHARACTERIZATION

Table B1. Selected metals concentrations in surface sediment, TVA Instream Contaminant Study.

Parameter (ppm) ¹	<u>East Fork Poplar Creek</u>			<u>Bear Creek</u>			<u>White Oak Creek</u>			<u>Poplar Creek</u>		
	Max	Min (n-16)	Mean	Max	Min (n-3)	Mean	Max	Min (n-4)	Mean	Max	Min (n-3)	Mean
Mercury	165.0	11.0	40.0	0.7	<0.1	0.3	6.0	2.2	3.3	5.9	0.1	3.4
Arsenic	14.0	3.8	6.9	11.0	4.8	6.5	12.0	5.0	8.7	11.0	7.4	8.9
Cadmium	8.2	<0.5	1.6	8.6	<0.5	8.6	2.4	0.6	1.4	3.5	2.1	2.9
Chromium	58.0	24.0	37.0	35.0	16.0	22.0	290.0	66.0	163.0	38.0	19.0	27.0
Lead	170.0	36.0	80.0	85.0	35.0	52.0	51.0	33.0	40.0	38.0	23.0	32.0
Nickel	74.0	20.0	37.0	155.0	28.0	67.0	30.0	24.0	26.0	65.0	43.0	56.0
Silver	45.0	2.0	8.0	<1.0	<1.0	<1.0	10.0	2.0	6.0	2.0	<1.0	2.0
Zirconium	590.0	350.0	448.0	500.0	430.0	500.0	480.0	260.0	365.0	470.0	220.0	340.0

Parameter (ppm) ¹	<u>Clinch River (Watts Bar)</u>			<u>Background Stations</u>					
				<u>Clinch River (Melton Hill)</u>			<u>Norris Reservoir²</u>		
	Max	Min (n-4)	Mean	Max	Min (n-1)	Mean	Max	Min (n-3)	Mean
Mercury	2.8	0.3	0.8	<0.1	<0.1	<0.1	0.1	0.1	0.1
Arsenic	11.0	5.1	8.1	17.0	17.0	17.0	26.0	16.0	22.0
Cadmium	4.2	0.7	1.8	0.5	0.5	0.5	<0.5	<0.5	<0.5
Chromium	25.0	9.0	16.0	25.0	25.0	25.0	23.0	21.0	22.0
Lead	38.0	14.0	30.0	28.0	28.0	28.0	77.0	58.0	67.0
Nickel	38.0	14.0	21.0	36.0	36.0	36.0	28.0	24.0	26.0
Silver	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zirconium	890.0	400.0	650.0	230.0	230.0	230.0	270.0	180.0	220.0

¹ ppm is equivalent to mg/kg.² Values for Norris Reservoir include Clinch River Miles 85.3 and 94.1 and Powell River Mile 6.0.

Table B2. TVA Instream contaminant study - Task 2. Maximum concentrations (pCi/g) reported for significant radioisotopes in fine-particle surface sediment (TVA 1985a).

Control Station	Norris Reservoir					Comparison Data		
	Clinch River	East Fork Poplar Creek	Bear Creek	White Oak Creek	Poplar Creek	Clinch River Upstream	Powell River	Tennessee River ² Clinch River ³
ANALYSIS/ISOTOPE								
Gross Alpha	11	160	32	3	11	4	3	15
Gross Beta	398	110	150	6,600	60	42	37	65
Uranium ¹ 7	90	200	4.1	14	5.9	2.3	— ⁴	2.0
Sr-89	4	.7	.5	0	1	4	1	14
Sr-90	1.8	.1	.1	900	.2	.4	.5	12.1
GAMMA SPECTRAL ANALYSIS¹								
Co-60	1.2	—	—	184	—	—	—	.6
Cs-134	—	—	—	1.2	—	—	—	.13
Cs-137	167	8.6	.2	12,100	1.9	.9	.7	5.5
K-40	27	21	18	25	16	27	16	27
Ra-226	.7	—	—	—	—	—	—	2.3
Th-234	4	23	63	—	3.8	—	—	1.4
Eu-152	—	—	—	8	—	—	—	—
Eu-154	—	—	—	7	—	—	—	—
Am-241	—	—	—	4	—	—	—	—
Ac-228	2.2	2	1.8	4	1.1	2.2	1.8	2.7
Pa-234	—	—	—	—	—	—	—	4.6
TRANSURANICS								
Pu-239	.73	.10	.001	1.08	.02	— ⁴	— ⁴	— ⁴
Pu-238	.03	.02	.001	.007	<.0002	— ⁴	— ⁴	— ⁴
Am-241	.51	.05	.04	.46	.02	— ⁴	— ⁴	— ⁴
Cm-244	.02	.01	.009	.01	<.0008	— ⁴	— ⁴	— ⁴

¹ Uranium reported in units of $\mu\text{g/g}$, dry weight.

² Maximum concentrations reported by TVA in surface sediment samples collected from the Tennessee River from 1981-83.

³ Maximum concentrations reported by TVA in surface sediment samples collected from the Clinch River from 1974-83.

⁴ Analysis not performed.

⁵ Dash indicates isotope not identified in gamma spectral analysis.

NOTE: The lower limits of detection for all isotopes are typically 1 pCi/g, dry weight.

Table B3. Concentrations of ^{137}Cs and selected metals in sediment at recreation area beaches and at water intakes in the Clinch River. All units mg/Kg unless otherwise noted. Data from TVA (1991).

Analyte	LOCATION			
	Emory River Mile 2 - Kingston Steam Plant Intake	Clinch River Mile 13 - K-25 Intake	Clinch River Mile 17 - Campground Beach	Upstream (maximum of all upstream sites)
^{137}Cs (pCi/g)	2.05	23.74	0.19	0.18 - CRM 36 and 52.5
Arsenic	19	15	3.8	20 - CRM 36
Chromium	28	22	56	87 - CRM 120
Copper	18	13	17	25 - CRM 120
Lead	30	29	35	150 - CRM 87.5
Mercury	0.5	0.45	<0.1	0.16 - CRM 36
Nickel	17	29	42	61 - CRM 36
Phenanthrene	ND	1.1	ND	0.44 - CRM 52.5
Pyrene	ND	0.96	ND	0.48 - CRM 52.5
Bis (2-ethyl- hexyl) phthalate	ND	0.42	ND	1.8 - CRM 41.5
Benzo(a) anthracene	ND	0.44	ND	ND
Flouranthene	ND	ND	ND	0.63 - CRM 52.5

Table B4. Number of samples within each subreach from the Phase 1, Phase 2, and the near-shore sediment sampling tasks.

Subreach	Phase 1 (sediment cores)	Phase 2 (sediment cores and pore-water)	Near-shore study (surface grabs only)
0	-	5	-
1	2	-	21
2.01	-	1	-
2.02	1	-	50
2.03	-	1	79
2.04	1	7	30
Total Reach 2	2	9	159
3.01	-	2	-
3.02	1	8	1
3.03	-	9	-
3.04	1	6	3
Total Reach 3	2	25	4
4.01	1	9	51
4.02	-	6	26
4.03	-	7	48
4.04	1	11	25
Total Reach 4	2	33	150
6.0	-	-	62
7.01	-	1	-
7.02	-	1	-
8.0	-	1	-
10	1	-	7
13	-	5	-
18	-	3	23

Table B5. Summary statistics for surface sediment (0-15 cm) inorganic concentrations (mg/kg) by reach. Mercury data includes results from Brooks Rand (BR) laboratory.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 0								
Aluminum	5	5	1.7E+03	6.8E+03	5.0E+03	910.89	6.9E+03	5.7E+03
Antimony	4	2	2.3E-01	6.9E-01	6.8E-01	0.01	6.9E-01	6.7E-01
Arsenic	5	5	1.4E+00	5.1E+00	3.4E+00	0.64	4.7E+00	3.8E+00
Barium	5	5	2.2E+01	7.4E+01	5.7E+01	9.14	7.7E+01	6.6E+01
Beryllium	5	5	1.6E-01	5.7E-01	4.6E-01	0.08	6.3E-01	5.2E-01
Boron	5	3	1.2E+00	2.6E+00	1.6E+00	0.32	2.3E+00	1.2E+00
Cadmium	5	5	1.5E-01	2.9E-01	2.5E-01	0.03	3.0E-01	2.7E-01
Calcium	5	5	1.0E+03	5.3E+03	2.9E+03	730.67	4.4E+03	2.5E+03
Chromium	5	5	1.0E+01	1.3E+01	1.1E+01	0.5	1.2E+01	1.0E+01
Cobalt	5	5	3.7E+00	1.8E+01	9.9E+00	2.29	1.5E+01	9.2E+00
Copper	5	5	2.4E+00	1.0E+01	7.5E+00	1.52	1.1E+01	9.0E+00
Iron	5	5	5.4E+03	1.5E+04	1.2E+04	1774.1	1.6E+04	1.4E+04
Kjeldahl Nitrogen	5	5	4.2E+02	3.5E+04	7.5E+03	6921.61	2.2E+04	6.7E+02
Lead	5	5	7.8E+00	2.6E+01	1.9E+01	3.16	2.6E+01	2.2E+01
Magnesium	5	5	5.7E+02	2.5E+03	1.6E+03	339.62	2.3E+03	1.6E+03
Manganese	5	5	3.0E+02	2.1E+03	1.2E+03	338.76	1.9E+03	1.1E+03
Mercury (BR)	5	5	1.7E-02	6.9E-02	4.2E-02	0.009735	6.3E-02	4.9E-02
Methyl Mercury (BR)	5	5	7.2E-05	2.5E-04	1.7E-04	0.0000395	2.6E-04	2.1E-04
Nickel	5	5	8.2E+00	1.5E+01	1.2E+01	1.32	1.5E+01	1.4E+01
Potassium	5	5	1.9E+02	7.1E+02	5.4E+02	96.46	7.5E+02	6.6E+02
Selenium	5	5	2.2E-01	4.2E-01	3.3E-01	0.03	4.0E-01	3.4E-01
Silver	5	4	2.0E-02	7.4E-01	1.8E-01	0.14	4.9E-01	5.2E-02
Sodium	5	4	1.6E+01	3.7E+01	2.6E+01	5.53	3.7E+01	2.6E+01
Uranium	5	5	1.8E-01	7.7E-01	4.0E-01	0.11	6.2E-01	4.1E-01
Vanadium	5	5	4.2E+00	1.4E+01	1.1E+01	1.8	1.4E+01	1.3E+01
Zinc	5	5	3.1E+01	8.9E+01	5.9E+01	10.57	8.1E+01	6.4E+01
Reach 1								
Arsenic	2	2	4.5E+00	1.0E+01	7.4E+00	2.9168	2.6E+01	7.4E+00
Beryllium	2	2	4.7E-01	9.3E-01	7.0E-01	0.2258	2.1E+00	7.0E-01
Cadmium	2	2	5.9E-01	8.1E-01	7.0E-01	0.1126	1.4E+00	7.0E-01
Chromium	2	2	8.8E+00	1.6E+01	1.3E+01	3.7341	3.6E+01	1.3E+01
Copper	2	2	3.4E+01	3.5E+01	3.4E+01	0.3333	3.7E+01	3.4E+01
Lead	2	2	2.5E+01	3.8E+01	3.1E+01	6.5534	7.3E+01	3.1E+01
Mercury	2	2	5.2E-02	1.5E-01	1.0E-01	0.0513	4.3E-01	1.0E-01
Nickel	2	2	1.2E+01	2.0E+01	1.6E+01	4.0584	4.2E+01	1.6E+01
Selenium	2	2	3.4E-01	7.8E-01	5.6E-01	0.2213	2.0E+00	5.6E-01

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Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Silver	2	2	2.3E-01	3.3E-01	2.8E-01	0.0515	6.0E-01	2.8E-01
Zinc	2	2	6.1E+01	1.1E+02	8.4E+01	23.5046	2.3E+02	8.4E+01
Reach 2								
Aluminum	9	9	2.0E+03	1.8E+04	9.1E+03	1474.68	1.2E+04	8.7E+03
Arsenic	11	11	1.8E+00	1.0E+01	5.0E+00	0.85	6.6E+00	3.8E+00
Barium	9	9	4.3E+01	1.9E+02	1.0E+02	15.11	1.3E+02	8.9E+01
Beryllium	11	10	2.3E-01	1.3E+00	6.5E-01	0.08	7.9E-01	6.4E-01
Boron	9	7	2.3E+00	4.9E+00	3.6E+00	0.35	4.2E+00	3.3E+00
Cadmium	11	10	7.0E-02	5.1E-01	2.6E-01	0.04	3.4E-01	2.2E-01
Calcium	9	9	8.4E+02	1.4E+04	4.0E+03	1385.95	6.6E+03	2.4E+03
Chromium	11	11	6.9E+00	2.1E+01	1.3E+01	1.14	1.5E+01	1.3E+01
Cobalt	9	9	4.9E+00	1.6E+01	1.1E+01	1.32	1.3E+01	9.2E+00
Copper	11	11	2.8E+00	1.2E+01	8.7E+00	0.96	1.0E+01	9.3E+00
Iron	9	9	8.4E+03	2.6E+04	1.6E+04	1915.87	2.0E+04	1.5E+04
Kjeldahl Nitrogen	9	9	1.7E+02	8.8E+03	2.0E+03	969.39	3.8E+03	7.2E+02
Lead	11	11	5.4E+00	6.5E+01	2.2E+01	5.18	3.2E+01	1.6E+01
Magnesium	9	9	4.2E+02	6.2E+03	2.2E+03	548.42	3.2E+03	1.8E+03
Manganese	9	9	2.7E+02	4.5E+03	1.6E+03	466.18	2.5E+03	9.6E+02
Mercury	3	2	3.0E-02	6.2E-01	2.4E-01	0.21900	8.8E-01	5.0E-02
Mercury (BR)	9	9	2.6E-02	2.5E-01	1.2E-01	0.02838	1.7E-01	9.3E-02
Methyl Mercury (BR)	9	9	1.4E-05	6.5E-04	2.3E-04	0.000071	3.6E-04	1.8E-04
Nickel	11	11	4.7E+00	2.5E+01	1.3E+01	1.67	1.6E+01	1.4E+01
Potassium	9	9	2.6E+02	2.0E+03	1.0E+03	157.08	1.3E+03	1.0E+03
Selenium	8	1	1.6E-01	2.7E+00	3.5E-01	.	.	3.5E-01
Silver	11	9	1.9E-02	6.0E-01	1.2E-01	0.05	2.2E-01	5.4E-02
Sodium	9	7	2.6E+01	4.4E+01	3.4E+01	2.16	3.8E+01	3.6E+01
Uranium	9	9	8.0E-02	9.6E-01	4.4E-01	0.09	6.0E-01	3.3E-01
Vanadium	9	9	6.7E+00	2.1E+01	1.4E+01	1.61	1.7E+01	1.4E+01
Zinc	11	11	2.4E+01	8.2E+01	5.4E+01	5.5	6.4E+01	5.3E+01
Reach 3								
Aluminum	25	25	4.6E+03	2.0E+04	1.1E+04	731.1	1.2E+04	1.1E+04
Antimony	24	2	3.0E-01	6.4E-01	3.0E-01	0.00	3.0E-01	3.0E-01
Arsenic	27	27	1.6E+00	6.4E+01	9.8E+00	2.92	1.5E+01	4.2E+00
Barium	25	25	4.8E+01	2.1E+02	1.0E+02	8.08	1.1E+02	9.4E+01
Beryllium	27	27	3.1E-01	1.3E+00	7.1E-01	0.04	7.9E-01	7.0E-01
Boron	25	18	8.9E-01	2.0E+01	6.4E+00	1.01	8.2E+00	3.8E+00
Cadmium	27	27	1.2E-01	5.6E+00	1.5E+00	0.27	2.0E+00	1.0E+00

Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	25	25	8.6E+02	4.2E+04	3.8E+03	1618.94	6.6E+03	1.9E+03
Chromium	27	27	1.2E+01	2.3E+02	4.0E+01	8.69	5.5E+01	2.6E+01
Cobalt	25	25	9.3E+00	2.4E+01	1.5E+01	0.78	1.7E+01	1.6E+01
Copper	27	27	5.5E+00	1.4E+02	3.5E+01	6.13	4.6E+01	2.6E+01
Iron	25	25	1.1E+04	3.3E+04	1.9E+04	1015.39	2.1E+04	1.9E+04
Kjeldahl Nitrogen	25	25	1.2E+02	1.6E+03	6.4E+02	83.34	7.9E+02	5.7E+02
Lead	27	27	7.0E+00	5.3E+01	2.2E+01	2.07	2.6E+01	2.0E+01
Magnesium	25	25	9.2E+02	2.9E+03	1.5E+03	102.06	1.7E+03	1.5E+03
Manganese	25	25	3.4E+02	1.4E+03	6.3E+02	52.93	7.2E+02	5.9E+02
Mercury	3	3	2.8E+00	2.1E+01	8.7E+00	5.93	2.6E+01	2.8E+00
Mercury (BR)	25	25	3.1E-02	1.4E+02	1.5E+01	5.74986	2.5E+01	5.1E+00
Methyl Mercury (BR)	25	25	9.1E-05	1.2E-02	4.1E-03	0.00065	5.2E-03	3.0E-03
Nickel	27	27	9.7E+00	2.3E+02	5.4E+01	9.78	7.0E+01	3.7E+01
Potassium	25	25	5.7E+02	2.3E+03	1.2E+03	79.44	1.3E+03	1.1E+03
Selenium	25	6	1.6E-01	2.9E+00	4.5E-01	0.127	6.7E-01	2.5E-01
Silver	26	26	3.0E-02	5.6E+00	1.0E+00	0.26	1.5E+00	5.4E-01
Sodium	25	25	2.3E+01	1.7E+02	5.7E+01	6.48	6.8E+01	5.0E+01
Thallium	27	3	1.4E-01	7.3E-01	3.5E-01	0.022	3.9E-01	3.2E-01
Uranium	25	25	4.3E-01	5.2E+01	9.8E+00	2.38507	1.4E+01	6.5E+00
Vanadium	25	25	7.9E+00	3.4E+01	1.8E+01	1.36167	2.0E+01	1.7E+01
Zinc	27	27	3.4E+01	2.4E+02	9.8E+01	9.2262	1.1E+02	8.1E+01
Reach 4								
Aluminum	33	33	3.1E+03	2.1E+04	9.4E+03	725.57	1.1E+04	8.8E+03
Antimony	31	1	3.0E-01	9.3E-01	5.0E-01	.	.	5.0E-01
Arsenic	35	35	2.0E+00	1.7E+01	6.6E+00	0.61	7.6E+00	6.2E+00
Barium	33	33	3.3E+01	1.7E+02	8.2E+01	6.02	9.3E+01	7.8E+01
Beryllium	35	35	2.5E-01	1.5E+00	7.2E-01	0.05	8.1E-01	6.8E-01
Boron	33	32	1.2E+00	8.0E+00	3.8E+00	0.29	4.3E+00	3.8E+00
Cadmium	35	35	1.3E-01	1.3E+00	3.8E-01	0.03	4.4E-01	3.8E-01
Calcium	33	33	8.2E+02	5.0E+03	2.4E+03	172.82	2.7E+03	2.5E+03
Chromium	35	35	8.5E+00	5.1E+01	2.0E+01	1.48	2.2E+01	1.8E+01
Cobalt	33	33	5.4E+00	2.9E+01	1.2E+01	0.92	1.4E+01	1.1E+01
Copper	35	35	4.0E+00	6.1E+01	2.1E+01	2.54	2.5E+01	1.8E+01
Iron	33	33	8.6E+03	3.2E+04	1.7E+04	1079.24	1.9E+04	1.6E+04
Kjeldahl Nitrogen	33	31	9.8E+00	2.1E+03	8.7E+02	120.37	1.1E+03	5.3E+02
Lead	35	35	9.1E+00	7.1E+01	2.5E+01	2.39	2.9E+01	2.2E+01
Magnesium	33	33	6.3E+02	2.7E+03	1.6E+03	98.47	1.8E+03	1.5E+03
Manganese	33	33	3.4E+02	2.0E+03	9.2E+02	88.7	1.1E+03	7.9E+02

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Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Mercury	12	12	1.0E+00	5.1E+00	2.0E+00	0.30056	2.5E+00	1.7E+00
Mercury (BR)	23	23	2.9E-03	6.9E+00	1.9E+00	0.43055	2.6E+00	1.2E+00
Methyl Mercury (BR)	22	22	1.1E-04	3.6E-03	1.0E-03	0.00019	1.4E-03	7.7E-04
Molybdenum	33	3	3.1E-01	1.6E+00	9.9E-01	0.02	1.0E+00	9.7E-01
Nickel	35	35	8.1E+00	4.4E+01	2.1E+01	1.56	2.4E+01	2.1E+01
Potassium	33	33	3.9E+02	1.8E+03	9.4E+02	57.45	1.0E+03	9.4E+02
Selenium	34	11	1.6E-01	2.1E+00	3.2E-01	0.05	4.0E-01	2.0E-01
Silver	33	33	3.0E-02	2.7E+00	2.5E-01	0.08	3.9E-01	1.8E-01
Sodium	33	33	1.9E+01	9.0E+01	4.2E+01	3.14	4.7E+01	3.5E+01
Uranium	33	33	1.5E-01	2.1E+00	9.1E-01	0.08	1.0E+00	8.8E-01
Vanadium	33	33	6.2E+00	3.7E+01	1.7E+01	1.24	1.9E+01	1.7E+01
Zinc	35	35	2.8E+01	1.7E+02	7.9E+01	6.49	9.0E+01	7.1E+01
Reach 5								
Antimony	3	1	4.3E-01	1.5E+00	1.5E+00			1.5E+00
Arsenic	4	4	9.3E+00	1.1E+01	1.0E+01	0.43307	1.1E+01	1.0E+01
Beryllium	4	4	1.2E+00	1.8E+00	1.4E+00	0.13519	1.7E+00	1.4E+00
Cadmium	4	4	1.0E+00	7.0E+00	2.7E+00	1.4609	6.1E+00	1.3E+00
Chromium	4	4	2.6E+01	3.2E+01	2.9E+01	1.32221	3.3E+01	3.0E+01
Copper	4	4	2.9E+01	4.3E+01	3.7E+01	3.4446	4.5E+01	3.9E+01
Lead	4	4	3.5E+01	4.7E+01	4.1E+01	2.90594	4.8E+01	4.1E+01
Mercury	4	4	4.6E-01	1.3E+00	7.0E-01	0.18915	1.1E+00	5.3E-01
Nickel	4	4	2.1E+01	3.2E+01	2.5E+01	2.62898	3.1E+01	2.3E+01
Silver	4	4	1.6E-01	9.1E-01	4.1E-01	0.1754	8.2E-01	2.8E-01
Zinc	4	4	1.8E+02	2.7E+02	2.2E+02	20.3905	2.7E+02	2.1E+02
Reach 7								
Aluminum	2	2	1.7E+04	1.9E+04	1.8E+04	1013.49	2.5E+04	1.8E+04
Antimony	10	3	2.0E-01	9.5E-01	2.6E-01	0.04	3.3E-01	2.0E-01
Arsenic	10	10	4.3E+00	9.7E+01	2.1E+01	8.6	3.7E+01	1.3E+01
Barium	2	2	1.6E+02	1.6E+02	1.6E+02	1.36	1.7E+02	1.6E+02
Beryllium	10	10	7.5E-01	1.5E+00	1.1E+00	0.08	1.2E+00	1.0E+00
Boron	2	2	5.7E+00	7.2E+00	6.5E+00	0.77	1.1E+01	6.5E+00
Cadmium	10	3	3.1E-01	9.4E-01	4.4E-01	0.07	5.6E-01	3.6E-01
Calcium	2	2	8.4E+03	9.6E+03	9.0E+03	639.77	1.3E+04	9.0E+03
Chromium	10	10	1.9E+01	5.9E+01	2.9E+01	4.07	3.6E+01	2.3E+01
Cobalt	2	2	1.4E+01	1.6E+01	1.5E+01	0.93	2.1E+01	1.5E+01
Copper	10	10	1.5E+01	4.3E+01	2.8E+01	3.14	3.4E+01	2.7E+01
Iron	2	2	3.0E+04	3.1E+04	3.1E+04	181.11	3.2E+04	3.1E+04

Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Kjeldahl Nitrogen	2	2	1.2E+03	2.7E+03	1.9E+03	775	6.8E+03	1.9E+03
Lead	10	10	1.4E+01	3.3E+01	2.0E+01	1.98	2.4E+01	1.8E+01
Magnesium	2	2	2.9E+03	3.2E+03	3.0E+03	118.77	3.8E+03	3.0E+03
Manganese	2	2	1.6E+03	2.9E+03	2.3E+03	648.47	6.4E+03	2.3E+03
Mercury (BR)	2	2	1.1E-01	1.6E-01	1.3E-01	0.0255	3.0E-01	1.3E-01
Methyl Mercury (BR)	2	2	2.8E-04	3.2E-04	3.0E-04	0.000022	4.4E-04	3.0E-04
Nickel	10	10	1.8E+01	4.1E+01	2.6E+01	1.96	3.0E+01	2.6E+01
Potassium	2	2	2.0E+03	2.1E+03	2.1E+03	27.27	2.2E+03	2.1E+03
Selenium	10	8	2.7E-01	8.4E+00	1.7E+00	0.78	3.1E+00	9.2E-01
Silver	10	6	2.5E-02	2.6E-01	9.2E-02	0.02	1.3E-01	6.3E-02
Sodium	2	2	6.2E+01	6.6E+01	6.4E+01	1.99	7.7E+01	6.4E+01
Thallium	10	1	2.5E-01	6.9E-01	6.9E-01	.	.	6.9E-01
Uranium	2	2	5.5E-01	7.6E-01	6.6E-01	0.1	1.3E+00	6.6E-01
Vanadium	2	2	3.5E+01	5.2E+01	4.4E+01	8.45	9.7E+01	4.4E+01
Zinc	10	10	4.6E+01	1.1E+02	8.0E+01	6.77	9.2E+01	7.8E+01
Reach 8								
Aluminum	1	1	.	.	1.7E+04	.	.	1.7E+04
Arsenic	1	1	.	.	7.9E+00	.	.	7.9E+00
Barium	1	1	.	.	1.2E+02	.	.	1.2E+02
Beryllium	1	1	.	.	1.1E+00	.	.	1.1E+00
Boron	1	1	.	.	4.2E+00	.	.	4.2E+00
Cadmium	1	1	.	.	2.8E-01	.	.	2.8E-01
Calcium	1	1	.	.	6.0E+03	.	.	6.0E+03
Chromium	1	1	.	.	2.1E+01	.	.	2.1E+01
Cobalt	1	1	.	.	1.5E+01	.	.	1.5E+01
Copper	1	1	.	.	2.3E+01	.	.	2.3E+01
Iron	1	1	.	.	2.9E+04	.	.	2.9E+04
Kjeldahl Nitrogen	1	1	.	.	1.5E+03	.	.	1.5E+03
Lead	1	1	.	.	2.8E+01	.	.	2.8E+01
Magnesium	1	1	.	.	2.9E+03	.	.	2.9E+03
Manganese	1	1	.	.	2.0E+03	.	.	2.0E+03
Mercury (BR)	1	1	.	.	7.6E-01	.	.	.
Methyl Mercury (BR)	1	1	.	.	4.6E-04	.	.	.
Nickel	1	1	.	.	2.4E+01	.	.	2.4E+01
Potassium	1	1	.	.	1.8E+03	.	.	1.8E+03
Silver	1	1	.	.	8.0E-02	.	.	8.0E-02
Sodium	1	1	.	.	5.2E+01	.	.	5.2E+01
Uranium	1	1	.	.	7.4E-01	.	.	7.4E-01

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Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Vanadium	1	1	.	.	3.2E+01	.	.	3.2E+01
Zinc	1	1	.	.	9.2E+01	.	.	9.2E+01
Reach 10								
Arsenic	1	1	.	.	6.9E+00	.	.	6.9E+00
Beryllium	1	1	.	.	1.3E+00	.	.	1.3E+00
Chromium	1	1	.	.	2.6E+01	.	.	2.6E+01
Copper	1	1	.	.	4.5E+01	.	.	4.5E+01
Lead	1	1	.	.	3.8E+01	.	.	3.8E+01
Mercury	1	1	.	.	7.0E-02	.	.	7.0E-02
Nickel	1	1	.	.	2.3E+01	.	.	2.3E+01
Zinc	1	1	.	.	9.9E+01	.	.	9.9E+01
Reach 13								
Aluminum	5	5	3.7E+03	1.3E+04	9.4E+03	1589.32	1.3E+04	1.0E+04
Arsenic	5	5	3.3E+00	4.1E+00	3.8E+00	0.13	4.0E+00	3.8E+00
Barium	5	5	7.4E+01	1.2E+02	9.0E+01	8.48	1.1E+02	8.5E+01
Boron	5	5	1.5E+00	1.3E+01	8.8E+00	1.96	1.3E+01	9.2E+00
Beryllium	5	5	4.5E-01	7.9E-01	6.4E-01	0.06	7.7E-01	6.8E-01
Cadmium	5	5	8.0E-02	4.3E-01	2.5E-01	0.07	4.0E-01	1.8E-01
Calcium	5	5	1.0E+03	1.6E+03	1.2E+03	107.4	1.5E+03	1.2E+03
Chromium	5	5	1.1E+01	1.7E+01	1.4E+01	1.1	1.7E+01	1.5E+01
Cobalt	5	5	9.0E+00	1.9E+01	1.4E+01	1.75	1.8E+01	1.5E+01
Copper	5	5	8.0E+00	1.5E+01	1.1E+01	1.16	1.4E+01	1.0E+01
Iron	5	5	1.1E+04	1.8E+04	1.5E+04	1393.05	1.8E+04	1.6E+04
Kjeldahl Nitrogen	5	5	4.3E+02	1.1E+03	6.1E+02	116.61	8.6E+02	5.5E+02
Lead	5	5	1.2E+01	1.8E+01	1.5E+01	0.97	1.7E+01	1.5E+01
Magnesium	5	5	8.5E+02	1.7E+03	1.4E+03	156.842	1.8E+03	1.6E+03
Manganese	5	5	2.4E+02	8.1E+02	4.9E+02	98.492	7.0E+02	4.2E+02
Mercury (BR)	5	5	5.2E-02	1.2E+00	3.5E-01	0.21765	8.2E-01	1.9E-01
Methyl Mercury (BR)	5	5	2.4E-04	2.7E-03	1.1E-03	0.00043	2.0E-03	8.7E-04
Nickel	5	5	1.5E+01	2.9E+01	2.2E+01	2.785	2.8E+01	1.9E+01
Potassium	5	5	6.5E+02	1.3E+03	1.1E+03	127.334	1.4E+03	1.3E+03
Selenium	5	1	2.0E-01	2.4E+00	5.2E-01	.	.	5.2E-01
Silver	5	4	3.0E-02	1.6E-01	7.8E-02	0.02	1.3E-01	5.0E-02
Sodium	5	5	3.2E+01	6.3E+01	5.1E+01	5.44	6.2E+01	5.3E+01
Uranium	5	5	7.3E-01	2.8E+00	1.2E+00	0.383	2.1E+00	9.3E-01
Vanadium	5	5	1.5E+01	2.1E+01	1.7E+01	1.254	2.0E+01	1.6E+01
Zinc	5	5	3.6E+01	9.2E+01	6.5E+01	11.002	8.8E+01	5.7E+01

B-13
Table B5. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 18								
Aluminum	3	3	8.7E+03	1.4E+04	1.2E+04	1511.77	1.6E+04	1.3E+04
Arsenic	3	3	3.5E+00	5.4E+00	4.6E+00	0.56	6.2E+00	4.9E+00
Barium	3	3	8.3E+01	1.2E+02	1.1E+02	12.72	1.4E+02	1.2E+02
Beryllium	3	3	5.4E-01	7.7E-01	6.8E-01	0.07	8.9E-01	7.3E-01
Boron	3	3	3.6E+00	6.5E+00	4.8E+00	0.89	7.4E+00	4.3E+00
Cadmium	3	3	3.7E-01	4.5E-01	4.2E-01	0.03	5.0E-01	4.5E-01
Calcium	3	3	2.0E+03	2.4E+03	2.3E+03	141.18	2.7E+03	2.4E+03
Chromium	3	3	1.3E+01	1.8E+01	1.6E+01	1.4	2.0E+01	1.7E+01
Cobalt	3	3	7.7E+00	1.1E+01	9.5E+00	0.92	1.2E+01	1.0E+01
Copper	3	3	1.2E+01	2.0E+01	1.6E+01	2.46	2.3E+01	1.7E+01
Iron	3	3	1.4E+04	2.0E+04	1.8E+04	1978.31	2.3E+04	1.9E+04
Kjeldahl Nitrogen	3	3	7.9E+02	1.2E+03	9.9E+02	131.91	1.4E+03	9.4E+02
Lead	3	3	2.0E+01	2.7E+01	2.3E+01	2.07	2.9E+01	2.3E+01
Magnesium	3	3	2.1E+03	2.8E+03	2.4E+03	200.34	3.0E+03	2.4E+03
Manganese	3	3	1.3E+03	2.0E+03	1.7E+03	214.55	2.4E+03	1.9E+03
Mercury (BR)	3	3	6.4E-02	1.1E-01	9.1E-02	0.014097	1.3E-01	9.8E-02
Nickel	3	3	8.8E+00	1.4E+01	1.2E+01	1.55	1.6E+01	1.3E+01
Potassium	3	3	1.3E+03	1.5E+03	1.4E+03	66.17	1.6E+03	1.4E+03
Silver	3	3	8.0E-02	1.9E-01	1.4E-01	0.03	2.3E-01	1.4E-01
Sodium	3	3	4.1E+01	5.5E+01	5.0E+01	4.65	6.4E+01	5.5E+01
Uranium	3	3	7.6E-01	7.9E-01	7.8E-01	0.01	8.1E-01	7.8E-01
Vanadium	3	3	1.6E+01	2.4E+01	2.1E+01	2.37	2.8E+01	2.3E+01
Zinc	3	3	1.1E+02	1.3E+02	1.2E+02	6.82	1.4E+02	1.3E+02
Reach 22								
Arsenic	1	1	.	.	3.9E+00	.	.	3.9E+00
Beryllium	1	1	.	.	2.7E+00	.	.	2.7E+00
Cadmium	1	1	.	.	3.5E+00	.	.	3.5E+00
Chromium	1	1	.	.	9.8E+01	.	.	9.8E+01
Copper	1	1	.	.	4.1E+01	.	.	4.1E+01
Lead	1	1	.	.	1.2E+02	.	.	1.2E+02
Mercury	1	1	.	.	1.1E+02	.	.	1.1E+02
Nickel	1	1	.	.	2.4E+01	.	.	2.4E+01
Silver	1	1	.	.	1.7E+01	.	.	1.7E+01
Zinc	1	1	.	.	1.1E+02	.	.	1.1E+02

Table B6. Summary statistics for surface sediment (0-15 cm) inorganic concentrations (mg/kg) by subreach. Mercury data includes results from Brooks Rand (BR) laboratory.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 0								
Aluminum	5	5	1.7E+03	6.8E+03	5.0E+03	910.89	6.9E+03	5.7E+03
Antimony	4	2	2.3E-01	6.9E-01	6.8E-01	0.01	6.9E-01	6.7E-01
Arsenic	5	5	1.4E+00	5.1E+00	3.4E+00	0.64	4.7E+00	3.8E+00
Barium	5	5	2.2E+01	7.4E+01	5.7E+01	9.14	7.7E+01	6.6E+01
Beryllium	5	5	1.6E-01	5.7E-01	4.6E-01	0.08	6.3E-01	5.2E-01
Boron	5	3	1.2E+00	2.6E+00	1.6E+00	0.32	2.3E+00	1.2E+00
Cadmium	5	5	1.5E-01	2.9E-01	2.5E-01	0.03	3.0E-01	2.7E-01
Calcium	5	5	1.0E+03	5.3E+03	2.9E+03	730.67	4.4E+03	2.5E+03
Chromium	5	5	1.0E+01	1.3E+01	1.1E+01	0.5	1.2E+01	1.0E+01
Cobalt	5	5	3.7E+00	1.8E+01	9.9E+00	2.29	1.5E+01	9.2E+00
Copper	5	5	2.4E+00	1.0E+01	7.5E+00	1.52	1.1E+01	9.0E+00
Iron	5	5	5.4E+03	1.5E+04	1.2E+04	1774.1	1.6E+04	1.4E+04
Kjeldahl Nitrogen	5	5	4.2E+02	3.5E+04	7.5E+03	6921.61	2.2E+04	6.7E+02
Lead	5	5	7.8E+00	2.6E+01	1.9E+01	3.16	2.6E+01	2.2E+01
Magnesium	5	5	5.7E+02	2.5E+03	1.6E+03	339.62	2.3E+03	1.6E+03
Manganese	5	5	3.0E+02	2.1E+03	1.2E+03	338.76	1.9E+03	1.1E+03
Mercury (BR)	5	5	1.7E-02	6.9E-02	4.2E-02	0.009735	6.3E-02	4.9E-02
Methyl Mercury (BR)	5	5	7.2E-05	2.5E-04	1.7E-04	0.0000395	2.6E-04	2.1E-04
Nickel	5	5	8.2E+00	1.5E+01	1.2E+01	1.32	1.5E+01	1.4E+01
Potassium	5	5	1.9E+02	7.1E+02	5.4E+02	96.46	7.5E+02	6.6E+02
Silver	5	4	2.0E-02	7.4E-01	1.8E-01	0.14	4.9E-01	5.2E-02
Sodium	5	4	1.6E+01	3.7E+01	2.6E+01	5.53	3.7E+01	2.6E+01
Uranium	5	5	1.8E-01	7.7E-01	4.0E-01	0.11	6.2E-01	4.1E-01
Vanadium	5	5	4.2E+00	1.4E+01	1.1E+01	1.8	1.4E+01	1.3E+01
Zinc	5	5	3.1E+01	8.9E+01	5.9E+01	10.57	8.1E+01	6.4E+01
Subreach 1								
Arsenic	2	2	4.5E+00	1.0E+01	7.4E+00	2.9168	2.6E+01	7.4E+00
Beryllium	2	2	4.7E-01	9.3E-01	7.0E-01	0.2258	2.1E+00	7.0E-01
Cadmium	2	2	5.9E-01	8.1E-01	7.0E-01	0.1126	1.4E+00	7.0E-01
Chromium	2	2	8.8E+00	1.6E+01	1.3E+01	3.7341	3.6E+01	1.3E+01
Copper	2	2	3.4E+01	3.5E+01	3.4E+01	0.3333	3.7E+01	3.4E+01
Lead	2	2	2.5E+01	3.8E+01	3.1E+01	6.5534	7.3E+01	3.1E+01
Mercury	2	2	5.2E-02	1.5E-01	1.0E-01	0.0513	4.3E-01	1.0E-01
Nickel	2	2	1.2E+01	2.0E+01	1.6E+01	4.0584	4.2E+01	1.6E+01
Selenium	2	2	3.4E-01	7.8E-01	5.6E-01	0.2213	2.0E+00	5.6E-01
Silver	2	2	2.3E-01	3.3E-01	2.8E-01	0.0515	6.0E-01	2.8E-01

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Zinc	2	2	6.1E+01	1.1E+02	8.4E+01	23.5046	2.3E+02	8.4E+01
Subreach 2.01								
Aluminum	1	1	.	.	4.1E+03	.	.	4.1E+03
Arsenic	1	1	.	.	1.8E+00	.	.	1.8E+00
Barium	1	1	.	.	4.3E+01	.	.	4.3E+01
Beryllium	1	1	.	.	4.0E-01	.	.	4.0E-01
Cadmium	1	1	.	.	1.1E-01	.	.	1.1E-01
Calcium	1	1	.	.	9.3E+02	.	.	9.3E+02
Chromium	1	1	.	.	7.8E+00	.	.	7.8E+00
Cobalt	1	1	.	.	4.9E+00	.	.	4.9E+00
Copper	1	1	.	.	4.2E+00	.	.	4.2E+00
Iron	1	1	.	.	8.4E+03	.	.	8.4E+03
Kjeldahl Nitrogen	1	1	.	.	4.7E+03	.	.	4.7E+03
Lead	1	1	.	.	5.4E+00	.	.	5.4E+00
Magnesium	1	1	.	.	8.2E+02	.	.	8.2E+02
Manganese	1	1	.	.	2.7E+02	.	.	2.7E+02
Mercury (BR)	1	1	.	.	2.4E-01	.	.	2.4E-01
Methyl Mercury (BR)	1	1	.	.	4.2E-05	.	.	4.2E-05
Nickel	1	1	.	.	9.7E+00	.	.	9.7E+00
Potassium	1	1	.	.	5.9E+02	.	.	5.9E+02
Silver	1	1	.	.	3.0E-02	.	.	3.0E-02
Uranium	1	1	.	.	8.0E-02	.	.	8.0E-02
Vanadium	1	1	.	.	6.7E+00	.	.	6.7E+00
Zinc	1	1	.	.	3.0E+01	.	.	3.0E+01
Subreach 2.02								
Arsenic	1	1	.	.	3.1E+00	.	.	3.1E+00
Chromium	1	1	.	.	6.9E+00	.	.	6.9E+00
Copper	1	1	.	.	9.1E+00	.	.	9.1E+00
Lead	1	1	.	.	9.7E+00	.	.	9.7E+00
Nickel	1	1	.	.	4.7E+00	.	.	4.7E+00
Zinc	1	1	.	.	4.0E+01	.	.	4.0E+01
Subreach 2.03								
Aluminum	1	1	.	.	8.2E+03	.	.	8.2E+03
Antimony	1	1	.	.	2.4E-01	.	.	2.4E-01
Arsenic	1	1	.	.	2.0E+00	.	.	2.0E+00

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Barium	1	1	.	.	8.9E+01	.	.	8.9E+01
Beryllium	1	1	.	.	6.8E-01	.	.	6.8E-01
Cadmium	1	1	.	.	1.9E-01	.	.	1.9E-01
Calcium	1	1	.	.	1.9E+03	.	.	1.9E+03
Chromium	1	1	.	.	1.3E+01	.	.	1.3E+01
Cobalt	1	1	.	.	7.9E+00	.	.	7.9E+00
Copper	1	1	.	.	7.7E+00	.	.	7.7E+00
Iron	1	1	.	.	1.5E+04	.	.	1.5E+04
Kjeldahl Nitrogen	1	1	.	.	8.8E+03	.	.	8.8E+03
Lead	1	1	.	.	8.6E+00	.	.	8.6E+00
Magnesium	1	1	.	.	1.7E+03	.	.	1.7E+03
Manganese	1	1	.	.	5.5E+02	.	.	5.5E+02
Mercury (BR)	1	1	.	.	2.6E-02	.	.	2.6E-02
Methyl Mercury (BR)	1	1	.	.	1.4E-05	.	.	1.4E-05
Nickel	1	1	.	.	1.8E+01	.	.	1.8E+01
Potassium	1	1	.	.	7.7E+02	.	.	7.7E+02
Silver	1	1	.	.	5.4E-02	.	.	5.4E-02
Uranium	1	1	.	.	2.7E-01	.	.	2.7E-01
Vanadium	1	1	.	.	1.1E+01	.	.	1.1E+01
Zinc	1	1	.	.	5.3E+01	.	.	5.3E+01

Subreach 2.04

Aluminum	7	7	2.0E+03	1.8E+04	9.9E+03	1737.97	1.3E+04	1.1E+04
Arsenic	8	8	3.6E+00	1.0E+01	6.1E+00	0.93	7.8E+00	5.2E+00
Barium	7	7	6.5E+01	1.9E+02	1.1E+02	16.79	1.5E+02	1.3E+02
Beryllium	8	8	3.5E-01	1.3E+00	7.1E-01	0.1	9.0E-01	7.0E-01
Boron	7	7	2.3E+00	4.9E+00	3.7E+00	0.39	4.5E+00	3.5E+00
Cadmium	8	8	7.0E-02	5.1E-01	3.0E-01	0.05	4.1E-01	2.9E-01
Calcium	7	7	8.4E+02	1.4E+04	4.8E+03	1691.06	8.1E+03	3.5E+03
Chromium	8	8	1.2E+01	2.1E+01	1.5E+01	0.98	1.7E+01	1.4E+01
Cobalt	7	7	8.3E+00	1.6E+01	1.2E+01	1.33	1.4E+01	9.9E+00
Copper	8	8	2.8E+00	1.2E+01	9.4E+00	1.18	1.2E+01	1.1E+01
Iron	7	7	9.2E+03	2.6E+04	1.7E+04	2146.66	2.2E+04	1.8E+04
Kjeldahl Nitrogen	7	7	1.7E+02	1.4E+03	6.2E+02	184.14	9.7E+02	3.7E+02
Lead	8	8	1.3E+01	6.5E+01	2.7E+01	6.13	3.9E+01	2.0E+01
Magnesium	7	7	4.2E+02	6.2E+03	2.5E+03	671.51	3.8E+03	2.4E+03
Manganese	7	7	9.3E+02	4.5E+03	2.0E+03	529.62	3.0E+03	1.3E+03
Mercury	2	2	5.0E-02	6.2E-01	3.3E-01	0.28449	2.1E+00	3.3E-01
Mercury (BR)	7	7	2.9E-02	2.5E-01	1.1E-01	0.02891	1.7E-01	9.3E-02

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Methyl Mercury (BR)	7	7	5.3E-05	6.5E-04	2.8E-04	0.000078	4.3E-04	2.2E-04
Nickel	8	8	6.4E+00	2.5E+01	1.4E+01	1.85	1.8E+01	1.4E+01
Potassium	7	7	2.6E+02	2.0E+03	1.1E+03	188.73	1.5E+03	1.1E+03
Selenium	5	1	3.5E-01	2.7E+00	3.5E-01	.	.	3.5E-01
Silver	8	7	1.9E-02	6.0E-01	1.6E-01	0.07	2.9E-01	6.6E-02
Sodium	7	7	2.6E+01	4.4E+01	3.5E+01	2.35	3.9E+01	3.6E+01
Uranium	7	7	2.8E-01	9.6E-01	5.1E-01	0.1	7.0E-01	3.9E-01
Vanadium	7	7	9.3E+00	2.1E+01	1.6E+01	1.57	1.9E+01	1.5E+01
Zinc	8	8	2.4E+01	8.2E+01	5.8E+01	6.56	7.1E+01	6.0E+01
Subreach 3.01								
Aluminum	2	2	9.1E+03	1.1E+04	1.0E+04	1150	1.8E+04	1.0E+04
Arsenic	2	2	1.6E+00	4.1E+00	2.9E+00	1.25	1.1E+01	2.9E+00
Barium	2	2	7.8E+01	8.6E+01	8.2E+01	4.1	1.1E+02	8.2E+01
Beryllium	2	2	6.6E-01	7.0E-01	6.8E-01	0.02	8.1E-01	6.8E-01
Boron	2	1	1.2E+00	3.8E+00	3.8E+00	.	.	3.8E+00
Cadmium	2	2	1.3E-01	2.1E+00	1.1E+00	0.99	7.3E+00	1.1E+00
Calcium	2	2	8.6E+02	1.9E+03	1.4E+03	497	4.5E+03	1.4E+03
Chromium	2	2	1.2E+01	2.1E+01	1.6E+01	4.3	4.3E+01	1.6E+01
Cobalt	2	2	1.1E+01	2.0E+01	1.6E+01	4.3	4.3E+01	1.6E+01
Copper	2	2	6.3E+00	2.6E+01	1.6E+01	10.05	8.0E+01	1.6E+01
Iron	2	2	1.4E+04	1.8E+04	1.6E+04	2100	2.9E+04	1.6E+04
Kjeldahl Nitrogen	2	2	1.8E+02	1.5E+03	8.2E+02	636.5	4.8E+03	8.2E+02
Lead	2	2	9.4E+00	1.9E+01	1.4E+01	4.75	4.4E+01	1.4E+01
Magnesium	2	2	1.2E+03	1.5E+03	1.3E+03	155	2.3E+03	1.3E+03
Manganese	2	2	3.8E+02	6.1E+02	5.0E+02	114	1.2E+03	5.0E+02
Mercury (BR)	2	2	3.1E-02	4.6E+00	2.3E+00	2.2877	1.7E+01	2.3E+00
Methyl Mercury (BR)	2	2	9.1E-05	2.8E-03	1.4E-03	0.00133	9.9E-03	1.4E-03
Nickel	2	2	1.2E+01	2.9E+01	2.0E+01	8.45	7.4E+01	2.0E+01
Potassium	2	2	8.0E+02	1.4E+03	1.1E+03	313.5	3.1E+03	1.1E+03
Silver	2	2	4.0E-02	5.0E-01	2.7E-01	0.23	1.7E+00	2.7E-01
Sodium	2	2	2.6E+01	5.1E+01	3.9E+01	12.3	1.2E+02	3.9E+01
Uranium	2	2	7.6E-01	3.3E+00	2.0E+00	1.26	9.9E+00	2.0E+00
Vanadium	2	2	1.4E+01	1.8E+01	1.6E+01	2	2.9E+01	1.6E+01
Zinc	2	2	3.4E+01	7.7E+01	5.5E+01	21.65	1.9E+02	5.5E+01
Subreach 3.02								
Aluminum	8	8	7.6E+03	2.0E+04	1.2E+04	1440.28	1.4E+04	1.0E+04
Antimony	8	1	3.0E-01	6.4E-01	3.0E-01	.	.	3.0E-01

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Arsenic	9	9	2.5E+00	1.8E+01	5.7E+00	1.6	8.7E+00	3.6E+00
Barium	8	8	6.3E+01	1.9E+02	1.1E+02	13.89	1.3E+02	9.9E+01
Beryllium	9	9	3.3E-01	1.0E+00	6.8E-01	0.07	8.1E-01	6.9E-01
Boron	8	6	8.9E-01	1.6E+01	5.5E+00	1.72	8.7E+00	3.7E+00
Cadmium	9	9	2.5E-01	5.3E+00	1.6E+00	0.53	2.5E+00	7.8E-01
Calcium	8	8	1.5E+03	4.2E+04	7.5E+03	4998.53	1.7E+04	2.2E+03
Chromium	9	9	1.8E+01	2.3E+02	5.2E+01	23.17	9.5E+01	2.6E+01
Cobalt	8	8	1.1E+01	2.1E+01	1.7E+01	1.28	1.9E+01	1.7E+01
Copper	9	9	1.3E+01	1.4E+02	4.5E+01	15.14	7.3E+01	2.9E+01
Iron	8	8	1.3E+04	2.4E+04	1.9E+04	1339.11	2.2E+04	1.9E+04
Kjeldahl Nitrogen	8	8	1.3E+02	1.6E+03	6.6E+02	186.05	1.0E+03	4.0E+02
Lead	9	9	1.2E+01	5.3E+01	2.5E+01	4.77	3.3E+01	1.8E+01
Magnesium	8	8	1.2E+03	2.9E+03	1.8E+03	227.13	2.2E+03	1.7E+03
Manganese	8	8	3.4E+02	1.1E+03	6.2E+02	87.76	7.9E+02	5.8E+02
Mercury	1	1	2.8E+00	2.8E+00	2.8E+00	.	.	2.8E+00
Mercury (BR)	8	8	6.3E-01	3.7E+01	1.3E+01	4.66965	2.2E+01	8.8E+00
Methyl Mercury (BR)	8	8	9.8E-04	1.2E-02	5.6E-03	0.00128	8.0E-03	5.2E-03
Nickel	9	9	2.5E+01	2.3E+02	8.2E+01	25.77	1.3E+02	4.8E+01
Potassium	8	8	9.5E+02	2.3E+03	1.4E+03	154.53	1.7E+03	1.2E+03
Selenium	8	1	3.0E-01	1.4E+00	3.0E-01	.	.	3.0E-01
Silver	9	9	9.0E-02	5.6E+00	1.1E+00	0.58	2.2E+00	4.3E-01
Sodium	8	8	2.7E+01	7.2E+01	5.4E+01	5.1312	6.4E+01	5.4E+01
Uranium	8	8	1.4E+00	5.2E+01	1.5E+01	6.0973	2.7E+01	7.6E+00
Vanadium	8	8	1.1E+01	2.2E+01	1.8E+01	1.409	2.0E+01	1.8E+01
Zinc	9	9	6.8E+01	2.4E+02	1.2E+02	21.4114	1.6E+02	8.1E+01
Subreach 3.03								
Aluminum	9	9	4.8E+03	1.6E+04	1.0E+04	1261.16	1.3E+04	1.1E+04
Arsenic	9	9	1.9E+00	1.1E+01	4.4E+00	0.85	6.0E+00	4.3E+00
Barium	9	9	5.1E+01	1.3E+02	8.8E+01	8.61	1.0E+02	9.3E+01
Beryllium	9	9	3.1E-01	9.3E-01	6.5E-01	0.06	7.7E-01	7.0E-01
Boron	9	5	9.0E-01	1.1E+01	4.2E+00	1.07	6.2E+00	2.5E+00
Cadmium	9	9	3.9E-01	3.5E+00	1.5E+00	0.36	2.1E+00	1.0E+00
Calcium	9	9	1.3E+03	3.3E+03	2.1E+03	261.48	2.5E+03	1.9E+03
Chromium	9	9	1.5E+01	1.2E+02	4.1E+01	11.46	6.2E+01	3.0E+01
Cobalt	9	9	9.9E+00	2.4E+01	1.5E+01	1.35	1.8E+01	1.6E+01
Copper	9	9	8.8E+00	5.9E+01	2.8E+01	6.14	4.0E+01	2.4E+01
Iron	9	9	1.1E+04	3.3E+04	1.9E+04	2210.22	2.3E+04	1.9E+04
Kjeldahl Nitrogen	9	9	1.2E+02	1.2E+03	6.9E+02	105.61	8.9E+02	7.0E+02

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Lead	9	9	7.0E+00	3.8E+01	2.3E+01	3.35	2.9E+01	2.3E+01
Magnesium	9	9	9.2E+02	2.4E+03	1.5E+03	152.55	1.8E+03	1.5E+03
Manganese	9	9	3.6E+02	1.4E+03	6.8E+02	119.4	9.0E+02	6.2E+02
Mercury (BR)	9	9	2.0E+00	1.2E+01	5.6E+00	1.01704	7.4E+00	5.0E+00
Methyl Mercury (BR)	9	9	9.3E-04	5.5E-03	2.5E-03	0.00047	3.4E-03	2.6E-03
Nickel	9	9	1.7E+01	8.6E+01	4.3E+01	7.84	5.8E+01	4.4E+01
Potassium	9	9	6.6E+02	1.9E+03	1.1E+03	116.57	1.3E+03	1.0E+03
Silver	9	9	1.4E-01	4.9E+00	1.1E+00	0.5	2.1E+00	5.8E-01
Sodium	9	9	2.3E+01	1.0E+02	4.4E+01	8.73	6.1E+01	3.4E+01
Uranium	9	9	9.2E-01	3.3E+01	8.9E+00	3.23	1.5E+01	6.5E+00
Vanadium	9	9	7.9E+00	3.3E+01	1.6E+01	2.47	2.1E+01	1.6E+01
Zinc	9	9	5.6E+01	1.5E+02	1.0E+02	13.03	1.3E+02	8.3E+01
Subreach 3.04								
Aluminum	6	6	4.6E+03	1.4E+04	1.0E+04	1607.41	1.3E+04	1.0E+04
Antimony	7	1	3.0E-01	5.5E-01	3.0E-01	.	.	3.0E-01
Arsenic	7	7	3.1E+00	6.4E+01	2.4E+01	9.57	4.2E+01	1.2E+01
Barium	6	6	4.8E+01	2.1E+02	1.2E+02	24.86	1.7E+02	1.1E+02
Beryllium	7	7	3.3E-01	1.3E+00	8.4E-01	0.12	1.1E+00	8.3E-01
Boron	6	6	8.4E+00	2.0E+01	1.2E+01	1.76	1.6E+01	1.1E+01
Cadmium	7	7	1.2E-01	5.6E+00	1.7E+00	0.7	3.0E+00	1.2E+00
Calcium	6	6	1.2E+03	4.3E+03	2.4E+03	477.32	3.4E+03	2.0E+03
Chromium	7	7	1.3E+01	5.6E+01	3.0E+01	6.16	4.1E+01	2.6E+01
Cobalt	6	6	9.3E+00	1.9E+01	1.4E+01	1.66	1.7E+01	1.5E+01
Copper	7	7	5.5E+00	9.0E+01	3.7E+01	10.81	5.8E+01	3.8E+01
Iron	6	6	1.1E+04	2.4E+04	1.9E+04	2111.76	2.3E+04	2.0E+04
Kjeldahl Nitrogen	6	6	1.2E+02	9.3E+02	4.9E+02	112.93	7.1E+02	5.2E+02
Lead	7	7	1.0E+01	3.1E+01	2.0E+01	2.76	2.6E+01	2.0E+01
Magnesium	6	6	9.6E+02	1.9E+03	1.4E+03	162	1.7E+03	1.4E+03
Manganese	6	6	3.8E+02	8.4E+02	6.0E+02	66.02	7.3E+02	6.2E+02
Mercury	2	2	2.8E+00	2.1E+01	1.2E+01	8.91	6.8E+01	1.2E+01
Mercury (BR)	6	6	2.1E+00	1.4E+02	3.5E+01	22.4112	8.0E+01	5.1E+00
Methyl Mercury (BR)	6	6	1.1E-03	1.2E-02	5.3E-03	0.0017	8.7E-03	4.2E-03
Nickel	7	7	9.7E+00	7.0E+01	4.1E+01	8.89	5.8E+01	3.7E+01
Potassium	6	6	5.7E+02	1.6E+03	1.1E+03	168.52	1.4E+03	1.1E+03
Selenium	7	5	1.6E-01	2.9E+00	8.5E-01	0.381	1.6E+00	2.7E-01
Silver	6	6	3.0E-02	1.6E+00	8.2E-01	0.25	1.3E+00	9.5E-01
Sodium	6	6	3.8E+01	1.7E+02	8.4E+01	19.45	1.2E+02	6.9E+01
Thallium	7	3	1.8E-01	7.3E-01	4.3E-01	0.076	5.8E-01	3.2E-01

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Uranium	6	6	4.3E-01	1.4E+01	6.7E+00	2.38	1.1E+01	5.5E+00
Vanadium	6	6	8.4E+00	3.4E+01	2.1E+01	4	2.9E+01	1.9E+01
Zinc	7	7	3.6E+01	1.1E+02	8.1E+01	10.58	1.0E+02	8.5E+01
Subreach 4.01								
Aluminum	9	9	3.1E+03	1.2E+04	6.7E+03	967.1	8.5E+03	6.1E+03
Arsenic	10	10	2.2E+00	6.2E+00	3.7E+00	0.43	4.5E+00	3.4E+00
Barium	9	9	3.3E+01	1.2E+02	6.1E+01	8.02	7.6E+01	5.4E+01
Beryllium	10	10	2.5E-01	1.0E+00	4.9E-01	0.07	6.1E-01	4.1E-01
Boron	9	8	1.4E+00	4.8E+00	3.4E+00	0.33	4.0E+00	3.7E+00
Cadmium	10	10	1.3E-01	5.5E-01	3.0E-01	0.05	3.8E-01	2.5E-01
Calcium	9	9	8.5E+02	2.8E+03	1.9E+03	223.7	2.3E+03	2.1E+03
Chromium	10	10	8.5E+00	2.1E+01	1.5E+01	1.38	1.8E+01	1.7E+01
Cobalt	9	9	5.4E+00	1.1E+01	7.9E+00	0.73	9.2E+00	7.4E+00
Copper	10	10	4.0E+00	1.8E+01	8.7E+00	1.34	1.1E+01	7.8E+00
Iron	9	9	8.6E+03	2.0E+04	1.2E+04	1186.75	1.4E+04	1.1E+04
Kjeldahl Nitrogen	9	7	9.8E+00	4.8E+02	1.7E+02	59.04	2.8E+02	1.5E+02
Lead	10	10	9.1E+00	4.8E+01	1.6E+01	3.64	2.3E+01	1.3E+01
Magnesium	9	9	6.3E+02	2.0E+03	1.4E+03	157.24	1.7E+03	1.5E+03
Manganese	9	9	3.5E+02	8.0E+02	6.0E+02	54.5	7.0E+02	5.5E+02
Mercury	1	1			5.1E+00			5.1E+00
Mercury (BR)	9	9	6.6E-02	6.9E+00	2.2E+00	0.9591	4.0E+00	5.3E-01
Methyl Mercury (BR)	9	9	1.9E-04	3.6E-03	1.4E-03	0.00039	2.2E-03	1.5E-03
Nickel	10	10	8.1E+00	2.6E+01	1.5E+01	1.9	1.8E+01	1.3E+01
Potassium	9	9	3.9E+02	1.3E+03	8.3E+02	101.07	1.0E+03	7.8E+02
Selenium	9	4	1.6E-01	1.5E+00	3.5E-01	0.16	6.4E-01	2.0E-01
Silver	9	9	5.0E-02	3.1E-01	1.4E-01	0.03	2.0E-01	9.0E-02
Sodium	9	9	2.4E+01	4.8E+01	3.2E+01	2.37	3.7E+01	3.3E+01
Uranium	9	9	1.5E-01	2.1E+00	8.2E-01	0.22	1.2E+00	5.3E-01
Vanadium	9	9	6.2E+00	1.7E+01	1.1E+01	1.15	1.3E+01	1.1E+01
Zinc	10	10	2.8E+01	6.7E+01	4.7E+01	4.02	5.4E+01	4.5E+01
Subreach 4.02								
Aluminum	6	6	4.7E+03	1.0E+04	7.2E+03	867.77	8.9E+03	6.9E+03
Arsenic	6	6	2.0E+00	1.1E+01	4.7E+00	1.43	7.5E+00	3.8E+00
Barium	6	6	4.8E+01	1.1E+02	7.0E+01	9.22	8.8E+01	6.7E+01
Beryllium	6	6	3.1E-01	7.8E-01	5.4E-01	0.08	7.0E-01	5.7E-01
Boron	6	6	1.2E+00	5.1E+00	2.5E+00	0.62	3.7E+00	1.7E+00
Cadmium	6	6	1.5E-01	5.1E-01	2.4E-01	0.06	3.6E-01	1.8E-01

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	6	6	1.0E+03	4.4E+03	2.2E+03	541.44	3.3E+03	1.8E+03
Chromium	6	6	1.1E+01	1.9E+01	1.5E+01	1.25	1.8E+01	1.5E+01
Cobalt	6	6	7.8E+00	1.1E+01	9.2E+00	0.49	1.0E+01	9.2E+00
Copper	6	6	4.4E+00	1.7E+01	8.9E+00	1.79	1.3E+01	7.5E+00
Iron	6	6	9.6E+03	1.6E+04	1.3E+04	1118.94	1.5E+04	1.3E+04
Kjeldahl Nitrogen	6	6	2.8E+02	1.3E+03	5.9E+02	167.85	9.3E+02	4.0E+02
Lead	6	6	9.7E+00	3.3E+01	1.9E+01	3.23	2.6E+01	1.8E+01
Magnesium	6	6	8.9E+02	2.5E+03	1.4E+03	234.57	1.9E+03	1.3E+03
Manganese	6	6	3.4E+02	1.2E+03	5.7E+02	142.77	8.6E+02	4.0E+02
Mercury	3	3	1.3E-01	1.9E+00	9.2E-01	0.52	2.4E+00	7.3E-01
Mercury (BR)	6	6	2.9E-03	2.9E+00	1.2E+00	0.4920	2.1E+00	9.5E-01
Methyl Mercury (BR)	6	6	1.1E-04	2.2E-03	7.6E-04	0.00032	1.4E-03	5.2E-04
Nickel	6	6	1.0E+01	2.1E+01	1.4E+01	1.64	1.7E+01	1.3E+01
Potassium	6	6	5.9E+02	1.1E+03	7.9E+02	66.31	9.2E+02	7.8E+02
Silver	6	6	3.0E-02	1.8E-01	8.4E-02	0.03	1.4E-01	5.3E-02
Sodium	6	6	1.9E+01	3.4E+01	2.5E+01	2.13	2.9E+01	2.4E+01
Uranium	6	6	2.6E-01	1.4E+00	6.4E-01	0.18	9.9E-01	5.1E-01
Vanadium	6	6	8.2E+00	1.7E+01	1.3E+01	1.42	1.6E+01	1.3E+01
Zinc	6	6	3.5E+01	8.0E+01	5.4E+01	7.09	6.9E+01	4.8E+01
Subreach 4.03								
Aluminum	7	7	6.7E+03	1.3E+04	9.3E+03	901.29	1.1E+04	9.5E+03
Antimony	6	1	3.3E-01	5.0E-01	5.0E-01	.	.	5.0E-01
Arsenic	7	7	4.3E+00	1.3E+01	7.7E+00	1.1	9.8E+00	8.2E+00
Barium	7	7	4.0E+01	1.2E+02	7.5E+01	11.86	9.8E+01	6.5E+01
Beryllium	7	7	4.2E-01	1.1E+00	6.9E-01	0.08	8.4E-01	6.4E-01
Boron	7	7	2.3E+00	4.2E+00	3.2E+00	0.27	3.8E+00	3.1E+00
Cadmium	7	7	2.6E-01	5.6E-01	4.2E-01	0.04	5.0E-01	4.4E-01
Calcium	7	7	8.2E+02	5.0E+03	2.5E+03	529.76	3.5E+03	2.0E+03
Chromium	7	7	2.0E+01	5.1E+01	3.1E+01	4.17	3.9E+01	2.9E+01
Cobalt	7	7	6.6E+00	1.8E+01	1.3E+01	1.43	1.6E+01	1.3E+01
Copper	7	7	1.4E+01	3.9E+01	2.5E+01	3.37	3.2E+01	2.3E+01
Iron	7	7	1.1E+04	2.4E+04	1.8E+04	1714.04	2.2E+04	1.8E+04
Kjeldahl Nitrogen	7	7	4.1E+02	1.5E+03	7.4E+02	145.96	1.0E+03	5.3E+02
Lead	7	7	1.4E+01	7.1E+01	3.3E+01	6.83	4.7E+01	3.1E+01
Magnesium	7	7	7.1E+02	2.6E+03	1.6E+03	276.42	2.2E+03	1.4E+03
Manganese	7	7	4.2E+02	2.0E+03	1.0E+03	207.82	1.4E+03	8.3E+02
Mercury	2	2	2.1E+00	4.5E+00	3.3E+00	1.2	1.1E+01	3.3E+00
Mercury (BR)	7	7	7.3E-01	5.3E+00	2.3E+00	0.58366	3.4E+00	1.8E+00

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Methyl Mercury (BR)	7	7	2.9E-04	1.2E-03	7.7E-04	0.0001	9.7E-04	8.2E-04
Nickel	7	7	1.5E+01	4.4E+01	2.6E+01	3.68	3.3E+01	2.8E+01
Potassium	7	7	5.7E+02	1.2E+03	9.2E+02	103.07	1.1E+03	9.5E+02
Selenium	7	1	2.9E-01	2.1E+00	3.9E-01	0.584	3.4E+00	1.8E+00
Silver	7	7	7.0E-02	3.6E-01	2.2E-01	0.04972	3.2E-01	2.1E-01
Sodium	7	7	2.6E+01	4.7E+01	3.6E+01	2.97064	4.2E+01	3.5E+01
Uranium	7	7	4.8E-01	2.1E+00	1.1E+00	0.20089	1.5E+00	1.0E+00
Vanadium	7	7	1.3E+01	2.5E+01	1.9E+01	1.50215	2.2E+01	2.0E+01
Zinc	7	7	4.9E+01	1.1E+02	7.3E+01	7.70996	8.8E+01	7.7E+01
Subreach 4.04								
Aluminum	11	11	7.4E+03	2.1E+04	1.3E+04	1340.8	1.5E+04	1.2E+04
Arsenic	12	12	4.4E+00	1.7E+01	9.3E+00	0.92	1.1E+01	8.2E+00
Barium	11	11	6.5E+01	1.7E+02	1.1E+02	9.73	1.3E+02	1.0E+02
Beryllium	12	12	7.3E-01	1.5E+00	1.0E+00	0.06	1.1E+00	1.0E+00
Boron	11	11	3.8E+00	8.0E+00	5.4E+00	0.39	6.1E+00	5.4E+00
Cadmium	12	12	3.3E-01	1.3E+00	5.1E-01	0.07	6.4E-01	4.6E-01
Calcium	11	11	1.9E+03	3.5E+03	2.9E+03	135.66	3.1E+03	2.9E+03
Chromium	12	12	1.1E+01	3.1E+01	1.9E+01	1.78	2.2E+01	1.8E+01
Cobalt	11	11	9.8E+00	2.9E+01	1.7E+01	1.6	2.0E+01	1.7E+01
Copper	12	12	1.9E+01	6.1E+01	3.5E+01	4.1	4.2E+01	3.0E+01
Iron	11	11	1.3E+04	3.2E+04	2.2E+04	1964.19	2.5E+04	2.1E+04
Kjeldahl Nitrogen	11	11	9.1E+02	2.1E+03	1.7E+03	109.74	1.9E+03	1.8E+03
Lead	12	12	1.5E+01	6.0E+01	2.9E+01	3.47	3.5E+01	2.5E+01
Magnesium	11	11	1.3E+03	2.7E+03	1.9E+03	136.23	2.1E+03	1.9E+03
Manganese	11	11	6.2E+02	2.0E+03	1.3E+03	141.83	1.6E+03	1.3E+03
Mercury	11	11	1.0E+00	2.2E+00	1.7E+00	0.1	1.9E+00	1.7E+00
Mercury (BR)	1	1	.	.	1.1E+00	.	.	1.1E+00
Nickel	12	12	1.7E+01	4.2E+01	2.7E+01	2.09	3.1E+01	2.6E+01
Potassium	11	11	4.8E+02	1.8E+03	1.1E+03	119.2	1.3E+03	1.1E+03
Selenium	12	6	2.6E-01	9.0E-01	4.3E-01	0.06	5.3E-01	3.1E-01
Silver	11	11	1.8E-01	2.7E+00	4.6E-01	0.22	8.7E-01	2.3E-01
Sodium	11	11	4.1E+01	9.0E+01	6.2E+01	4.27	7.0E+01	6.3E+01
Uranium	11	11	7.0E-01	1.6E+00	1.0E+00	0.07	1.1E+00	9.2E-01
Vanadium	11	11	1.6E+01	3.7E+01	2.3E+01	2.08	2.7E+01	2.1E+01
Zinc	12	12	8.0E+01	1.7E+02	1.2E+02	8.47	1.4E+02	1.2E+02
Subreach 5								
Antimony	3	1	4.3E-01	1.5E+00	1.5E+00	.	.	1.5E+00

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Arsenic	4	4	9.3E+00	1.1E+01	1.0E+01	0.43307	1.1E+01	1.0E+01
Beryllium	4	4	1.2E+00	1.8E+00	1.4E+00	0.13519	1.7E+00	1.4E+00
Cadmium	4	4	1.0E+00	7.0E+00	2.7E+00	1.4609	6.1E+00	1.3E+00
Chromium	4	4	2.6E+01	3.2E+01	2.9E+01	1.32221	3.3E+01	3.0E+01
Copper	4	4	2.9E+01	4.3E+01	3.7E+01	3.4446	4.5E+01	3.9E+01
Lead	4	4	3.5E+01	4.7E+01	4.1E+01	2.90594	4.8E+01	4.1E+01
Mercury	4	4	4.6E-01	1.3E+00	7.0E-01	0.18915	1.1E+00	5.3E-01
Nickel	4	4	2.1E+01	3.2E+01	2.5E+01	2.629	3.1E+01	2.3E+01
Silver	4	4	1.6E-01	9.1E-01	4.1E-01	0.1754	8.2E-01	2.8E-01
Zinc	4	4	1.8E+02	2.7E+02	2.2E+02	20.3905	2.7E+02	2.1E+02
Subreach 7.01								
Aluminum	1	1	.	.	1.9E+04	.	.	1.9E+04
Arsenic	1	1	.	.	9.7E+01	.	.	9.7E+01
Barium	1	1	.	.	1.6E+02	.	.	1.6E+02
Beryllium	1	1	.	.	1.4E+00	.	.	1.4E+00
Boron	1	1	.	.	7.2E+00	.	.	7.2E+00
Cadmium	1	1	.	.	5.0E-01	.	.	5.0E-01
Calcium	1	1	.	.	9.6E+03	.	.	9.6E+03
Chromium	1	1	.	.	2.5E+01	.	.	2.5E+01
Cobalt	1	1	.	.	1.4E+01	.	.	1.4E+01
Copper	1	1	.	.	2.6E+01	.	.	2.6E+01
Iron	1	1	.	.	3.1E+04	.	.	3.1E+04
Kjeldahl Nitrogen	1	1	.	.	2.7E+03	.	.	2.7E+03
Lead	1	1	.	.	1.6E+01	.	.	1.6E+01
Magnesium	1	1	.	.	3.2E+03	.	.	3.2E+03
Manganese	1	1	.	.	1.6E+03	.	.	1.6E+03
Mercury (BR)	1	1	.	.	1.6E-01	.	.	1.6E-01
Methyl Mercury (BR)	1	1	.	.	3.2E-04	.	.	3.2E-04
Nickel	1	1	.	.	2.7E+01	.	.	2.7E+01
Potassium	1	1	.	.	2.1E+03	.	.	2.1E+03
Selenium	1	1	.	.	8.4E+00	.	.	8.4E+00
Sodium	1	1	.	.	6.6E+01	.	.	6.6E+01
Uranium	1	1	.	.	5.5E-01	.	.	5.5E-01
Vanadium	1	1	.	.	5.2E+01	.	.	5.2E+01
Zinc	1	1	.	.	9.7E+01	.	.	9.7E+01
Subreach 7.02								
Aluminum	1	1	.	.	1.7E+04	.	.	1.7E+04

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Antimony	9	3	2.0E-01	8.3E-01	2.6E-01	0.04300	3.4E-01	2.0E-01
Arsenic	9	9	4.3E+00	2.1E+01	1.2E+01	1.62381	1.5E+01	1.3E+01
Barium	1	1	.	.	1.6E+02	.	.	1.6E+02
Beryllium	9	9	7.5E-01	1.5E+00	1.0E+00	0.08431	1.2E+00	1.0E+00
Boron	1	1	.	.	5.7E+00	.	.	5.7E+00
Cadmium	9	2	3.1E-01	9.4E-01	4.2E-01	0.08535	5.8E-01	3.6E-01
Calcium	1	1	.	.	8.4E+03	.	.	8.4E+03
Chromium	9	9	1.9E+01	5.9E+01	2.9E+01	4.53416	3.8E+01	2.3E+01
Cobalt	1	1	.	.	1.6E+01	.	.	1.6E+01
Copper	9	9	1.5E+01	4.3E+01	2.8E+01	3.50445	3.4E+01	2.8E+01
Iron	1	1	.	.	3.0E+04	.	.	3.0E+04
Kjeldahl Nitrogen	1	1	.	.	1.2E+03	.	.	1.2E+03
Lead	9	9	1.4E+01	3.3E+01	2.1E+01	2.15588	2.5E+01	1.9E+01
Magnesium	1	1	.	.	2.9E+03	.	.	2.9E+03
Manganese	1	1	.	.	2.9E+03	.	.	2.9E+03
Mercury (BR)	1	1	.	.	1.1E-01	.	.	1.1E-01
Methyl Mercury (BR)	1	1	.	.	2.8E-04	.	.	2.8E-04
Nickel	9	9	1.8E+01	4.1E+01	2.6E+01	2.18718	3.1E+01	2.5E+01
Potassium	1	1	.	.	2.0E+03	.	.	2.0E+03
Selenium	9	8	2.7E-01	2.3E+00	9.9E-01	0.20574	1.4E+00	8.0E-01
Silver	9	6	2.5E-02	2.6E-01	9.6E-02	0.02378	1.4E-01	7.7E-02
Sodium	1	1	.	.	6.2E+01	.	.	6.2E+01
Thallium	9	1	2.5E-01	6.9E-01	6.9E-01	.	.	6.9E-01
Uranium	1	1	.	.	7.6E-01	.	.	7.6E-01
Vanadium	1	1	.	.	3.5E+01	.	.	3.5E+01
Zinc	9	9	4.6E+01	1.1E+02	7.8E+01	7.23991	9.1E+01	7.2E+01
Subreach 8								
Aluminum	1	1	.	.	1.7E+04	.	.	1.7E+04
Arsenic	1	1	.	.	7.9E+00	.	.	7.9E+00
Barium	1	1	.	.	1.2E+02	.	.	1.2E+02
Beryllium	1	1	.	.	1.1E+00	.	.	1.1E+00
Boron	1	1	.	.	4.2E+00	.	.	4.2E+00
Cadmium	1	1	.	.	2.8E-01	.	.	2.8E-01
Calcium	1	1	.	.	6.0E+03	.	.	6.0E+03
Chromium	1	1	.	.	2.1E+01	.	.	2.1E+01
Cobalt	1	1	.	.	1.5E+01	.	.	1.5E+01
Copper	1	1	.	.	2.3E+01	.	.	2.3E+01
Iron	1	1	.	.	2.9E+04	.	.	2.9E+04

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Kjeldahl Nitrogen	1	1	.	.	1.5E+03	.	.	1.5E+03
Lead	1	1	.	.	2.8E+01	.	.	2.8E+01
Magnesium	1	1	.	.	2.9E+03	.	.	2.9E+03
Manganese	1	1	.	.	2.0E+03	.	.	2.0E+03
Mercury (BR)	1	1	.	.	7.6E-01	.	.	7.6E-01
Methyl Mercury (BR)	1	1	.	.	4.6E-04	.	.	4.6E-04
Nickel	1	1	.	.	2.4E+01	.	.	2.4E+01
Potassium	1	1	.	.	1.8E+03	.	.	1.8E+03
Silver	1	1	.	.	8.0E-02	.	.	8.0E-02
Sodium	1	1	.	.	5.2E+01	.	.	5.2E+01
Uranium	1	1	.	.	7.4E-01	.	.	7.4E-01
Vanadium	1	1	.	.	3.2E+01	.	.	3.2E+01
Zinc	1	1	.	.	9.2E+01	.	.	9.2E+01
Subreach 10								
Arsenic	1	1	.	.	6.9E+00	.	.	6.9E+00
Beryllium	1	1	.	.	1.3E+00	.	.	1.3E+00
Chromium	1	1	.	.	2.6E+01	.	.	2.6E+01
Copper	1	1	.	.	4.5E+01	.	.	4.5E+01
Lead	1	1	.	.	3.8E+01	.	.	3.8E+01
Mercury	1	1	.	.	7.0E-02	.	.	7.0E-02
Nickel	1	1	.	.	2.3E+01	.	.	2.3E+01
Zinc	1	1	.	.	9.9E+01	.	.	9.9E+01
Subreach 13								
Aluminum	5	5	3.7E+03	1.3E+04	9.4E+03	1589.32	1.3E+04	1.0E+04
Arsenic	5	5	3.3E+00	4.1E+00	3.8E+00	0.13	4.0E+00	3.8E+00
Barium	5	5	7.4E+01	1.2E+02	9.0E+01	8.48	1.1E+02	8.5E+01
Beryllium	5	5	4.5E-01	7.9E-01	6.4E-01	0.06	7.7E-01	6.8E-01
Boron	5	5	1.5E+00	1.3E+01	8.8E+00	1.96	1.3E+01	9.2E+00
Cadmium	5	5	8.0E-02	4.3E-01	2.5E-01	0.07	4.0E-01	1.8E-01
Calcium	5	5	1.0E+03	1.6E+03	1.2E+03	107.4	1.5E+03	1.2E+03
Chromium	5	5	1.1E+01	1.7E+01	1.4E+01	1.1	1.7E+01	1.5E+01
Cobalt	5	5	9.0E+00	1.9E+01	1.4E+01	1.75	1.8E+01	1.5E+01
Copper	5	5	8.0E+00	1.5E+01	1.1E+01	1.16	1.4E+01	1.0E+01
Iron	5	5	1.1E+04	1.8E+04	1.5E+04	1393.05	1.8E+04	1.6E+04
Kjeldahl Nitrogen	5	5	4.3E+02	1.1E+03	6.1E+02	116.61	8.6E+02	5.5E+02
Lead	5	5	1.2E+01	1.8E+01	1.5E+01	0.97	1.7E+01	1.5E+01
Magnesium	5	5	8.5E+02	1.7E+03	1.4E+03	156.84	1.8E+03	1.6E+03

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Manganese	5	5	2.4E+02	8.1E+02	4.9E+02	98.49	7.0E+02	4.2E+02
Mercury (BR)	5	5	5.2E-02	1.2E+00	3.5E-01	0.21765	8.2E-01	1.9E-01
Methyl Mercury (BR)	5	5	2.4E-04	2.7E-03	1.1E-03	0.00043	2.0E-03	8.7E-04
Nickel	5	5	1.5E+01	2.9E+01	2.2E+01	2.79	2.8E+01	1.9E+01
Potassium	5	5	6.5E+02	1.3E+03	1.1E+03	127.33	1.4E+03	1.3E+03
Selenium	5	1	2.0E-01	2.4E+00	5.2E-01	.	.	.
Silver	5	4	3.0E-02	1.6E-01	7.8E-02	0.02	1.3E-01	5.0E-02
Sodium	5	5	3.2E+01	6.3E+01	5.1E+01	5.44	6.2E+01	5.3E+01
Uranium	5	5	7.3E-01	2.8E+00	1.2E+00	0.38	2.1E+00	9.3E-01
Vanadium	5	5	1.5E+01	2.1E+01	1.7E+01	1.25	2.0E+01	1.6E+01
Zinc	5	5	3.6E+01	9.2E+01	6.5E+01	11	8.8E+01	5.7E+01
Subreach 18								
Aluminum	3	3	8.7E+03	1.4E+04	1.2E+04	1511.77	1.6E+04	1.3E+04
Arsenic	3	3	3.5E+00	5.4E+00	4.6E+00	0.56	6.2E+00	4.9E+00
Barium	3	3	8.3E+01	1.2E+02	1.1E+02	12.72	1.4E+02	1.2E+02
Beryllium	3	3	5.4E-01	7.7E-01	6.8E-01	0.07	8.9E-01	7.3E-01
Boron	3	3	3.6E+00	6.5E+00	4.8E+00	0.89	7.4E+00	4.3E+00
Cadmium	3	3	3.7E-01	4.5E-01	4.2E-01	0.03	5.0E-01	4.5E-01
Calcium	3	3	2.0E+03	2.4E+03	2.3E+03	141.18	2.7E+03	2.4E+03
Chromium	3	3	1.3E+01	1.8E+01	1.6E+01	1.4	2.0E+01	1.7E+01
Cobalt	3	3	7.7E+00	1.1E+01	9.5E+00	0.92	1.2E+01	1.0E+01
Copper	3	3	1.2E+01	2.0E+01	1.6E+01	2.46	2.3E+01	1.7E+01
Iron	3	3	1.4E+04	2.0E+04	1.8E+04	1978.31	2.3E+04	1.9E+04
Kjeldahl Nitrogen	3	3	7.9E+02	1.2E+03	9.9E+02	131.91	1.4E+03	9.4E+02
Lead	3	3	2.0E+01	2.7E+01	2.3E+01	2.07	2.9E+01	2.3E+01
Magnesium	3	3	2.1E+03	2.8E+03	2.4E+03	200.34	3.0E+03	2.4E+03
Manganese	3	3	1.3E+03	2.0E+03	1.7E+03	214.55	2.4E+03	1.9E+03
Mercury (BR)	3	3	6.4E-02	1.1E-01	9.1E-02	0.014097	1.3E-01	9.8E-02
Nickel	3	3	8.8E+00	1.4E+01	1.2E+01	1.55	1.6E+01	1.3E+01
Potassium	3	3	1.3E+03	1.5E+03	1.4E+03	66.17	1.6E+03	1.4E+03
Silver	3	3	8.0E-02	1.9E-01	1.4E-01	0.03	2.3E-01	1.4E-01
Sodium	3	3	4.1E+01	5.5E+01	5.0E+01	4.65	6.4E+01	5.5E+01
Uranium	3	3	7.6E-01	7.9E-01	7.8E-01	0.010	8.1E-01	7.8E-01
Vanadium	3	3	1.6E+01	2.4E+01	2.1E+01	2.37	2.8E+01	2.3E+01
Zinc	3	3	1.1E+02	1.3E+02	1.2E+02	6.82	1.4E+02	1.3E+02
Subreach 22								
Arsenic	1	1	.	.	3.9E+00	.	.	3.9E+00

Table B6. (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Beryllium	1	1	.	.	2.7E+00	.	.	2.7E+00
Cadmium	1	1	.	.	3.5E+00	.	.	3.5E+00
Chromium	1	1	.	.	9.8E+01	.	.	9.8E+01
Copper	1	1	.	.	4.1E+01	.	.	4.1E+01
Lead	1	1	.	.	1.2E+02	.	.	1.2E+02
Mercury	1	1	.	.	1.1E+02	.	.	1.1E+02
Nickel	1	1	.	.	2.4E+01	.	.	2.4E+01
Silver	1	1	.	.	1.7E+01	.	.	1.7E+01
Zinc	1	1	.	.	1.1E+02	.	.	1.1E+02

Table B7. Summary statistics for deep sediment (core weighted) inorganic concentrations (mg/kg) by reach.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 0								
Aluminum	5	5	2.1E+03	8.3E+03	5.5E+03	1076.67	7.8E+03	6.2E+03
Antimony	5	2	2.3E-01	6.7E-01	5.4E-01	0.04	6.3E-01	5.0E-01
Arsenic	5	5	1.5E+00	6.9E+00	3.8E+00	0.92	5.8E+00	3.8E+00
Barium	5	5	2.5E+01	9.3E+01	6.5E+01	11.35	8.9E+01	7.4E+01
Beryllium	5	5	2.1E-01	6.0E-01	4.9E-01	0.07	6.5E-01	5.7E-01
Boron	5	3	1.2E+00	2.5E+00	1.8E+00	0.30	2.5E+00	1.4E+00
Cadmium	5	5	1.5E-01	3.4E-01	2.6E-01	0.03	3.3E-01	2.7E-01
Calcium	5	5	1.1E+03	4.9E+03	2.9E+03	716.3	4.5E+03	2.5E+03
Chromium	5	5	1.0E+01	2.0E+01	1.3E+01	1.93	1.7E+01	1.1E+01
Cobalt	5	5	4.2E+00	1.6E+01	1.0E+01	2.08	1.5E+01	9.2E+00
Copper	5	5	3.0E+00	1.2E+01	8.0E+00	1.65	1.2E+01	9.5E+00
Iron	5	5	6.3E+03	2.0E+04	1.3E+04	2258.87	1.8E+04	1.4E+04
Kjeldahl Nitrogen	5	5	4.2E+02	3.5E+04	7.7E+03	6887.66	2.2E+04	7.3E+02
Lead	5	5	1.0E+01	4.2E+01	2.3E+01	5.21	3.4E+01	2.2E+01
Magnesium	5	5	6.4E+02	2.5E+03	1.7E+03	347.2	2.4E+03	1.6E+03
Manganese	5	5	2.9E+02	4.3E+03	1.6E+03	703.61	3.1E+03	1.1E+03
Mercury	5	5	3.5E-02	1.4E-01	7.5E-02	0.02	1.1E-01	6.9E-02
Nickel	5	5	7.7E+00	2.2E+01	1.4E+01	2.56	1.9E+01	1.4E+01
Potassium	5	5	2.2E+02	8.6E+02	5.9E+02	109.7	8.2E+02	6.8E+02
Silver	5	4	2.0E-02	4.9E-01	1.4E-01	0.09	3.3E-01	5.2E-02
Sodium	5	4	1.5E+01	4.0E+01	2.5E+01	5.87	3.8E+01	1.7E+01
Uranium	5	5	2.1E-01	7.7E-01	4.5E-01	0.11	6.7E-01	4.9E-01
Vanadium	5	5	4.9E+00	1.7E+01	1.2E+01	2.17	1.6E+01	1.3E+01
Zinc	5	5	3.0E+01	8.4E+01	6.1E+01	10.87	8.4E+01	7.1E+01
Reach 1								
Arsenic	2	2	5.0E+00	1.1E+01	8.0E+00	3.0141	2.7E+01	8.0E+00
Beryllium	2	2	5.9E-01	8.1E-01	7.0E-01	0.1072	1.4E+00	7.0E-01
Cadmium	2	2	4.2E-01	7.3E-01	5.7E-01	0.1547	1.5E+00	5.7E-01
Chromium	2	2	9.9E+00	2.0E+01	1.5E+01	4.8691	4.5E+01	1.5E+01
Copper	2	2	2.6E+01	2.9E+01	2.8E+01	1.3587	3.6E+01	2.8E+01
Lead	2	2	3.0E+01	3.9E+01	3.5E+01	4.5584	6.3E+01	3.5E+01
Mercury	2	2	5.9E-02	1.2E-01	9.2E-02	0.0322	3.0E-01	9.2E-02
Nickel	2	2	1.4E+01	2.3E+01	1.8E+01	4.8722	4.9E+01	1.8E+01
Selenium	2	2	4.2E-01	6.9E-01	5.6E-01	0.1376	1.4E+00	5.6E-01
Silver	2	2	2.0E-01	3.3E-01	2.7E-01	0.0624	6.6E-01	2.7E-01
Zinc	2	2	7.0E+01	1.2E+02	9.6E+01	26.2773	2.6E+02	9.6E+01

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 2								
Aluminum	8	8	4.0E+03	1.8E+04	9.6E+03	1356.05	1.2E+04	9.1E+03
Antimony	7	1	7.0E-01	7.0E-01	7.0E-01	.	.	7.0E-01
Arsenic	10	10	1.6E+00	1.0E+01	4.9E+00	0.8	6.4E+00	4.3E+00
Barium	8	8	4.7E+01	1.9E+02	1.0E+02	16.2	1.4E+02	1.0E+02
Beryllium	10	10	4.1E-01	1.3E+00	7.1E-01	0.08	8.6E-01	7.0E-01
Boron	8	6	2.2E+00	4.9E+00	3.5E+00	0.25	4.0E+00	3.1E-01
Cadmium	10	10	1.3E-01	4.8E-01	3.0E-01	0.04	3.7E-01	3.1E-01
Calcium	8	8	1.2E+03	9.1E+03	3.8E+03	933.91	5.6E+03	2.9E+03
Chromium	10	10	7.7E+00	2.1E+01	1.4E+01	1.05	1.6E+01	1.4E+01
Cobalt	8	8	5.3E+00	2.1E+01	1.2E+01	1.78	1.6E+01	1.1E+01
Copper	10	10	4.1E+00	1.5E+01	9.7E+00	1.05	1.2E+01	9.8E+00
Iron	8	8	8.9E+03	2.6E+04	1.7E+04	1873.22	2.0E+04	1.7E+04
Kjeldahl Nitrogen	8	8	2.2E+02	6.5E+03	2.1E+03	897.36	3.8E+03	9.1E+02
Lead	10	10	5.8E+00	6.5E+01	2.7E+01	5.15	3.6E+01	2.5E+01
Magnesium	8	8	8.5E+02	4.1E+03	2.2E+03	339.75	2.8E+03	2.0E+03
Manganese	8	8	2.0E+02	4.5E+03	1.6E+03	504.15	2.6E+03	1.1E+03
Mercury	10	8	3.2E-02	2.5E-01	1.0E-01	0.02	1.4E-01	7.4E-02
Nickel	10	10	8.4E+00	2.5E+01	1.5E+01	1.41	1.7E+01	1.4E+01
Potassium	8	8	4.8E+02	2.0E+03	1.0E+03	149.6	1.3E+03	9.5E+02
Selenium	8	2	1.8E-01	2.4E+00	3.2E-01	0.00	3.2E-01	3.2E-01
Silver	10	9	1.9E-02	5.5E-01	1.5E-01	0.05	2.5E-01	7.8E-02
Sodium	8	6	2.6E+01	4.4E+01	3.2E+01	2.29	3.7E+01	3.3E+01
Uranium	8	8	1.1E-01	1.0E+00	5.3E-01	0.12	7.5E-01	4.3E-01
Vanadium	8	8	6.0E+00	2.1E+01	1.5E+01	1.68	1.8E+01	1.5E+01
Zinc	10	10	3.0E+01	8.2E+01	5.9E+01	4.74	6.7E+01	5.7E+01
Reach 3								
Aluminum	25	25	6.5E+03	2.0E+04	1.3E+04	774.55	1.4E+04	1.3E+04
Antimony	25	2	2.8E-01	6.1E-01	3.0E-01	0.00	3.1E-01	3.0E-01
Arsenic	28	28	1.3E+00	1.4E+02	1.5E+01	5.71	2.5E+01	5.0E+00
Barium	25	25	5.9E+01	2.9E+02	1.2E+02	10.21	1.3E+02	1.0E+02
Beryllium	28	28	3.0E-01	1.7E+00	8.1E-01	0.06	9.2E-01	7.5E-01
Boron	25	18	9.0E-01	4.4E+01	7.7E+00	1.78	1.1E+01	5.0E+00
Cadmium	28	28	9.2E-02	5.6E+00	1.7E+00	0.28	2.2E+00	1.2E+00
Calcium	25	25	5.0E+02	1.4E+04	3.0E+03	547.3	3.9E+03	2.2E+03
Chromium	28	28	9.3E+00	1.1E+02	3.8E+01	4.94	4.7E+01	3.1E+01
Cobalt	25	25	9.5E+00	2.5E+01	1.6E+01	0.88	1.8E+01	1.6E+01

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Copper	28	28	5.4E+00	1.7E+02	3.8E+01	6.41	4.9E+01	3.4E+01
Iron	25	25	1.1E+04	3.6E+04	2.1E+04	1170.5	2.3E+04	2.0E+04
Kjeldahl Nitrogen	25	25	7.7E+01	2.1E+03	6.5E+02	94.74	8.1E+02	5.3E+02
Lead	28	28	7.4E+00	5.8E+01	2.2E+01	1.97	2.6E+01	2.1E+01
Magnesium	25	25	9.5E+02	2.7E+03	1.7E+03	94.78	1.8E+03	1.7E+03
Manganese	25	25	2.7E+02	1.1E+03	6.1E+02	39.75	6.8E+02	5.9E+02
Mercury	28	28	2.5E-02	1.1E+02	1.3E+01	4.4	2.1E+01	5.2E+00
Nickel	28	28	7.8E+00	3.3E+02	5.5E+01	12.07	7.5E+01	4.0E+01
Potassium	25	25	6.1E+02	2.4E+03	1.3E+03	99.67	1.5E+03	1.3E+03
Selenium	26	8	1.7E-01	3.3E+00	4.6E-01	0.1430	7.1E-01	1.7E-01
Silver	28	28	2.2E-02	3.8E+00	9.5E-01	0.18	1.3E+00	8.9E-01
Sodium	25	25	2.3E+01	3.0E+02	6.9E+01	12.4154	9.0E+01	5.0E+01
Thallium	28	11	1.3E-01	1.6E+00	2.7E-01	0.0576	3.7E-01	2.1E-01
Uranium	25	25	4.6E-01	1.1E+02	1.3E+01	4.3664	2.0E+01	6.5E+00
Vanadium	25	25	1.1E+01	5.9E+01	2.2E+01	2.0728	2.5E+01	1.8E+01
Zinc	28	28	2.8E+01	2.1E+02	9.5E+01	8.7618	1.1E+02	9.0E+01

Reach 4

Aluminum	33	33	4.7E+03	2.0E+04	1.1E+04	684.05	1.2E+04	1.1E+04
Antimony	35	2	2.5E-01	7.8E-01	4.1E-01	0.002	4.1E-01	4.1E-01
Arsenic	35	35	2.2E+00	1.2E+01	6.9E+00	0.5	7.7E+00	7.7E+00
Barium	33	33	4.5E+01	1.5E+02	9.5E+01	5.44	1.0E+02	8.5E+01
Beryllium	35	35	3.4E-01	1.4E+00	8.3E-01	0.05	9.1E-01	7.7E-01
Boron	33	33	1.4E+00	7.5E+00	4.2E+00	0.29	4.7E+00	4.2E+00
Cadmium	35	35	1.4E-01	1.4E+00	4.3E-01	0.05	5.1E-01	4.5E-01
Calcium	33	33	7.1E+02	4.4E+03	2.4E+03	160.31	2.7E+03	2.5E+03
Chromium	35	35	1.1E+01	3.7E+01	2.1E+01	1.18	2.3E+01	2.0E+01
Cobalt	33	33	7.0E+00	2.6E+01	1.4E+01	0.99	1.5E+01	1.2E+01
Copper	35	35	4.4E+00	5.3E+01	2.2E+01	2.45	2.6E+01	1.9E+01
Iron	33	33	9.6E+03	3.1E+04	1.9E+04	1032.1	2.0E+04	1.8E+04
Kjeldahl Nitrogen	33	31	9.9E+00	2.1E+03	8.9E+02	119.29	1.1E+03	6.3E+02
Lead	35	35	9.7E+00	5.0E+01	2.5E+01	1.61	2.8E+01	2.5E+01
Magnesium	33	33	5.6E+02	2.7E+03	1.7E+03	97.65	1.9E+03	1.8E+03
Manganese	33	33	2.7E+02	2.0E+03	1.0E+03	92.95	1.2E+03	9.2E+02
Mercury	35	35	8.5E-02	1.2E+01	2.4E+00	0.4	3.1E+00	2.0E+00
Nickel	35	35	9.6E+00	4.0E+01	2.3E+01	1.62	2.6E+01	2.2E+01
Potassium	33	33	4.5E+02	1.7E+03	1.0E+03	58.14	1.1E+03	1.1E+03
Selenium	35	13	1.6E-01	1.4E+00	3.9E-01	0.06	5.0E-01	2.1E-01
Silver	34	34	3.0E-02	1.8E+00	2.8E-01	0.06	3.7E-01	2.0E-01

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Sodium	33	33	1.9E+01	7.6E+01	4.3E+01	2.9	4.8E+01	4.0E+01
Uranium	33	33	3.1E-01	2.2E+00	1.2E+00	0.1	1.3E+00	1.2E+00
Vanadium	33	33	8.2E+00	3.3E+01	2.0E+01	1.12	2.2E+01	1.8E+01
Zinc	35	35	3.5E+01	1.6E+02	8.5E+01	6.45	9.6E+01	7.0E+01

Reach 5

Antimony	3	1	4.0E-01	4.8E-01	4.6E-01			4.6E-01
Arsenic	4	4	7.5E+00	9.2E+00	8.6E+00	0.38009	9.4E+00	8.8E+00
Beryllium	4	4	1.0E+00	1.5E+00	1.2E+00	0.09752	1.5E+00	1.2E+00
Cadmium	4	4	1.1E+00	5.2E+00	2.3E+00	0.98322	4.6E+00	1.4E+00
Chromium	4	4	2.8E+01	3.5E+01	3.2E+01	1.79194	3.6E+01	3.3E+01
Copper	4	4	2.9E+01	3.9E+01	3.5E+01	2.195	4.0E+01	3.6E+01
Lead	4	4	3.9E+01	4.6E+01	4.4E+01	1.65588	4.7E+01	4.5E+01
Mercury	4	4	9.9E-01	3.1E+00	1.9E+00	0.46841	3.0E+00	1.7E+00
Nickel	4	4	1.9E+01	3.0E+01	2.3E+01	2.25762	2.9E+01	2.2E+01
Silver	4	4	1.6E-01	7.4E-01	3.6E-01	0.13372	6.7E-01	2.6E-01
Zinc	4	4	2.3E+02	2.7E+02	2.5E+02	8.03156	2.7E+02	2.5E+02

Reach 7

Aluminum	2	2	1.5E+04	1.6E+04	1.5E+04	938.86	2.1E+04	1.5E+04
Antimony	10	4	2.0E-01	6.8E-01	2.7E-01	0.038	3.4E-01	2.0E-01
Arsenic	10	10	4.3E+00	6.4E+01	1.7E+01	5.37	2.7E+01	1.3E+01
Barium	2	2	1.3E+02	1.6E+02	1.4E+02	15.92	2.4E+02	1.4E+02
Beryllium	10	10	7.5E-01	1.5E+00	1.1E+00	0.06	1.2E+00	1.1E+00
Boron	2	2	4.8E+00	5.8E+00	5.3E+00	0.49	8.4E+00	5.3E+00
Cadmium	10	5	2.6E-01	8.2E-01	4.0E-01	0.07	5.3E-01	3.1E-01
Calcium	2	2	4.6E+03	6.5E+03	5.5E+03	956.75	1.2E+04	5.5E+03
Chromium	10	10	1.9E+01	5.9E+01	3.0E+01	3.94	3.7E+01	2.5E+01
Cobalt	2	2	1.3E+01	1.3E+01	1.3E+01	0.11	1.4E+01	1.3E+01
Copper	10	10	1.5E+01	3.7E+01	2.4E+01	2.4	2.8E+01	2.3E+01
Iron	2	2	2.4E+04	2.9E+04	2.7E+04	2320.46	4.1E+04	2.7E+04
Kjeldahl Nitrogen	2	2	1.0E+03	1.4E+03	1.2E+03	221.28	2.6E+03	1.2E+03
Lead	10	10	1.4E+01	3.0E+01	2.1E+01	1.87	2.4E+01	1.9E+01
Magnesium	2	2	2.3E+03	2.7E+03	2.5E+03	186.65	3.7E+03	2.5E+03
Manganese	2	2	1.0E+03	1.6E+03	1.3E+03	282.74	3.1E+03	1.3E+03
Mercury	10	2	5.0E-02	2.3E-01	1.2E-01	0.01	1.4E-01	1.2E-01
Nickel	10	10	1.8E+01	4.1E+01	2.6E+01	1.96	3.0E+01	2.6E+01
Potassium	2	2	1.4E+03	2.0E+03	1.7E+03	296.9	3.6E+03	1.7E+03
Selenium	10	8	2.7E-01	9.5E+00	2.0E+00	0.90	3.7E+00	9.3E-01

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Silver	10	7	2.5E-02	2.6E-01	9.6E-02	0.02	1.4E-01	5.5E-02
Sodium	2	2	4.7E+01	5.4E+01	5.1E+01	3.46	7.3E+01	5.1E+01
Thallium	10	1	2.5E-01	5.7E-01	5.7E-01			5.7E-01
Uranium	2	2	7.3E-01	7.8E-01	7.6E-01	0.02	8.9E-01	7.6E-01
Vanadium	2	2	3.1E+01	4.3E+01	3.7E+01	5.9	7.4E+01	3.7E+01
Zinc	10	10	4.6E+01	1.0E+02	7.7E+01	6.22	8.8E+01	7.7E+01

Reach 8

Aluminum	1	1	.	.	1.6E+04	.	.	1.6E+04
Arsenic	1	1	.	.	5.5E+00	.	.	5.5E+00
Barium	1	1	.	.	1.2E+02	.	.	1.2E+02
Beryllium	1	1	.	.	1.1E+00	.	.	1.1E+00
Boron	1	1	.	.	4.4E+00	.	.	4.4E+00
Cadmium	1	1	.	.	2.5E-01	.	.	2.5E-01
Calcium	1	1	.	.	4.1E+03	.	.	4.1E+03
Chromium	1	1	.	.	2.0E+01	.	.	2.0E+01
Cobalt	1	1	.	.	3.0E+01	.	.	3.0E+01
Copper	1	1	.	.	1.8E+01	.	.	1.8E+01
Iron	1	1	.	.	2.7E+04	.	.	2.7E+04
Kjeldahl Nitrogen	1	1	.	.	1.5E+03	.	.	1.5E+03
Lead	1	1	.	.	5.2E+01	.	.	5.2E+01
Magnesium	1	1	.	.	2.4E+03	.	.	2.4E+03
Manganese	1	1	.	.	1.2E+03	.	.	1.2E+03
Mercury	1	1	.	.	3.4E-01	.	.	3.4E-01
Nickel	1	1	.	.	2.2E+01	.	.	2.2E+01
Potassium	1	1	.	.	1.6E+03	.	.	1.6E+03
Silver	1	1	.	.	7.3E-02	.	.	7.3E-02
Sodium	1	1	.	.	4.6E+01	.	.	4.6E+01
Uranium	1	1	.	.	7.0E-01	.	.	7.0E-01
Vanadium	1	1	.	.	2.8E+01	.	.	2.8E+01
Zinc	1	1	.	.	8.2E+01	.	.	8.2E+01

Reach 10

Antimony	1	1	.	.	4.1E-01	.	.	4.1E-01
Arsenic	1	1	.	.	5.2E+00	.	.	5.2E+00
Beryllium	1	1	.	.	1.3E+00	.	.	1.3E+00
Cadmium	1	1	.	.	6.4E-01	.	.	6.4E-01
Chromium	1	1	.	.	2.2E+01	.	.	2.2E+01
Copper	1	1	.	.	1.9E+01	.	.	1.9E+01

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Lead	1	1	.	.	3.3E+01	.	.	3.3E+01
Mercury	1	1	.	.	8.2E-02	.	.	8.2E-02
Nickel	1	1	.	.	2.1E+01	.	.	2.1E+01
Zinc	1	1	.	.	8.7E+01	.	.	8.7E+01
Reach 13								
Aluminum	5	5	9.6E+03	1.3E+04	1.1E+04	674.973	1.3E+04	1.0E+04
Arsenic	5	5	2.6E+00	4.0E+00	3.2E+00	0.261	3.8E+00	3.2E+00
Barium	5	5	8.3E+01	1.2E+02	9.8E+01	6.67	1.1E+02	9.6E+01
Beryllium	5	5	6.0E-01	8.3E-01	7.0E-01	0.04	7.8E-01	6.9E-01
Boron	5	5	2.1E+00	9.1E+00	7.1E+00	1.29	9.9E+00	8.1E+00
Cadmium	5	5	8.0E-02	3.8E-01	2.0E-01	0.055	3.2E-01	1.6E-01
Calcium	5	5	1.0E+03	1.2E+03	1.1E+03	47.455	1.2E+03	1.2E+03
Chromium	5	5	1.4E+01	1.8E+01	1.6E+01	0.664	1.7E+01	1.7E+01
Cobalt	5	5	1.1E+01	1.8E+01	1.5E+01	1.208	1.7E+01	1.5E+01
Copper	5	5	8.9E+00	1.4E+01	1.1E+01	0.923	1.3E+01	1.1E+01
Iron	5	5	1.5E+04	1.9E+04	1.7E+04	814.655	1.9E+04	1.6E+04
Kjeldahl Nitrogen	5	5	3.8E+02	1.1E+03	6.2E+02	113.868	8.7E+02	5.5E+02
Lead	5	5	1.4E+01	1.6E+01	1.5E+01	0.445	1.6E+01	1.6E+01
Magnesium	5	5	1.4E+03	1.7E+03	1.6E+03	56.404	1.7E+03	1.5E+03
Manganese	5	5	2.4E+02	9.1E+02	5.8E+02	122.288	8.5E+02	5.5E+02
Mercury	5	5	3.7E-02	4.4E+00	9.4E-01	0.856	2.8E+00	8.7E-02
Nickel	5	5	1.8E+01	4.0E+01	2.4E+01	4.241	3.3E+01	1.9E+01
Potassium	5	5	1.1E+03	1.4E+03	1.3E+03	53.924	1.4E+03	1.3E+03
Selenium	5	1	2.0E-01	2.4E+00	3.2E-01	.	.	3.2E-01
Silver	5	5	3.7E-02	9.4E-02	5.8E-02	0.011	8.2E-02	4.8E-02
Sodium	5	5	2.9E+01	5.5E+01	4.7E+01	4.7	5.7E+01	4.8E+01
Uranium	5	5	7.1E-01	2.7E+00	1.2E+00	0.387	2.0E+00	7.7E-01
Vanadium	5	5	1.6E+01	2.0E+01	1.8E+01	0.754	1.9E+01	1.7E+01
Zinc	5	5	4.5E+01	8.5E+01	6.2E+01	7.481	7.8E+01	5.8E+01
Reach 18								
Aluminum	3	3	8.8E+03	1.4E+04	1.2E+04	1694.82	1.7E+04	1.3E+04
Arsenic	3	3	4.9E+00	5.3E+00	5.1E+00	0.11	5.4E+00	5.0E+00
Barium	3	3	8.4E+01	1.2E+02	1.1E+02	12.33	1.4E+02	1.2E+02
Beryllium	3	3	5.6E-01	7.8E-01	7.0E-01	0.07	9.0E-01	7.5E-01
Boron	3	3	3.5E+00	5.1E+00	4.3E+00	0.46	5.7E+00	4.5E+00
Cadmium	3	3	4.6E-01	5.0E-01	4.8E-01	0.01	5.2E-01	4.9E-01
Calcium	3	3	2.0E+03	2.3E+03	2.1E+03	83.73	2.4E+03	2.0E+03

Table B7 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Chromium	3	3	1.4E+01	1.9E+01	1.7E+01	1.56	2.1E+01	1.8E+01
Cobalt	3	3	9.1E+00	1.2E+01	1.1E+01	0.78	1.3E+01	1.1E+01
Copper	3	3	1.4E+01	2.0E+01	1.7E+01	1.77	2.2E+01	1.8E+01
Iron	3	3	1.5E+04	2.1E+04	1.8E+04	1863.98	2.4E+04	2.0E+04
Kjeldahl Nitrogen	3	3	6.4E+02	1.2E+03	9.6E+02	162.29	1.4E+03	1.0E+03
Lead	3	3	2.0E+01	2.7E+01	2.4E+01	1.76	2.9E+01	2.4E+01
Magnesium	3	3	2.1E+03	2.6E+03	2.3E+03	146.14	2.8E+03	2.3E+03
Manganese	3	3	1.2E+03	2.1E+03	1.7E+03	280.09	2.5E+03	1.9E+03
Mercury	3	3	1.2E-01	1.3E-01	1.2E-01	0	1.3E-01	1.2E-01
Nickel	3	3	8.9E+00	1.4E+01	1.2E+01	1.55	1.6E+01	1.3E+01
Potassium	3	3	1.2E+03	1.4E+03	1.3E+03	76.61	1.6E+03	1.4E+03
Silver	3	3	9.6E-02	2.1E-01	1.5E-01	0.03	2.5E-01	1.5E-01
Sodium	3	3	4.6E+01	5.3E+01	4.9E+01	2.03	5.5E+01	4.8E+01
Uranium	3	3	9.4E-01	1.0E-01	9.8E-01	0.019	1.0E+00	9.8E-01
Vanadium	3	3	1.7E+01	2.4E+01	2.1E+01	2.31	2.8E+01	2.3E+01
Zinc	3	3	1.3E+02	1.4E+02	1.4E+02	3.73	1.5E+02	1.3E+02
Reach 22								
Antimony	1	1	.	.	9.6E+00	.	.	9.6E+00
Arsenic	1	1	.	.	4.4E+00	.	.	4.4E+00
Beryllium	1	1	.	.	1.5E+00	.	.	1.5E+00
Cadmium	1	1	.	.	2.4E+00	.	.	2.4E+00
Chromium	1	1	.	.	5.3E+01	.	.	5.3E+01
Copper	1	1	.	.	2.4E+01	.	.	2.4E+01
Lead	1	1	.	.	6.1E+01	.	.	6.1E+01
Mercury	1	1	.	.	7.4E+01	.	.	7.4E+01
Nickel	1	1	.	.	2.3E+01	.	.	2.3E+01
Silver	1	1	.	.	7.6E+00	.	.	7.6E+00
Thallium	1	1	.	.	6.6E-01	.	.	6.6E-01
Zinc	1	1	.	.	7.7E+01	.	.	7.7E+01

Table B8. Summary statistics for deep sediment (core weighted) inorganic concentrations (mg/kg) by subreach.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 0								
Aluminum	5	5	2.1E+03	8.3E+03	5.5E+03	1076.67	7.8E+03	6.2E+03
Antimony	5	2	2.3E-01	6.7E-01	5.4E-01	0.04	6.3E-01	5.0E-01
Arsenic	5	5	1.5E+00	6.9E+00	3.8E+00	0.92	5.8E+00	3.8E+00
Barium	5	5	2.5E+01	9.3E+01	6.5E+01	11.35	8.9E+01	7.4E+01
Beryllium	5	5	2.1E-01	6.0E-01	4.9E-01	0.07	6.5E-01	5.7E-01
Boron	5	3	1.2E+00	2.5E+00	1.8E+00	0.30	2.5E+00	1.4E+00
Cadmium	5	5	1.5E-01	3.4E-01	2.6E-01	0.03	3.3E-01	2.7E-01
Calcium	5	5	1.1E+03	4.9E+03	2.9E+03	716.3	4.5E+03	2.5E+03
Chromium	5	5	1.0E+01	2.0E+01	1.3E+01	1.93	1.7E+01	1.1E+01
Cobalt	5	5	4.2E+00	1.6E+01	1.0E+01	2.08	1.5E+01	9.2E+00
Copper	5	5	3.0E+00	1.2E+01	8.0E+00	1.65	1.2E+01	9.5E+00
Iron	5	5	6.3E+03	2.0E+04	1.3E+04	2258.87	1.8E+04	1.4E+04
Kjeldahl Nitrogen	5	5	4.2E+02	3.5E+04	7.7E+03	6887.66	2.2E+04	7.3E+02
Lead	5	5	1.0E+01	4.2E+01	2.3E+01	5.21	3.4E+01	2.2E+01
Magnesium	5	5	6.4E+02	2.5E+03	1.7E+03	347.2	2.4E+03	1.6E+03
Manganese	5	5	2.9E+02	4.3E+03	1.6E+03	703.61	3.1E+03	1.1E+03
Mercury	5	5	3.5E-02	1.4E-01	7.5E-02	0.02	1.1E-01	6.9E-02
Nickel	5	5	7.7E+00	2.2E+01	1.4E+01	2.56	1.9E+01	1.4E+01
Potassium	5	5	2.2E+02	8.6E+02	5.9E+02	109.7	8.2E+02	6.8E+02
Silver	5	4	2.0E-02	4.9E-01	1.4E-01	0.09	3.3E-01	5.2E-02
Sodium	5	4	1.5E+01	4.0E+01	2.5E+01	5.87	3.8E+01	1.7E+01
Uranium	5	5	2.1E-01	7.7E-01	4.5E-01	0.11	6.7E-01	4.9E-01
Vanadium	5	5	4.9E+00	1.7E+01	1.2E+01	2.17	1.6E+01	1.3E+01
Zinc	5	5	3.0E+01	8.4E+01	6.1E+01	10.87	8.4E+01	7.1E+01
Subreach 1								
Arsenic	2	2	5.0E+00	1.1E+01	8.0E+00	3.0141	2.7E+01	8.0E+00
Beryllium	2	2	5.9E-01	8.1E-01	7.0E-01	0.1072	1.4E+00	7.0E-01
Cadmium	2	2	4.2E-01	7.3E-01	5.7E-01	0.1547	1.5E+00	5.7E-01
Chromium	2	2	9.9E+00	2.0E+01	1.5E+01	4.8691	4.5E+01	1.5E+01
Copper	2	2	2.6E+01	2.9E+01	2.8E+01	1.3587	3.6E+01	2.8E+01
Lead	2	2	3.0E+01	3.9E+01	3.5E+01	4.5584	6.3E+01	3.5E+01
Mercury	2	2	5.9E-02	1.2E-01	9.2E-02	0.0322	3.0E-01	9.2E-02
Nickel	2	2	1.4E+01	2.3E+01	1.8E+01	4.8722	4.9E+01	1.8E+01
Selenium	2	2	4.2E-01	6.9E-01	5.6E-01	0.1376	1.4E+00	5.6E-01
Silver	2	2	2.0E-01	3.3E-01	2.7E-01	0.0624	6.6E-01	2.7E-01
Zinc	2	2	7.0E+01	1.2E+02	9.6E+01	26.2773	2.6E+02	9.6E+01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 2.01								
Aluminum	1	1	.	.	4.0E+03	.	.	4.0E+03
Arsenic	1	1	.	.	1.6E+00	.	.	1.6E+00
Barium	1	1	.	.	4.7E+01	.	.	4.7E+01
Beryllium	1	1	.	.	4.1E-01	.	.	4.1E-01
Cadmium	1	1	.	.	1.3E-01	.	.	1.3E-01
Calcium	1	1	.	.	1.2E+03	.	.	1.2E+03
Chromium	1	1	.	.	7.7E+00	.	.	7.7E+00
Cobalt	1	1	.	.	5.3E+00	.	.	5.3E+00
Copper	1	1	.	.	4.1E+00	.	.	4.1E+00
Iron	1	1	.	.	8.9E+03	.	.	8.9E+03
Kjeldahl Nitrogen	1	1	.	.	5.7E+03	.	.	5.7E+03
Lead	1	1	.	.	5.8E+00	.	.	5.8E+00
Magnesium	1	1	.	.	8.5E+02	.	.	8.5E+02
Manganese	1	1	.	.	2.0E+02	.	.	2.0E+02
Nickel	1	1	.	.	8.4E+00	.	.	8.4E+00
Potassium	1	1	.	.	4.8E+02	.	.	4.8E+02
Silver	1	1	.	.	3.8E-02	.	.	3.8E-02
Uranium	1	1	.	.	1.1E-01	.	.	1.1E-01
Vanadium	1	1	.	.	6.0E+00	.	.	6.0E+00
Zinc	1	1	.	.	3.0E+01	.	.	3.0E+01
Subreach 2.02								
Arsenic	1	1	.	.	6.1E+00	.	.	6.1E+00
Beryllium	1	1	.	.	6.5E-01	.	.	6.5E-01
Cadmium	1	1	.	.	3.6E-01	.	.	3.6E-01
Chromium	1	1	.	.	1.3E+01	.	.	1.3E+01
Copper	1	1	.	.	1.5E+01	.	.	1.5E+01
Lead	1	1	.	.	2.8E+01	.	.	2.8E+01
Mercury	1	1	.	.	9.6E-02	.	.	9.6E-02
Nickel	1	1	.	.	1.3E+01	.	.	1.3E+01
Selenium	1	1	.	.	3.2E-01	.	.	3.2E-01
Silver	1	1	.	.	3.3E-01	.	.	3.3E-01
Zinc	1	1	.	.	7.6E+01	.	.	7.6E+01
Subreach 2.03								
Aluminum	1	1	.	.	8.6E+03	.	.	8.6E+03
Arsenic	1	1	.	.	2.0E+00	.	.	2.0E+00
Barium	1	1	.	.	9.4E+01	.	.	9.4E+01
Beryllium	1	1	.	.	7.5E-01	.	.	7.5E-01
Cadmium	1	1	.	.	2.2E-01	.	.	2.2E-01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	1	1	.	.	2.0E+03	.	.	2.0E+03
Chromium	1	1	.	.	1.3E+01	.	.	1.3E+01
Cobalt	1	1	.	.	9.0E+00	.	.	9.0E+00
Copper	1	1	.	.	7.8E+00	.	.	7.8E+00
Iron	1	1	.	.	1.6E+04	.	.	1.6E+04
Kjeldahl Nitrogen	1	1	.	.	6.5E+03	.	.	6.5E+03
Lead	1	1	.	.	9.8E+00	.	.	9.8E+00
Magnesium	1	1	.	.	1.8E+03	.	.	1.8E+03
Manganese	1	1	.	.	5.8E+02	.	.	5.8E+02
Nickel	1	1	.	.	1.8E+01	.	.	1.8E+01
Potassium	1	1	.	.	8.2E+02	.	.	8.2E+02
Silver	1	1	.	.	4.1E-02	.	.	4.1E-02
Uranium	1	1	.	.	2.4E-01	.	.	2.4E-01
Vanadium	1	1	.	.	1.2E+01	.	.	1.2E+01
Zinc	1	1	.	.	5.5E+01	.	.	5.5E+01

Subreach 2.04

Aluminum	6	6	7.6E+03	1.8E+04	1.1E+04	1459.03	1.4E+04	1.0E+04
Antimony	5	1	7.0E-01	7.0E-01	7.0E-01	.	.	7.0E-01
Arsenic	7	7	3.6E+00	1.0E+01	5.7E+00	0.88	7.4E+00	4.4E+00
Barium	6	6	6.5E+01	1.9E+02	1.2E+02	18.61	1.5E+02	1.2E+02
Beryllium	7	7	4.4E-01	1.3E+00	7.6E-01	0.1	9.6E-01	7.8E-01
Boron	6	6	2.9E+00	4.9E+00	3.7E+00	0.3	4.3E+00	3.6E+00
Cadmium	7	7	1.9E-01	4.8E-01	3.3E-01	0.05	4.2E-01	3.4E-01
Calcium	6	6	2.2E+03	9.1E+03	4.6E+03	1082.15	6.8E+03	4.0E+03
Chromium	7	7	1.1E+01	2.1E+01	1.5E+01	1.13	1.7E+01	1.5E+01
Cobalt	6	6	8.8E+00	2.1E+01	1.4E+01	1.85	1.8E+01	1.4E+01
Copper	7	7	5.9E+00	1.2E+01	9.9E+00	0.86	1.2E+01	1.0E+01
Iron	6	6	1.2E+04	2.6E+04	1.8E+04	2016.73	2.2E+04	1.8E+04
Kjeldahl Nitrogen	6	6	2.2E+02	1.3E+03	7.1E+02	167.3	1.0E+03	6.9E+02
Lead	7	7	1.7E+01	6.5E+01	3.2E+01	5.93	4.3E+01	2.8E+01
Magnesium	6	6	1.7E+03	4.1E+03	2.5E+03	366.02	3.2E+03	2.3E+03
Manganese	6	6	8.0E+02	4.5E+03	2.0E+03	578.86	3.2E+03	1.6E+03
Mercury	7	7	4.5E-02	2.5E-01	1.2E-01	0.03	1.8E-01	7.6E-02
Nickel	7	7	1.1E+01	2.5E+01	1.6E+01	1.7	1.9E+01	1.5E+01
Potassium	6	6	9.5E+02	2.0E+03	1.1E+03	166	1.5E+03	9.7E+02
Selenium	5	1	3.3E-01	2.4E+00	3.3E-01	.	.	3.3E+00
Silver	7	6	1.9E-02	5.5E-01	1.6E-01	0.07	2.9E-01	8.3E-02
Sodium	6	6	2.6E+01	4.4E+01	3.3E+01	2.59	3.9E+01	3.4E+01
Uranium	6	6	3.5E-01	1.0E+00	6.5E-01	0.11749	8.9E-01	6.0E-01
Vanadium	6	6	1.2E+01	2.1E+01	1.6E+01	1.35705	1.9E+01	1.6E+01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Zinc	7	7	4.7E+01	8.2E+01	6.1E+01	4.45556	7.0E+01	5.8E+01
Subreach 3.01								
Aluminum	2	2	7.0E+03	1.9E+04	1.3E+04	6113.12	5.2E+04	1.3E+04
Arsenic	2	2	1.3E+00	4.8E+00	3.1E+00	1.77	1.4E+01	3.1E+00
Barium	2	2	6.0E+01	1.3E+02	9.5E+01	35.3	3.2E+02	9.5E+01
Beryllium	2	2	5.3E-01	1.0E+00	7.6E-01	0.24	2.3E+00	7.6E-01
Boron	2	1	1.1E+00	6.0E+00	6.0E+00	.	.	6.0E+00
Cadmium	2	2	9.2E-02	3.0E+00	1.5E+00	1.45	1.1E+01	1.5E+00
Calcium	2	2	5.0E+02	2.7E+03	1.6E+03	1095.9	8.5E+03	1.6E+03
Chromium	2	2	1.0E+01	3.3E+01	2.2E+01	11.45	9.4E+01	2.2E+01
Cobalt	2	2	9.7E+00	2.1E+01	1.5E+01	5.73	5.2E+01	1.5E+01
Copper	2	2	5.4E+00	5.5E+01	3.0E+01	24.75	1.9E+02	3.0E+01
Iron	2	2	1.1E+04	2.2E+04	1.7E+04	5790.01	5.3E+04	1.7E+04
Kjeldahl Nitrogen	2	2	7.7E+01	2.1E+03	1.1E+03	1020.64	7.5E+03	1.1E+03
Lead	2	2	8.5E+00	2.2E+01	1.5E+01	6.86	5.9E+01	1.5E+01
Magnesium	2	2	9.5E+02	2.3E+03	1.6E+03	655.06	5.7E+03	1.6E+03
Manganese	2	2	3.2E+02	5.8E+02	4.5E+02	130.86	1.3E+03	4.5E+02
Mercury	2	2	3.9E-02	1.5E+00	7.7E-01	0.73	5.4E+00	7.7E-01
Nickel	2	2	1.0E+01	3.5E+01	2.3E+01	12.19	9.9E+01	2.3E+01
Potassium	2	2	6.1E+02	2.2E+03	1.4E+03	812.2	6.5E+03	1.4E+03
Silver	2	2	3.2E-02	9.5E-01	4.9E-01	0.46	3.4E+00	4.9E-01
Sodium	2	2	2.3E+01	6.4E+01	4.3E+01	20.56	1.7E+02	4.3E+01
Uranium	2	2	6.1E-01	4.3E+00	2.5E+00	1.86	1.4E+01	2.5E+00
Vanadium	2	2	1.1E+01	2.6E+01	1.8E+01	7.49	6.5E+01	1.8E+01
Zinc	2	2	2.8E+01	1.2E+02	7.4E+01	46.09	3.7E+02	7.4E+01
Subreach 3.02								
Aluminum	8	8	7.9E+03	1.8E+04	1.2E+04	1346.57	1.5E+04	1.0E+04
Antimony	8	1	3.0E-01	5.9E-01	3.0E-01	.	.	3.0E-01
Arsenic	10	10	1.4E+00	2.5E+01	5.4E+00	2.18	9.4E+00	3.2E+00
Barium	8	8	5.9E+01	1.4E+02	1.0E+02	9.73	1.2E+02	1.1E+02
Beryllium	10	10	3.0E-01	1.1E+00	6.4E-01	0.08	7.8E-01	6.5E-01
Boron	8	6	9.5E-01	9.4E+00	4.7E+00	0.9	6.4E+00	4.2E+00
Cadmium	10	10	2.3E-01	3.1E+00	1.1E+00	0.34	1.7E+00	5.5E-01
Calcium	8	8	9.3E+02	1.4E+04	4.0E+03	1550.96	6.9E+03	2.7E+03
Chromium	10	10	9.3E+00	8.4E+01	3.2E+01	8.12	4.7E+01	1.8E+01
Cobalt	8	8	1.1E+01	2.5E+01	1.7E+01	1.79	2.0E+01	1.8E+01
Copper	10	10	9.3E+00	1.7E+02	3.6E+01	15.86	6.5E+01	1.7E+01
Iron	8	8	1.5E+04	3.2E+04	1.9E+04	1967.02	2.3E+04	1.8E+04
Kjeldahl Nitrogen	8	8	1.3E+02	1.3E+03	5.7E+02	150.95	8.6E+02	4.9E+02

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Lead	10	10	7.4E+00	5.8E+01	2.2E+01	4.88	3.1E+01	1.6E+01
Magnesium	8	8	9.5E+02	2.7E+03	1.7E+03	200.41	2.1E+03	1.8E+03
Manganese	8	8	2.7E+02	1.1E+03	5.8E+02	99.4	7.7E+02	5.1E+02
Mercury	10	10	2.5E-02	2.0E+01	5.5E+00	1.94	9.1E+00	4.2E+00
Nickel	10	10	7.8E+00	3.3E+02	6.7E+01	30.26	1.2E+02	2.9E+01
Potassium	8	8	7.0E+02	2.2E+03	1.2E+03	177.34	1.6E+03	1.1E+03
Selenium	9	2	2.5E-01	1.4E+00	2.8E-01	0.02	3.2E-01	2.8E-01
Silver	10	10	2.2E-02	2.0E+00	5.8E-01	0.21	9.6E-01	2.1E-01
Sodium	8	8	2.9E+01	6.5E+01	4.8E+01	3.66	5.5E+01	5.0E+01
Uranium	8	8	1.2E+00	1.1E+02	1.9E+01	13.08	4.4E+01	5.5E+00
Vanadium	8	8	1.3E+01	2.7E+01	1.8E+01	1.58	2.1E+01	1.8E+01
Zinc	10	10	4.8E+01	2.1E+02	8.8E+01	17.07	1.2E+02	6.5E+01

Subreach 3.03

Aluminum	9	9	7.8E+03	1.5E+04	1.3E+04	837.67	1.4E+04	1.3E+04
Arsenic	9	9	4.1E+00	7.3E+00	5.6E+00	0.4	6.3E+00	5.3E+00
Barium	9	9	6.6E+01	1.7E+02	1.0E+02	10.36	1.2E+02	1.0E+02
Beryllium	9	9	5.4E-01	9.5E-01	7.7E-01	0.05	8.6E-01	7.5E-01
Boron	9	5	9.0E-01	1.2E+01	4.2E+00	1.05	6.2E+00	2.9E+00
Cadmium	9	9	4.7E-01	5.3E+00	2.3E+00	0.54	3.3E+00	2.4E+00
Calcium	9	9	1.1E+03	4.2E+03	2.3E+03	325.12	2.9E+03	1.8E+03
Chromium	9	9	1.3E+01	1.1E+02	5.4E+01	10.52	7.4E+01	4.4E+01
Cobalt	9	9	1.0E+01	2.4E+01	1.7E+01	1.41	1.9E+01	1.6E+01
Copper	9	9	7.5E+00	8.2E+01	3.9E+01	7.51	5.3E+01	3.6E+01
Iron	9	9	1.5E+04	2.5E+04	2.1E+04	1378.17	2.4E+04	2.1E+04
Kjeldahl Nitrogen	9	9	9.1E+01	1.3E+03	7.9E+02	109.56	9.9E+02	8.3E+02
Lead	9	9	1.5E+01	3.8E+01	2.5E+01	2.22	3.0E+01	2.6E+01
Magnesium	9	9	1.0E+03	2.2E+03	1.7E+03	137.57	1.9E+03	1.7E+03
Manganese	9	9	4.2E+02	8.5E+02	6.4E+02	57.43	7.4E+02	6.9E+02
Mercury	9	9	1.5E-01	1.1E+02	2.5E+01	12.31	4.8E+01	6.7E+00
Nickel	9	9	1.3E+01	1.8E+02	6.3E+01	16.25	9.3E+01	5.9E+01
Potassium	9	9	7.7E+02	1.7E+03	1.3E+03	98.64	1.5E+03	1.3E+03
Silver	9	9	7.0E-02	3.8E+00	1.5E+00	0.44	2.3E+00	1.5E+00
Sodium	9	9	2.5E+01	7.4E+01	4.6E+01	5.3	5.6E+01	4.3E+01
Uranium	9	9	7.8E-01	3.6E+01	1.4E+01	3.61	2.1E+01	1.1E+01
Vanadium	9	9	1.3E+01	2.7E+01	1.9E+01	1.61	2.2E+01	1.8E+01
Zinc	9	9	4.2E+01	1.9E+02	1.2E+02	15.38	1.4E+02	1.2E+02

Subreach 3.04

Aluminum	6	6	6.5E+03	2.0E+04	1.4E+04	2024.74	1.8E+04	1.4E+04
Antimony	7	1	2.8E-01	5.2E-01	3.1E-01	.	.	3.1E-01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Arsenic	7	7	3.2E+00	1.4E+02	4.5E+01	19.48	8.3E+01	2.4E+01
Barium	6	6	7.2E+01	2.9E+02	1.6E+02	32.05	2.3E+02	1.5E+02
Beryllium	7	7	6.4E-01	1.7E+00	1.1E+00	0.15	1.4E+00	1.1E+00
Boron	6	6	7.9E+00	4.4E+01	1.8E+01	5.38	2.9E+01	1.4E+01
Cadmium	7	7	1.3E-01	5.6E+00	1.8E+00	0.68	3.1E+00	1.4E+00
Calcium	6	6	1.2E+03	6.4E+03	3.2E+03	770.16	4.7E+03	2.8E+03
Chromium	7	7	1.3E+01	4.7E+01	3.2E+01	4.19	4.0E+01	3.2E+01
Cobalt	6	6	9.5E+00	1.8E+01	1.4E+01	1.26	1.7E+01	1.4E+01
Copper	7	7	5.7E+00	6.8E+01	4.0E+01	8.29	5.6E+01	3.9E+01
Iron	6	6	1.5E+04	3.6E+04	2.4E+04	3010.32	3.0E+04	2.4E+04
Kjeldahl Nitrogen	6	6	1.8E+02	5.7E+02	3.9E+02	62.73	5.1E+02	4.1E+02
Lead	7	7	1.2E+01	2.7E+01	2.2E+01	1.92	2.5E+01	2.1E+01
Magnesium	6	6	9.9E+02	2.1E+03	1.6E+03	170.31	2.0E+03	1.7E+03
Manganese	6	6	5.9E+02	8.0E+02	6.8E+02	31.69	7.4E+02	6.6E+02
Mercury	7	7	2.7E-01	4.0E+01	1.3E+01	5.6	2.4E+01	7.1E+00
Nickel	7	7	1.0E+01	5.3E+01	3.5E+01	6.12	4.7E+01	3.4E+01
Potassium	6	6	6.6E+02	2.4E+03	1.5E+03	253.52	2.0E+03	1.5E+03
Selenium	7	6	1.7E-01	3.3E+00	1.1E+00	0.4	1.9E+00	7.9E-01
Silver	7	7	3.8E-02	1.4E+00	8.5E-01	0.17	1.2E+00	8.9E-01
Sodium	6	6	3.9E+01	3.0E+02	1.4E+02	40.51	2.2E+02	1.2E+02
Thallium	7	5	1.8E-01	1.6E+00	5.4E-01	0.2	9.2E-01	3.1E-01
Uranium	6	6	4.6E-01	1.6E+01	6.9E+00	2.27	1.2E+01	5.5E+00
Vanadium	6	6	1.3E+01	5.9E+01	3.1E+01	6.85	4.5E+01	2.9E+01
Zinc	7	7	3.8E+01	1.2E+02	8.4E+01	10.36	1.0E+02	9.3E+01

Subreach 4.01

Aluminum	9	9	6.9E+03	1.2E+04	9.7E+03	654.383	1.1E+04	9.4E+03
Arsenic	10	10	2.2E+00	1.0E+01	5.1E+00	0.863	6.6E+00	4.0E+00
Barium	9	9	6.2E+01	1.2E+02	8.3E+01	5.798	9.4E+01	7.8E+01
Beryllium	10	10	4.4E-01	1.0E+00	6.8E-01	0.052	7.8E-01	6.5E-01
Boron	9	9	2.7E+00	7.5E+00	4.8E+00	0.455	5.6E+00	4.8E+00
Cadmium	10	10	1.7E-01	1.2E+00	3.7E-01	0.1	5.6E-01	2.4E-01
Calcium	9	9	1.1E+03	3.2E+03	2.2E+03	219.364	2.6E+03	2.3E+03
Chromium	10	10	1.2E+01	2.0E+01	1.7E+01	0.872	1.8E+01	1.7E+01
Cobalt	9	9	7.0E+00	1.2E+01	9.4E+00	0.516	1.0E+01	9.6E+00
Copper	10	10	6.2E+00	2.2E+01	1.1E+01	1.812	1.4E+01	8.9E+00
Iron	9	9	1.2E+04	2.0E+04	1.5E+04	881.67	1.7E+04	1.4E+04
Kjeldahl Nitrogen	9	7	9.9E+00	6.3E+02	2.3E+02	65.79	3.5E+02	2.1E+02
Lead	10	10	1.2E+01	3.2E+01	1.8E+01	1.828	2.2E+01	1.7E+01
Magnesium	9	9	1.1E+03	2.1E+03	1.7E+03	112.775	1.9E+03	1.8E+03
Manganese	9	9	2.9E+02	1.4E+03	8.3E+02	120.835	1.1E+03	8.4E+02

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Mercury	10	10	8.5E-02	1.2E+01	3.1E+00	1.269	5.5E+00	1.0E+00
Nickel	10	10	1.2E+01	2.2E+01	1.7E+01	1.284	1.9E+01	1.8E+01
Potassium	9	9	8.1E+02	1.6E+03	1.1E+03	76.362	1.3E+03	1.1E+03
Selenium	10	4	1.6E-01	1.2E+00	3.1E-01	0.109	5.1E-01	2.0E-01
Silver	10	10	5.0E-02	1.8E+00	2.9E-01	0.16938	6.0E-01	9.3E-02
Sodium	9	9	3.1E+01	4.7E+01	3.8E+01	1.86938	4.1E+01	3.8E+01
Uranium	9	9	3.9E-01	2.2E+00	8.4E-01	0.20304	1.2E+00	6.9E-01
Vanadium	9	9	1.2E+01	2.0E+01	1.5E+01	0.85068	1.7E+01	1.5E+01
Zinc	10	10	4.2E+01	6.8E+01	5.8E+01	2.81486	6.3E+01	5.9E+01

Subreach 4.02

Aluminum	6	6	4.7E+03	1.1E+04	7.7E+03	997.87	9.7E+03	7.7E+03
Arsenic	6	6	2.6E+00	1.1E+01	5.1E+00	1.32	7.8E+00	4.2E+00
Barium	6	6	4.5E+01	1.1E+02	7.4E+01	9.17	9.3E+01	7.5E+01
Beryllium	6	6	3.4E-01	8.0E-01	5.7E-01	0.07	7.2E-01	5.9E-01
Boron	6	6	1.4E+00	4.8E+00	2.4E+00	0.58	3.5E+00	1.6E+00
Cadmium	6	6	1.4E-01	5.2E-01	2.3E-01	0.06	3.5E-01	1.8E-01
Calcium	6	6	9.6E+02	4.1E+03	2.0E+03	487.08	3.0E+03	1.6E+03
Chromium	6	6	1.1E+01	2.3E+01	1.6E+01	1.67	1.9E+01	1.5E+01
Cobalt	6	6	7.8E+00	1.4E+01	9.7E+00	.088	1.2E+01	9.4E+00
Copper	6	6	4.4E+00	1.9E+01	9.0E+00	2.08	1.3E+01	7.3E+00
Iron	6	6	9.6E+03	1.8E+04	1.4E+04	1300.85	1.6E+04	1.3E+04
Kjeldahl Nitrogen	6	6	3.5E+02	1.3E+03	6.2E+02	151.25	9.2E+02	4.4E+02
Lead	6	6	9.7E+00	3.0E+01	2.1E+01	3.06	2.7E+01	2.1E+01
Magnesium	6	6	8.9E+02	2.5E+03	1.4E+03	242.6	1.9E+03	1.2E+03
Manganese	6	6	2.7E+02	1.2E+03	5.5E+02	140.43	8.3E+02	4.0E+02
Mercury	6	6	1.6E-01	3.6E+00	1.0E+00	0.54	2.1E+00	4.2E-01
Nickel	6	6	9.6E+00	2.7E+01	1.5E+01	2.58	2.0E+01	1.3E+01
Potassium	6	6	5.7E+02	1.1E+03	7.6E+02	81.38	9.3E+02	7.4E+02
Silver	6	6	3.0E-02	2.7E-01	9.1E-02	0.04	1.7E-01	4.6E-02
Sodium	6	6	1.9E+01	3.6E+01	2.5E+01	2.5	3.0E+01	2.3E+01
Uranium	6	6	3.1E-01	1.6E+00	7.0E-01	0.2	1.1E+00	5.2E-01
Vanadium	6	6	8.2E+00	1.8E+01	1.4E+01	1.6	1.8E+01	1.4E+01
Zinc	6	6	3.5E+01	7.8E+01	5.3E+01	6.9	6.7E+01	4.6E+01

Subreach 4.03

Aluminum	7	7	6.5E+03	1.5E+04	1.0E+04	1099.49	1.3E+04	1.1E+04
Antimony	7	1	3.2E-01	4.4E-01	4.4E-01	.	.	4.4E-01
Arsenic	7	7	4.5E+00	8.7E+00	6.8E+00	0.65	8.0E+00	7.8E+00
Barium	7	7	5.0E+01	1.3E+02	8.4E+01	11.09	1.1E+02	7.3E+01
Beryllium	7	7	5.2E-01	1.1E+00	7.3E-01	0.07	8.6E-01	7.1E-01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Boron	7	7	2.3E+00	4.2E+00	3.2E+00	0.28	3.7E+00	2.9E+00
Cadmium	7	7	1.8E-01	6.0E-01	4.0E-01	0.06	5.1E-01	3.8E-01
Calcium	7	7	7.1E+02	4.4E+03	2.5E+03	528.84	3.5E+03	1.9E+03
Chromium	7	7	1.9E+01	3.7E+01	2.8E+01	2.36	3.3E+01	2.8E+01
Cobalt	7	7	8.7E+00	2.5E+01	1.5E+01	2.05	1.9E+01	1.4E+01
Copper	7	7	9.5E+00	3.6E+01	2.1E+01	3.25	2.8E+01	2.0E+01
Iron	7	7	1.4E+04	2.6E+04	1.9E+04	1354.67	2.2E+04	1.9E+04
Kjeldahl Nitrogen	7	7	3.4E+02	1.5E+03	7.4E+02	161.68	1.1E+03	5.1E+02
Lead	7	7	1.8E+01	5.0E+01	3.1E+01	4.01	3.8E+01	2.7E+01
Magnesium	7	7	5.6E+02	2.7E+03	1.7E+03	296.89	2.3E+03	1.4E+03
Manganese	7	7	5.4E+02	2.0E+03	1.1E+03	214.8	1.5E+03	8.3E+02
Mercury	7	7	5.9E-01	4.1E+00	2.4E+00	0.46	3.3E+00	2.0E+00
Nickel	7	7	1.2E+01	4.0E+01	2.5E+01	3.46	3.2E+01	2.6E+01
Potassium	7	7	4.5E+02	1.4E+03	9.6E+02	121.42	1.2E+03	1.1E+03
Selenium	7	1	3.4E-01	1.4E+00	3.5E-01	.	.	3.5E-01
Silver	7	7	4.4E-02	4.1E-01	2.3E-01	0.05	3.3E-01	1.7E-01
Sodium	7	7	2.0E+01	4.7E+01	3.6E+01	3.73	4.3E+01	3.6E+01
Uranium	7	7	7.7E-01	2.2E+00	1.5E+00	0.16	1.9E+00	1.5E+00
Vanadium	7	7	1.4E+01	2.7E+01	2.1E+01	1.73	2.4E+01	1.9E+01
Zinc	7	7	3.9E+01	1.1E+02	7.4E+01	9.22	9.2E+01	7.4E+01

Subreach 4.04

Aluminum	11	11	7.4E+03	2.0E+04	1.5E+04	1228.59	1.7E+04	1.5E+04
Antimony	12	1	2.7E-01	7.8E-01	4.1E-01	.	.	4.1E-01
Arsenic	12	12	6.0E+00	1.2E+01	9.4E+00	0.54	1.0E+01	9.7E+00
Barium	11	11	7.6E+01	1.5E+02	1.2E+02	8.22	1.4E+02	1.3E+02
Beryllium	12	12	8.2E-01	1.4E+00	1.1E+00	0.05	1.2E+00	1.2E+00
Boron	11	11	3.7E+00	7.3E+00	5.5E+00	0.35	6.1E+00	5.5E+00
Cadmium	12	12	4.5E-01	1.4E+00	5.8E-01	0.08	7.3E-01	4.9E-01
Calcium	11	11	1.8E+03	3.3E+03	2.8E+03	120.63	3.0E+03	2.8E+03
Chromium	12	12	1.1E+01	3.3E+01	2.2E+01	2.06	2.6E+01	2.2E+01
Cobalt	11	11	1.2E+01	2.6E+01	1.9E+01	1.54	2.2E+01	1.8E+01
Copper	12	12	1.9E+01	5.3E+01	3.7E+01	3.17	4.3E+01	3.9E+01
Iron	11	11	1.3E+04	3.1E+04	2.4E+04	1855.06	2.7E+04	2.6E+04
Kjeldahl Nitrogen	11	11	7.8E+02	2.1E+03	1.7E+03	130.56	1.9E+03	1.8E+03
Lead	12	12	1.5E+01	4.6E+01	3.0E+01	2.32	3.4E+01	3.0E+01
Magnesium	11	11	1.3E+03	2.7E+03	2.0E+03	134.63	2.3E+03	2.0E+03
Manganese	11	11	6.2E+02	2.0E+03	1.4E+03	141.42	1.7E+03	1.3E+03
Mercury	12	12	1.0E+00	5.6E+00	2.5E+00	0.33	3.1E+00	2.2E+00
Nickel	12	12	2.1E+01	4.0E+01	3.2E+01	1.95	3.6E+01	3.3E+01
Potassium	11	11	4.8E+02	1.7E+03	1.2E+03	118.79	1.4E+03	1.2E+03

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Selenium	12	8	1.8E-01	1.2E+00	6.3E-01	0.12	8.4E-01	4.5E-01
Silver	11	11	2.0E-01	1.0E+00	3.9E-01	0.07	5.1E-01	3.5E-01
Sodium	11	11	4.0E+01	7.6E+01	6.2E+01	3.58	6.8E+01	6.0E+01
Thallium	12	7	1.1E-01	4.1E-01	1.3E-01	0.01	1.4E-01	1.2E-01
Uranium	11	11	9.5E-01	2.2E+00	1.5E+00	0.12	1.7E+00	1.3E+00
Vanadium	11	11	1.6E+01	3.3E+01	2.6E+01	1.71	2.9E+01	2.6E+01
Zinc	12	12	9.2E+01	1.6E+02	1.3E+02	6.85	1.4E+02	1.4E+02

Subreach 5

Antimony	3	1	4.0E-01	4.8E-01	4.6E-01	.	.	4.6E-01
Arsenic	4	4	7.5E+00	9.2E+00	8.6E+00	0.38009	9.4E+00	8.8E+00
Beryllium	4	4	1.0E+00	1.5E+00	1.2E+00	0.09752	1.5E+00	1.2E+00
Cadmium	4	4	1.1E+00	5.2E+00	2.3E+00	0.98322	4.6E+00	1.4E+00
Chromium	4	4	2.8E+01	3.5E+01	3.2E+01	1.79194	3.6E+01	3.3E+01
Copper	4	4	2.9E+01	3.9E+01	3.5E+01	2.195	4.0E+01	3.6E+01
Lead	4	4	3.9E+01	4.6E+01	4.4E+01	1.65588	4.7E+01	4.5E+01
Mercury	4	4	9.9E-01	3.1E+00	1.9E+00	0.46841	3.0E+00	1.7E+00
Nickel	4	4	1.9E+01	3.0E+01	2.3E+01	2.25762	2.9E+01	2.2E+01
Silver	4	4	1.6E-01	7.4E-01	3.6E-01	0.13372	6.7E-01	2.6E-01
Zinc	4	4	2.3E+02	2.7E+02	2.5E+02	8.03156	2.7E+02	2.5E+02

Subreach 7.01

Aluminum	1	1	.	.	1.5E+04	.	.	1.5E+04
Arsenic	1	1	.	.	6.4E+01	.	.	6.4E+01
Barium	1	1	.	.	1.3E+02	.	.	1.3E+02
Beryllium	1	1	.	.	1.0E+00	.	.	1.0E+00
Boron	1	1	.	.	4.8E+00	.	.	4.8E+00
Cadmium	1	1	.	.	3.1E-01	.	.	3.1E-01
Calcium	1	1	.	.	6.5E+03	.	.	6.5E+03
Chromium	1	1	.	.	1.9E+01	.	.	1.9E+01
Cobalt	1	1	.	.	1.3E+01	.	.	1.3E+01
Copper	1	1	.	.	1.7E+01	.	.	1.7E+01
Iron	1	1	.	.	2.4E+04	.	.	2.4E+04
Kjeldahl Nitrogen	1	1	.	.	1.4E+03	.	.	1.4E+03
Lead	1	1	.	.	2.1E+01	.	.	2.1E+01
Magnesium	1	1	.	.	2.3E+03	.	.	2.3E+03
Manganese	1	1	.	.	1.0E+03	.	.	1.0E+03
Mercury	1	1	.	.	1.7E-01	.	.	1.7E-01
Nickel	1	1	.	.	2.1E+01	.	.	2.1E+01
Potassium	1	1	.	.	1.4E+03	.	.	1.4E+03
Selenium	1	1	.	.	9.5E+00	.	.	9.5E+00

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Silver	1	1	.	.	4.6E-02	.	.	4.6E-02
Sodium	1	1	.	.	4.7E+01	.	.	4.7E+01
Uranium	1	1	.	.	7.8E-01	.	.	7.8E-01
Vanadium	1	1	.	.	4.3E+01	.	.	4.3E+01
Zinc	1	1	.	.	7.4E+01	.	.	7.4E+01

Subreach 7.02

Aluminum	1	1	.	.	1.6E+04	.	.	.
Antimony	9	4	2.0E-01	6.5E-01	2.7E-01	0.03812	3.4E-01	2.0E-01
Arsenic	9	9	4.3E+00	1.8E+01	1.1E+01	1.3298	1.4E+01	1.2E+01
Barium	1	1	.	.	1.6E+02	.	.	1.6E+02
Beryllium	9	9	7.5E-01	1.5E+00	1.1E+00	0.06768	1.2E+00	1.1E+00
Boron	1	1	.	.	5.8E+00	.	.	5.8E+00
Cadmium	9	4	2.6E-01	8.2E-01	4.0E-01	0.08163	5.6E-01	2.6E-01
Calcium	1	1	.	.	4.6E+03	.	.	4.6E+03
Chromium	9	9	2.0E+01	5.9E+01	3.1E+01	4.19867	3.9E+01	2.5E+01
Cobalt	1	1	.	.	1.3E+01	.	.	1.3E+01
Copper	9	9	1.5E+01	3.7E+01	2.4E+01	2.55048	2.9E+01	2.3E+01
Iron	1	1	.	.	2.9E+04	.	.	2.9E+04
Kjeldahl Nitrogen	1	1	.	.	1.0E+03	.	.	1.0E+03
Lead	9	9	1.4E+01	3.0E+01	2.1E+01	2.08572	2.5E+01	1.9E+01
Magnesium	1	1	.	.	2.7E+03	.	.	2.7E+03
Manganese	1	1	.	.	1.6E+03	.	.	1.6E+03
Mercury	9	1	5.0E-02	2.3E-01	1.2E-01	.	.	1.2E-01
Nickel	9	9	1.8E+01	4.1E+01	2.7E+01	2.09712	3.1E+01	2.6E+01
Potassium	1	1	.	.	2.0E+03	.	.	2.0E+03
Selenium	9	7	2.7E-01	3.5E+00	1.2E+00	0.34776	1.9E+00	8.2E-01
Silver	9	6	2.5E-02	2.6E-01	1.0E-01	0.02646	1.5E-01	6.0E-02
Sodium	1	1	.	.	5.4E+01	.	.	5.4E+01
Thallium	9	1	2.5E-01	5.7E-01	5.7E-01	.	.	5.7E-01
Uranium	1	1	.	.	7.3E-01	.	.	7.3E-01
Vanadium	1	1	.	.	3.1E+01	.	.	3.1E+01
Zinc	9	9	4.6E+01	1.0E+02	7.7E+01	6.94781	9.0E+01	8.1E+01

Subreach 8

Aluminum	1	1	.	.	1.6E+04	.	.	1.6E+04
Arsenic	1	1	.	.	5.5E+00	.	.	5.5E+00
Barium	1	1	.	.	1.2E+02	.	.	1.2E+02
Beryllium	1	1	.	.	1.1E+00	.	.	1.1E+00
Boron	1	1	.	.	4.4E+00	.	.	4.4E+00
Cadmium	1	1	.	.	2.5E-01	.	.	2.5E-01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Calcium	1	1	.	.	4.1E+03	.	.	4.1E+03
Chromium	1	1	.	.	2.0E+01	.	.	2.0E+01
Cobalt	1	1	.	.	3.0E+01	.	.	3.0E+01
Copper	1	1	.	.	1.8E+01	.	.	1.8E+01
Iron	1	1	.	.	2.7E+04	.	.	2.7E+04
Kjeldahl Nitrogen	1	1	.	.	1.5E+03	.	.	1.5E+03
Lead	1	1	.	.	5.2E+01	.	.	5.2E+01
Magnesium	1	1	.	.	2.4E+03	.	.	2.4E+03
Manganese	1	1	.	.	1.2E+03	.	.	1.2E+03
Mercury	1	1	.	.	3.4E-01	.	.	3.4E-01
Nickel	1	1	.	.	2.2E+01	.	.	2.2E+01
Potassium	1	1	.	.	1.6E+03	.	.	1.6E+03
Silver	1	1	.	.	7.3E-02	.	.	7.3E-02
Sodium	1	1	.	.	4.6E+01	.	.	4.6E+01
Uranium	1	1	.	.	7.0E-01	.	.	7.0E-01
Vanadium	1	1	.	.	2.8E+01	.	.	2.8E+01
Zinc	1	1	.	.	8.2E+01	.	.	8.2E+01
Subreach 10								
Antimony	1	1	.	.	4.1E-01	.	.	4.1E-01
Arsenic	1	1	.	.	5.2E+00	.	.	5.2E+00
Beryllium	1	1	.	.	1.3E+00	.	.	1.3E+00
Cadmium	1	1	.	.	6.4E-01	.	.	6.4E-01
Chromium	1	1	.	.	2.2E+01	.	.	2.2E+01
Copper	1	1	.	.	1.9E+01	.	.	1.9E+01
Lead	1	1	.	.	3.3E+01	.	.	3.3E+01
Mercury	1	1	.	.	8.2E-02	.	.	8.2E-02
Nickel	1	1	.	.	2.1E+01	.	.	2.1E+01
Zinc	1	1	.	.	8.7E+01	.	.	8.7E+01
Subreach 13								
Aluminum	5	5	9.6E+03	1.3E+04	1.1E+04	674.973	1.3E+04	1.0E+04
Arsenic	5	5	2.6E+00	4.0E+00	3.2E+00	0.261	3.8E+00	3.2E+00
Barium	5	5	8.3E+01	1.2E+02	9.8E+01	6.67	1.1E+02	9.6E+01
Beryllium	5	5	6.0E-01	8.3E-01	7.0E-01	0.04	7.8E-01	6.9E-01
Boron	5	5	2.1E+00	9.1E+00	7.1E+00	1.29	9.9E+00	8.1E+00
Cadmium	5	5	8.0E-02	3.8E-01	2.0E-01	0.055	3.2E-01	1.6E-01
Calcium	5	5	1.0E+03	1.2E+03	1.1E+03	47.455	1.2E+03	1.2E+03
Chromium	5	5	1.4E+01	1.8E+01	1.6E+01	0.664	1.7E+01	1.7E+01
Cobalt	5	5	1.1E+01	1.8E+01	1.5E+01	1.208	1.7E+01	1.5E+01
Copper	5	5	8.9E+00	1.4E+01	1.1E+01	0.923	1.3E+01	1.1E+01

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Iron	5	5	1.5E+04	1.9E+04	1.7E+04	814.655	1.9E+04	1.6E+04
Kjeldahl Nitrogen	5	5	3.8E+02	1.1E+03	6.2E+02	113.868	8.7E+02	5.5E+02
Lead	5	5	1.4E+01	1.6E+01	1.5E+01	0.445	1.6E+01	1.6E+01
Magnesium	5	5	1.4E+03	1.7E+03	1.6E+03	56.404	1.7E+03	1.5E+03
Manganese	5	5	2.4E+02	9.1E+02	5.8E+02	122.288	8.5E+02	5.5E+02
Mercury	5	5	3.7E-02	4.4E+00	9.4E-01	0.856	2.8E+00	8.7E-02
Nickel	5	5	1.8E+01	4.0E+01	2.4E+01	4.241	3.3E+01	1.9E+01
Potassium	5	5	1.1E+03	1.4E+03	1.3E+03	53.924	1.4E+03	1.3E+03
Selenium	5	1	2.0E-01	2.4E+00	3.2E-01	.	.	3.2E-01
Silver	5	5	3.7E-02	9.4E-02	5.8E-02	0.011	8.2E-02	4.8E-02
Sodium	5	5	2.9E+01	5.5E+01	4.7E+01	4.7	5.7E+01	4.8E+01
Uranium	5	5	7.1E-01	2.7E+00	1.2E+00	0.38671	2.0E+00	7.7E-01
Vanadium	5	5	1.6E+01	2.0E+01	1.8E+01	0.75416	1.9E+01	1.7E+01
Zinc	5	5	4.5E+01	8.5E+01	6.2E+01	7.48114	7.8E+01	5.8E+01
Subreach 18								
Aluminum	3	3	8.8E+03	1.4E+04	1.2E+04	1694.82	1.7E+04	1.3E+04
Arsenic	3	3	4.9E+00	5.3E+00	5.1E+00	0.11	5.4E+00	5.0E+00
Barium	3	3	8.4E+01	1.2E+02	1.1E+02	12.33	1.4E+02	1.2E+02
Beryllium	3	3	5.6E-01	7.8E-01	7.0E-01	0.07	9.0E-01	7.5E-01
Boron	3	3	3.5E+00	5.1E+00	4.3E+00	0.46	5.7E+00	4.5E+00
Cadmium	3	3	4.6E-01	5.0E-01	4.8E-01	0.01	5.2E-01	4.9E-01
Calcium	3	3	2.0E+03	2.3E+03	2.1E+03	83.73	2.4E+03	2.0E+03
Chromium	3	3	1.4E+01	1.9E+01	1.7E+01	1.56	2.1E+01	1.8E+01
Cobalt	3	3	9.1E+00	1.2E+01	1.1E+01	0.78	1.3E+01	1.1E+01
Copper	3	3	1.4E+01	2.0E+01	1.7E+01	1.77	2.2E+01	1.8E+01
Iron	3	3	1.5E+04	2.1E+04	1.8E+04	1863.98	2.4E+04	2.0E+04
Kjeldahl Nitrogen	3	3	6.4E+02	1.2E+03	9.6E+02	162.29	1.4E+03	1.0E+03
Lead	3	3	2.0E+01	2.7E+01	2.4E+01	1.76	2.9E+01	2.4E+01
Magnesium	3	3	2.1E+03	2.6E+03	2.3E+03	146.14	2.8E+03	2.3E+03
Manganese	3	3	1.2E+03	2.1E+03	1.7E+03	280.09	2.5E+03	1.9E+03
Mercury	3	3	1.2E-01	1.3E-01	1.2E-01	0	1.3E-01	1.2E-01
Molybdenum	3	3	7.4E-01	9.0E-01	8.3E-01	0.05	9.7E-01	8.6E-01
Nickel	3	3	8.9E+00	1.4E+01	1.2E+01	1.55	1.6E+01	1.3E+01
Potassium	3	3	1.2E+03	1.4E+03	1.3E+03	76.61	1.6E+03	1.4E+03
Silver	3	3	9.6E-02	2.1E-01	1.5E-01	0.03	2.5E-01	1.5E-01
Sodium	3	3	4.6E+01	5.3E+01	4.9E+01	2.03	5.5E+01	4.8E+01
Uranium	3	3	9.4E-01	1.0E+00	9.8E-01	0.02	1.0E+00	9.8E-01
Vanadium	3	3	1.7E+01	2.4E+01	2.1E+01	2.31	2.8E+01	2.3E+01
Zinc	3	3	1.3E+02	1.4E+02	1.4E+02	3.73	1.5E+02	1.3E+02

Table B8. (Continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 22								
Antimony	1	1	.	.	9.6E+00	.	.	9.6E+00
Arsenic	1	1	.	.	4.4E+00	.	.	4.4E+00
Beryllium	1	1	.	.	1.5E+00	.	.	1.5E+00
Cadmium	1	1	.	.	2.4E+00	.	.	2.4E+00
Chromium	1	1	.	.	5.3E+01	.	.	5.3E+01
Copper	1	1	.	.	2.4E+01	.	.	2.4E+01
Lead	1	1	.	.	6.1E+01	.	.	6.1E+01
Mercury	1	1	.	.	7.4E+01	.	.	7.4E+01
Nickel	1	1	.	.	2.3E+01	.	.	2.3E+01
Silver	1	1	.	.	7.6E+00	.	.	7.6E+00
Thallium	1	1	.	.	6.6E-01	.	.	6.6E-01
Zinc	1	1	.	.	7.7E+01	.	.	7.7E+01

Table B9. Summary statistics for inorganic porewater concentrations (mg/l) by reach.
Mercury data includes Brooks Rand (BR) laboratory results.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error.	95% UCB	Median
Reach 0								
Aluminum	5	5	1.60e-02	4.40e-01	1.30e-01	7.90e-02	3.00e-01	5.00e-02
Ammonium Nitrogen	5	5	1.00e+00	3.40e+00	2.00e+00	4.00e-01	2.90e+00	2.00e+00
Antimony	5	5	2.60e-03	3.70e-03	3.10e-03	2.40e-04	3.60e-03	2.90e-03
Barium	5	5	3.00e-02	1.00e-01	7.70e-02	1.40e-02	1.10e-01	9.60e-02
Boron	5	4	1.80e-02	1.70e-01	6.20e-02	2.90e-02	1.30e-01	4.00e-02
Calcium	5	5	2.60e+01	4.40e+01	3.30e+01	3.40e+00	4.00e+01	3.00e+01
Calculated Hardness	5	5	8.80e+01	1.90e+02	1.30e+02	1.70e+01	1.70e+02	1.30e+02
Chromium	5	4	1.00e-03	1.90e-03	1.50e-03	1.70e-04	1.80e-03	1.60e-03
Cobalt	5	3	1.00e-03	3.30e-03	1.60e-03	4.60e-04	2.60e-03	1.20e-03
Copper	5	5	1.80e-03	2.20e-03	2.00e-03	6.70e-05	2.10e-03	2.00e-03
Iron	5	5	2.90e-02	2.20e-01	6.90e-02	3.70e-02	1.50e-01	3.30e-02
Kjeldahl Nitrogen	5	5	1.40e+00	4.10e+00	2.50e+00	4.70e-01	3.50e+00	2.50e+00
Magnesium	5	5	5.40e+00	1.30e+01	9.60e+00	1.30e+00	1.20e+01	9.20e+00
Manganese	5	4	1.00e-03	1.10e+01	6.50e+00	1.40e+00	9.50e+00	5.10e+00
Molybdenum	5	4	1.00e-03	1.90e-03	1.50e-03	1.60e-04	1.80e-03	1.20e-03
Nickel	5	4	1.00e-03	2.30e-02	1.70e-02	2.40e-03	2.20e-02	1.50e-02
Potassium	5	5	8.90e-01	2.10e+00	1.80e+00	2.20e-01	2.20e+00	2.00e+00
Selenium	5	1	0.00e+00	0.00e+00	3.60e-03			0.00e+00
Sodium	5	5	3.40e+00	4.00e+00	3.70e+00	1.10e-01	4.00e+00	3.80e+00
Zinc	5	5	5.90e-03	8.50e-03	7.60e-03	5.00e-04	8.60e-03	7.90e-03
Reach 2								
Aluminum	8	8	1.20e-02	4.30e-02	2.20e-02	3.50e-03	2.90e-02	1.80e-02
Ammonium Nitrogen	8	6	5.00e-02	2.90e+00	7.10e-01	3.60e-01	1.40e+00	2.20e-01
Antimony	8	8	1.70e-03	1.00e-02	4.40e-03	9.10e-04	6.20e-03	3.90e-03
Arsenic	8	2	1.00e-03	3.30e-03	2.30e-03	2.00e-04	2.60e-03	2.10e-03
Barium	8	8	1.60e-02	9.70e-02	5.10e-02	1.10e-02	7.20e-02	4.30e-02
Boron	8	4	1.50e-02	6.70e-02	4.00e-02	5.30e-03	5.00e-02	3.10e-02
Calcium	8	8	2.30e+01	4.30e+01	3.10e+01	2.50e+00	3.60e+01	3.00e+01
Calculated Hardness	8	8	9.60e+01	1.70e+02	1.20e+02	9.80e+00	1.30e+02	1.00e+02
Chromium	8	4	1.00e-03	2.30e-03	1.20e-03	1.70e-04	1.50e-03	1.00e-03
Cobalt	8	2	1.00e-03	1.90e-03	1.60e-03	6.60e-05	1.70e-03	1.50e-03
Copper	8	8	1.10e-03	3.70e-03	2.20e-03	3.20e-04	2.80e-03	2.00e-03
Iron	8	8	3.60e-02	3.40e-01	1.30e-01	3.90e-02	2.10e-01	8.70e-02
Kjeldahl Nitrogen	8	8	1.70e-01	2.80e+00	8.90e-01	3.10e-01	1.50e+00	5.80e-01
Magnesium	8	8	5.90e+00	1.30e+01	8.50e+00	7.40e-01	9.90e+00	7.90e+00
Manganese	8	8	1.30e-03	6.50e+00	1.80e+00	7.80e-01	3.30e+00	1.20e+00
Molybdenum	8	4	1.00e-03	3.90e-03	1.80e-03	3.30e-04	2.40e-03	1.40e-03

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Table B9 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error.	95% UCB	Median
Nickel	8	7	1.00e-03	1.70e-02	6.30e-03	1.70e-03	9.70e-03	4.60e-03
Potassium	8	8	8.30e-01	2.30e+00	1.70e+00	1.80e-01	2.00e+00	1.80e+00
Sodium	8	8	2.60e+00	6.00e+00	3.70e+00	4.00e-01	4.50e+00	3.40e+00
Vanadium	8	1	0.00e+00	0.00e+00	1.00e-03	.	.	0.00e+00
Zinc	8	8	3.10e-03	1.70e-02	7.40e-03	1.70e-03	1.10e-02	6.20e-03
Reach 3								
Aluminum	25	18	6.00e-03	9.00e-02	2.20e-02	4.30e-03	2.90e-02	1.30e-02
Ammonium Nitrogen	25	25	1.30e-01	9.00e+00	1.90e+00	3.50e-01	2.50e+00	1.40e+00
Antimony	25	25	1.50e-03	1.30e-02	3.30e-03	4.70e-04	4.10e-03	2.70e-03
Arsenic	25	14	1.00e-03	1.20e-01	7.70e-03	4.90e-03	1.60e-02	1.90e-03
Barium	25	25	2.70e-02	1.20e-01	5.80e-02	4.60e-03	6.60e-02	6.10e-02
Boron	25	20	7.00e-03	1.20e+00	1.10e-01	4.50e-02	1.80e-01	5.60e-02
Calcium	25	22	2.70e-02	6.10e+01	3.70e+01	2.20e+00	4.10e+01	3.90e+01
Calculated Hardness	25	22	4.40e+00	2.30e+02	1.40e+02	8.30e+00	1.50e+02	1.50e+02
Chromium	25	20	1.00e-03	3.70e-03	1.90e-03	1.60e-04	2.20e-03	1.50e-03
Cobalt	25	22	1.00e-03	1.40e-02	2.90e-03	5.50e-04	3.90e-03	2.00e-03
Copper	25	24	1.30e-03	1.40e-02	4.10e-03	6.50e-04	5.20e-03	2.70e-03
Iron	25	23	1.30e-02	2.10e+00	1.80e-01	8.30e-02	3.20e-01	6.20e-02
Kjeldahl Nitrogen	25	25	3.70e-01	6.80e+00	1.90e+00	2.70e-01	2.30e+00	1.60e+00
Magnesium	25	22	9.00e-03	1.60e+01	9.60e+00	5.90e-01	1.10e+01	1.00e+01
Manganese	25	25	3.50e-02	9.70e+00	3.60e+00	4.30e-01	4.30e+00	3.30e+00
Mercury	25	3	2.00e-04	5.60e-04	2.20e-04	1.70e-05	2.50e-04	2.00e-04
Mercury (BR)	21	17	2.00e-06	6.00e-04	4.70e-05	2.90e-05	9.70e-05	9.60e-06
Methyl Mercury (BR)	21	9	1.10e-07	1.80e-06	4.10e-07	9.10e-08	5.70e-07	2.00e-07
Molybdenum	25	13	1.00e-03	1.00e-01	6.30e-03	4.00e-03	1.30e-02	2.20e-03
Nickel	25	24	2.40e-03	1.00e-01	1.50e-02	4.00e-03	2.20e-02	9.10e-03
Potassium	25	22	1.30e-02	3.10e+00	2.10e+00	1.30e-01	2.30e+00	2.20e+00
Selenium	25	4	1.00e-03	3.00e-03	1.60e-03	8.10e-05	1.80e-03	1.50e-03
Sodium	25	22	2.00e-02	8.10e+00	5.10e+00	3.00e-01	5.60e+00	4.80e+00
Uranium	25	23	1.00e-03	9.90e-02	1.10e-02	3.90e-03	1.80e-02	6.90e-03
Vanadium	25	3	1.00e-03	1.00e-02	1.40e-03	4.40e-04	2.10e-03	1.00e-03
Zinc	25	22	2.70e-03	3.20e-02	9.40e-03	1.30e-03	1.20e-02	7.50e-03
Reach 4								
Aluminum	33	32	1.00e-02	6.20e-01	5.90e-02	2.00e-02	9.30e-02	2.40e-02
Ammonium Nitrogen	31	31	7.10e-02	4.90e+00	1.30e+00	2.20e-01	1.70e+00	7.40e-01
Antimony	33	33	1.20e-03	1.40e-02	4.70e-03	5.40e-04	5.70e-03	3.70e-03
Arsenic	33	9	1.00e-03	3.90e-03	1.40e-03	1.20e-04	1.60e-03	1.10e-03
Barium	33	33	2.50e-02	2.20e-01	5.90e-02	7.60e-03	7.20e-02	4.40e-02

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Table B9 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error.	95% UCB	Median
Boron	33	31	1.80e-02	6.30e-02	3.40e-02	1.90e-03	3.70e-02	3.30e-02
Cadmium	33	1	0.00e+00	0.00e+00	1.00e-03	.	.	0.00e+00
Calcium	33	33	1.80e+01	7.80e+01	3.60e+01	2.10e+00	4.00e+01	3.50e+01
Calculated Hardness	33	33	6.60e+01	3.10e+02	1.40e+02	8.00e+00	1.50e+02	1.30e+02
Chromium	33	25	1.00e-03	3.10e-03	1.50e-03	9.40e-05	1.60e-03	1.20e-03
Cobalt	33	21	1.00e-03	1.20e-02	2.00e-03	4.20e-04	2.70e-03	1.20e-03
Copper	33	33	1.40e-03	8.50e-03	3.30e-03	3.00e-04	3.80e-03	2.70e-03
Iron	33	33	2.80e-02	6.00e+00	4.90e-01	2.20e-01	8.70e-01	1.80e-01
Kjeldahl Nitrogen	31	28	1.00e-01	7.20e+00	1.60e+00	2.80e-01	2.10e+00	1.20e+00
Lead	33	3	1.00e-03	2.80e-03	1.30e-03	5.90e-05	1.40e-03	1.20e-03
Magnesium	33	33	5.30e+00	1.90e+01	1.00e+01	5.20e-01	1.10e+01	9.90e+00
Manganese	33	30	1.00e-03	2.00e+01	2.80e+00	6.50e-01	3.80e+00	1.80e+00
Mercury	33	1	0.00e+00	0.00e+00	8.10e-04	.	.	0.00e+00
Mercury (BR)	9	2	3.30e-06	9.10e-06	5.90e-06	5.30e-07	6.90e-06	5.50e-06
Molybdenum	33	15	1.00e-03	4.70e-03	1.40e-03	1.30e-04	1.60e-03	1.10e-03
Nickel	33	33	2.10e-03	2.90e-02	7.40e-03	1.00e-03	9.10e-03	4.90e-03
Potassium	33	33	7.40e-01	3.70e+00	1.90e+00	1.00e-01	2.00e+00	1.80e+00
Sodium	33	33	2.40e+00	8.20e+00	4.80e+00	2.70e-01	5.20e+00	5.20e+00
Uranium	33	6	1.00e-03	2.10e-03	1.20e-03	4.20e-05	1.20e-03	1.10e-03
Vanadium	33	3	1.00e-03	1.30e-03	1.20e-03	3.70e-06	1.20e-03	1.20e-03
Zinc	33	33	2.40e-03	7.40e-02	1.30e-02	2.30e-03	1.70e-02	8.40e-03

Reach 7

Aluminum	2	2	3.10e-02	2.70e-01	1.50e-01	1.20e-01	9.10e-01	1.50e-01
Ammonium Nitrogen	2	2	1.20e+00	2.00e+00	1.60e+00	4.00e-01	4.10e+00	1.60e+00
Antimony	2	2	5.30e-03	5.70e-03	5.50e-03	2.00e-04	6.80e-03	5.50e-03
Arsenic	2	2	1.50e-02	1.30e-01	7.00e-02	5.60e-02	4.20e-01	7.00e-02
Barium	2	2	6.00e-02	6.20e-02	6.10e-02	9.50e-04	6.70e-02	6.10e-02
Boron	2	2	3.50e-02	4.40e-02	3.90e-02	4.50e-03	6.70e-02	3.90e-02
Calcium	2	2	3.70e+01	4.90e+01	4.30e+01	5.90e+00	8.00e+01	4.30e+01
Calculated Hardness	2	2	1.40e+02	1.70e+02	1.60e+02	1.60e+01	2.60e+02	1.60e+02
Chromium	2	1	0.00e+00	0.00e+00	1.10e-03	.	.	0.00e+00
Copper	2	2	2.30e-03	4.20e-03	3.30e-03	9.50e-04	9.20e-03	3.30e-03
Iron	2	2	2.20e-02	3.30e-02	2.80e-02	5.60e-03	6.30e-02	2.80e-02
Kjeldahl Nitrogen	2	2	1.00e+00	1.90e+00	1.50e+00	4.50e-01	4.30e+00	1.50e+00
Magnesium	2	2	9.50e+00	1.00e+01	9.90e+00	3.40e-01	1.20e+01	9.90e+00
Manganese	2	2	4.20e+00	5.20e+00	4.70e+00	5.30e-01	8.00e+00	4.70e+00
Molybdenum	2	2	2.30e-03	2.80e-03	2.60e-03	2.50e-04	4.10e-03	2.60e-03
Nickel	2	2	1.10e-02	1.20e-02	1.10e-02	5.50e-04	1.50e-02	1.10e-02
Potassium	2	2	1.80e+00	2.30e+00	2.00e+00	2.60e-01	3.70e+00	2.00e+00

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Table B9 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error.	95% UCB	Median
Sodium	2	2	3.10e+00	3.70e+00	3.40e+00	3.00e-01	5.20e+00	3.40e+00
Vanadium	2	2	1.00e-03	1.50e-03	1.30e-03	2.50e-04	2.80e-03	1.30e-03
Zinc	2	2	4.50e-03	6.60e-03	5.60e-03	1.10e-03	1.20e-02	5.60e-03
Reach 8								
Aluminum	1	1	0.00e+00	0.00e+00	2.70e-02	.	.	0.00e+00
Ammonium Nitrogen	1	1	0.00e+00	0.00e+00	1.50e+00	.	.	0.00e+00
Antimony	1	1	0.00e+00	0.00e+00	5.00e-03	.	.	0.00e+00
Barium	1	1	0.00e+00	0.00e+00	5.40e-02	.	.	0.00e+00
Calcium	1	1	0.00e+00	0.00e+00	4.20e+01	.	.	0.00e+00
Calculated Hardness	1	1	0.00e+00	0.00e+00	1.50e+02	.	.	0.00e+00
Chromium	1	1	0.00e+00	0.00e+00	1.10e-03	.	.	0.00e+00
Copper	1	1	0.00e+00	0.00e+00	2.60e-03	.	.	0.00e+00
Iron	1	1	0.00e+00	0.00e+00	2.90e-02	.	.	0.00e+00
Kjeldahl Nitrogen	1	1	0.00e+00	0.00e+00	1.30e+00	.	.	0.00e+00
Magnesium	1	1	0.00e+00	0.00e+00	1.00e+01	.	.	0.00e+00
Manganese	1	1	0.00e+00	0.00e+00	3.40e+00	.	.	0.00e+00
Nickel	1	1	0.00e+00	0.00e+00	1.20e-02	.	.	0.00e+00
Potassium	1	1	0.00e+00	0.00e+00	1.80e+00	.	.	0.00e+00
Sodium	1	1	0.00e+00	0.00e+00	3.60e+00	.	.	0.00e+00
Zinc	1	1	0.00e+00	0.00e+00	4.80e-03	.	.	0.00e+00
Reach 13								
Ammonium Nitrogen	5	5	3.20e-01	2.50e+00	1.40e+00	3.70e-01	2.20e+00	1.20e+00
Antimony	5	4	1.00e-03	4.50e-03	1.80e-03	6.90e-04	3.30e-03	1.10e-03
Barium	5	5	4.10e-02	1.20e-01	7.50e-02	1.40e-02	1.10e-01	7.00e-02
Boron	5	2	1.10e-02	4.80e-02	3.10e-02	6.60e-03	4.50e-02	2.60e-02
Calcium	5	5	1.90e+01	5.30e+01	3.60e+01	5.50e+00	4.80e+01	3.60e+01
Calculated Hardness	5	5	7.80e+01	2.10e+02	1.50e+02	2.20e+01	1.90e+02	1.60e+02
Chromium	5	1	0.00e+00	0.00e+00	1.50e-03	.	.	0.00e+00
Cobalt	5	4	1.00e-03	8.70e-03	3.00e-03	1.50e-03	6.10e-03	1.50e-03
Copper	5	4	1.20e-03	3.50e-03	1.80e-03	4.50e-04	2.80e-03	1.30e-03
Iron	5	1	0.00e+00	0.00e+00	4.40e-02	.	.	0.00e+00
Kjeldahl Nitrogen	5	5	5.80e-01	1.60e+00	9.50e-01	2.10e-01	1.40e+00	6.60e-01
Magnesium	5	5	6.70e+00	1.60e+01	1.10e+01	1.50e+00	1.50e+01	1.20e+01
Manganese	5	5	1.40e+00	9.10e+00	5.10e+00	1.40e+00	8.00e+00	5.30e+00
Mercury (BR)	5	3	3.70e-06	1.30e-05	6.60e-06	1.80e-06	1.00e-05	4.90e-06
Nickel	5	3	1.00e-03	1.20e-02	6.50e-03	1.50e-03	9.80e-03	4.40e-03
Potassium	5	5	1.40e+00	2.60e+00	1.90e+00	2.00e-01	2.30e+00	2.00e+00
Sodium	5	5	2.70e+00	5.10e+00	3.90e+00	3.80e-01	4.70e+00	3.90e+00

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Table B9 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error.	95% UCB	Median
Uranium	5	2	1.00e-03	1.50e-03	1.10e-03	1.30e-04	1.40e-03	1.00e-03
Zinc	5	4	2.70e-03	1.30e-02	4.40e-03	6.00e-04	5.70e-03	4.70e-03
Reach 18								
Aluminum	3	3	3.90e-02	3.10e-01	1.30e-01	9.10e-02	4.00e-01	4.20e-02
Ammonium Nitrogen	3	3	4.60e-01	5.40e+00	2.20e+00	1.60e+00	6.90e+00	7.10e-01
Antimony	3	3	4.50e-03	5.80e-03	5.10e-03	3.80e-04	6.20e-03	4.90e-03
Arsenic	3	2	1.00e-03	1.30e-03	1.20e-03	3.80e-05	1.30e-03	1.20e-03
Barium	3	3	4.30e-02	6.50e-02	5.50e-02	6.40e-03	7.40e-02	5.70e-02
Boron	3	3	2.40e-02	3.90e-02	3.20e-02	4.40e-03	4.50e-02	3.40e-02
Calcium	3	3	2.20e+01	2.50e+01	2.30e+01	1.00e+00	2.60e+01	2.30e+01
Calculated Hardness	3	3	7.70e+01	9.00e+01	8.20e+01	3.80e+00	9.30e+01	8.00e+01
Chromium	3	3	1.00e-03	1.20e-03	1.10e-03	5.80e-05	1.30e-03	1.10e-03
Cobalt	3	2	1.00e-03	1.40e-03	1.20e-03	1.20e-04	1.50e-03	1.10e-03
Copper	3	3	4.70e-03	5.40e-03	5.00e-03	2.10e-04	5.60e-03	4.90e-03
Iron	3	3	1.10e-01	1.90e-01	1.40e-01	2.30e-02	2.10e-01	1.30e-01
Kjeldahl Nitrogen	3	3	1.70e+00	2.00e+00	1.80e+00	8.80e-02	2.10e+00	1.80e+00
Magnesium	3	3	5.50e+00	6.00e+00	5.70e+00	1.80e-01	6.20e+00	5.50e+00
Molybdenum	3	3	2.20e-03	2.70e-03	2.50e-03	1.50e-04	2.90e-03	2.50e-03
Nickel	3	3	2.40e-03	4.30e-03	3.10e-03	6.20e-04	4.90e-03	2.50e-03
Potassium	3	3	1.60e+00	1.90e+00	1.80e+00	8.70e-02	2.10e+00	1.90e+00
Sodium	3	3	8.70e+00	1.00e+01	9.40e+00	3.60e-01	1.00e+01	9.60e+00
Vanadium	3	1	0.00e+00	0.00e+00	1.10e-03	.	.	0.00e+00
Zinc	3	3	8.20e-03	1.30e-02	1.00e-02	1.30e-03	1.40e-02	1.00e-02

Table B10. Summary statistics for porewater inorganic concentrations (mg/l) by subreach.
Mercury data includes Brooks Rand results.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Subreach 0								
Aluminum	5	5	1.60e-02	4.4E-01	1.3E-01	7.9E-02	5.0E-02	3.0E-01
Ammonium Nitrogen	5	5	1.00e+00	3.4E+00	2.0E+00	4.0E-01	2.0E+00	2.9E+00
Antimony	5	5	2.60e-03	3.7E-03	3.1E-03	2.4E-04	2.9E-03	3.6E-03
Barium	5	5	3.00e-02	1.0E-01	7.7E-02	1.4E-02	9.6E-02	1.1E-01
Boron	5	4	1.80e-02	1.7E-01	6.2E-02	2.9E-02	4.0E-02	1.3E-01
Calcium	5	5	2.60e+01	4.4E+01	3.3E+01	3.4E+00	3.0E+01	4.0E+01
Calculated Hardness	5	5	8.80e+01	1.9E+02	1.3E+02	1.7E+01	1.3E+02	1.7E+02
Chromium	5	4	1.00e-03	1.9E-03	1.5E-03	1.7E-04	1.6E-03	1.8E-03
Cobalt	5	3	1.00e-03	3.3E-03	1.6E-03	4.6E-04	1.2E-03	2.6E-03
Copper	5	5	1.80e-03	2.2E-03	2.0E-03	6.7E-05	2.0E-03	2.1E-03
Iron	5	5	2.90e-02	2.2E-01	6.9E-02	3.7E-02	3.3E-02	1.5E-01
Kjeldahl Nitrogen	5	5	1.40e+00	4.1E+00	2.5E+00	4.7E-01	2.5E+00	3.5E+00
Magnesium	5	5	5.40e+00	1.3E+01	9.6E+00	1.3E+00	9.2E+00	1.2E+01
Manganese	5	4	1.00e-03	1.1E+01	6.5E+00	1.4E+00	5.1E+00	9.5E+00
Molybdenum	5	4	1.00e-03	1.9E-03	1.5E-03	1.6E-04	1.2E-03	1.8E-03
Nickel	5	4	1.00e-03	2.3E-02	1.7E-02	2.4E-03	1.5E-02	2.2E-02
Potassium	5	5	8.90e-01	2.1E+00	1.8E+00	2.2E-01	2.0E+00	2.2E+00
Selenium	5	1	.	.	3.6E-03	.	.	.
Sodium	5	5	3.4E+00	4.0E+00	3.7E+00	1.1E-01	3.8E+00	4.0E+00
Zinc	5	5	5.9E-03	8.5E-03	7.60e-03	5.0E-04	7.9E-03	8.6E-03
Subreach 2.01								
Aluminum	1	1	.	.	1.8E-02	.	.	.
Ammonium Nitrogen	1	1	.	.	6.4E-02	.	.	.
Antimony	1	1	.	.	5.2E-03	.	.	.
Barium	1	1	.	.	9.7E-02	.	.	.
Calcium	1	1	.	.	4.3E+01	.	.	.
Calculated Hardness	1	1	.	.	1.7E+02	.	.	.
Cobalt	1	1	.	.	1.9E-03	.	.	.
Copper	1	1	.	.	3.7E-03	.	.	.
Iron	1	1	.	.	3.4E-01	.	.	.
Kjeldahl Nitrogen	1	1	.	.	1.7E-01	.	.	.
Magnesium	1	1	.	.	1.3E+01	.	.	.
Manganese	1	1	.	.	6.5E+00	.	.	.
Molybdenum	1	1	.	.	3.9E-03	.	.	.

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Nickel	1	1	.	.	2.6E-03	.	.	.
Potassium	1	1	.	.	2.3E+00	.	.	.
Sodium	1	1	.	.	6.0E+00	.	.	.
Vanadium	1	1	.	.	1.0E-03	.	.	.
Zinc	1	1	.	.	3.1E-03	.	.	.
Subreach 2.03								
Aluminum	1	1	.	.	1.7E-02	.	.	.
Antimony	1	1	.	.	3.2E-03	.	.	.
Barium	1	1	.	.	2.8E-02	.	.	.
Calcium	1	1	.	.	3.0E+01	.	.	.
Calculated Hardness	1	1	.	.	1.1E+02	.	.	.
Copper	1	1	.	.	1.1E-03	.	.	.
Iron	1	1	.	.	2.4E-01	.	.	.
Kjeldahl Nitrogen	1	1	.	.	3.2E-01	.	.	.
Magnesium	1	1	.	.	7.8E+00	.	.	.
Manganese	1	1	.	.	3.0E-03	.	.	.
Potassium	1	1	.	.	1.2E+00	.	.	.
Sodium	1	1	.	.	4.8E+00	.	.	.
Zinc	1	1	.	.	1.1E-02	.	.	.
Subreach 2.04								
Aluminum	6	6	1.2E-02	4.3E-02	2.4E-02	4.6E-03	2.1E-02	3.3E-02
Ammonium Nitrogen	6	5	5.0E-02	2.9E+00	9.3E-01	4.5E-01	6.8E-01	1.8E+00
Antimony	6	6	1.7E-03	1.0E-02	4.5E-03	1.2E-03	3.9E-03	7.0E-03
Arsenic	6	2	1.0E-03	3.3E-03	2.3E-03	2.6E-04	2.1E-03	2.8E-03
Barium	6	6	1.6E-02	8.7E-02	4.7E-02	1.1E-02	4.3E-02	7.0E-02
Boron	6	4	1.8E-02	6.7E-02	4.3E-02	6.6E-03	3.5E-02	5.6E-02
Calcium	6	6	2.3E+01	4.0E+01	2.9E+01	2.5E+00	2.9E+01	3.4E+01
Calculated Hardness	6	6	9.6E+01	1.4E+02	1.1E+02	7.4E+00	1.0E+02	1.2E+02
Chromium	6	4	1.0E-03	2.3E-03	1.3E-03	2.2E-04	1.1E-03	1.7E-03
Cobalt	6	1	.	.	1.5E-03	.	.	.
Copper	6	6	1.2E-03	2.9E-03	2.1E-03	2.8E-04	2.0E-03	2.6E-03
Iron	6	6	3.6E-02	1.7E-01	7.8E-02	2.2E-02	5.4E-02	1.2E-01
Kjeldahl Nitrogen	6	6	2.8E-01	2.8E+00	1.1E+00	3.8E-01	9.2E-01	1.9E+00
Magnesium	6	6	5.9E+00	9.4E+00	7.9E+00	5.0E-01	7.7E+00	8.9E+00

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Manganese	6	6	1.3E-03	3.2E+00	1.3E+00	5.1E-01	1.2E+00	2.3E+00
Molybdenum	6	3	1.0E-03	1.7E-03	1.5E-03	5.5E-05	1.4E-03	1.6E-03
Nickel	6	6	3.6E-03	1.7E-02	7.6E-03	2.1E-03	5.6E-03	1.2E-02
Potassium	6	6	8.3E-01	2.3E+00	1.6E+00	2.1E-01	1.8E+00	2.1E+00
Sodium	6	6	2.6E+00	3.7E+00	3.2E+00	1.6E-01	3.3E+00	3.5E+00
Zinc	6	6	3.3E-03	1.7E-02	7.6E-03	2.0E-03	6.2E-03	1.2E-02

Subreach 3.01

Aluminum	2	1	.	.	4.3E-02	.	.	.
Ammonium Nitrogen	2	2	8.2E-01	9.5E-01	8.9E-01	6.5E-02	8.9E-01	1.3E+00
Antimony	2	2	3.3E-03	4.6E-03	4.0E-03	6.5E-04	4.0E-03	8.1E-03
Barium	2	2	2.7E-02	4.7E-02	3.7E-02	1.0E-02	3.7E-02	1.0E-01
Boron	2	1	.	.	5.5E-02	.	.	.
Calcium	2	1	.	.	2.0E+01	.	.	.
Calculated Hardness	2	1	.	.	7.6E+01	.	.	.
Chromium	2	2	1.3E-03	2.8E-03	2.1E-03	7.5E-04	2.1E-03	6.8E-03
Cobalt	2	2	6.6E-03	1.4E-02	1.0E-02	3.7E-03	1.0E-02	3.3E-02
Copper	2	1	.	.	1.2E-02	.	.	.
Iron	2	1	.	.	3.1E-02	.	.	.
Kjeldahl Nitrogen	2	2	8.6E-01	1.4E+00	1.1E+00	2.7E-01	1.1E+00	2.8E+00
Magnesium	2	1	.	.	5.2E+00	.	.	.
Manganese	2	2	2.2E+00	2.6E+00	2.4E+00	2.1E-01	2.4E+00	3.7E+00
Mercury	2	1	.	.	5.6E-04	.	.	.
Mercury (BR)	2	1	5.8E-06	6.0E-04	6.0E-04	.	6.0E-04	.
Methyl Mercury (BR)	2	1	2.3E-07	1.8E-06	1.8E-06	.	1.8E-06	.
Nickel	2	2	7.1E-03	1.0E-01	5.4E-02	4.7E-02	5.4E-02	3.5E-01
Potassium	2	1	.	.	1.0E+00	.	.	.
Selenium	2	1	.	.	1.5E-03	.	.	.
Sodium	2	1	.	.	4.5E+00	.	.	.
Zinc	2	1	.	.	2.3E-02	.	.	.

Subreach 3.02

Aluminum	8	6	6.2E-03	7.5E-02	2.5E-02	8.7E-03	1.9E-02	4.1E-02
Ammonium Nitrogen	8	8	2.4E-01	9.0E+00	2.6E+00	9.9E-01	1.9E+00	4.5E+00
Antimony	8	8	1.5E-03	5.9E-03	2.6E-03	5.0E-04	2.2E-03	3.6E-03
Arsenic	8	5	1.0E-03	6.4E-03	2.1E-03	6.6E-04	1.4E-03	3.3E-03
Barium	8	8	2.8E-02	1.2E-01	6.3E-02	9.3E-03	6.3E-02	8.0E-02

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Boron	8	6	1.8E-02	9.7E-02	5.9E-02	9.3E-03	6.8E-02	7.7E-02
Calcium	8	6	2.7E-02	4.3E+01	3.5E+01	3.0E+00	3.9E+01	4.0E+01
Calculated Hardness	8	6	7.3E+00	1.6E+02	1.3E+02	1.1E+01	1.4E+02	1.5E+02
Chromium	8	7	1.3E-03	2.7E-03	1.9E-03	1.8E-04	2.0E-03	2.3E-03
Cobalt	8	7	1.0E-03	4.0E-03	2.4E-03	2.9E-04	2.2E-03	3.0E-03
Copper	8	8	1.4E-03	8.6E-03	3.9E-03	7.7E-04	3.5E-03	5.3E-03
Iron	8	8	1.4E-02	2.1E+00	3.6E-01	2.5E-01	8.6E-02	8.4E-01
Kjeldahl Nitrogen	8	8	5.7E-01	6.8E+00	2.3E+00	7.2E-01	1.6E+00	3.6E+00
Magnesium	8	6	9.0E-03	1.0E+01	8.4E+00	6.9E-01	8.4E+00	9.7E+00
Manganese	8	8	3.4E-01	9.7E+00	4.0E+00	1.0E+00	4.1E+00	5.9E+00
Mercury	7	1	.	.	2.3E-04	.	.	.
Mercury (BR)	5	4	4.6E-06	1.6E-04	3.8E-05	3.1E-05	9.6E-06	1.0E-04
Methyl Mercury (BR)	5	1	1.3E-07	7.8E-07	3.4E-07	.	3.4E-07	.
Molybdenum	8	3	1.3E-03	5.0E-03	2.3E-03	5.8E-04	2.2E-03	3.4E-03
Nickel	8	7	4.6E-03	4.2E-02	1.5E-02	4.1E-03	9.9E-03	2.3E-02
Potassium	8	6	1.3E-02	2.6E+00	2.1E+00	1.5E-01	2.1E+00	2.4E+00
Selenium	8	1	.	.	2.0E-03	.	.	.
Sodium	8	6	2.0E-02	8.1E+00	5.3E+00	8.3E-01	4.7E+00	6.8E+00
Uranium	8	8	1.4E-03	9.9E-02	2.2E-02	1.1E-02	9.1E-03	4.4E-02
Zinc	8	7	5.5E-03	1.2E-02	8.0E-03	8.7E-04	7.4E-03	9.7E-03
Subreach 3.03								
Aluminum	9	7	7.0E-03	3.5E-02	1.4E-02	2.9E-03	1.1E-02	1.9E-02
Ammonium Nitrogen	9	9	1.3E-01	2.4E+00	1.4E+00	2.6E-01	1.4E+00	1.8E+00
Antimony	9	9	1.7E-03	5.8E-03	2.8E-03	4.1E-04	2.4E-03	3.6E-03
Arsenic	9	3	2.1E-03	1.0E-02	3.3E-03	1.0E-03	2.1E-03	5.2E-03
Barium	9	9	2.7E-02	8.7E-02	5.2E-02	6.6E-03	4.6E-02	6.5E-02
Boron	9	8	2.9E-02	8.9E-02	5.4E-02	7.9E-03	4.5E-02	6.9E-02
Calcium	9	9	2.8E+01	5.3E+01	4.0E+01	3.1E+00	4.3E+01	4.6E+01
Calculated Hardness	9	9	9.8E+01	2.0E+02	1.5E+02	1.2E+01	1.6E+02	1.7E+02
Chromium	9	7	1.0E-03	3.7E-03	2.2E-03	3.4E-04	2.1E-03	2.8E-03
Cobalt	9	8	1.0E-03	6.5E-03	2.8E-03	5.6E-04	2.4E-03	3.9E-03
Copper	9	9	1.7E-03	8.3E-03	3.4E-03	8.1E-04	2.4E-03	4.9E-03
Iron	9	8	1.3E-02	2.4E-01	7.7E-02	2.5E-02	4.2E-02	1.2E-01
Kjeldahl Nitrogen	9	9	3.7E-01	2.7E+00	1.6E+00	2.9E-01	2.0E+00	2.1E+00
Magnesium	9	9	6.8E+00	1.4E+01	1.0E+01	7.7E-01	1.1E+01	1.2E+01

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Manganese	9	9	3.5E-02	5.8E+00	3.5E+00	6.1E-01	3.3E+00	4.6E+00
Mercury	9	1	.	.	2.0E-04	.	.	.
Mercury (BR)	8	8	5.6E-06	1.8E-05	1.2E-05	1.5E-06	1.4E-05	1.5E-05
Methyl Mercury (BR)	8	4	1.3E-07	7.6E-07	3.1E-07	7.4E-08	2.0E-07	4.5E-07
Molybdenum	9	8	1.5E-03	5.0E-03	2.4E-03	3.7E-04	2.2E-03	3.1E-03
Nickel	9	9	7.9E-03	2.5E-02	1.3E-02	1.8E-03	1.1E-02	1.6E-02
Potassium	9	9	1.4E+00	2.8E+00	2.2E+00	1.7E-01	2.2E+00	2.5E+00
Selenium	9	1	.	.	3.0E-03	.	.	.
Sodium	9	9	4.8E+00	6.2E+00	5.8E+00	1.9E-01	6.1E+00	6.1E+00
Uranium	9	9	1.3E-03	2.1E-02	6.9E-03	2.0E-03	6.9E-03	1.1E-02
Zinc	9	8	5.4E-03	3.2E-02	1.2E-02	2.7E-03	1.0E-02	1.7E-02
Subreach 3.04								
Aluminum	6	4	6.0E-03	9.0E-02	3.3E-02	1.2E-02	2.1E-02	5.7E-02
Ammonium Nitrogen	6	6	8.7E-01	3.6E+00	2.2E+00	4.4E-01	2.1E+00	3.0E+00
Antimony	6	6	2.0E-03	1.3E-02	4.6E-03	1.7E-03	3.1E-03	8.1E-03
Arsenic	6	6	2.2E-03	1.2E-01	2.5E-02	2.0E-02	5.9E-03	6.5E-02
Barium	6	6	4.9E-02	1.1E-01	7.0E-02	8.7E-03	6.5E-02	8.7E-02
Boron	6	5	7.0E-03	1.2E+00	2.7E-01	1.8E-01	1.0E-01	6.4E-01
Calcium	6	6	3.0E+01	6.1E+01	4.3E+01	4.3E+00	4.2E+01	5.2E+01
Calculated Hardness	6	6	1.1E+02	2.3E+02	1.6E+02	1.6E+01	1.6E+02	2.0E+02
Chromium	6	4	1.0E-03	2.9E-03	1.4E-03	3.1E-04	1.1E-03	2.0E-03
Cobalt	6	5	1.0E-03	2.0E-03	1.5E-03	1.8E-04	1.4E-03	1.8E-03
Copper	6	6	1.3E-03	1.4E-02	4.5E-03	1.9E-03	3.0E-03	8.2E-03
Iron	6	6	2.1E-02	3.7E-01	1.3E-01	5.1E-02	9.7E-02	2.3E-01
Kjeldahl Nitrogen	6	6	9.7E-01	3.4E+00	2.0E+00	3.7E-01	2.0E+00	2.7E+00
Magnesium	6	6	8.5E+00	1.6E+01	1.2E+01	1.0E+00	1.2E+01	1.4E+01
Manganese	6	6	1.0E+00	6.3E+00	3.5E+00	9.0E-01	3.0E+00	5.3E+00
Mercury (BR)	6	4	2.0E-06	3.6E-05	1.7E-05	5.0E-06	9.5E-06	2.7E-05
Methyl Mercury (BR)	6	3	1.1E-07	1.2E-06	6.1E-07	1.3E-07	4.6E-07	8.6E-07
Molybdenum	6	2	2.4E-03	1.0E-01	1.9E-02	2.1E-02	2.4E-03	6.2E-02
Nickel	6	6	2.4E-03	7.0E-03	5.0E-03	8.2E-04	5.9E-03	6.6E-03
Potassium	6	6	2.0E+00	3.1E+00	2.5E+00	2.2E-01	2.4E+00	2.9E+00
Selenium	6	1	.	.	1.6E-03	.	.	.
Sodium	6	6	3.8E+00	4.7E+00	4.3E+00	1.2E-01	4.2E+00	4.5E+00
Uranium	6	6	1.2E-03	1.0E-02	5.5E-03	1.5E-03	5.0E-03	8.6E-03
Vanadium	6	3	1.0E-03	1.0E-02	2.5E-03	1.7E-03	1.0E-03	6.0E-03

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Zinc	6	6	2.7E-03	1.2E-02	5.7E-03	1.4E-03	4.9E-03	8.5E-03
Subreach 4.01								
Aluminum	9	9	1.1E-02	6.2E-01	1.2E-01	7.1E-02	2.0E-02	2.5E-01
Ammonium Nitrogen	7	7	7.1E-02	1.2E+00	5.6E-01	1.5E-01	5.7E-01	8.6E-01
Antimony	9	9	1.6E-03	1.4E-02	3.8E-03	1.3E-03	2.8E-03	6.2E-03
Barium	9	9	2.6E-02	5.6E-02	4.1E-02	2.9E-03	4.1E-02	4.7E-02
Boron	9	9	1.9E-02	6.3E-02	3.4E-02	5.0E-03	2.8E-02	4.4E-02
Calcium	9	9	1.8E+01	4.6E+01	3.8E+01	2.9E+00	4.0E+01	4.3E+01
Calculated Hardness	9	9	6.6E+01	1.7E+02	1.4E+02	1.0E+01	1.5E+02	1.6E+02
Chromium	9	8	1.0E-03	2.7E-03	1.9E-03	1.1E-04	1.8E-03	2.1E-03
Cobalt	9	1	.	.	1.3E-03	.	.	.
Copper	9	9	1.7E-03	4.0E-03	2.7E-03	2.2E-04	2.7E-03	3.1E-03
Iron	9	9	1.3E-01	3.6E-01	2.9E-01	2.8E-02	3.2E-01	3.4E-01
Kjeldahl Nitrogen	7	5	2.0E-01	1.4E+00	6.6E-01	1.7E-01	6.0E-01	1.0E+00
Magnesium	9	9	5.3E+00	1.3E+01	1.1E+01	7.9E-01	1.1E+01	1.2E+01
Manganese	9	9	3.6E-02	2.4E+00	5.7E-01	2.5E-01	1.8E-01	1.0E+00
Mercury (BR)	5	1	3.3E-06	5.5E06	5.5E-06	.	5.5E-06	.
Molybdenum	9	2	1.0E-03	1.2E-03	1.2E-03	0.0E+00	1.2E-03	1.2E-03
Nickel	9	9	2.1E-03	5.2E-03	3.7E-03	3.0E-04	3.5E-03	4.2E-03
Potassium	9	9	7.4E-01	2.0E+00	1.6E+00	1.6E-01	1.8E+00	1.9E+00
Sodium	9	9	2.4E+00	5.4E+00	4.5E+00	4.0E-01	5.2E+00	5.3E+00
Uranium	9	3	1.0E-03	1.6E-03	1.3E-03	5.4E-05	1.2E-03	1.4E-03
Zinc	9	9	4.7E-03	1.8E-02	7.6E-03	1.4E-03	6.4E-03	1.0E-02
Subreach 4.02								
Aluminum	6	6	1.2E-02	9.0E-02	3.3E-02	1.2E-02	2.0E-02	5.8E-02
Ammonium Nitrogen	6	6	6.5E-01	2.8E+00	1.5E+00	3.2E-01	1.3E+00	2.1E+00
Antimony	6	6	2.7E-03	8.0E-03	5.4E-03	7.8E-04	5.2E-03	7.0E-03
Arsenic	6	2	1.0E-03	3.0E-03	1.7E-03	6.5E-04	1.1E-03	3.0E-03
Barium	6	6	3.5E-02	8.8E-02	5.9E-02	8.2E-03	6.1E-02	7.6E-02
Boron	6	5	1.8E-02	4.8E-02	3.8E-02	4.6E-03	4.3E-02	4.7E-02
Calcium	6	6	2.8E+01	4.7E+01	3.8E+01	2.9E+00	3.8E+01	4.4E+01
Calculated Hardness	6	6	1.2E+02	1.8E+02	1.5E+02	1.1E+01	1.5E+02	1.7E+02
Chromium	6	3	1.0E-03	2.2E-03	1.2E-03	2.2E-04	1.0E-03	1.7E-03
Cobalt	6	5	1.0E-03	3.0E-03	1.6E-03	3.1E-04	1.3E-03	2.2E-03
Copper	6	6	1.4E-03	3.6E-03	2.4E-03	3.7E-04	2.3E-03	3.2E-03

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Iron	6	6	2.8E-02	8.6E-02	5.0E-02	9.1E-03	4.1E-02	6.9E-02
Kjeldahl Nitrogen	6	5	1.0E-01	2.6E+00	1.3E+00	2.9E-01	1.1E+00	1.9E+00
Magnesium	6	6	9.1E+00	1.5E+01	1.1E+01	8.2E-01	1.1E+01	1.3E+01
Manganese	6	6	1.3E+00	7.9E+00	4.0E+00	9.7E-01	3.9E+00	5.9E+00
Molybdenum	6	2	1.0E-03	1.4E-03	1.3E-03	2.2E-05	1.3E-03	1.4E-03
Nickel	6	6	4.7E-03	2.9E-02	1.3E-02	3.8E-03	9.2E-03	2.1E-02
Potassium	6	6	1.5E+00	2.4E+00	1.9E+00	1.3E-01	1.9E+00	2.2E+00
Sodium	6	6	2.8E+00	3.9E+00	3.4E+00	1.6E-01	3.5E+00	3.7E+00
Uranium	6	2	1.0E-03	1.8E-03	1.2E-03	1.5E-04	1.1E-03	1.5E-03
Zinc	6	6	1.0E-02	2.8E-02	1.6E-02	3.1E-03	1.2E-02	2.2E-02
Subreach 4.03								
Aluminum	7	6	1.0E-02	3.4E-02	2.0E-02	3.0E-03	1.6E-02	2.6E-02
Ammonium Nitrogen	7	7	3.4E-01	4.9E+00	1.5E+00	6.2E-01	6.2E-01	2.7E+00
Antimony	7	7	1.5E-03	5.8E-03	3.5E-03	5.2E-04	3.7E-03	4.5E-03
Arsenic	7	2	1.5E-03	3.0E-03	1.6E-03	8.5E-05	1.6E-03	1.8E-03
Barium	7	7	2.5E-02	2.2E-01	7.4E-02	2.5E-02	5.0E-02	1.2E-01
Boron	7	6	1.8E-02	5.0E-02	3.9E-02	2.9E-03	3.6E-02	4.5E-02
Calcium	7	7	2.3E+01	7.8E+01	3.5E+01	7.4E+00	2.7E+01	4.9E+01
Calculated Hardness	7	7	8.4E+01	3.1E+02	1.4E+02	3.0E+01	1.1E+02	2.0E+02
Chromium	7	5	1.0E-03	2.0E-03	1.3E-03	1.8E-04	1.1E-03	1.7E-03
Cobalt	7	5	1.0E-03	1.2E-02	3.1E-03	1.6E-03	1.7E-03	6.2E-03
Copper	7	7	1.9E-03	8.5E-03	3.2E-03	9.0E-04	2.3E-03	4.9E-03
Iron	7	7	2.9E-02	1.0E-01	4.9E-02	1.0E-02	3.1E-02	6.9E-02
Kjeldahl Nitrogen	7	7	5.9E-01	4.8E+00	1.7E+00	5.3E-01	1.3E+00	2.8E+00
Lead	7	3	1.0E-03	2.8E-03	1.4E-03	2.6E-04	1.2E-03	1.9E-03
Magnesium	7	7	6.6E+00	1.9E+01	9.8E+00	1.6E+00	8.3E+00	1.3E+01
Manganese	7	7	2.1E-03	2.0E+01	5.4E+00	2.6E+00	2.8E+00	1.0E+01
Mercury (BR)	1	1	9.1E-06	9.1E-06	9.1E-06	.	9.1E-06	.
Molybdenum	7	6	1.0E-03	4.7E-03	2.1E-03	4.9E-04	1.5E-03	3.1E-03
Nickel	7	7	4.8E-03	1.8E-02	1.1E-02	1.6E-03	1.1E-02	1.4E-02
Potassium	7	7	1.4E+00	3.7E+00	1.9E+00	3.0E-01	1.6E+00	2.5E+00
Sodium	7	7	2.9E+00	5.2E+00	3.6E+00	2.8E-01	3.5E+00	4.1E+00
Uranium	7	1	.	.	2.1E-03	.	.	.
Vanadium	7	1	.	.	1.2E-03	.	.	.
Zinc	7	7	8.4E-03	7.4E-02	2.6E-02	8.3E-03	2.2E-02	4.3E-02

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Subreach 4.04								
Aluminum	11	11	1.4E-02	1.2E-01	4.9E-02	1.2E-02	2.8E-02	7.1E-02
Ammonium Nitrogen	11	11	5.6E-01	4.4E+00	1.6E+00	4.3E-01	7.4E-01	2.3E+00
Antimony	11	11	1.2E-03	1.3E-02	5.9E-03	1.1E-03	7.0E-03	7.8E-03
Arsenic	11	5	1.0E-03	3.9E-03	1.9E-03	2.2E-04	1.6E-03	2.3E-03
Barium	11	11	3.5E-02	2.0E-01	6.5E-02	1.6E-02	4.1E-02	9.3E-02
Boron	11	11	2.2E-02	4.0E-02	3.0E-02	1.6E-03	3.0E-02	3.3E-02
Cadmium	11	1	.	.	1.0E-03	.	.	.
Calcium	11	11	2.4E+01	5.9E+01	3.5E+01	3.5E+00	3.3E+01	4.1E+01
Calculated Hardness	11	11	9.6E+01	2.3E+02	1.3E+02	1.3E+01	1.2E+02	1.6E+02
Chromium	11	9	1.0E-03	3.1E-03	1.4E-03	1.9E-04	1.2E-03	1.7E-03
Cobalt	11	10	1.0E-03	9.2E-03	2.4E-03	7.4E-04	1.5E-03	3.8E-03
Copper	11	11	2.2E-03	8.3E-03	4.3E-03	5.5E-04	4.3E-03	5.3E-03
Iron	11	11	1.7E-01	6.0E+00	1.2E+00	6.4E-01	2.4E-01	2.3E+00
Kjeldahl Nitrogen	11	11	9.9E-01	7.2E+00	2.4E+00	6.2E-01	1.4E+00	3.5E+00
Magnesium	11	11	7.0E+00	1.6E+01	9.6E+00	8.9E-01	8.9E+00	1.1E+01
Manganese	11	8	1.0E-03	4.3E+00	2.8E+00	2.9E-01	2.9E+00	3.3E+00
Mercury	11	1	.	.	8.1E-04	.	.	.
Molybdenum	11	5	1.0E-03	2.2E-03	1.4E-03	1.3E-04	1.1E-03	1.6E-03
Nickel	11	11	3.2E-03	6.7E-03	4.8E-03	3.3E-04	4.6E-03	5.4E-03
Potassium	11	11	1.6E+00	3.6E+00	2.0E+00	1.8E-01	1.8E+00	2.4E+00
Sodium	11	11	5.3E+00	8.2E+00	6.5E+00	2.7E-01	6.6E+00	7.0E+00
Vanadium	11	2	1.0E-03	1.3E-03	1.2E-03	1.2E-05	1.2E-03	1.2E-03
Zinc	11	11	2.4E-03	2.6E-02	7.2E-03	2.1E-03	4.8E-03	1.1E-02
Subreach 7.01								
Aluminum	1	1	.	.	3.1E-02	.	.	.
Ammonium Nitrogen	1	1	.	.	2.0E+00	.	.	.
Antimony	1	1	.	.	5.7E-03	.	.	.
Arsenic	1	1	.	.	1.3E-01	.	.	.
Barium	1	1	.	.	6.0E-02	.	.	.
Boron	1	1	.	.	4.4E-02	.	.	.
Calcium	1	1	.	.	4.9E+01	.	.	.
Calculated Hardness	1	1	.	.	1.7E+02	.	.	.
Chromium	1	1	.	.	1.1E-03	.	.	.
Copper	1	1	.	.	4.2E-03	.	.	.
Iron	1	1	.	.	3.3E-02	.	.	.

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Kjeldahl Nitrogen	1	1	.	.	1.9E+00	.	.	.
Magnesium	1	1	.	.	1.0E+01	.	.	.
Manganese	1	1	.	.	5.2E+00	.	.	.
Molybdenum	1	1	.	.	2.8E-03	.	.	.
Nickel	1	1	.	.	1.2E-02	.	.	.
Potassium	1	1	.	.	2.3E+00	.	.	.
Sodium	1	1	.	.	3.1E+00	.	.	.
Vanadium	1	1	.	.	1.5E-03	.	.	.
Zinc	1	1	.	.	4.5E-03	.	.	.

Subreach 7.02

Aluminum	1	1	.	.	2.7E-01	.	.	.
Ammonium Nitrogen	1	1	.	.	1.2E+00	.	.	.
Antimony	1	1	.	.	5.3E-03	.	.	.
Arsenic	1	1	.	.	1.5E-02	.	.	.
Barium	1	1	.	.	6.2E-02	.	.	.
Boron	1	1	.	.	3.5E-02	.	.	.
Calcium	1	1	.	.	3.7E+01	.	.	.
Calculated Hardness	1	1	.	.	1.4E+02	.	.	.
Copper	1	1	.	.	2.3E-03	.	.	.
Iron	1	1	.	.	2.2E-02	.	.	.
Kjeldahl Nitrogen	1	1	.	.	1.0E+00	.	.	.
Magnesium	1	1	.	.	9.5E+00	.	.	.
Manganese	1	1	.	.	4.2E+00	.	.	.
Molybdenum	1	1	.	.	2.3E-03	.	.	.
Nickel	1	1	.	.	1.1E-02	.	.	.
Potassium	1	1	.	.	1.8E+00	.	.	.
Sodium	1	1	.	.	3.7E+00	.	.	.
Vanadium	1	1	.	.	1.0E-03	.	.	.
Zinc	1	1	.	.	6.6E-03	.	.	.

Subreach 8

Aluminum	1	1	.	.	2.7E-02	.	.	.
Ammonium Nitrogen	1	1	.	.	1.5E+00	.	.	.
Antimony	1	1	.	.	5.0E-03	.	.	.
Barium	1	1	.	.	5.4E-02	.	.	.
Calcium	1	1	.	.	4.2E+01	.	.	.

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Calculated Hardness	1	1	.	.	1.5E+02	.	.	.
Chromium	1	1	.	.	1.1E-03	.	.	.
Copper	1	1	.	.	2.6E-03	.	.	.
Iron	1	1	.	.	2.9E-02	.	.	.
Kjeldahl Nitrogen	1	1	.	.	1.3E+00	.	.	.
Magnesium	1	1	.	.	1.0E+01	.	.	.
Manganese	1	1	.	.	3.4E+00	.	.	.
Nickel	1	1	.	.	1.2E-02	.	.	.
Potassium	1	1	.	.	1.8E+00	.	.	.
Sodium	1	1	.	.	3.6E+00	.	.	.
Zinc	1	1	.	.	4.8E-03	.	.	.

Subreach 13

Ammonium Nitrogen	5	5	3.2E-01	2.5E+00	1.4E+00	3.7E-01	1.2E+00	2.2E+00
Antimony	5	4	1.0E-03	4.5E-03	1.8E-03	6.9E-04	1.1E-03	3.3E-03
Barium	5	5	4.1E-02	1.2E-01	7.5E-02	1.4E-02	7.0E-02	1.1E-01
Boron	5	2	1.1E-02	4.8E-02	3.1E-02	6.6E-03	2.6E-02	4.5E-02
Calcium	5	5	1.9E+01	5.3E+01	3.6E+01	5.5E+00	3.6E+01	4.8E+01
Calculated Hardness	5	5	7.8E+01	2.1E+02	1.5E+02	2.2E+01	1.6E+02	1.9E+02
Chromium	5	1	.	.	1.5E-03	.	.	.
Cobalt	5	4	1.0E-03	8.7E-03	3.0E-03	1.5E-03	1.5E-03	6.1E-03
Copper	5	4	1.2E-03	3.5E-03	1.8E-03	4.5E-04	1.3E-03	2.8E-03
Iron	5	1	.	.	4.4E-02	.	.	.
Kjeldahl Nitrogen	5	5	5.8E-01	1.6E+00	9.5E-01	2.1E-01	6.6E-01	1.4E+00
Magnesium	5	5	6.7E+00	1.6E+01	1.1E+01	1.5E+00	1.2E+01	1.5E+01
Manganese	5	5	1.4E+00	9.1E+00	5.1E+00	1.4E+00	5.3E+00	8.0E+00
Mercury (BR)	5	3	3.7E-06	1.3E-05	6.6E-06	1.8E-06	4.9E-06	1.0E-05
Nickel	5	3	1.0E-03	1.2E-02	6.5E-03	1.5E-03	4.4E-03	9.8E-03
Potassium	5	5	1.4E+00	2.6E+00	1.9E+00	2.0E-01	2.0E+00	2.3E+00
Sodium	5	5	2.7E+00	5.1E+00	3.9E+00	3.8E-01	3.9E+00	4.7E+00
Uranium	5	2	1.0E-03	1.5E-03	1.1E-03	1.3E-04	1.0E-03	1.4E-03
Zinc	5	4	2.7E-03	1.3E-02	4.4E-03	6.0E-04	4.7E-03	5.7E-03

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Aluminum	3	3	3.9E-02	3.1E-01	1.3E-01	9.1E-02	4.2E-02	4.0E-01
Ammonium Nitrogen	3	3	4.6E-01	5.4E+00	2.2E+00	1.6E+00	7.1E-01	6.9E+00

Table B10 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	Median	95% UCB
Antimony	3	3	4.5E-03	5.8E-03	5.1E-03	3.8E-04	4.9E-03	6.2E-03
Arsenic	3	2	1.0E-03	1.3E-03	1.2E-03	3.8E-05	1.2E-03	1.3E-03
Barium	3	3	4.3E-02	6.5E-02	5.5E-02	6.4E-03	5.7E-02	7.4E-02
Boron	3	3	2.4E-02	3.9E-02	3.2E-02	4.4E-03	3.4E-02	4.5E-02
Calcium	3	3	2.2E+01	2.5E+01	2.3E+01	1.0E+00	2.3E+01	2.6E+01
Calculated Hardness	3	3	7.7E+01	9.0E+01	8.2E+01	3.8E+00	8.0E+01	9.3E+01
Chromium	3	3	1.0E-03	1.2E-03	1.1E-03	5.8E-05	1.1E-03	1.3E-03
Cobalt	3	2	1.0E-03	1.4E-03	1.2E-03	1.2E-04	1.1E-03	1.5E-03
Copper	3	3	4.7E-03	5.4E-03	5.0E-03	2.1E-04	4.9E-03	5.6E-03
Iron	3	3	1.1E-01	1.9E-01	1.4E-01	2.3E-02	1.3E-01	2.1E-01
Kjeldahl Nitrogen	3	3	1.7E+00	2.0E+00	1.8E+00	8.8E-02	1.8E+00	2.1E+00
Magnesium	3	3	5.5E+00	6.0E+00	5.7E+00	1.8E-01	5.5E+00	6.2E+00
Molybdenum	3	3	2.2E-03	2.7E-03	2.5E-03	1.5E-04	2.5E-03	2.9E-03
Nickel	3	3	2.4E-03	4.3E-03	3.1E-03	6.2E-04	2.5E-03	4.9E-03
Potassium	3	3	1.6E+00	1.9E+00	1.8E+00	8.7E-02	1.9E+00	2.1E+00
Sodium	3	3	8.7E+00	1.0E+01	9.4E+00	3.6E-01	9.6E+00	1.0E+01
Vanadium	3	1	.	.	1.1E-03	.	.	.
Zinc	3	3	8.2E-03	1.3E-02	1.0E-02	1.3E-03	1.0E-02	1.4E-02

Table B11. Organic contaminants that were 100% Non-Detects in surface sediment, whole core sediment and pore-water

ANALYTE	PORE WATER	SURFACE SEDIMENT	MASS WEIGHTED SEDIMENT
1,2,4-Trichlorobenzene	X	X	X
1,2-Dichlorobenzene		X	X
1,3-Dichlorobenzene		X	X
2,2'-oxybis(1-Chloropropa	X	X	X
2,4,5-Trichlorophenol	X	X	X
2,4,6-Trichlorophenol	X	X	X
2,4-Dichlorophenol	X	X	X
2,4-Dimethylphenol	X		
2,4-Dinitrophenol	X	X	X
2,4-Dinitrotoluene	X	X	X
2,6-Dinitrotoluene	X	X	X
2-Chloronaphthalene	X	X	X
2-Chlorophenol	X	X	X
2-Methyl-4,6-dinitrophenol	X	X	X
2-Methylnaphthalene	X		
2-Methylphenol	X	X	X
2-Nitroaniline	X	X	X
2-Nitrophenol	X	X	X
3,3'-Dichlorobenzidine	X	X	X
3-Nitroaniline	X	X	X
4,4'-DDD	X		
4,4'-DDE	X	X	X
4,4'-DDT	X		
4-Bromophenyl phenyl ether	X	X	X
4-Chloro-3-methylphenol	X		
4-Chlorobenzenamine	X	X	X
4-Chlorophenylphenyl ether	X	X	X
4-Methylphenol	X		
4-Nitroaniline	X	X	X
4-Nitrophenol	X		
Acenaphthene	X		
Acenaphthylene	X		
Anthracene	X		
Aldrin		X	X
Benzo(a)anthracene	X		
Benzo(a)pyrene	X		
Benzo(b)fluoranthene	X		
Benzo(ghi)perylene	X		
Benzo(k)fluoranthene	X		
Benzyl alcohol	X	X	X
Bis(2-chloroethoxy)methan	X	X	X
Bis(2-chloroethyl) ether	X	X	X
Butylbenzylphthalate	X		
Carbazole	X		
Chlordane, total	X	X	X
Chrysene	X		
Dibenz(a,h)anthracene	X		

Table B11. (Continued)

ANALYTE	PORE WATER	SURFACE SEDIMENT	MASS WEIGHTED SEDIMENT
Dibenzofuran	X		
Dieldrin	X	X	X
Diethylphthalate	X		
Dimethylphthalate	X	X	
Endosulfan	X	X	X
Endosulfan I	X	X	X
Endosulfan II	X	X	X
Endosulfan sulfate	X	X	X
Endrin	X	X	X
Endrin aldehyde	X	X	X
Endrin ketone	X	X	X
Fluoranthene	X		
Fluorene	X		
Heptachlor	X		
Heptachlor epoxide	X	X	X
Hexachlorobenzene	X	X	X
Hexachlorobutadiene	X	X	X
Hexachlorocyclopentadiene	X	X	X
Hexachloroethane	X	X	X
Indeno(1,2,3-cd)pyrene	X		
Isophorone	X	X	X
Lindane	X	X	X
Methoxychlor	X		
N-Nitroso-di-n-propylamin	X	X	
N-Nitrosodiphenylamine	X	X	X
Naphthalene	X		
Nitrobenzene	X	X	X
PCB-1016	X	X	X
PCB-1221	X	X	X
PCB-1232	X	X	X
PCB-1242	X	X	X
PCB-1248	X		
PCB-1260	X		
Pentachlorophenol	X		
Phenanthrene	X		
Phenol	X		
Pyrene	X		
Toxaphene	X		
alpha-BHC	X	X	X
alpha-Chlordane	X	X	X
beta-BHC	X	X	X
delta-BHC	X	X	X
gamma-Chlordane	X	X	X

Table B12. Summary statistics for surface sediment (0-15 cm) organic concentrations (mg/kg) by subreach

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 0							
2-Methylnaphthalene	5	5	4.00e-02	6.70e-01	2.70e-01	1.40e-01	5.80e-01
Acenaphthene	5	1	2.00e-02	2.70e-01	2.00e-02	.	.
Benzo(a)anthracene	5	2	7.00e-02	2.30e-01	9.00e-02	2.00e-02	1.30e-01
Benzo(a)pyrene	5	2	7.00e-02	2.30e-01	8.00e-02	1.00e-02	1.00e-01
Benzo(b)fluoranthene	5	4	2.00e-02	2.00e-01	7.00e-02	2.00e-02	1.20e-01
Benzo(ghi)perylene	5	1	5.00e-02	2.70e-01	5.00e-02	.	.
Benzo(k)fluoranthene	5	2	2.00e-02	2.30e-01	2.00e-02	1.00e-02	4.00e-02
Butylbenzylphthalate	5	1	3.00e-02	2.80e-01	3.00e-02	.	.
Carbazole	5	2	2.00e-02	2.30e-01	2.00e-02	0.00e+00	2.00e-02
Chrysene	5	4	2.00e-02	2.00e-01	7.00e-02	3.00e-02	1.30e-01
Dibenzofuran	5	2	1.30e-01	2.30e-01	1.40e-01	1.00e-02	1.60e-01
Diethylphthalate	5	1	1.00e-01	2.80e-01	1.00e-01	.	.
Fluoranthene	5	3	2.00e-02	2.00e-01	7.00e-02	3.00e-02	1.30e-01
Fluorene	5	2	4.00e-02	2.30e-01	4.00e-02	0.00e+00	4.00e-02
Indeno(1,2,3-cd)pyre	5	1	3.00e-02	2.70e-01	3.00e-02	.	.
Naphthalene	5	5	2.00e-02	3.80e-01	1.60e-01	8.00e-02	3.40e-01
Phenanthrene	5	5	3.00e-02	3.70e-01	1.60e-01	8.00e-02	3.20e-01
Pyrene	5	5	2.00e-02	1.50e-01	7.00e-02	3.00e-02	1.30e-01
Total combustible or	5	5	4.30e+04	4.29e+05	2.85e+05	6.57e+04	4.25e+05
Total organic carbon	5	5	9.89e+03	2.00e+04	1.43e+04	2.27e+03	1.91e+04
Subreach 1							
4,4'-DDD	2	1	2.80e-01	5.90e-01	2.80e-01	.	.
4,4'-DDT	2	1	2.80e-01	5.90e-01	2.80e-01	.	.
Subreach 2.01							
Bis(2-ethylhexyl)pht	1	1	2.00e-02	2.00e-02	2.00e-02	.	.
Total combustible or	1	1	1.70e+04	1.70e+04	1.70e+04	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Total organic carbon	1	1	3.95e+03	3.95e+03	3.95e+03	.	.
Subreach 2.02							
Bis(2-ethylhexyl)pht	1	1	3.00e-01	3.00e-01	3.00e-01	.	.
PCB-1254	1	1	1.17e+00	1.17e+00	1.17e+00	.	.
PCB-1260	1	1	1.17e+00	1.17e+00	1.17e+00	.	.
Toxaphene	1	1	1.17e+00	1.17e+00	1.17e+00	.	.
Subreach 2.03							
Bis(2-ethylhexyl)pht	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Diethylphthalate	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Heptachlor	1	1	0.00e+00	0.00e+00	0.00e+00	.	.
Total combustible or	1	1	2.40e+04	2.40e+04	2.40e+04	.	.
Total organic carbon	1	1	3.78e+03	3.78e+03	3.78e+03	.	.
Subreach 2.04							
2-Methylnaphthalene	8	5	4.00e-02	6.50e-01	1.20e-01	8.00e-02	2.70e-01
4-Methylphenol	8	1	4.00e-02	5.00e-01	4.00e-02	.	.
4-Nitrophenol	8	1	2.70e-01	2.38e+00	2.70e-01	.	.
Benzo(a)anthracene	8	2	7.00e-02	5.00e-01	9.00e-02	2.00e-02	1.20e-01
Benzo(a)pyrene	8	4	2.00e-02	5.00e-01	1.20e-01	7.00e-02	2.40e-01
Benzo(b)fluoranthene	8	6	3.00e-02	5.00e-01	7.00e-02	2.00e-02	1.00e-01
Benzo(ghi)perylene	8	3	2.00e-02	5.00e-01	4.00e-02	1.00e-02	7.00e-02
Benzo(k)fluoranthene	8	1	2.00e-02	5.00e-01	2.00e-02	.	.
Bis(2-ethylhexyl)pht	8	4	4.00e-02	5.10e-01	1.10e-01	6.00e-02	2.30e-01
Carbazole	7	1	2.00e-02	2.90e-01	2.00e-02	.	.
Chrysene	8	6	2.00e-02	5.00e-01	5.00e-02	1.00e-02	8.00e-02
Di-n-butylphthalate	8	2	2.00e-01	5.00e-01	3.40e-01	2.00e-02	3.80e-01
Dibenzofuran	8	2	2.00e-02	5.00e-01	6.00e-02	4.00e-02	1.40e-01
Diethylphthalate	8	1	3.00e-02	5.00e-01	3.00e-02	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Fluoranthene	8	7	2.00e-02	5.00e-01	1.20e-01	6.00e-02	2.30e-01
Indeno(1,2,3-cd)pyre	8	3	2.00e-02	5.00e-01	4.00e-02	2.00e-02	7.00e-02
Naphthalene	8	5	2.00e-02	5.00e-01	7.00e-02	5.00e-02	1.70e-01
Pentachlorophenol	7	1	2.60e-01	2.38e+00	2.60e-01	.	.
Phenanthrene	8	6	3.00e-02	5.00e-01	1.30e-01	6.00e-02	2.40e-01
Pyrene	8	4	3.00e-02	5.00e-01	1.10e-01	6.00e-02	2.30e-01
Total combustible or	7	7	2.93e+05	4.07e+05	3.42e+05	1.40e+04	3.69e+05
Total organic carbon	7	7	4.05e+03	4.14e+04	1.52e+04	4.71e+03	2.43e+04

Subreach 3.01

2-Methylnaphthalene	2	1	2.00e-02	2.00e-01	2.00e-02	.	.
Benzo(a)anthracene	2	1	1.00e-01	2.00e-01	1.00e-01	.	.
Benzo(a)pyrene	2	1	7.00e-02	2.00e-01	7.00e-02	.	.
Benzo(b)fluoranthene	2	2	3.00e-02	1.70e-01	1.00e-01	7.00e-02	5.50e-01
Benzo(ghi)perylene	2	1	9.00e-02	2.00e-01	9.00e-02	.	.
Bis(2-ethylhexyl)pht	2	2	2.00e-02	3.00e-02	3.00e-02	0.00e+00	5.00e-02
Chrysene	2	2	1.00e-02	9.00e-02	5.00e-02	4.00e-02	2.90e-01
Di-n-butylphthalate	2	1	4.00e-02	3.90e-01	4.00e-02	.	.
Fluoranthene	2	2	3.00e-02	1.40e-01	8.00e-02	6.00e-02	4.50e-01
Heptachlor	2	1	0.00e+00	0.00e+00	0.00e+00	.	.
Indeno(1,2,3-cd)pyre	2	1	9.00e-02	2.00e-01	9.00e-02	.	.
PCB-1260	2	1	1.00e-02	2.00e-02	2.00e-02	.	.
Phenanthrene	2	2	2.00e-02	7.00e-02	5.00e-02	3.00e-02	2.10e-01
Pyrene	2	2	2.00e-02	1.30e-01	7.00e-02	6.00e-02	4.30e-01
Total combustible or	2	2	3.52e+04	5.03e+05	2.69e+05	2.34e+05	1.75e+06
Total organic carbon	2	2	5.73e+03	1.21e+04	8.93e+03	3.20e+03	2.91e+04

Subreach 3.02

2-Methylnaphthalene	9	8	1.00e-02	4.90e-01	1.60e-01	4.00e-02	2.40e-01
4-Chloro-3-methylphe	9	1	6.00e-02	4.90e-01	6.00e-02	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Acenaphthene	9	5	2.00e-02	4.90e-01	4.00e-02	1.00e-02	6.00e-02
Acenaphthylene	9	1	3.00e-02	4.90e-01	3.00e-02	.	.
Anthracene	9	5	5.00e-02	4.90e-01	6.00e-02	1.00e-02	8.00e-02
Benzo(a)anthracene	9	7	8.00e-02	5.00e-01	2.40e-01	6.00e-02	3.50e-01
Benzo(a)pyrene	9	8	4.00e-02	4.90e-01	1.70e-01	4.00e-02	2.50e-01
Benzo(b)fluoranthene	9	8	2.00e-02	6.10e-01	2.60e-01	7.00e-02	3.80e-01
Benzo(ghi)perylene	9	6	5.00e-02	4.90e-01	1.20e-01	2.00e-02	1.70e-01
Benzo(k)fluoranthene	9	7	2.00e-02	4.90e-01	8.00e-02	3.00e-02	1.40e-01
Bis(2-ethylhexyl)pht	9	4	2.00e-02	1.60e+00	1.90e-01	8.00e-02	3.40e-01
Butylbenzylphthalate	9	4	2.00e-02	4.90e-01	3.00e-02	1.00e-02	5.00e-02
Carbazole	8	5	2.00e-02	2.50e-01	5.00e-02	1.00e-02	8.00e-02
Chrysene	9	7	8.00e-02	4.90e-01	2.00e-01	4.00e-02	2.80e-01
Dibenz(a,h)anthracen	9	3	3.00e-02	4.90e-01	4.00e-02	1.00e-02	5.00e-02
Dibenzofuran	9	7	2.00e-02	4.90e-01	6.00e-02	2.00e-02	9.00e-02
Fluoranthene	9	8	8.00e-02	7.10e-01	3.90e-01	8.00e-02	5.40e-01
Fluorene	9	4	3.00e-02	4.90e-01	6.00e-02	1.00e-02	9.00e-02
Indeno(1,2,3-cd)pyre	9	5	1.00e-01	4.90e-01	1.50e-01	2.00e-02	1.90e-01
Naphthalene	9	7	5.00e-02	4.90e-01	1.20e-01	3.00e-02	1.70e-01
PCB-1248	9	2	1.00e-02	1.17e+00	8.00e-02	4.00e-02	1.50e-01
PCB-1254	9	7	1.00e-02	1.50e+00	3.30e-01	1.50e-01	6.20e-01
PCB-1260	9	6	1.00e-02	2.39e+00	1.30e-01	6.00e-02	2.50e-01
Phenanthrene	9	8	1.10e-01	7.80e-01	3.10e-01	8.00e-02	4.50e-01
Phenol	9	2	7.00e-02	4.90e-01	1.00e-01	4.00e-02	1.70e-01
Pyrene	9	8	1.30e-01	6.60e-01	3.50e-01	6.00e-02	4.70e-01
Total combustible or	7	7	3.20e+03	3.99e+05	1.42e+05	6.72e+04	2.72e+05
Total organic carbon	4	4	1.48e+04	1.95e+05	6.27e+04	4.40e+04	1.66e+05
Subreach 3.03							
2-Methylnaphthalene	9	9	5.00e-02	5.10e-01	1.90e-01	5.00e-02	2.90e-01
4-Methylphenol	9	1	6.00e-02	3.10e-01	6.00e-02	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Acenaphthene	9	7	2.00e-02	2.40e-01	6.00e-02	2.00e-02	1.00e-01
Acenaphthylene	9	2	2.00e-02	3.10e-01	2.00e-02	0.00e+00	2.00e-02
Anthracene	9	7	2.00e-02	2.40e-01	8.00e-02	3.00e-02	1.30e-01
Benzo(a)anthracene	9	9	8.00e-02	8.70e-01	2.50e-01	8.00e-02	4.00e-01
Benzo(a)pyrene	9	9	5.00e-02	6.70e-01	1.80e-01	6.00e-02	2.90e-01
Benzo(b)fluoranthene	9	9	8.00e-02	1.00e+00	3.10e-01	9.00e-02	4.80e-01
Benzo(ghi)perylene	9	9	4.00e-02	4.80e-01	1.10e-01	5.00e-02	2.00e-01
Benzo(k)fluoranthene	9	9	3.00e-02	4.20e-01	9.00e-02	4.00e-02	1.70e-01
Benzoic acid	9	1	4.80e-01	7.40e-01	4.80e-01	.	.
Bis(2-ethylhexyl)pht	9	4	1.50e-01	3.10e-01	1.80e-01	2.00e-02	2.10e-01
Butylbenzylphthalate	9	1	2.00e-02	3.10e-01	2.00e-02	.	.
Carbazole	9	8	2.00e-02	2.30e-01	7.00e-02	2.00e-02	1.10e-01
Chrysene	9	9	8.00e-02	7.30e-01	2.20e-01	7.00e-02	3.50e-01
Di-n-octylphthlate	9	1	6.00e-02	3.10e-01	6.00e-02	.	.
Dibenz(a,h)anthracen	9	7	2.00e-02	2.40e-01	4.00e-02	1.00e-02	6.00e-02
Dibenzofuran	9	8	2.00e-02	2.30e-01	6.00e-02	2.00e-02	1.00e-01
Diethylphthalate	9	1	1.40e-01	3.10e-01	1.40e-01	.	.
Fluoranthene	9	9	1.10e-01	1.40e+00	4.00e-01	1.30e-01	6.50e-01
Fluorene	9	6	4.00e-02	2.40e-01	7.00e-02	2.00e-02	1.10e-01
Indeno(1,2,3-cd)pyre	9	9	4.00e-02	5.60e-01	1.30e-01	5.00e-02	2.30e-01
Methoxychlor	9	1	1.00e-02	1.50e-01	1.50e-01	.	.
Naphthalene	9	9	4.00e-02	3.90e-01	1.30e-01	4.00e-02	2.00e-01
PCB-1254	9	9	0.00e+00	5.30e-01	1.30e-01	5.00e-02	2.30e-01
PCB-1260	9	8	1.00e-02	2.80e-01	8.00e-02	3.00e-02	1.30e-01
Phenanthrene	9	9	1.00e-01	1.20e+00	3.30e-01	1.10e-01	5.40e-01
Phenol	9	1	8.00e-02	2.70e-01	8.00e-02	.	.
Pyrene	9	9	1.40e-01	1.25e+00	3.90e-01	1.10e-01	6.00e-01
Total combustible or	9	9	3.27e+03	4.27e+05	2.65e+05	5.50e+04	3.67e+05
Total organic carbon	1	1	1.84e+04	1.84e+04	1.84e+04	.	.

B-71
Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 3.04							
1,4-Dichlorobenzene	7	1	1.30e-01	5.30e-01	1.30e-01	.	.
2-Methylnaphthalene	7	7	3.00e-02	2.80e-01	1.30e-01	3.00e-02	1.90e-01
4-Chloro-3-methylphe	7	1	4.00e-02	5.30e-01	4.00e-02	.	.
4-Methylphenol	7	1	2.10e-01	5.30e-01	3.00e-01	.	.
Acenaphthene	7	2	2.00e-02	5.30e-01	8.00e-02	7.00e-02	2.10e-01
Acenaphthylene	7	1	2.00e-02	5.30e-01	2.00e-02	.	.
Anthracene	7	3	5.00e-02	5.30e-01	1.10e-01	3.00e-02	1.70e-01
Benzo(a)anthracene	7	5	2.00e-02	5.30e-01	1.20e-01	3.00e-02	1.70e-01
Benzo(a)pyrene	7	6	2.00e-02	5.30e-01	1.00e-01	2.00e-02	1.50e-01
Benzo(b)fluoranthene	7	6	3.00e-02	4.70e-01	1.90e-01	5.00e-02	2.90e-01
Benzo(ghi)perylene	7	4	7.00e-02	5.30e-01	1.00e-01	1.00e-02	1.20e-01
Benzo(k)fluoranthene	7	3	2.00e-02	5.30e-01	3.00e-02	0.00e+00	4.00e-02
Bis(2-ethylhexyl)pht	7	4	4.00e-02	3.28e+00	5.20e-01	4.90e-01	1.47e+00
Butylbenzylphthalate	7	2	1.60e-01	5.30e-01	1.60e-01	0.00e+00	1.70e-01
Carbazole	6	3	3.00e-02	2.70e-01	6.00e-02	3.00e-02	1.20e-01
Chrysene	7	5	2.00e-02	5.30e-01	1.20e-01	3.00e-02	1.80e-01
Dibenz(a,h)anthracen	7	3	2.00e-02	5.30e-01	6.00e-02	3.00e-02	1.30e-01
Dibenzofuran	7	4	3.00e-02	5.30e-01	7.00e-02	3.00e-02	1.20e-01
Diethylphthalate	7	2	1.40e-01	5.30e-01	1.60e-01	2.00e-02	2.10e-01
Fluoranthene	7	7	3.00e-02	2.70e-01	1.70e-01	3.00e-02	2.30e-01
Fluorene	7	4	2.00e-02	5.30e-01	8.00e-02	3.00e-02	1.40e-01
Indeno(1,2,3-cd)pyre	7	4	7.00e-02	5.30e-01	9.00e-02	1.00e-02	1.00e-01
Naphthalene	7	7	2.00e-02	3.30e-01	1.20e-01	4.00e-02	1.90e-01
PCB-1248	7	2	1.00e-02	2.88e+00	6.00e-02	2.00e-02	1.10e-01
PCB-1254	7	6	0.00e+00	5.72e+00	9.00e-02	3.00e-02	1.50e-01
PCB-1260	7	5	1.00e-02	5.72e+00	8.00e-02	2.00e-02	1.20e-01
Phenanthrene	7	7	3.00e-02	3.10e-01	1.60e-01	4.00e-02	2.30e-01
Phenol	7	1	7.00e-02	5.30e-01	7.00e-02	.	.
Pyrene	7	7	3.00e-02	2.70e-01	1.80e-01	3.00e-02	2.40e-01

B-72
Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Total combustible or	6	6	3.30e+04	3.43e+05	1.75e+05	5.77e+04	2.91e+05
Total organic carbon	4	4	5.95e+03	1.28e+04	9.10e+03	1.60e+03	1.29e+04
Subreach 4.01							
2-Methylnaphthalene	10	7	3.00e-02	4.90e-01	5.00e-02	1.00e-02	6.00e-02
Acenaphthene	10	1	1.10e-01	4.90e-01	1.10e-01	.	.
Anthracene	10	1	1.10e-01	4.90e-01	1.10e-01	.	.
Benzo(a)anthracene	10	5	4.00e-02	4.90e-01	6.00e-02	1.00e-02	8.00e-02
Benzo(a)pyrene	10	6	1.00e-02	4.90e-01	4.00e-02	1.00e-02	6.00e-02
Benzo(b)fluoranthene	10	6	2.00e-02	4.90e-01	7.00e-02	2.00e-02	1.00e-01
Benzo(ghi)perylene	10	3	3.00e-02	4.90e-01	5.00e-02	1.00e-02	7.00e-02
Benzo(k)fluoranthene	10	1	2.00e-02	4.90e-01	2.00e-02	.	.
Bis(2-ethylhexyl)pht	10	9	2.00e-02	4.90e-01	6.00e-02	1.00e-02	8.00e-02
Butylbenzylphthalate	10	2	2.00e-02	4.90e-01	2.00e-02	0.00e+00	2.00e-02
Carbazole	9	1	1.20e-01	4.50e-01	1.20e-01	.	.
Chrysene	10	6	2.00e-02	4.90e-01	5.00e-02	1.00e-02	7.00e-02
Dibenz(a,h)anthracen	10	1	1.10e-01	4.90e-01	1.10e-01	.	.
Dibenzofuran	10	3	1.00e-02	4.90e-01	5.00e-02	3.00e-02	1.10e-01
Diethylphthalate	10	1	4.00e-02	4.90e-01	4.00e-02	.	.
Fluoranthene	10	7	2.00e-02	4.90e-01	9.00e-02	2.00e-02	1.30e-01
Heptachlor	10	5	0.00e+00	1.20e-01	0.00e+00	0.00e+00	0.00e+00
Indeno(1,2,3-cd)pyre	10	3	4.00e-02	4.90e-01	6.00e-02	1.00e-02	9.00e-02
Naphthalene	10	7	2.00e-02	4.90e-01	3.00e-02	0.00e+00	4.00e-02
PCB-1254	10	8	0.00e+00	8.60e-01	1.10e-01	8.00e-02	2.60e-01
PCB-1260	10	5	1.00e-02	2.38e+00	2.00e-02	0.00e+00	2.00e-02
Pentachlorophenol	10	1	2.70e-01	2.38e+00	2.70e-01	.	.
Phenanthrene	10	7	2.00e-02	4.90e-01	6.00e-02	1.00e-02	8.00e-02
Phenol	10	1	1.20e-01	4.90e-01	1.20e-01	.	.
Pyrene	10	7	2.00e-02	4.90e-01	7.00e-02	2.00e-02	1.00e-01
Total combustible or	9	9	1.20e+04	5.50e+04	3.32e+04	4.53e+03	4.16e+04

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Total organic carbon	8	8	2.77e+03	1.34e+04	8.36e+03	1.38e+03	1.10e+04
Subreach 4.02							
2-Methylnaphthalene	5	4	3.00e-02	2.80e-01	1.00e-01	5.00e-02	2.10e-01
Anthracene	5	1	2.00e-02	2.80e-01	2.00e-02	.	.
Benzo(a)anthracene	5	4	2.00e-02	2.00e-01	8.00e-02	3.00e-02	1.40e-01
Benzo(a)pyrene	5	4	2.00e-02	3.10e-01	1.00e-01	6.00e-02	2.20e-01
Benzo(b)fluoranthene	5	5	2.00e-02	2.00e-01	9.00e-02	4.00e-02	1.70e-01
Benzo(ghi)perylene	5	4	2.00e-02	2.00e-01	5.00e-02	1.00e-02	7.00e-02
Benzo(k)fluoranthene	5	2	5.00e-02	2.10e-01	5.00e-02	0.00e+00	5.00e-02
Bis(2-ethylhexyl)pht	5	3	6.00e-02	2.80e-01	7.00e-02	1.00e-02	1.00e-01
Butylbenzylphthalate	5	1	6.00e-02	2.80e-01	6.00e-02	.	.
Carbazole	5	1	2.00e-02	2.80e-01	2.00e-02	.	.
Chrysene	5	4	3.00e-02	2.00e-01	9.00e-02	3.00e-02	1.50e-01
Dibenz(a,h)anthracen	5	2	2.00e-02	2.10e-01	2.00e-02	0.00e+00	2.00e-02
Dibenzofuran	5	2	2.00e-02	2.80e-01	4.00e-02	2.00e-02	8.00e-02
Diethylphthalate	5	1	3.00e-02	2.80e-01	3.00e-02	.	.
Fluoranthene	5	4	4.00e-02	2.60e-01	1.30e-01	5.00e-02	2.30e-01
Fluorene	5	1	2.00e-02	2.80e-01	2.00e-02	.	.
Indeno(1,2,3-cd)pyre	5	4	2.00e-02	2.00e-01	5.00e-02	2.00e-02	9.00e-02
Naphthalene	5	4	2.00e-02	2.80e-01	6.00e-02	3.00e-02	1.20e-01
PCB-1254	5	2	1.00e-02	5.00e-02	2.00e-02	1.00e-02	4.00e-02
PCB-1260	5	1	1.00e-02	3.00e-02	3.00e-02	.	.
Phenanthrene	5	5	2.00e-02	2.20e-01	9.00e-02	4.00e-02	1.60e-01
Pyrene	5	5	2.00e-02	2.40e-01	1.10e-01	4.00e-02	2.00e-01
Total combustible or	6	6	2.23e+05	4.09e+05	2.99e+05	3.08e+04	3.61e+05
Total organic carbon	6	6	5.17e+03	2.15e+04	1.13e+04	2.45e+03	1.62e+04
Subreach 4.03							
2-Methylnaphthalene	7	7	4.00e-02	2.40e-01	1.10e-01	2.00e-02	1.60e-01

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Benzo(a)anthracene	7	7	5.00e-02	9.00e-02	6.00e-02	1.00e-02	7.00e-02
Benzo(a)pyrene	7	7	4.00e-02	1.10e+00	2.90e-01	1.40e-01	5.60e-01
Benzo(b)fluoranthene	7	7	7.00e-02	1.50e-01	9.00e-02	1.00e-02	1.10e-01
Benzo(ghi)perylene	7	7	3.00e-02	9.00e-02	5.00e-02	1.00e-02	6.00e-02
Benzo(k)fluoranthene	7	7	2.00e-02	4.00e-02	3.00e-02	0.00e+00	3.00e-02
Bis(2-ethylhexyl)pht	7	7	6.00e-02	1.90e-01	1.20e-01	2.00e-02	1.50e-01
Butylbenzylphthalate	7	3	3.00e-02	2.80e-01	3.00e-02	0.00e+00	4.00e-02
Chrysene	7	7	6.00e-02	1.20e-01	7.00e-02	1.00e-02	9.00e-02
Dibenz(a,h)anthracen	7	2	1.00e-02	2.80e-01	2.00e-02	1.00e-02	3.00e-02
Dibenzofuran	7	6	2.00e-02	2.20e-01	5.00e-02	2.00e-02	9.00e-02
Fluoranthene	7	7	7.00e-02	1.40e-01	1.00e-01	1.00e-02	1.10e-01
Fluorene	7	1	3.00e-02	2.80e-01	3.00e-02	.	.
Indeno(1,2,3-cd)pyre	7	7	3.00e-02	8.00e-02	5.00e-02	1.00e-02	6.00e-02
Naphthalene	7	7	2.00e-02	1.20e-01	6.00e-02	1.00e-02	8.00e-02
PCB-1254	7	2	1.00e-02	8.00e-02	6.00e-02	0.00e+00	7.00e-02
PCB-1260	7	2	1.00e-02	4.00e-02	3.00e-02	0.00e+00	4.00e-02
Pentachlorophenol	7	1	4.00e-02	7.40e-01	4.00e-02	.	.
Phenanthrene	7	7	6.00e-02	1.90e-01	1.00e-01	2.00e-02	1.30e-01
Pyrene	7	7	9.00e-02	1.50e-01	1.00e-01	1.00e-02	1.20e-01
Total combustible or	7	7	2.74e+05	4.92e+05	3.70e+05	3.13e+04	4.31e+05
Total organic carbon	7	7	9.93e+03	2.22e+04	1.59e+04	1.91e+03	1.97e+04

Subreach 4.04

2-Methylnaphthalene	12	10	8.00e-02	5.33e+00	1.20e-01	1.00e-02	1.40e-01
4,4'-DDD	12	4.04	0.00e+00	9.90e-01	.	.	.
4,4'-DDT	12	4.04	0.00e+00	9.90e-01	.	.	.
4-Chloro-3-methylphe	12	4.04	1.00e+00	5.33e+00	.	.	.
4-Methylphenol	12	4.04	1.00e+00	5.33e+00	.	.	.
4-Nitrophenol	12	4.04	2.40e+00	2.60e+01	.	.	.
Acenaphthene	12	4.04	1.00e+00	5.33e+00	.	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Acenaphthylene	12	4.04	1.00e+00	5.33e+00	.	.	.
Anthracene	12	4.04	1.00e+00	5.33e+00	.	.	.
Benzo(a)anthracene	12	10	7.00e-02	5.33e+00	1.00e-01	1.00e-02	1.20e-01
Benzo(a)pyrene	12	8	7.00e-02	5.33e+00	5.50e-01	9.00e-02	7.00e-01
Benzo(b)fluoranthene	12	11	9.00e-02	5.33e+00	1.70e-01	2.00e-02	2.00e-01
Benzo(ghi)perylene	12	5	6.00e-02	5.33e+00	9.00e-02	1.00e-02	1.20e-01
Benzo(k)fluoranthene	12	4.04	1.00e+00	5.33e+00	.	.	.
Benzoic acid	12	4.04	2.40e+00	2.60e+01	.	.	.
Bis(2-ethylhexyl)pht	12	8	1.00e-01	3.34e+00	1.20e-01	1.00e-02	1.30e-01
Butylbenzylphthalate	12	4.04	1.00e+00	5.33e+00	.	.	.
Carbazole	11	4.04	1.00e+00	1.30e+00	.	.	.
Chrysene	12	8	8.00e-02	5.33e+00	1.20e-01	1.00e-02	1.50e-01
Fluoranthene	12	11	1.00e-01	5.33e+00	1.60e-01	1.00e-02	1.80e-01
Indeno(1,2,3-cd)pyre	12	1	9.00e-02	5.33e+00	9.00e-02	.	.
Naphthalene	12	7	6.00e-02	5.33e+00	1.00e-01	1.00e-02	1.10e-01
PCB-1254	12	1	1.00e-02	2.79e+00	2.79e+00	.	.
Phenanthrene	12	11	1.00e-01	5.33e+00	1.50e-01	1.00e-02	1.70e-01
Pyrene	12	11	1.10e-01	5.33e+00	1.80e-01	2.00e-02	2.20e-01
Total combustible or	11	11	1.26e+04	5.41e+05	1.18e+05	4.30e+04	1.96e+05
Total organic carbon	11	11	2.11e+04	3.45e+04	2.46e+04	1.15e+03	2.67e+04
Subreach 5							
Bis(2-ethylhexyl)pht	4	3	1.01e+00	4.52e+00	2.85e+00	6.30e-01	4.32e+00
Subreach 7.01							
4-Nitrophenol	1	1	1.40e-01	1.40e-01	1.40e-01	.	.
Benzo(a)anthracene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Benzo(a)pyrene	1	1	3.90e-01	3.90e-01	3.90e-01	.	.
Benzo(b)fluoranthene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Benzo(ghi)perylene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Chrysene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Indeno(1,2,3-cd)pyre	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Phenanthrene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Pyrene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Total combustible or	1	1	7.08e+05	7.08e+05	7.08e+05	.	.
Subreach 7.02							
2-Methylnaphthalene	1	1	1.10e-01	1.10e-01	1.10e-01	.	.
Benzo(a)anthracene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Benzo(a)pyrene	1	1	6.40e-01	6.40e-01	6.40e-01	.	.
Benzo(b)fluoranthene	1	1	6.00e-02	6.00e-02	6.00e-02	.	.
Benzo(ghi)perylene	1	1	6.00e-02	6.00e-02	6.00e-02	.	.
Chrysene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Indeno(1,2,3-cd)pyre	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Naphthalene	1	1	6.00e-02	6.00e-02	6.00e-02	.	.
Phenanthrene	1	1	8.00e-02	8.00e-02	8.00e-02	.	.
Pyrene	1	1	1.10e-01	1.10e-01	1.10e-01	.	.
Total combustible or	1	1	6.26e+05	6.26e+05	6.26e+05	.	.
Subreach 8							
2-Methylnaphthalene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Benzo(a)pyrene	1	1	5.50e-01	5.50e-01	5.50e-01	.	.
Benzo(b)fluoranthene	1	1	7.00e-02	7.00e-02	7.00e-02	.	.
Benzo(ghi)perylene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Chrysene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Fluoranthene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Indeno(1,2,3-cd)pyre	1	1	7.00e-02	7.00e-02	7.00e-02	.	.
Naphthalene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Phenanthrene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Pyrene	1	1	8.00e-02	8.00e-02	8.00e-02	.	.

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Total combustible or	1	1	5.49e+05	5.49e+05	5.49e+05	.	.
Subreach 13							
2,4-Dimethylphenol	5	1	2.20e-01	2.70e-01	2.70e-01	.	.
2-Methylnaphthalene	5	5	4.00e-02	1.10e+01	2.37e+00	2.16e+00	6.97e+00
Acenaphthene	5	1	1.90e-01	2.70e-01	1.90e-01	.	.
Acenaphthylene	5	1	2.00e-02	1.20e+00	2.00e-02	.	.
Anthracene	5	1	2.00e-02	1.20e+00	2.00e-02	.	.
Benzo(a)anthracene	5	3	6.00e-02	1.20e+00	1.10e-01	3.00e-02	1.80e-01
Benzo(a)pyrene	5	4	6.00e-02	1.20e+00	1.70e-01	7.00e-02	3.00e-01
Benzo(b)fluoranthene	5	4	2.00e-02	3.00e-01	1.50e-01	6.00e-02	2.70e-01
Benzo(ghi)perylene	5	4	7.00e-02	2.30e-01	1.10e-01	3.00e-02	1.70e-01
Benzo(k)fluoranthene	5	2	2.00e-02	1.20e+00	3.00e-02	1.00e-02	5.00e-02
Benzoic acid	5	2	7.00e-02	2.80e+00	9.00e-02	3.00e-02	1.50e-01
Bis(2-ethylhexyl)pht	5	5	3.00e-02	2.70e-01	1.00e-01	4.00e-02	1.90e-01
Carbazole	5	3	2.00e-02	2.70e-01	8.00e-02	6.00e-02	2.20e-01
Chrysene	5	4	7.00e-02	5.50e-01	2.00e-01	9.00e-02	4.00e-01
Dibenz(a,h)anthracen	5	1	2.00e-02	1.20e+00	2.00e-02	.	.
Dibenzofuran	5	4	5.00e-02	2.00e+00	4.50e-01	4.00e-01	1.30e+00
Fluoranthene	5	4	8.00e-02	2.70e-01	1.60e-01	4.00e-02	2.40e-01
Fluorene	5	2	2.00e-02	2.70e-01	8.00e-02	7.00e-02	2.40e-01
Indeno(1,2,3-cd)pyre	5	4	6.00e-02	2.30e-01	9.00e-02	2.00e-02	1.20e-01
Naphthalene	5	5	3.00e-02	8.30e+00	1.76e+00	1.63e+00	5.25e+00
PCB-1254	5	1	1.00e-02	2.00e-02	2.00e-02	.	.
Phenanthrene	5	5	2.00e-02	3.70e+00	8.70e-01	7.10e-01	2.38e+00
Phenol	5	1	5.00e-02	1.20e+00	5.00e-02	.	.
Pyrene	5	4	9.00e-02	6.10e-01	2.50e-01	1.00e-01	4.60e-01
Total combustible or	5	5	3.92e+04	3.96e+05	2.88e+05	6.35e+04	4.23e+05
Total organic carbon	5	5	8.32e+03	1.12e+05	3.18e+04	2.00e+04	7.43e+04

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Table B12 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 18							
Benzo(a)anthracene	3	3	2.00e-01	6.80e-01	3.60e-01	1.60e-01	8.20e-01
Benzo(a)pyrene	3	3	1.30e-01	1.60e-01	1.50e-01	1.00e-02	1.80e-01
Benzo(b)fluoranthene	3	3	2.50e-01	3.10e-01	2.80e-01	2.00e-02	3.30e-01
Chrysene	3	3	1.80e-01	2.30e-01	2.00e-01	2.00e-02	2.50e-01
Fluoranthene	3	3	3.10e-01	4.10e-01	3.60e-01	3.00e-02	4.50e-01
Phenanthrene	3	3	1.10e-01	1.90e-01	1.50e-01	2.00e-02	2.10e-01
Pyrene	3	3	3.10e-01	3.70e-01	3.50e-01	2.00e-02	4.10e-01
Total combustible or	3	3	4.86e+04	8.73e+04	6.67e+04	1.12e+04	9.95e+04
Total organic carbon	3	3	6.16e+03	2.49e+04	1.65e+04	5.48e+03	3.24e+04
Subreach 22							
Bis(2-ethylhexyl)pht	1	1	1.47e+00	1.47e+00	1.47e+00	.	.
Diethylphthalate	1	1	2.99e+00	2.99e+00	2.99e+00	.	.
PCB-1254	1	1	1.59e+00	1.59e+00	1.59e+00	.	.

Table B13. Summary statistics for mass- weighted sediment organic (PCB/pesticide) concentrations (mg/kg) by subreach

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Subreach 0							
2-Methylnaphthalene	5	5	4.00e-02	7.20e-01	2.90e-01	1.50e-01	6.20e-01
Acenaphthene	5	2	2.00e-02	2.30e-01	6.00e-02	4.00e-02	1.60e-01
Anthracene	5	2	1.00e-01	2.30e-01	1.00e-01	0.00e+00	1.00e-01
Benzo(a)anthracene	5	2	9.00e-02	2.30e-01	1.00e-01	1.00e-02	1.20e-01
Benzo(a)pyrene	5	2	9.00e-02	2.30e-01	1.00e-01	1.00e-02	1.10e-01
Benzo(b)fluoranthene	5	4	2.00e-02	2.00e-01	7.00e-02	3.00e-02	1.30e-01
Benzo(ghi)perylene	5	2	5.00e-02	2.30e-01	1.00e-01	4.00e-02	1.90e-01
Benzo(k)fluoranthene	5	2	2.00e-02	2.30e-01	3.00e-02	0.00e+00	4.00e-02
Butylbenzylphthalate	5	1	3.00e-02	2.70e-01	3.00e-02	.	.
Carbazole	5	2	2.00e-02	2.30e-01	2.00e-02	0.00e+00	2.00e-02
Chrysene	5	4	2.00e-02	2.00e-01	7.00e-02	3.00e-02	1.40e-01
Dibenzofuran	5	2	1.40e-01	2.30e-01	1.60e-01	2.00e-02	1.90e-01
Diethylphthalate	5	2	1.20e-01	2.30e-01	1.40e-01	3.00e-02	2.00e-01
Fluoranthene	5	3	2.00e-02	2.00e-01	7.00e-02	3.00e-02	1.30e-01
Fluorene	5	2	5.00e-02	2.30e-01	5.00e-02	0.00e+00	5.00e-02
Indeno(1,2,3-cd)pyre	5	1	1.90e-01	2.70e-01	1.90e-01	.	.
Naphthalene	5	5	2.00e-02	4.10e-01	1.70e-01	9.00e-02	3.60e-01
Phenanthrene	5	5	3.00e-02	4.20e-01	1.70e-01	9.00e-02	3.60e-01
Pyrene	5	5	2.00e-02	1.40e-01	7.00e-02	3.00e-02	1.30e-01
Total combustible or	5	5	5.29e+04	4.29e+05	2.95e+05	6.59e+04	4.35e+05
Total organic carbon	5	5	9.83e+03	2.17e+04	1.54e+04	2.42e+03	2.06e+04
Subreach 1							
4,4'-DDD	2	1	1.30e-01	3.80e-01	1.30e-01	.	.
4,4'-DDT	2	1	1.30e-01	3.80e-01	1.30e-01	.	.
Benzo(a)anthracene	2	1	5.20e-01	7.90e-01	7.90e-01	.	.
Benzo(k)fluoranthene	2	1	5.20e-01	7.90e-01	7.90e-01	.	.
Chrysene	2	1	5.20e-01	7.90e-01	7.90e-01	.	.

B-80
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Fluoranthene	2	1	5.20e-01	8.20e-01	8.20e-01	.	.
Pyrene	2	1	5.20e-01	8.10e-01	8.10e-01	.	.
Subreach 2.01							
Bis(2-ethylhexyl)pht	1	1	2.00e-02	2.00e-02	2.00e-02	.	.
Total Combustible Or	1	1	1.81e+04	1.81e+04	1.81e+04	.	.
Total Organic Carbon	1	1	3.82e+03	3.82e+03	3.82e+03	.	.
Subreach 2.02							
Benzo(a)anthracene	1	1	4.90e-01	4.90e-01	4.90e-01	.	.
Benzo(a)pyrene	1	1	4.90e-01	4.90e-01	4.90e-01	.	.
Benzo(b)fluoranthene	1	1	4.80e-01	4.80e-01	4.80e-01	.	.
Benzo(k)fluoranthene	1	1	5.00e-01	5.00e-01	5.00e-01	.	.
Bis(2-ethylhexyl)pht	1	1	4.10e-01	4.10e-01	4.10e-01	.	.
Chrysene	1	1	4.90e-01	4.90e-01	4.90e-01	.	.
Di-n-butylphthalate	1	1	4.80e-01	4.80e-01	4.80e-01	.	.
Diethylphthalate	1	1	4.80e-01	4.80e-01	4.80e-01	.	.
Fluoranthene	1	1	4.20e-01	4.20e-01	4.20e-01	.	.
Indeno(1,2,3-cd)pyre	1	1	4.90e-01	4.90e-01	4.90e-01	.	.
PCB-1254	1	1	2.10e+00	2.10e+00	2.10e+00	.	.
PCB-1260	1	1	2.10e+00	2.10e+00	2.10e+00	.	.
Phenanthrene	1	1	4.80e-01	4.80e-01	4.80e-01	.	.
Pyrene	1	1	4.30e-01	4.30e-01	4.30e-01	.	.
Toxaphene	1	1	2.10e+00	2.10e+00	2.10e+00	.	.
Subreach 2.03							
4-Nitrophenol	1	1	2.60e-01	2.60e-01	2.60e-01	.	.
Bis(2-ethylhexyl)pht	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Diethylphthalate	1	1	1.40e-01	1.40e-01	1.40e-01	.	.
Heptachlor	1	1	0.00e+00	0.00e+00	0.00e+00	.	.

[illegible]

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Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
2-Methylnaphthalene	2	1	2.00e-02	2.10e-01	2.00e-02	.	.
Acenaphthene	2	1	7.00e-02	2.10e-01	7.00e-02	.	.
Anthracene	2	1	7.00e-02	2.10e-01	7.00e-02	.	.
Benzo(a)anthracene	2	1	2.10e-01	2.20e-01	2.20e-01	.	.
Benzo(a)pyrene	2	1	1.10e-01	2.10e-01	1.10e-01	.	.
Benzo(b)fluoranthene	2	2	1.60e-01	3.20e-01	2.40e-01	8.00e-02	7.30e-01
Benzo(ghi)perylene	2	1	6.00e-02	2.10e-01	6.00e-02	.	.
Benzo(k)fluoranthene	2	1	9.00e-02	2.10e-01	9.00e-02	.	.
Bis(2-ethylhexyl)pht	2	2	3.00e-02	3.00e-02	3.00e-02	0.00e+00	6.00e-02
Carbazole	2	1	6.00e-02	2.10e-01	6.00e-02	.	.
Chrysene	2	2	1.60e-01	1.80e-01	1.70e-01	1.00e-02	2.40e-01
Di-n-butylphthalate	2	1	2.00e-02	4.60e-01	2.00e-02	.	.
Dibenzofuran	2	1	6.00e-02	2.10e-01	6.00e-02	.	.
Diethylphthalate	2	1	8.00e-02	2.60e-01	8.00e-02	.	.
Fluoranthene	2	2	1.60e-01	4.20e-01	2.90e-01	1.30e-01	1.10e+00
Fluorene	2	1	7.00e-02	2.10e-01	7.00e-02	.	.
Heptachlor	2	1	0.00e+00	0.00e+00	0.00e+00	.	.
Indeno(1,2,3-cd)pyre	2	1	6.00e-02	2.10e-01	6.00e-02	.	.
PCB-1254	2	1	1.00e-02	5.00e-02	5.00e-02	.	.
PCB-1260	2	1	1.00e-02	3.00e-02	3.00e-02	.	.
Pentachlorophenol	2	1	1.50e-01	6.20e-01	1.50e-01	.	.
Phenanthrene	2	2	1.60e-01	1.80e-01	1.70e-01	1.00e-02	2.20e-01
Pyrene	2	2	3.00e-02	4.20e-01	2.20e-01	2.00e-01	1.48e+00
Total combustible or	2	2	3.35e+04	4.70e+05	2.52e+05	2.18e+05	1.63e+06
Total organic carbon	2	2	6.29e+03	1.98e+04	1.30e+04	6.76e+03	5.57e+04
Subreach 3.02							
2-Methylnaphthalene	9	8	5.00e-02	4.10e-01	1.10e-01	2.00e-02	1.40e-01
4-Chloro-3-methylph e	9	1	2.10e-01	4.10e-01	2.10e-01	.	.

B-83
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Acenaphthene	9	5	4.00e-02	4.10e-01	1.30e-01	3.00e-02	1.90e-01
Acenaphthylene	9	3	2.00e-02	4.10e-01	8.00e-02	3.00e-02	1.30e-01
Anthracene	9	5	3.00e-02	4.10e-01	1.20e-01	4.00e-02	1.80e-01
Benzo(a)anthracene	9	7	5.00e-02	9.50e-01	2.40e-01	1.00e-01	4.30e-01
Benzo(a)pyrene	9	8	4.00e-02	5.70e-01	2.00e-01	6.00e-02	3.10e-01
Benzo(b)fluoranthene	9	8	6.00e-02	9.80e-01	2.80e-01	1.00e-01	4.70e-01
Benzo(ghi)perylene	9	6	4.00e-02	4.10e-01	1.30e-01	3.00e-02	1.80e-01
Benzo(k)fluoranthene	9	8	2.00e-02	4.10e-01	1.70e-01	5.00e-02	2.60e-01
Bis(2-ethylhexyl)pht	9	4	1.20e-01	4.70e-01	2.00e-01	5.00e-02	3.00e-01
Butylbenzylphthalate	9	5	2.00e-02	4.10e-01	8.00e-02	4.00e-02	1.40e-01
Carbazole	8	6	3.00e-02	2.30e-01	1.10e-01	3.00e-02	1.50e-01
Chrysene	9	7	5.00e-02	7.20e-01	2.00e-01	7.00e-02	3.40e-01
Dibenz(a,h)anthracen	9	4	3.00e-02	4.10e-01	7.00e-02	2.00e-02	1.00e-01
Dibenzofuran	9	7	4.00e-02	4.10e-01	1.30e-01	2.00e-02	1.70e-01
Fluoranthene	9	8	7.00e-02	1.38e+00	3.80e-01	1.40e-01	6.40e-01
Fluorene	9	4	4.00e-02	4.10e-01	1.40e-01	4.00e-02	2.10e-01
Indeno(1,2,3-cd)pyre	9	7	1.30e-01	4.10e-01	1.70e-01	2.00e-02	2.20e-01
Naphthalene	9	7	3.00e-02	4.10e-01	8.00e-02	2.00e-02	1.10e-01
PCB-1248,	9	3	1.00e-02	3.90e-01	7.00e-02	3.00e-02	1.20e-01
PCB-1254	9	8	1.00e-02	1.03e+00	3.30e-01	1.20e-01	5.60e-01
PCB-1260	9	6	1.00e-02	7.90e-01	1.40e-01	4.00e-02	2.20e-01
Phenanthrene	9	8	4.00e-02	1.40e+00	3.30e-01	1.40e-01	5.90e-01
Phenol	9	2	1.70e-01	4.10e-01	2.00e-01	2.00e-02	2.40e-01
Pyrene	9	8	8.00e-02	1.29e+00	3.50e-01	1.30e-01	5.90e-01
Total combustible or	8	8	3.04e+03	3.99e+05	1.26e+05	5.84e+04	2.36e+05
Total organic carbon	5	5	9.68e+03	1.95e+05	5.11e+04	3.59e+04	1.28e+05
Subreach 3.03							
2-Methylnaphthalene	9	9	4.00e-02	3.50e-01	1.30e-01	3.00e-02	1.90e-01
4-Methylphenol	9	1	2.00e-01	2.90e-01	2.00e-01	.	.

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Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Acenaphthene	9	7	2.00e-02	2.50e-01	6.00e-02	3.00e-02	1.10e-01
Acenaphthylene	9	4	1.00e-01	2.60e-01	1.10e-01	1.00e-02	1.20e-01
Anthracene	9	7	3.00e-02	2.50e-01	7.00e-02	3.00e-02	1.20e-01
Benzo(a)anthracene	9	9	6.00e-02	2.60e-01	1.60e-01	2.00e-02	2.00e-01
Benzo(a)pyrene	9	9	4.00e-02	4.10e-01	1.50e-01	4.00e-02	2.40e-01
Benzo(b)fluoranthene	9	9	6.00e-02	4.30e-01	2.20e-01	4.00e-02	2.90e-01
Benzo(ghi)perylene	9	9	3.00e-02	3.00e-01	9.00e-02	3.00e-02	1.50e-01
Benzo(k)fluoranthene	9	9	2.00e-02	2.80e-01	7.00e-02	3.00e-02	1.20e-01
Benzoic acid	9	1	5.50e-01	7.10e-01	6.10e-01	.	.
Bis(2-ethylhexyl)pht	9	4	1.20e-01	3.60e-01	1.60e-01	2.00e-02	1.90e-01
Butylbenzylphthalate	9	1	2.00e-02	2.90e-01	2.00e-02	.	.
Carbazole	9	8	2.00e-02	2.50e-01	1.10e-01	3.00e-02	1.60e-01
Chrysene	9	9	6.00e-02	2.40e-01	1.50e-01	2.00e-02	1.90e-01
Di-n-octylphthalate	9	1	2.00e-01	2.90e-01	2.00e-01	.	.
Dibenz(a,h)anthracen	9	7	2.00e-02	2.50e-01	9.00e-02	3.00e-02	1.50e-01
Dibenzofuran	9	8	2.00e-02	2.50e-01	6.00e-02	1.00e-02	9.00e-02
Diethylphthalate	9	1	2.20e-01	2.90e-01	2.40e-01	.	.
Fluoranthene	9	9	8.00e-02	4.80e-01	2.80e-01	5.00e-02	3.70e-01
Fluorene	9	6	2.00e-02	2.50e-01	1.20e-01	3.00e-02	1.80e-01
Indeno(1,2,3-cd)pyre	9	9	3.00e-02	3.20e-01	1.00e-01	3.00e-02	1.60e-01
Methoxychlor	9	1	0.00e+00	4.00e-02	4.00e-02	.	.
Naphthalene	9	9	3.00e-02	2.10e-01	1.00e-01	2.00e-02	1.40e-01
PCB-1248	9	1	1.00e-02	1.70e-01	1.70e-01	.	.
PCB-1254	9	9	0.00e+00	6.20e-01	2.40e-01	6.00e-02	3.50e-01
PCB-1260	9	8	1.00e-02	2.10e-01	1.10e-01	2.00e-02	1.50e-01
Phenanthrene	9	9	7.00e-02	3.80e-01	2.10e-01	4.00e-02	2.80e-01
Phenol	9	1	2.10e-01	2.80e-01	2.10e-01	.	.
Pyrene	9	9	1.00e-01	3.90e-01	2.60e-01	3.00e-02	3.20e-01
Total combustible or	9	9	3.73e+03	4.42e+05	2.63e+05	5.60e+04	3.67e+05
Total organic carbon	1	1	1.70e+04	1.70e+04	1.70e+04	.	.

B-85
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Subreach 3.04							
1,4-Dichlorobenzene	7	1	2.10e-01	4.80e-01	2.30e-01	.	.
2-Methylnaphthalene	7	7	4.00e-02	4.40e-01	1.40e-01	6.00e-02	2.50e-01
4-Chloro-3-methylph	7	1	1.90e-01	4.80e-01	1.90e-01	.	.
4-Methylphenol	7	1	2.10e-01	4.80e-01	2.80e-01	.	.
Acenaphthene	7	3	1.50e-01	4.80e-01	1.70e-01	1.00e-02	1.90e-01
Acenaphthylene	7	2	1.70e-01	4.80e-01	1.80e-01	1.00e-02	2.00e-01
Anthracene	7	4	2.00e-02	4.70e-01	1.60e-01	7.00e-02	2.90e-01
Benzo(a)anthracene	7	7	6.00e-02	4.70e-01	1.60e-01	5.00e-02	2.60e-01
Benzo(a)pyrene	7	7	6.00e-02	4.70e-01	1.80e-01	6.00e-02	2.90e-01
Benzo(b)fluoranthene	7	7	7.00e-02	4.60e-01	2.00e-01	5.00e-02	2.90e-01
Benzo(ghi)perylene	7	4	1.00e-01	4.80e-01	1.40e-01	3.00e-02	1.90e-01
Benzo(k)fluoranthene	7	4	4.00e-02	4.70e-01	1.60e-01	7.00e-02	2.90e-01
Bis(2-ethylhexyl)phta	7	5	3.00e-02	9.70e-01	2.10e-01	1.50e-01	5.10e-01
Butylbenzylphthalate	7	2	1.70e-01	4.80e-01	1.80e-01	2.00e-02	2.10e-01
Carbazole	6	3	6.00e-02	2.50e-01	1.40e-01	4.00e-02	2.30e-01
Chrysene	7	7	7.00e-02	4.70e-01	1.50e-01	5.00e-02	2.60e-01
Di-n-butylphthalate	7	1	2.20e-01	6.00e-01	4.70e-01	.	.
Dibenz(a,h)anthracen	7	3	2.00e-02	4.80e-01	1.30e-01	6.00e-02	2.40e-01
Dibenzofuran	7	4	7.00e-02	4.80e-01	1.50e-01	4.00e-02	2.20e-01
Diethylphthalate	7	5	8.00e-02	4.70e-01	1.40e-01	3.00e-02	2.00e-01
Dimethylphthalate	7	1	2.10e-01	4.80e-01	4.80e-01	.	.
Fluoranthene	7	7	7.00e-02	3.60e-01	1.70e-01	4.00e-02	2.40e-01
Fluorene	7	4	3.00e-02	4.80e-01	1.50e-01	4.00e-02	2.40e-01
Indeno(1,2,3-cd)pyre	7	4	6.00e-02	4.80e-01	1.20e-01	3.00e-02	1.90e-01
Naphthalene	7	7	3.00e-02	4.60e-01	1.60e-01	5.00e-02	2.70e-01
PCB-1248	7	2	1.00e-02	1.12e+00	3.00e-02	1.00e-02	5.00e-02
PCB-1254	7	6	1.00e-02	2.27e+00	7.00e-02	3.00e-02	1.20e-01
PCB-1260	7	5	1.00e-02	2.27e+00	6.00e-02	1.00e-02	9.00e-02

B-86
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Phenanthrene	7	7	7.00e-02	3.80e-01	1.60e-01	4.00e-02	2.40e-01
Phenol	7	1	7.00e-02	4.80e-01	7.00e-02	.	.
Pyrene	7	7	7.00e-02	3.90e-01	1.90e-01	4.00e-02	2.70e-01
Total combustible or	6	6	4.10e+04	3.42e+05	1.77e+05	5.62e+04	2.90e+05
Total organic carbon	4	4	5.95e+03	1.35e+04	1.05e+04	1.68e+03	1.45e+04
Subreach 4.01							
2-Methylnaphthalene	10	7	4.00e-02	5.00e-01	8.00e-02	2.00e-02	1.10e-01
Acenaphthene	10	1	1.20e-01	5.00e-01	1.20e-01	.	.
Anthracene	10	1	1.20e-01	5.00e-01	1.20e-01	.	.
Benzo(a)anthracene	10	6	8.00e-02	5.00e-01	1.70e-01	3.00e-02	2.30e-01
Benzo(a)pyrene	10	6	1.00e-02	5.00e-01	3.00e-02	1.00e-02	5.00e-02
Benzo(b)fluoranthene	10	6	4.00e-02	5.00e-01	7.00e-02	1.00e-02	9.00e-02
Benzo(ghi)perylene	10	4	6.00e-02	5.00e-01	1.30e-01	4.00e-02	2.20e-01
Benzo(k)fluoranthene	10	1	1.70e-01	5.00e-01	1.70e-01	.	.
Bis(2-ethylhexyl)pht	10	10	2.00e-02	9.70e-01	1.90e-01	9.00e-02	3.50e-01
Butylbenzylphthalate	10	3	2.00e-02	5.00e-01	9.00e-02	4.00e-02	1.70e-01
Carbazole	9	1	1.20e-01	4.00e-01	1.20e-01	.	.
Chrysene	10	7	3.00e-02	5.00e-01	1.30e-01	4.00e-02	2.00e-01
Dibenz(a,h)anthracen	10	1	1.20e-01	5.00e-01	1.20e-01	.	.
Dibenzofuran	10	5	2.00e-02	5.00e-01	9.00e-02	4.00e-02	1.60e-01
Diethylphthalate	10	1	4.00e-02	5.00e-01	4.00e-02	.	.
Fluoranthene	10	8	5.00e-02	4.90e-01	1.40e-01	4.00e-02	2.20e-01
Fluorene	10	1	1.50e-01	5.00e-01	1.50e-01	.	.
Heptachlor	10	7	0.00e+00	1.00e-01	0.00e+00	0.00e+00	0.00e+00
Indeno(1,2,3-cd)pyre	10	3	7.00e-02	5.00e-01	1.50e-01	5.00e-02	2.50e-01
N-Nitroso-di-n-propy	10	1	2.00e-01	5.00e-01	5.00e-01	.	.
Naphthalene	10	7	2.00e-02	5.00e-01	4.00e-02	1.00e-02	5.00e-02
PCB-1254	10	8	0.00e+00	4.00e-01	6.00e-02	4.00e-02	1.30e-01
PCB-1260	10	5	1.00e-02	2.06e+00	2.00e-02	0.00e+00	2.00e-02

B-87
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Pentachlorophenol	10	1	4.40e-01	2.42e+00	4.40e-01	.	.
Phenanthrene	10	8	5.00e-02	5.00e-01	1.30e-01	4.00e-02	2.10e-01
Phenol	10	1	1.80e-01	5.00e-01	1.80e-01	.	.
Pyrene	10	8	4.00e-02	4.90e-01	1.40e-01	4.00e-02	2.20e-01
Total combustible or	9	9	2.28e+04	5.50e+04	4.05e+04	3.07e+03	4.62e+04
Total organic carbon	8	8	6.16e+03	1.22e+04	9.53e+03	7.93e+02	1.10e+04
Subreach 4.02							
2-Methylnaphthalene	6	5	2.00e-02	3.00e-01	1.00e-01	5.00e-02	1.90e-01
Acenaphthene	6	1	1.30e-01	2.50e-01	1.30e-01	.	.
Anthracene	6	1	3.00e-02	2.50e-01	3.00e-02	.	.
Benzo(a)anthracene	6	4	7.00e-02	2.10e-01	1.10e-01	3.00e-02	1.60e-01
Benzo(a)pyrene	6	4	3.00e-02	6.90e-01	1.60e-01	1.10e-01	3.90e-01
Benzo(b)fluoranthene	6	5	2.00e-02	2.40e-01	1.00e-01	3.00e-02	1.70e-01
Benzo(ghi)perylene	6	4	6.00e-02	2.10e-01	8.00e-02	1.00e-02	1.00e-01
Benzo(k)fluoranthene	6	2	3.00e-02	2.10e-01	4.00e-02	2.00e-02	8.00e-02
Bis(2-ethylhexyl)pht	6	3	4.00e-02	2.50e-01	7.00e-02	2.00e-02	1.20e-01
Butylbenzylphthalate	6	1	1.70e-01	2.50e-01	1.70e-01	.	.
Carbazole	6	1	2.00e-02	2.50e-01	2.00e-02	.	.
Chrysene	6	4	4.00e-02	2.10e-01	1.00e-01	3.00e-02	1.60e-01
Dibenz(a,h)anthracen	6	2	2.00e-02	2.10e-01	2.00e-02	0.00e+00	2.00e-02
Dibenzofuran	6	2	6.00e-02	2.50e-01	7.00e-02	0.00e+00	8.00e-02
Diethylphthalate	6	1	1.60e-01	2.50e-01	1.60e-01	.	.
Fluoranthene	6	4	6.00e-02	2.90e-01	1.30e-01	4.00e-02	2.00e-01
Fluorene	6	1	3.00e-02	2.50e-01	3.00e-02	.	.
Indeno(1,2,3-cd)pyre	6	4	6.00e-02	2.10e-01	8.00e-02	1.00e-02	1.10e-01
Naphthalene	6	4	2.00e-02	2.50e-01	1.00e-01	3.00e-02	1.60e-01
PCB-1254	6	5	1.00e-02	4.00e-02	2.00e-02	1.00e-02	3.00e-02
PCB-1260	6	3	1.00e-02	3.00e-02	1.00e-02	1.00e-02	2.00e-02
Pentachlorophenol	6	1	3.00e-01	6.20e-01	3.00e-01	.	.

B-88
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Phenanthrene	6	5	2.00e-02	2.80e-01	1.00e-01	4.00e-02	1.80e-01
Pyrene	6	5	2.00e-02	2.50e-01	9.00e-02	4.00e-02	1.60e-01
Total combustible or	6	6	2.20e+05	3.93e+05	2.97e+05	3.20e+04	3.62e+05
Total organic carbon	6	6	5.17e+03	2.20e+04	1.13e+04	2.44e+03	1.62e+04
Subreach 4.03							
2-Methylnaphthalene	7	7	6.00e-02	2.30e-01	1.20e-01	2.00e-02	1.70e-01
Acenaphthene	7	1	1.10e-01	2.70e-01	1.10e-01	.	.
Anthracene	7	1	1.10e-01	2.70e-01	1.10e-01	.	.
Benzo(a)anthracene	7	7	5.00e-02	1.80e-01	8.00e-02	2.00e-02	1.20e-01
Benzo(a)pyrene	7	7	4.00e-02	5.70e-01	3.40e-01	8.00e-02	4.90e-01
Benzo(b)fluoranthene	7	7	4.00e-02	1.80e-01	9.00e-02	2.00e-02	1.20e-01
Benzo(ghi)perylene	7	7	3.00e-02	9.00e-02	5.00e-02	1.00e-02	6.00e-02
Benzo(k)fluoranthene	7	7	2.00e-02	1.80e-01	6.00e-02	2.00e-02	1.00e-01
Bis(2-ethylhexyl)pht	7	7	5.00e-02	2.80e-01	1.30e-01	3.00e-02	1.80e-01
Butylbenzylphthalate	7	3	3.00e-02	2.70e-01	1.20e-01	5.00e-02	2.20e-01
Chrysene	7	7	3.00e-02	1.30e-01	7.00e-02	1.00e-02	9.00e-02
Dibenz(a,h)anthracen	7	3	2.00e-02	2.70e-01	1.00e-01	4.00e-02	1.80e-01
Dibenzofuran	7	6	2.00e-02	2.10e-01	8.00e-02	3.00e-02	1.40e-01
Diethylphthalate	7	1	1.00e-01	2.90e-01	1.00e-01	.	.
Fluoranthene	7	7	4.00e-02	1.60e-01	1.00e-01	1.00e-02	1.20e-01
Fluorene	7	1	3.00e-02	2.70e-01	3.00e-02	.	.
Indeno(1,2,3-cd)pyre	7	7	3.00e-02	9.00e-02	5.00e-02	1.00e-02	6.00e-02
Naphthalene	7	7	3.00e-02	1.70e-01	8.00e-02	2.00e-02	1.20e-01
PCB-1254	7	6	1.00e-02	8.00e-02	4.00e-02	1.00e-02	6.00e-02
PCB-1260	7	6	1.00e-02	4.00e-02	3.00e-02	0.00e+00	3.00e-02
Pentachlorophenol	7	1	3.50e-01	7.00e-01	3.50e-01	.	.
Phenanthrene	7	7	2.00e-02	2.00e-01	9.00e-02	2.00e-02	1.40e-01
Pyrene	7	7	4.00e-02	1.70e-01	1.00e-01	2.00e-02	1.30e-01
Total combustible or	7	7	2.83e+05	4.78e+05	3.73e+05	2.73e+04	4.26e+05

B-89
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Total organic carbon	7	7	9.03e+03	2.25e+04	1.64e+04	1.88e+03	2.00e+04
Subreach 4.04							
2-Methylnaphthalene	12	11	7.00e-02	3.54e+00	2.20e-01	7.00e-02	3.50e-01
Benzo(a)anthracene	12	10	7.00e-02	3.54e+00	1.70e-01	8.00e-02	3.00e-01
Benzo(a)pyrene	12	8	6.00e-02	3.54e+00	7.70e-01	1.40e-01	1.02e+00
Benzo(b)fluoranthene	12	11	9.00e-02	3.54e+00	1.40e-01	1.00e-02	1.60e-01
Benzo(ghi)perylene	12	6	7.00e-02	3.54e+00	3.50e-01	1.30e-01	5.90e-01
Bis(2-ethylhexyl)pht	12	8	7.00e-02	1.87e+00	1.00e-01	1.00e-02	1.20e-01
Chrysene	12	8	7.00e-02	3.54e+00	1.10e-01	1.00e-02	1.30e-01
Dibenz(a,h)anthracen	12	1	4.10e-01	3.54e+00	4.10e-01	.	.
Fluoranthene	12	11	9.00e-02	3.54e+00	1.40e-01	1.00e-02	1.60e-01
Indeno(1,2,3-cd)pyre	12	2	4.50e-01	3.54e+00	6.30e-01	1.80e-01	9.60e-01
Naphthalene	12	8	5.00e-02	3.54e+00	2.10e-01	9.00e-02	3.70e-01
PCB-1254	12	1	1.00e-02	9.80e-01	9.80e-01	.	.
Phenanthrene	12	11	1.00e-01	3.54e+00	1.50e-01	1.00e-02	1.80e-01
Pyrene	12	11	1.00e-01	3.54e+00	1.60e-01	1.00e-02	1.80e-01
Total combustible or	11	11	1.26e+04	5.41e+05	1.17e+05	4.29e+04	1.95e+05
Total organic carbon	11	11	2.13e+04	4.59e+04	2.64e+04	2.23e+03	3.05e+04
Subreach 5							
Bis(2-ethylhexyl)pht	4	3	8.40e-01	2.43e+00	1.95e+00	2.30e-01	2.49e+00
Subreach 7.01							
2-Methylnaphthalene	1	1	1.50e-01	1.50e-01	1.50e-01	.	.
4-Nitrophenol	1	1	5.70e-01	5.70e-01	5.70e-01	.	.
Benzo(a)anthracene	1	1	2.20e-01	2.20e-01	2.20e-01	.	.
Benzo(a)pyrene	1	1	4.60e-01	4.60e-01	4.60e-01	.	.
Benzo(b)fluoranthene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Benzo(ghi)perylene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.

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Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Chrysene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Indeno(1,2,3-cd)pyre	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Phenanthrene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Pyrene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Total combustible or	1	1	5.72e+05	5.72e+05	5.72e+05	.	.
Subreach 7.02							
2-Methylnaphthalene	1	1	7.00e-02	7.00e-02	7.00e-02	.	.
Benzo(a)anthracene	1	1	1.90e-01	1.90e-01	1.90e-01	.	.
Benzo(a)pyrene	1	1	6.30e-01	6.30e-01	6.30e-01	.	.
Benzo(b)fluoranthene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Benzo(ghi)perylene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Chrysene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Fluoranthene	1	1	1.70e-01	1.70e-01	1.70e-01	.	.
Indeno(1,2,3-cd)pyre	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Naphthalene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Phenanthrene	1	1	5.00e-02	5.00e-02	5.00e-02	.	.
Pyrene	1	1	7.00e-02	7.00e-02	7.00e-02	.	.
Total combustible or	1	1	5.69e+05	5.69e+05	5.69e+05	.	.
Subreach 8							
2-Methylnaphthalene	1	1	2.00e-02	2.00e-02	2.00e-02	.	.
Benzo(a)pyrene	1	1	4.60e-01	4.60e-01	4.60e-01	.	.
Benzo(b)fluoranthene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.
Benzo(ghi)perylene	1	1	2.00e-01	2.00e-01	2.00e-01	.	.
Chrysene	1	1	1.90e-01	1.90e-01	1.90e-01	.	.
Fluoranthene	1	1	2.00e-01	2.00e-01	2.00e-01	.	.
Indeno(1,2,3-cd)pyre	1	1	2.00e-01	2.00e-01	2.00e-01	.	.
Naphthalene	1	1	1.90e-01	1.90e-01	1.90e-01	.	.
Phenanthrene	1	1	3.00e-02	3.00e-02	3.00e-02	.	.

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Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Pyrene	1	1	4.00e-02	4.00e-02	4.00e-02	.	.
Total combustible or	1	1	6.98e+05	6.98e+05	6.98e+05	.	.
Subreach 10							
Anthracene	1	1	4.18e+00	4.18e+00	4.18e+00	.	.
Bis(2-ethylhexyl)pht	1	1	3.29e+00	3.29e+00	3.29e+00	.	.
Chrysene	1	1	4.20e+00	4.20e+00	4.20e+00	.	.
Fluoranthene	1	1	4.19e+00	4.19e+00	4.19e+00	.	.
Phenanthrene	1	1	4.19e+00	4.19e+00	4.19e+00	.	.
Pyrene	1	1	4.19e+00	4.19e+00	4.19e+00	.	.
Subreach 13							
2,4-Dimethylphenol	5	1	2.20e-01	2.40e-01	2.40e-01	.	.
2-Methylnaphthalene	5	5	5.00e-02	1.66e+00	4.20e-01	3.10e-01	1.08e+00
Acenaphthene	5	1	2.20e-01	2.40e-01	2.20e-01	.	.
Acenaphthylene	5	1	1.50e-01	3.70e-01	1.50e-01	.	.
Anthracene	5	1	1.60e-01	3.70e-01	1.60e-01	.	.
Benzo(a)anthracene	5	3	1.10e-01	3.70e-01	1.60e-01	2.00e-02	2.00e-01
Benzo(a)pyrene	5	5	4.00e-02	4.40e-01	2.60e-01	9.00e-02	4.40e-01
Benzo(b)fluoranthene	5	4	4.00e-02	2.40e-01	8.00e-02	2.00e-02	1.30e-01
Benzo(ghi)perylene	5	4	4.00e-02	2.30e-01	1.50e-01	4.00e-02	2.40e-01
Benzo(k)fluoranthene	5	2	2.00e-02	3.70e-01	3.00e-02	1.00e-02	5.00e-02
Benzoic acid	5	2	1.30e-01	8.80e-01	2.50e-01	1.20e-01	5.10e-01
Bis(2-ethylhexyl)pht	5	5	5.00e-02	9.00e-02	7.00e-02	1.00e-02	9.00e-02
Butylbenzylphthalate	5	4	9.00e-02	2.40e-01	1.50e-01	3.00e-02	2.20e-01
Carbazole	5	3	1.50e-01	2.40e-01	1.80e-01	2.00e-02	2.30e-01
Chrysene	5	4	4.00e-02	2.30e-01	7.00e-02	2.00e-02	1.10e-01
Di-n-butylphthalate	5	1	1.10e-01	4.30e-01	1.10e-01	.	.
Dibenz(a,h)anthracen	5	1	1.50e-01	3.70e-01	1.50e-01	.	.
Dibenzofuran	5	4	1.60e-01	4.90e-01	2.30e-01	7.00e-02	3.70e-01

B-92
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Fluoranthene	5	4	4.00e-02	2.40e-01	1.10e-01	4.00e-02	2.00e-01
Fluorene	5	2	1.50e-01	2.40e-01	1.70e-01	3.00e-02	2.30e-01
Indeno(1,2,3-cd)pyre	5	4	4.00e-02	2.30e-01	1.50e-01	4.00e-02	2.30e-01
Naphthalene	5	5	4.00e-02	1.25e+00	3.10e-01	2.40e-01	8.10e-01
PCB-1254	5	1	1.00e-02	1.00e-02	1.00e-02	.	.
Phenanthrene	5	5	4.00e-02	5.70e-01	1.90e-01	1.00e-01	3.90e-01
Phenol	5	1	1.70e-01	3.70e-01	1.70e-01	.	.
Pyrene	5	4	5.00e-02	2.30e-01	1.10e-01	3.00e-02	1.80e-01
Total combustible or	5	5	3.78e+04	3.50e+05	2.66e+05	5.83e+04	3.91e+05
Total organic carbon	5	5	8.20e+03	8.92e+04	2.58e+04	1.59e+04	5.96e+04
Subreach 18							
4,4'-DDD	3	1	0.00e+00	0.00e+00	0.00e+00	.	.
Anthracene	3	1	5.90e-01	1.15e+00	5.90e-01	.	.
Benzo(a)anthracene	3	3	1.70e-01	6.70e-01	4.80e-01	1.60e-01	9.40e-01
Benzo(a)pyrene	3	3	1.20e-01	4.50e-01	3.40e-01	1.10e-01	6.60e-01
Benzo(b)fluoranthene	3	3	2.00e-01	6.60e-01	3.60e-01	1.50e-01	7.90e-01
Benzo(ghi)perylene	3	1	7.50e-01	1.23e+00	7.50e-01	.	.
Carbazole	3	1	5.00e-01	1.23e+00	5.00e-01	.	.
Chrysene	3	3	1.40e-01	5.10e-01	2.80e-01	1.20e-01	6.20e-01
Fluoranthene	3	3	2.70e-01	1.15e+00	5.70e-01	2.90e-01	1.42e+00
Indeno(1,2,3-cd)pyre	3	1	7.50e-01	1.23e+00	7.50e-01	.	.
Methoxychlor	3	1	1.00e-02	1.00e-02	1.00e-02	.	.
Phenanthrene	3	3	9.00e-02	6.20e-01	2.70e-01	1.70e-01	7.80e-01
Pyrene	3	3	2.80e-01	1.02e+00	5.40e-01	2.40e-01	1.25e+00
Total combustible or	3	3	5.12e+04	7.07e+04	6.28e+04	5.93e+03	8.01e+04
Total organic carbon	3	3	6.68e+03	2.07e+04	1.44e+04	4.11e+03	2.64e+04
Subreach 22							
Benzo(a)pyrene	1	1	2.26e+00	2.26e+00	2.26e+00	.	.

B-93
Table B13 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std Error	95% UCB
Benzo(k)fluoranthene	1	1	2.58e+00	2.58e+00	2.58e+00	.	.
Bis(2-ethylhexyl)pht	1	1	2.39e+00	2.39e+00	2.39e+00	.	.
Chrysene	1	1	2.45e+00	2.45e+00	2.45e+00	.	.
Diethylphthalate	1	1	2.62e+00	2.62e+00	2.62e+00	.	.
Fluoranthene	1	1	2.45e+00	2.45e+00	2.45e+00	.	.
PCB-1254	1	1	1.82e+00	1.82e+00	1.82e+00	.	.
Phenanthrene	1	1	2.45e+00	2.45e+00	2.45e+00	.	.
Pyrene	1	1	2.39e+00	2.39e+00	2.39e+00	.	.

Table B14. Summary statistics for porewater organic concentrations(mg/L)by subreach

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 0							
Di-n-octylphthlate	2	1	0.00e+00	1.00e-02	0.00e+00	.	.
Total organic carbon	5	5	4.80e+00	9.10e+00	6.50e+00	7.60e-01	8.12e+00
Subreach 2.01							
Total organic carbon	1	1	1.80e+00	1.80e+00	1.80e+00	.	.
Subreach 2.03							
Total organic carbon	1	1	2.00e+00	2.00e+00	2.00e+00	.	.
Subreach 2.04							
Bis(2-ethylhexyl)pht	3	1	0.00e+00	1.00e-02	0.00e+00	.	.
Di-n-butylphthalate	3	2	0.00e+00	1.00e-02	0.00e+00	0.00e+00	0.00e+00
Total organic carbon	6	6	2.60e+00	5.00e+00	4.10e+00	3.90e-01	4.89e+00
Subreach 3.01							
Aldrin	1	1	0.00e+00	0.00e+00	0.00e+00	.	.
Total organic carbon	2	2	2.60e+00	1.10e+01	6.80e+00	4.20e+00	3.33e+01
Subreach 3.02							
Bis(2-ethylhexyl)pht	5	1	0.00e+00	1.00e-02	0.00e+00	.	.
Di-n-butylphthalate	5	2	0.00e+00	1.00e-02	0.00e+00	0.00e+00	0.00e+00
Total organic carbon	7	7	4.30e+00	1.10e+01	6.81e+00	8.80e-01	8.52e+00
Subreach 3.03							
Bis(2-ethylhexyl)pht	5	1	0.00e+00	1.00e-02	0.00e+00	.	.
Total organic carbon	9	9	4.40e+00	1.20e+01	7.17e+00	9.50e-01	8.93e+00

B-95
Table B14 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 3.04							
Total organic carbon	6	6	3.90e+00	9.05e+00	6.23e+00	8.10e-01	7.86e+00
Subreach 4.01							
Benzoic acid	5	2	0.00e+00	4.00e-02	0.00e+00	0.00e+00	0.00e+00
Bis(2-ethylhexyl)pht	5	2	0.00e+00	1.00e-02	0.00e+00	0.00e+00	0.00e+00
Total organic carbon	7	7	3.50e+00	7.50e+00	5.06e+00	5.00e-01	6.03e+00
Subreach 4.02							
Total organic carbon	6	6	2.70e+00	5.30e+00	3.98e+00	3.90e-01	4.76e+00
Subreach 4.03							
Total organic carbon	7	7	3.00e+00	9.90e+00	4.76e+00	9.10e-01	6.53e+00
Subreach 4.04							
Total organic carbon	11	11	7.50e+00	3.80e+01	1.74e+01	3.70e+00	2.41e+01
Subreach 7.01							
Total organic carbon	1	1	7.20e+00	7.20e+00	7.20e+00	.	.
Subreach 7.02							
Total organic carbon	1	1	7.50e+00	7.50e+00	7.50e+00	.	.
Subreach 8							
Total organic carbon	1	1	4.10e+00	4.10e+00	4.10e+00	.	.
Subreach 13							
Total organic carbon	5	5	3.20e+00	7.60e+00	5.28e+00	7.00e-01	6.78e+00

B-96
Table B14 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB
Subreach 18							
Benzoic acid	4	1	1.00e-02	2.00e-02	1.00e-02	.	.
PCB-1254	4	1	0.00e+00	0.00e+00	0.00e+00	.	.
Total organic carbon	2	2	9.00e+00	1.10e+01	1.00e+01	1.00e+00	1.63e+01

Table B15. Summary statistics for radionuclide concentrations in surface sediment (pCi/g, ~0-15 cm) by reach.

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach ' '								
Beryllium-7	13	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	16	16	5.30E-02	1.47E+01	1.09E+01	1.30E+01	1.31E+01	1.26E+00
Cobalt-60	16	15	6.17E-03	8.34E-01	4.02E-01	3.75E-01	5.15E-01	6.42E-02
Europium-152	13	0	4.20E-01	1.01E+00	.	.	.	.
Potassium-40	13	13	5.28E+00	1.77E+01	1.33E+01	1.43E+01	1.52E+01	1.06E+00
Reach 00								
Cesium-137	5	3	1.24E-01	2.50E-01	1.73E-01	1.24E-01	2.40E-01	3.16E-02
Cobalt-60	5	0	1.19E-01	1.73E-01	.	.	.	.
Strontium-90	5	0	1.08E+00	1.71E+00	.	.	.	.
Reach 1								
Cesium-137	27	27	4.45E-02	1.76E+00	4.57E-01	3.03E-01	6.06E-01	8.77E-02
Cobalt-60	27	25	1.27E-02	5.05E+00	1.27E+00	4.39E-01	1.83E+00	3.28E-01
Reach 2								
Americium-241	111	8	5.96E-02	2.01E-01	8.69E-02	7.78E-02	9.25E-02	3.39E-03
Beryllium-7	141	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	196	194	5.39E-02	5.20E+01	2.60E+00	1.26E+00	3.26E+00	4.00E-01
Cobalt-60	196	145	1.03E-02	3.76E-01	5.65E-02	4.46E-02	6.23E-02	3.49E-03
Curium-243/244	2	2	1.11E-02	1.46E-02	1.29E-02	1.29E-02	2.38E-02	1.73E-03
Curium-245/246	1	1	1.64E-02	1.64E-02	1.64E-02	1.64E-02	.	.
Curium-248	1	1	2.20E-02	2.20E-02	2.20E-02	2.20E-02	.	.
Europium-152	141	1	2.78E-02	2.01E-01	5.05E-02	5.05E-02	.	.
Europium-154	115	0	2.08E-02	9.75E-02	.	.	.	.
Plutonium-238	2	2	1.70E-02	6.12E-02	3.91E-02	3.91E-02	1.79E-01	2.21E-02
Plutonium - 239/240	2	2	8.14E-02	4.35E-01	2.58E-01	2.58E-01	1.37E+00	1.77E-01
Potassium-40	141	141	2.64E+00	2.50E+01	1.01E+01	1.03E+01	1.07E+01	3.53E-01
Strontium-90	12	5	1.34E-02	4.33E+00	9.23E-01	4.18E-01	1.75E+00	4.62E-01
Technetium-99	2	0	1.47E+00	1.56E+00	.	.	.	.
Uranium-234	4	4	5.56E-01	1.39E+00	8.15E-01	6.59E-01	1.27E+00	1.93E-01
Uranium-235	4	2	2.04E-02	6.56E-02	3.17E-02	2.04E-02	6.43E-02	1.39E-02
Uranium-238	4	4	5.33E-01	1.32E+00	7.93E-01	6.58E-01	1.21E+00	1.79E-01
Reach 3								
Americium-241	1	1	7.63E-02	7.60E-02	7.63E-02	7.63E-02	.	.
Cesium-137	34	30	1.05E-01	1.90E+01	2.65E+00	5.79E-01	4.01E+00	8.00E-01
Cobalt-60	34	5	6.75E-03	2.00E-01	3.87E-02	4.07E-02	5.52E-02	9.72E-03
Curium-243/244	1	1	1.11E-02	1.10E-02	1.11E-02	1.11E-02	.	.
Curium-245/246	1	1	1.25E-02	1.20E-02	1.25E-02	1.25E-02	.	.
Curium-248	1	1	2.58E-02	2.60E-02	2.58E-02	2.58E-02	.	.
Plutonium-238	1	1	9.63E-03	1.00E-02	9.60E-03	9.63E-03	.	.

Table B15 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95%-UCB	Median
Plutonium - 239/240	1	1	1.00E-02	1.00E-02	1.00E-02	1.00E-02	.	.
Strontium-90	30	4	6.36E-02	2.24E+00	2.62E-01	6.36E-02	4.66E-01	1.20E-01
Technetium-99	28	17	1.23E+00	1.79E+02	1.28E+01	4.04E+00	2.37E+01	6.38E+00
Uranium-234	28	28	4.62E-01	8.35E+01	8.21E+00	4.08E+00	1.34E+01	3.03E+00
Uranium-235	30	28	2.24E-02	4.46E+00	3.92E-01	1.64E-01	6.47E-01	1.50E-01
Uranium-238	29	29	2.37E-01	5.77E+01	5.83E+00	2.81E+00	9.29E+00	2.03E+00
Reach 4								
Americium-241	51	4	2.26E-02	2.89E-01	7.44E-02	5.93E-02	9.02E-02	9.46E-03
Beryllium-7	62	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	192	192	1.62E-01	3.61E+01	3.51E+00	1.85E+00	4.05E+00	3.24E-01
Cobalt-60	194	164	1.32E-02	3.79E-01	8.87E-02	6.16E-02	9.73E-02	5.19E-03
Curium-243/244	1	1	3.42E-02	3.42E-02	3.42E-02	3.42E-02	.	.
Curium-245/246	1	1	1.95E-02	1.95E-02	1.95E-02	1.95E-02	.	.
Curium-248	1	1	1.80E-02	1.80E-02	1.80E-02	1.80E-02	.	.
Europium-152	62	0	1.59E-02	2.87E-01	.	.	.	.
Europium-154	53	0	7.68E-03	1.44E-01	.	.	.	.
Plutonium-238	1	1	1.28E-02	1.27E-02	1.28E-02	1.28E-02	.	.
Plutonium - 239/240	1	1	1.33E-02	1.33E-02	1.33E-02	1.33E-02	.	.
Potassium-40	62	62	1.51E+00	2.20E+01	9.04E+00	8.28E+00	9.96E+00	5.56E-01
Strontium-90	36	2	1.75E-01	1.38E+01	2.49E-01	1.75E-01	4.21E-01	1.02E-01
Uranium-234	1	1	1.71E+00	1.71E+00	1.71E+00	1.71E+00	.	.
Uranium-235	1	1	1.24E-01	1.24E-01	1.24E-01	1.24E-01	.	.
Uranium-238	1	1	1.57E+00	1.57E+00	1.57E+00	1.57E+00	.	.
Reach 5								
Americium-241	50	2	5.03E-02	3.05E-01	6.36E-02	5.95E-02	7.19E-02	4.97E-03
Beryllium-7	283	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	526	519	1.31E-02	9.35E+00	5.05E-01	2.18E-01	5.62E-01	3.47E-02
Cobalt-60	526	179	1.53E-03	1.63E-01	1.54E-02	7.90E-03	1.71E-02	1.03E-03
Curium-243/244	2	2	2.00E-02	2.23E-02	2.11E-02	2.11E-02	2.84E-02	1.15E-03
Curium-245/246	2	2	2.00E-02	6.25E-02	4.12E-02	4.12E-02	1.75E-01	2.13E-02
Curium-248	2	2	1.25E-02	6.25E-02	3.75E-02	3.75E-02	1.95E-01	2.50E-02
Europium-152	283	0	2.50E-02	3.14E-01	.	.	.	.
Europium-154	53	0	1.52E-02	1.24E-01	.	.	.	.
Plutonium-238	2	2	9.62E-03	3.85E-02	2.41E-02	2.41E-02	1.15E-01	1.45E-02
Plutonium - 239/240	2	2	1.00E-02	6.20E-02	3.60E-02	3.60E-02	2.00E-01	2.60E-02
Potassium-40	283	283	7.88E-01	4.02E+01	1.15E+01	1.10E+01	1.21E+01	3.97E-01
Radium-226	3	3	4.28E-01	7.44E-01	5.66E-01	5.27E-01	8.39E-01	9.33E-02
Strontium-90	2	2	1.01E-01	1.51E-01	1.26E-01	1.26E-01	2.85E-01	2.51E-02
Thorium-232	3	3	2.40E-01	8.61E-01	5.20E-01	4.59E-01	1.05E+00	1.82E-01
Uranium-234	2	2	1.65E+00	1.93E+00	1.79E+00	1.79E+00	2.68E+00	1.41E-01
Uranium-235	2	2	3.00E-02	9.30E-02	6.15E-02	6.15E-02	2.61E-01	3.15E-02

B-99
Table B15 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Uranium-238	2	2	1.43E+00	1.62E+00	1.53E+00	1.53E+00	2.13E+00	9.51E-02
Reach 6								
Cesium-137	31	31	4.85E-03	6.22E+00	9.26E-01	4.10E-01	1.36E+00	2.57E-01
Cobalt-60	30	15	7.89E-04	1.47E-01	2.46E-02	8.32E-03	3.70E-02	7.31E-03
Reach 7								
Cesium-137	11	10	2.66E-02	4.36E-01	2.97E-01	3.14E-01	3.48E-01	2.83E-02
Cobalt-60	11	7	1.66E-02	3.65E-01	3.51E-02	2.91E-02	4.65E-02	6.30E-03
Strontium-90	2	1	8.68E-01	5.17E+00	5.17E+00	5.17E+00	.	.
Reach 8								
Cesium-137	1	1	2.80E-01	2.80E-01	2.80E-01	2.80E-01	.	.
Cobalt-60	1	0	2.35E-01	2.35E-01	.	.	.	.
Strontium-90	1	0	1.39E+00	1.39E+00	.	.	.	.
Reach 10								
Americium-241	9	1	3.69E-02	1.55E-01	4.43E-02	4.43E-02	.	.
Beryllium-7	8	4	3.00E-06	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-06
Cesium-137	10	10	5.66E-02	4.12E-01	1.61E-01	1.39E-01	2.21E-01	3.28E-02
Cobalt-60	10	0	4.76E-03	9.97E-02	.	.	.	.
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	1.11E-02	.	.
Curium-245/246	1	1	1.78E-02	1.78E-02	1.78E-02	1.78E-02	.	.
Curium-248	1	1	1.25E-02	1.25E-02	1.25E-02	1.25E-02	.	.
Europium-152	8	0	3.93E-02	1.54E-01	.	.	.	.
Europium-154	8	0	1.56E-02	8.72E-02	.	.	.	.
Plutonium-238	1	1	9.61E-03	9.61E-03	9.61E-03	9.61E-03	.	.
Plutonium - 239/240	1	1	4.00E-02	4.00E-02	4.00E-02	4.00E-02	.	.
Potassium-40	8	8	2.25E+00	8.31E+00	4.71E+00	4.52E+00	5.91E+00	6.35E-01
Strontium-90	1	1	1.58E-01	1.58E-01	1.58E-01	1.58E-01	.	.
Uranium-234	1	1	1.22E+00	1.22E+00	1.22E+00	1.22E+00	.	.
Uranium-235	1	1	3.58E-02	3.58E-02	3.58E-02	3.58E-02	.	.
Uranium-238	1	1	1.27E+00	1.27E+00	1.27E+00	1.27E+00	.	.

B-100
Table B15 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 13								
Cesium-137	5	1	1.22E-01	3.69E-01	3.69E-01	3.69E-01	.	.
Cobalt-60	5	0	1.18E-01	1.56E-01	.	.	.	.
Strontium-90	5	0	1.16E+00	2.18E+00	.	.	.	.
Technetium-99	5	0	1.33E+00	1.95E+00	.	.	.	.
Uranium-234	5	5	3.02E-01	1.73E+00	8.08E-01	6.33E-01	1.33E+00	2.44E-01
Uranium-235	5	2	3.06E-02	1.51E-01	5.30E-02	3.13E-02	1.10E-01	2.66E-02
Uranium-238	5	5	3.03E-01	1.47E+00	7.64E-01	6.64E-01	1.18E+00	1.93E-01
Reach 18								
Cesium-137	27	24	2.49E-02	4.64E-01	1.36E-01	7.31E-02	1.77E-01	2.37E-02
Cobalt-60	27	1	2.66E-03	1.72E-01	2.13E-02	2.13E-02	.	.
Strontium-90	4	1	1.21E+00	1.28E+00	1.28E+00	1.28E+00	.	.
Reach 22								
Americium-241	1	1	2.30E+01	2.30E+01	2.30E+01	2.30E+01	.	.
Cesium-137	7	7	6.30E-02	2.23E+04	3.18E+03	4.22E-01	9.37E+03	3.18E+03
Cobalt-60	7	7	1.00E-02	8.90E+01	1.27E+01	1.90E-02	3.75E+01	1.27E+01
Curium-243/244	1	1	1.00E-03	0.00E+00	0.00E+00	1.00E-03	.	.
Curium-248	1	1	1.80E-02	2.00E-02	2.00E-02	1.80E-02	.	.
Plutonium-238	1	1	6.56E+00	6.56E+00	6.56E+00	6.56E+00	.	.
Plutonium - 239/240	1	1	2.18E+02	2.18E+02	2.18E+02	2.18E+02	.	.
Strontium-90	1	1	8.73E+02	8.73E+02	8.73E+02	8.73E+02	.	.
Uranium-234	1	1	1.01E+01	1.01E+01	1.01E+01	1.01E+01	.	.
Uranium-235	1	1	3.84E-01	3.80E-01	3.80E-01	3.84E-01	.	.
Uranium-238	1	1	6.24E+00	6.24E+00	6.24E+00	6.24E+00	.	.

Table B16. Summary statistics for radionuclide concentrations in surface sediment (pCi/g, ~0 - 15 cm) by subreach

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach ''								
Beryllium-7	13	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	16	16	5.30E-02	1.47E+01	1.09E+01	1.26E+00	1.31E+01	1.30E+01
Cobalt-60	16	15	6.17E-03	8.34E-01	4.02E-01	6.42E-02	5.15E-01	3.75E-01
Europium-152	13	0	4.20E-01	1.01E+00	.	.	.	.
Potassium-40	13	13	5.28E+00	1.77E+01	1.33E+01	1.06E+00	1.52E+01	1.43E+01
Subreach 0								
Cesium-137	5	3	1.24E-01	2.50E-01	1.73E-01	3.16E-02	2.40E-01	1.24E-01
Cobalt-60	5	0	1.19E-01	1.73E-01	.	.	.	.
Strontium-90	5	0	1.08E+00	1.71E+00	.	.	.	.
Subreach 1								
Cesium-137	27	27	4.45E-02	1.76E+00	4.57E-01	8.77E-02	6.06E-01	3.03E-01
Cobalt-60	27	25	1.27E-02	5.05E+00	1.27E+00	3.28E-01	1.83E+00	4.39E-01
Subreach 2.01								
Cesium-137	1	0	9.94E-02	9.94E-02	.	.	.	.
Cobalt-60	1	0	1.14E-01	1.14E-01	.	.	.	.
Strontium-90	1	0	1.09E+00	1.09E+00	.	.	.	.
Subreach 2.02								
Americium-241	52	2	8.45E-02	2.01E-01	9.68E-02	1.12E-03	9.86E-02	9.59E-02
Beryllium-7	55	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	57	57	5.39E-02	2.95E+01	1.77E+00	5.39E-01	2.67E+00	5.21E-01
Cobalt-60	57	35	1.29E-02	3.76E-01	5.48E-02	8.40E-03	6.88E-02	2.68E-02
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	.	.	1.11E-02
Europium-152	55	0	6.06E-02	1.79E-01	.	.	.	.
Europium-154	55	0	2.54E-02	9.12E-02	.	.	.	.
Plutonium-238	1	1	1.70E-02	1.70E-02	1.70E-02	.	.	1.70E-02
Plutonium-239/240	1	1	8.14E-02	8.14E-02	8.14E-02	.	.	8.14E-02
Potassium-40	55	55	2.87E+00	2.50E+01	1.07E+01	6.16E-01	1.17E+01	1.14E+01
Strontium-90	1	1	1.34E-02	1.34E-02	1.34E-02	.	.	1.34E-02
Uranium-234	1	1	5.56E-01	5.56E-01	5.56E-01	.	.	5.56E-01
Uranium-235	1	1	2.04E-02	2.04E-02	2.04E-02	.	.	2.04E-02
Uranium-238	1	1	5.33E-01	5.33E-01	5.33E-01	.	.	5.33E-01
Subreach 2.03								
Americium-241	54	5	5.96E-02	1.99E-01	8.79E-02	5.13E-03	9.65E-02	7.78E-02
Beryllium-7	55	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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Table B16 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Cesium-137	84	83	1.11E-01	3.09E+01	2.23E+00	4.49E-01	2.98E+00	1.11E+00
Cobalt-60	84	65	1.03E-02	1.48E-01	4.92E-02	3.96E-03	5.58E-02	4.45E-02
Europium-152	55	1	4.19E-02	2.01E-01	5.05E-02	.	.	5.05E-02
Europium-154	55	0	2.08E-02	9.75E-02	.	.	.	.
Potassium-40	55	55	2.64E+00	1.84E+01	9.24E+00	5.86E-01	1.02E+01	8.95E+00
Strontium-90	1	0	1.24E+00	1.24E+00	.	.	.	.
Subreach 2.04								
Americium-241	5	1	1.70E-01	1.93E-01	1.79E-01	.	.	1.79E-01
Beryllium-7	31	6	0.00E+00	1.00E-05	0.00E+00	4.42E+04	1.22E-06	0.00E+00
Cesium-137	54	54	2.39E-01	5.20E+01	4.11E+00	1.12E+00	5.99E+00	1.71E+00
Cobalt-60	54	45	2.00E-02	2.24E-01	7.33E-02	5.94E-03	8.32E-02	5.83E-02
Curium-243/244	1	1	1.46E-02	1.46E-02	1.46E-02	.	.	1.46E-02
Curium-245/246	1	1	1.64E-02	1.64E-02	1.64E-02	.	.	1.64E-02
Curium-248	1	1	2.20E-02	2.20E-02	2.20E-02	.	.	2.20E-02
Europium-152	31	0	2.78E-02	1.81E-01	.	.	.	.
Europium-154	5	0	8.05E-02	8.91E-02	.	.	.	.
Plutonium-238	1	1	6.12E-02	6.12E-02	6.12E-02	.	.	6.12E-02
Plutonium-239/240	1	1	4.35E-01	4.35E-01	4.35E-01	.	.	4.35E-01
Potassium-40	31	31	5.62E+00	1.55E+01	1.07E+01	5.13E-01	1.15E+01	1.03E+01
Strontium-90	9	4	4.18E-01	4.33E+00	1.29E+00	5.56E-01	2.33E+00	4.18E-01
Technetium-99	2	0	1.47E+00	1.56E+00	.	.	.	.
Uranium-234	3	3	6.36E-01	1.39E+00	9.02E-01	2.43E-01	1.61E+00	6.81E-01
Uranium-235	3	1	2.13E-02	6.56E-02	6.56E-02	.	.	6.56E-02
Uranium-238	3	3	6.39E-01	1.32E+00	8.79E-01	2.22E-01	1.53E+00	6.76E-01
Subreach 3.01								
Cesium-137	2	0	1.24E-01	2.08E-01	.	.	.	.
Cobalt-60	2	0	1.33E-01	1.87E-01	.	.	.	.
Strontium-90	2	0	9.40E-01	1.38E+00	.	.	.	.
Technetium-99	2	0	1.53E+00	1.54E+00	.	.	.	.
Uranium-234	2	2	6.83E-01	1.88E+00	1.28E+00	5.99E-01	5.06E+00	1.28E+00
Uranium-235	2	1	2.24E-02	6.64E-02	6.64E-02	.	.	6.64E-02
Uranium-238	2	2	6.59E-01	1.20E+00	9.30E-01	2.71E-01	2.64E+00	9.30E-01
Subreach 3.02								
Cesium-137	10	9	1.29E-01	1.80E+00	5.78E-01	1.57E-01	8.66E-01	4.40E-01
Cobalt-60	10	2	6.75E-03	1.65E-01	2.29E-02	1.62E-02	5.25E-02	2.29E-02
Strontium-90	8	2	4.17E-01	1.81E+00	8.67E-01	1.67E-01	1.18E+00	7.40E-01
Technetium-99	8	5	1.62E+00	1.79E+02	2.93E+01	2.26E+01	7.21E+01	5.41E+00

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Table B16 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Uranium-234	8	8	1.35E+00	8.35E+01	1.77E+01	1.01E+01	3.68E+01	5.25E+00
Uranium-235	8	8	6.55E-02	4.46E+00	8.82E-01	5.36E-01	1.90E+00	2.40E-01
Uranium-238	8	8	1.24E+00	5.77E+01	1.21E+01	7.00E+00	2.54E+01	2.97E+00
Subreach 3.03								
Cesium-137	10	9	1.05E-01	3.10E+00	9.49E-01	3.29E-01	1.55E+00	4.14E-01
Cobalt-60	10	0	5.78E-02	1.72E-01	.	.	.	.
Strontium-90	10	1	3.63E-01	2.24E+00	9.73E-01	.	.	9.73E-01
Technetium-99	10	9	3.55E+00	2.98E+01	9.56E+00	2.53E+00	1.42E+01	7.48E+00
Uranium-234	10	10	1.30E+00	1.39E+01	4.91E+00	1.20E+00	7.10E+00	4.17E+00
Uranium-235	10	10	4.54E-02	7.36E-01	2.46E-01	6.61E-02	3.68E-01	1.92E-01
Uranium-238	10	10	1.32E+00	1.02E+01	3.82E+00	8.75E-01	5.42E+00	3.52E+00
Subreach 3.04								
Americium-241	1	1	7.63E-02	7.63E-02	7.63E-02	.	.	7.63E-02
Cesium-137	12	12	3.24E-01	1.90E+01	6.21E+00	1.88E+00	9.59E+00	4.57E+00
Cobalt-60	12	3	4.07E-02	2.01E-01	5.44E-02	9.08E-03	7.07E-02	5.10E-02
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	.	.	1.11E-02
Curium-245/246	1	1	1.25E-02	1.25E-02	1.25E-02	.	.	1.25E-02
Curium-248	1	1	2.58E-02	2.58E-02	2.58E-02	.	.	2.58E-02
Plutonium-238	1	1	9.63E-03	9.60E-03	9.63E-03	.	.	9.63E-03
Plutonium-239/240	1	1	1.00E-02	1.00E-02	1.00E-02	.	.	1.00E-02
Strontium-90	10	1	6.36E-02	1.94E+00	6.36E-02	.	.	6.36E-02
Technetium-99	8	3	1.23E+00	7.50E+00	3.78E+00	7.30E-01	5.16E+00	2.84E+00
Uranium-234	8	8	4.62E-01	1.05E+01	4.63E+00	1.37E+00	7.22E+00	3.83E+00
Uranium-235	10	9	4.18E-02	5.95E-01	2.14E-01	6.78E-02	3.38E-01	1.14E-01
Uranium-238	9	9	2.37E-01	8.68E+00	3.55E+00	1.11E+00	5.62E+00	2.17E+00
Subreach 4.01								
Americium-241	29	3	2.26E-02	2.20E-01	1.01E-01	5.21E-03	1.10E-01	9.46E-02
Beryllium-7	39	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	66	66	1.62E-01	2.85E+01	3.63E+00	5.99E-01	4.63E+00	1.85E+00
Cobalt-60	67	56	1.48E-02	2.11E-01	6.89E-02	5.51E-03	7.81E-02	5.95E-02
Europium-152	39	0	1.59E-02	2.28E-01	.	.	.	.
Europium-154	30	0	7.68E-03	1.25E-01	.	.	.	.
Potassium-40	39	39	1.65E+00	1.69E+01	8.38E+00	4.97E-01	9.22E+00	7.41E+00
Strontium-90	10	0	9.66E-01	1.29E+00	.	.	.	.

Subreach 4.02

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Table B16 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Americium-241	16	0	9.17E-02	2.84E-01	.	.	.	.
Beryllium-7	17	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	33	33	1.73E-01	7.44E+00	3.13E+00	4.75E-01	3.93E+00	1.87E+00
Cobalt-60	34	27	2.00E-02	2.42E-01	1.04E-01	1.07E-02	1.22E-01	9.57E-02
Europium-152	17	0	8.37E-02	2.70E-01	.	.	.	.
Europium-154	17	0	3.62E-02	1.29E-01	.	.	.	.
Potassium-40	17	17	1.51E+00	1.66E+01	8.89E+00	1.35E+00	1.12E+01	8.98E+00
Strontium-90	6	0	1.11E+00	3.04E+00	.	.	.	.
Subreach 4.03								
Americium-241	5	0	1.61E-01	2.89E-01	.	.	.	.
Beryllium-7	6	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	56	56	2.10E-01	3.61E+01	3.47E+00	7.73E-01	4.77E+00	1.44E+00
Cobalt-60	56	51	1.32E-02	3.79E-01	9.13E-02	1.17E-02	1.11E-01	5.49E-02
Europium-152	6	0	1.28E-01	2.87E-01	.	.	.	.
Europium-154	6	0	8.29E-02	1.44E-01	.	.	.	.
Potassium-40	6	6	6.45E+00	2.20E+01	1.37E+01	2.32E+00	1.84E+01	1.35E+01
Strontium-90	8	0	1.01E+00	1.38E+01	.	.	.	.
Subreach 4.04								
Americium-241	1	1	5.93E-02	5.93E-02	5.93E-02	.	.	5.93E-02
Cesium-137	37	37	2.76E-01	9.09E+00	3.71E+00	4.19E-01	4.42E+00	3.58E+00
Cobalt-60	37	30	1.34E-02	3.33E-01	1.09E-01	1.45E-02	1.34E-01	9.49E-02
Curium-243/244	1	1	3.42E-02	3.42E-02	3.42E-02	.	.	3.42E-02
Curium-245/246	1	1	1.95E-02	1.95E-02	1.95E-02	.	.	1.95E-02
Curium-248	1	1	1.80E-02	1.80E-02	1.80E-02	.	.	1.80E-02
Plutonium-238	1	1	1.28E-02	1.28E-02	1.28E-02	.	.	1.28E-02
Plutonium-239/240	1	1	1.33E-02	1.33E-02	1.33E-02	.	.	1.33E-02
Strontium-90	12	2	1.75E-01	2.31E+00	3.53E-01	2.40E-01	7.85E-01	1.75E-01
Uranium-234	1	1	1.71E+00	1.71E+00	1.71E+00	.	.	1.71E+00
Uranium-235	1	1	1.24E-01	1.24E-01	1.24E-01	.	.	1.24E-01
Uranium-238	1	1	1.57E+00	1.57E+00	1.57E+00	.	.	1.57E+00
Subreach 5								
Americium-241	50	2	5.03E-02	3.05E-01	6.36E-02	4.97E-03	7.19E-02	5.95E-02
Beryllium-7	283	104	0.00E+00	1.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	526	519	1.31E-02	9.35E+00	5.04E-01	3.47E-02	5.62E-01	2.18E-01
Cobalt-60	526	179	1.53E-03	1.63E-01	1.54E-02	1.03E-03	1.71E-02	7.86E-03

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Table B16 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Curium-243/244	2	2	2.00E-02	2.23E-02	2.11E-02	1.15E-03	2.84E-02	2.11E-02
Curium-245/246	2	2	2.00E-02	0.0625	4.12E-02	2.13E-02	1.75E-01	4.12E-02
Curium-248	2	2	1.25E-02	0.0625	3.75E-02	2.50E-02	1.95E-01	3.75E-02
Europium-152	28	3	2.50E-02	0.3143	.	.	.	.
Europium-154	5	3	1.52E-02	0.1243	.	.	.	.
Plutonium-238	2	2	9.62E-03	0.0385	2.41E-02	1.45E-02	1.15E-01	2.41E-02
Plutonium-239/240	2	2	1.00E-02	0.0620	3.60E-02	2.60E-02	2.00E-01	3.60E-02
Potassium-40	283	283	7.88E-01	40.2263	1.15E+01	3.97E-01	1.21E+01	1.10E+01
Radium-226	3	3	4.28E-01	7.44E-01	5.66E-01	9.33E-02	8.39E-01	5.27E-01
Strontium-90	2	2	1.01E-01	1.51E-01	1.26E-01	2.51E-02	2.85E-01	1.26E-01
Thorium-232	3	3	2.40E-01	8.61E-01	5.20E-01	1.82E-01	1.05E+00	4.59E-01
Uranium-234	2	2	1.65E+00	1.93E+00	1.79E+00	1.41E-01	2.68E+00	1.79E+00
Uranium-235	2	2	3.00E-02	9.30E-02	6.15E-02	3.15E-02	2.61E-01	6.15E-02
Uranium-238	2	2	1.43E+00	1.62E+00	1.53E+00	9.51E-02	2.13E+00	1.53E+00
Subreach 6								
Cesium-137	31	31	4.85E-03	6.22E+00	9.26E-01	2.57E-01	1.36E+00	4.10E-01
Cobalt-60	30	15	7.89E-04	1.47E-01	2.46E-02	7.31E-03	3.70E-02	8.32E-03
Subreach 7.01								
Cesium-137	1	1	3.77E-01	3.77E-01	3.77E-01	.	.	3.77E-01
Cobalt-60	1	0	3.65E-01	3.65E-01	.	.	.	.
Strontium-90	1	1	5.17E+00	5.17E+00	5.17E+00	.	.	5.17E+00
Subreach 7.02								
Cesium-137	10	9	2.66E-02	4.36E-01	2.89E-01	3.00E-02	3.44E-01	2.95E-01
Cobalt-60	10	7	1.66E-02	2.86E-01	3.51E-02	6.30E-03	4.67E-02	2.91E-02
Strontium-90	1	0	8.68E-01	8.68E-01	.	.	.	.
Subreach 8								
Cesium-137	1	1	2.80E-01	2.80E-01	2.80E-01	.	.	2.80E-01
Cobalt-60	1	0	2.35E-01	2.35E-01	.	.	.	.
Strontium-90	1	0	1.39E+00	1.39E+00	.	.	.	.
Subreach 10								
Americium-241	9	1	3.69E-02	1.55E-01	4.43E-02	.	.	4.43E-02
Beryllium-7	8	4	0.00E+00	1.00E-05	1.00E-05	0.00E+00	1.00E-05	1.00E-05
Cesium-137	10	10	5.66E-02	4.12E-01	1.61E-01	3.28E-02	2.21E-01	1.39E-01
Cobalt-60	10	0	4.76E-03	9.97E-02	.	.	.	.
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	.	.	1.11E-02

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Table B16 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Curium-245/246	1	1	1.78E-02	1.78E-02	1.78E-02	.	.	1.78E-02
Curium-248	1	1	1.25E-02	1.25E-02	1.25E-02	.	.	1.25E-02
Europium-152	8	0	3.93E-02	1.54E-01	.	.	.	.
Europium-154	8	0	1.56E-02	8.72E-02	.	.	.	.
Plutonium-238	1	1	9.61E-03	9.61E-03	9.61E-03	.	.	9.61E-03
Plutonium-239/240	1	1	4.00E-02	4.00E-02	4.00E-02	.	.	4.00E-02
Potassium-40	8	8	2.25E+00	8.31E+00	4.71E+00	6.35E-01	5.91E+00	4.52E+00
Strontium-90	1	1	1.58E-01	1.58E-01	1.58E-01	.	.	1.58E-01
Uranium-234	1	1	1.22E+00	1.22E+00	1.22E+00	.	.	1.22E+00
Uranium-235	1	1	3.58E-02	3.58E-02	3.58E-02	.	.	3.58E-02
Uranium-238	1	1	1.27E+00	1.27E+00	1.27E+00	.	.	1.27E+00
Subreach 13								
Cesium-137	5	1	1.22E-01	3.69E-01	3.69E-01	.	.	3.69E-01
Cobalt-60	5	0	1.18E-01	1.56E-01	.	.	.	.
Strontium-90	5	0	1.16E+00	2.18E+00	.	.	.	.
Technetium-99	5	0	1.33E+00	1.95E+00	.	.	.	.
Uranium-234	5	5	3.02E-01	1.73E+00	8.08E-01	2.44E-01	1.33E+00	6.33E-01
Uranium-235	5	2	3.06E-02	1.51E-01	5.30E-02	2.66E-02	1.10E-01	3.13E-02
Uranium-238	5	5	3.03E-01	1.47E+00	7.64E-01	1.93E-01	1.18E+00	6.64E-01
Subreach 18								
Cesium-137	27	24	2.49E-02	4.64E-01	1.36E-01	2.37E-02	1.77E-01	7.31E-02
Cobalt-60	27	1	2.66E-03	1.72E-01	2.13E-02	.	.	2.13E-02
Strontium-90	4	1	1.21E+00	1.28E+00	1.28E+00	.	.	1.28E+00
Subreach 22								
Americium-241	1	1	2.30E+01	2.30E+01	2.30E+01	.	.	2.30E+01
Cesium-137	7	7	6.30E-02	2.23E+04	3.18E+03	3.18E+03	9.37E+03	4.22E-01
Cobalt-60	7	7	1.00E-02	8.90E+01	1.27E+01	1.27E+01	3.75E+01	1.90E-02
Curium-243/244	1	1	1.00E-03	0.00E+00	0.00E+00	.	.	1.00E-03
Curium-248	1	1	1.80E-02	2.00E-02	2.00E-02	.	.	1.80E-02
Plutonium-238	1	1	6.56E+00	6.56E+00	6.56E+00	.	.	6.56E+00
Plutonium-239/240	1	1	2.18E+02	2.18E+02	2.18E+02	.	.	2.18E+02
Strontium-90	1	1	8.73E+02	8.73E+02	8.73E+02	.	.	8.73E+02
Uranium-234	1	1	1.01E+01	1.01E+01	1.01E+01	.	.	1.01E+01
Uranium-235	1	1	3.84E-01	3.80E-01	3.80E-01	.	.	3.84E-01
Uranium-238	1	1	6.24E+00	6.24E+00	6.24E+00	.	.	6.24E+00

Table B17. Summary statistics for radionuclide concentrations (pCi/g), core weighted averages, by reach

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 00								
Cesium-137	5	4	1.53E-01	3.73E-01	2.51E-01	4.29E-02	3.43E-01	2.26E-01
Cobalt-60	5	0	9.48E-02	1.68E-01	.	.	.	.
Strontium-90	5	0	1.08E+00	1.71E+00	.	.	.	.
Reach 1								
Cesium-137	3	3	1.61E-01	9.33E-01	6.00E-01	2.29E-01	1.27E+00	7.06E-01
Cobalt-60	3	2	6.34E-02	5.79E+00	2.05E+00	2.16E+00	8.36E+00	1.72E-01
Reach 2								
Americium-241	2	2	1.37E-01	1.87E-01	1.62E-01	2.52E-02	3.21E-01	1.62E-01
Cesium-137	10	8	9.85E-02	2.50E+01	5.67E+00	2.51E+00	1.03E+01	2.33E+00
Cobalt-60	10	3	5.44E-02	1.93E-01	8.86E-02	1.51E-02	1.16E-01	7.00E-02
Curium-243/244	2	2	1.11E-02	1.39E-02	1.25E-02	1.36E-03	2.11E-02	1.25E-02
Curium-245/246	1	1	1.47E-02	1.47E-02	1.47E-02	.	.	1.47E-02
Curium-248	1	1	2.89E-02	2.89E-02	2.89E-02	.	.	2.89E-02
Plutonium-238	2	2	1.41E-02	2.83E-02	2.12E-02	7.09E-03	6.60E-02	2.12E-02
Plutonium - 239/240	2	2	1.85E-01	1.86E-01	1.86E-01	9.00E-04	1.91E-01	1.86E-01
Strontium-90	11	5	2.60E-01	3.51E+00	8.23E-01	3.36E-01	1.43E+00	3.22E-01
Technetium-99	1	0	1.52E+00	1.52E+00	.	.	.	.
Uranium-234	3	3	6.59E-01	1.35E+00	9.40E-01	2.11E-01	1.56E+00	8.10E-01
Uranium-235	3	2	2.45E-02	6.24E-02	4.44E-02	1.04E-02	7.48E-02	3.53E-02
Uranium-238	3	3	6.58E-01	1.23E+00	8.75E-01	1.78E-01	1.39E+00	7.41E-01
Reach 3								
Americium-241	1	1	1.06E-01	1.06E-01	1.06E-01	.	.	1.06E-01
Cesium-137	30	26	3.95E-02	7.92E+00	1.94E+00	4.60E-01	2.72E+00	7.65E-01
Cobalt-60	30	4	2.69E-02	2.04E-01	4.63E-02	7.21E-03	5.85E-02	4.38E-02
Curium-243/244	1	1	1.11E-02	1.10E-02	1.11E-02	.	.	1.11E-02
Curium-245/246	1	1	1.77E-02	1.80E-02	1.77E-02	.	.	1.77E-02
Curium-248	1	1	1.73E-02	1.70E-02	1.73E-02	.	.	1.73E-02
Plutonium-238	1	1	1.42E-02	1.40E-02	1.42E-02	.	.	1.42E-02
Plutonium - 239/240	1	1	1.54E-02	1.50E-02	1.54E-02	.	.	1.54E-02
Strontium-90	27	7	6.78E-02	3.96E+00	5.86E-01	2.14E-01	9.51E-01	6.78E-02
Technetium-99	26	17	1.23E+00	2.58E+02	1.86E+01	9.99E+00	3.56E+01	4.00E+00
Uranium-234	27	27	4.62E-01	9.69E+01	9.00E+00	3.52E+00	1.50E+01	3.51E+00
Uranium-235	27	26	2.55E-02	4.89E+00	4.56E-01	1.81E-01	7.64E-01	1.67E-01
Uranium-238	27	27	2.37E-01	6.59E+01	6.26E+00	2.39E+00	1.03E+01	2.69E+00
Reach 4								
Americium-241	1	1	1.98E-01	1.98E-01	1.98E-01	.	.	1.98E-01
Cesium-137	37	37	1.02E-01	2.69E+01	7.56E+00	1.25E+00	9.67E+00	5.55E+00

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Table B17 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Cobalt-60	37	19	3.51E-02	3.94E-01	1.52E-01	1.37E-02	1.75E-01	1.03E-01
Curium-243/244	1	1	1.96E-02	1.96E-02	1.96E-02	.	.	1.96E-02
Curium-245/246	1	1	2.91E-02	2.91E-02	2.91E-02	.	.	2.91E-02
Curium-248	1	1	2.69E-02	2.69E-02	2.69E-02	.	.	2.69E-02
Plutonium-238	1	1	2.12E-02	2.12E-02	2.12E-02	.	.	2.12E-02
Plutonium - 239/240	1	1	2.59E-01	2.59E-01	2.59E-01	.	.	2.59E-01
Strontium-90	34	4	3.58E-01	3.41E+00	5.48E-01	1.26E-01	7.61E-01	3.58E-01
Uranium-234	1	1	2.22E+00	2.22E+00	2.22E+00	.	.	2.22E+00
Uranium-235	1	1	1.22E-01	1.22E-01	1.22E-01	.	.	1.22E-01
Uranium-238	1	1	1.88E+00	1.88E+00	1.88E+00	.	.	1.88E+00
Reach 5								
Americium-241	2	2	3.79E-02	1.02E-01	6.99E-02	3.20E-02	2.72E-01	6.99E-02
Cesium-137	9	5	2.52E-02	1.24E+01	7.22E+00	9.08E-01	8.91E+00	5.42E+00
Cobalt-60	9	5	2.64E-02	1.72E-01	1.11E-01	8.31E-03	1.27E-01	9.87E-02
Curium-243/244	2	2	1.34E-02	1.62E-02	1.48E-02	1.38E-03	2.35E-02	1.48E-02
Curium-245/246	2	2	3.49E-02	4.88E-02	4.19E-02	6.97E-03	8.59E-02	4.19E-02
Curium-248	2	2	2.22E-02	3.52E-02	2.87E-02	6.50E-03	6.98E-02	2.87E-02
Plutonium-238	2	2	2.28E-02	2.95E-02	2.62E-02	3.38E-03	4.75E-02	2.62E-02
Plutonium - 239/240	2	2	1.00E-02	9.81E-02	5.41E-02	4.41E-02	3.32E-01	5.41E-02
Strontium-90	2	2	8.83E-02	1.30E-01	1.09E-01	2.07E-02	2.40E-01	1.09E-01
Uranium-234	2	2	1.91E+00	1.93E+00	1.92E+00	9.37E-03	1.97E+00	1.92E+00
Uranium-235	2	2	4.64E-02	8.86E-02	6.75E-02	2.11E-02	2.01E-01	6.75E-02
Uranium-238	2	2	1.60E+00	1.69E+00	1.65E+00	4.12E-02	1.91E+00	1.65E+00
Reach 7								
Cesium-137	2	2	3.40E-01	4.38E-01	3.89E-01	4.86E-02	6.96E-01	3.89E-01
Cobalt-60	2	0	1.24E-01	2.77E-01	.	.	.	.
Strontium-90	2	1	9.67E-01	2.14E+00	2.14E+00	.	.	2.14E+00
Reach 8								
Cesium-137	1	1	6.42E-01	6.42E-01	6.42E-01	.	.	6.42E-01
Cobalt-60	1	0	2.20E-01	2.20E-01	.	.	.	.
Strontium-90	1	0	1.65E+00	1.65E+00	.	.	.	.
Reach 10								
Americium-241	1	1	5.45E-02	5.45E-02	5.45E-02	.	.	5.45E-02
Cesium-137	1	1	9.16E-01	9.16E-01	9.16E-01	.	.	9.16E-01
Cobalt-60	1	0	8.83E-02	8.83E-02	.	.	.	.
Curium-243/244	1	1	1.22E-02	1.22E-02	1.22E-02	.	.	1.22E-02
Curium-245/246	1	1	1.84E-02	1.84E-02	1.84E-02	.	.	1.84E-02
Curium-248	1	1	3.55E-02	3.55E-02	3.55E-02	.	.	3.55E-02
Plutonium-238	1	1	9.61E-03	9.61E-03	9.61E-03	.	.	9.61E-03

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Table B17 (continued)

Analyte	Obs	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Plutonium - 239/240	1	1	2.80E-02	2.80E-02	2.80E-02	.	.	2.80E-02
Strontium-90	1	1	1.00E-01	1.00E-01	1.00E-01	.	.	1.00E-01
Uranium-234	1	1	1.20E+00	1.20E+00	1.20E+00	.	.	1.20E+00
Uranium-235	1	1	6.03E-02	6.03E-02	6.03E-02	.	.	6.03E-02
Uranium-238	1	1	1.32E+00	1.32E+00	1.32E+00	.	.	1.32E+00
Reach 13								
Cesium-137	5	1	1.22E-01	3.04E-01	3.04E-01	.	.	3.04E-01
Cobalt-60	5	0	1.20E-01	1.56E-01	.	.	.	.
Strontium-90	5	0	1.16E+00	2.56E+00	.	.	.	.
Technetium-99	5	0	1.26E+00	1.85E+00	.	.	.	.
Uranium-234	5	5	3.26E-01	1.44E+00	7.61E-01	1.93E-01	1.17E+00	6.33E-01
Uranium-235	5	2	2.99E-02	9.86E-02	4.48E-02	1.70E-02	8.10E-02	3.14E-02
Uranium-238	5	5	3.05E-01	9.66E-01	6.60E-01	1.17E-01	9.10E-01	7.70E-01
Reach 18								
Cesium-137	3	3	1.59E-01	3.44E-01	2.26E-01	5.89E-02	3.98E-01	1.76E-01
Cobalt-60	3	0	4.59E-02	1.55E-01	.	.	.	.
Strontium-90	3	1	1.14E+00	1.22E+00	1.14E+00	.	.	1.14E+00
Reach 22								
Americium-241	1	1	6.87E+00	6.87E+00	6.87E+00	.	.	6.87E+00
Cesium-137	1	1	7.89E+03	7.89E+03	7.89E+03	.	.	7.89E+03
Cobalt-60	1	1	3.26E+01	3.26E+01	3.26E+01	.	.	3.26E+01
Curium-243/244	1	1	0.00E+00	0.00E+00	0.00E+00	.	.	0.00E+00
Curium-245/246	1	1	6.00E-02	6.00E-02	6.00E-02	.	.	6.00E-02
Curium-248	1	1	2.00E-02	2.00E-02	2.00E-02	.	.	2.00E-02
Plutonium-238	1	1	1.63E+00	1.63E+00	1.63E+00	.	.	1.63E+00
Plutonium - 239/240	1	1	7.41E+01	7.41E+01	7.41E+01	.	.	7.41E+01
Strontium-90	1	1	3.62E+02	3.62E+02	3.62E+02	.	.	3.62E+02
Uranium-234	1	1	5.42E+00	5.42E+00	5.42E+00	.	.	5.42E+00
Uranium-235	1	1	1.80E-01	1.80E-01	1.80E-01	.	.	1.80E-01
Uranium-238	1	1	3.87E+00	3.87E+00	3.87E+00	.	.	3.87E+00

Table B18. Summary statistics for radionuclide concentrations (pCi/g), core weighted averages, by subreach

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 00								
Cesium-137	5	4	1.53E-01	3.73E-01	2.51E-01	4.29E-02	3.43E-01	2.26E-01
Cobalt-60	5	0	9.48E-02	1.68E-01	.	.	.	.
Strontium-90	5	0	1.08E+00	1.71E+00	.	.	.	.
Subreach 1								
Cesium-137	3	3	1.61E-01	9.33E-01	6.00E-01	2.29E-01	1.27E+00	7.06E-01
Cobalt-60	3	2	6.34E-02	5.79E+00	2.05E+00	2.16E+00	8.36E+00	1.72E-01
Subreach 2.01								
Cesium-137	1	0	9.85E-02	9.85E-02	.	.	.	.
Cobalt-60	1	0	1.08E-01	1.08E-01	.	.	.	.
Strontium-90	1	0	1.09E+00	1.09E+00	.	.	.	.
Subreach 2.02								
Americium-241	1	1	1.87E-01	1.87E-01	1.87E-01	.	.	1.87E-01
Cesium-137	1	1	1.01E+01	1.01E+01	1.01E+01	.	.	1.01E+01
Cobalt-60	1	1	6.99E-02	6.99E-02	6.99E-02	.	.	6.99E-02
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	.	.	1.11E-02
Plutonium-238	1	1	1.41E-02	1.41E-02	1.41E-02	.	.	1.41E-02
Plutonium-239/240	1	1	1.85E-01	1.85E-01	1.85E-01	.	.	1.85E-01
Strontium-90	1	1	2.60E-01	2.60E-01	2.60E-01	.	.	2.60E-01
Uranium-234	1	1	8.10E-01	8.10E-01	8.10E-01	.	.	8.10E-01
Uranium-235	1	1	3.53E-02	3.53E-02	3.53E-02	.	.	3.53E-02
Uranium-238	1	1	7.41E-01	7.41E-01	7.41E-01	.	.	7.41E-01
Subreach 2.03								
Cesium-137	1	0	1.09E-01	1.09E-01	.	.	.	.
Cobalt-60	1	0	1.18E-01	1.18E-01	.	.	.	.
Strontium-90	1	0	1.25E+00	1.25E+00	.	.	.	.
Subreach 2.04								
Americium-241	1	1	1.37E-01	1.37E-01	1.37E-01	.	.	1.37E-01
Cesium-137	7	7	2.39E-01	2.50E+01	6.59E+00	3.33E+00	1.31E+01	2.39E+00
Cobalt-60	7	2	5.44E-02	1.93E-01	1.06E-01	2.03E-02	1.45E-01	8.99E-02
Curium-243/244	1	1	1.39E-02	1.39E-02	1.39E-02	.	.	1.39E-02
Curium-245/246	1	1	1.47E-02	1.47E-02	1.47E-02	.	.	1.47E-02
Curium-248	1	1	2.89E-02	2.89E-02	2.89E-02	.	.	2.89E-02
Plutonium-238	1	1	2.83E-02	2.83E-02	2.83E-02	.	.	2.83E-02

Table B18 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Plutonium-239/240	1	1	1.86E-01	1.86E-01	1.86E-01	.	.	1.86E-01
Strontium-90	8	4	3.22E-01	3.51E+00	1.04E+00	4.45E-01	1.88E+00	3.22E-01
Technetium-99	1	0	1.52E+00	1.52E+00	.	.	.	.
Uranium-234	2	2	6.59E-01	1.35E+00	1.01E+00	3.47E-01	3.20E+00	1.01E+00
Uranium-235	2	1	2.45E-02	6.24E-02	6.24E-02	.	.	6.24E-02
Uranium-238	2	2	6.58E-01	1.23E+00	9.42E-01	2.85E-01	2.74E+00	9.42E-01
Subreach 3.01								
Cesium-137	2	1	9.85E-02	2.54E+00	2.54E+00	.	.	2.54E+00
Cobalt-60	2	0	1.12E-01	1.63E-01	.	.	.	.
Strontium-90	2	0	9.94E-01	1.28E+00	.	.	.	.
Technetium-99	2	0	1.52E+00	3.53E+00	.	.	.	.
Uranium-234	2	2	6.12E-01	3.48E+00	2.05E+00	1.43E+00	1.11E+01	2.05E+00
Uranium-235	2	1	2.55E-02	1.01E-01	1.01E-01	.	.	1.01E-01
Uranium-238	2	2	4.72E-01	2.01E+00	1.24E+00	7.68E-01	6.09E+00	1.24E+00
Subreach 3.02								
Cesium-137	11	9	3.95E-02	8.05E-01	3.22E-01	8.17E-02	4.70E-01	2.36E-01
Cobalt-60	11	1	2.69E-02	2.04E-01	3.45E-02	.	.	3.45E-02
Strontium-90	9	3	4.17E-01	3.96E+00	2.01E+00	3.11E-01	2.58E+00	1.63E+00
Technetium-99	9	6	1.60E+00	2.58E+02	4.14E+01	2.86E+01	9.45E+01	6.14E+00
Uranium-234	9	9	7.69E-01	9.69E+01	1.65E+01	1.03E+01	3.56E+01	3.69E+00
Uranium-235	9	9	4.55E-02	4.89E+00	8.07E-01	5.20E-01	1.77E+00	1.89E-01
Uranium-238	9	9	6.67E-01	6.59E+01	1.12E+01	7.02E+00	2.42E+01	2.69E+00
Subreach 3.03								
Cesium-137	9	8	1.05E-01	3.97E+00	1.29E+00	3.94E-01	2.02E+00	1.17E+00
Cobalt-60	9	0	6.60E-02	1.60E-01	.	.	.	.
Strontium-90	9	2	3.42E-01	2.05E+00	7.57E-01	2.15E-01	1.16E+00	5.96E-01
Technetium-99	9	8	3.55E+00	3.35E+01	1.07E+01	3.36E+00	1.70E+01	5.65E+00
Uranium-234	9	9	2.40E+00	1.56E+01	7.36E+00	1.75E+00	1.06E+01	5.96E+00
Uranium-235	9	9	1.01E-01	1.32E+00	4.13E-01	1.34E-01	6.62E-01	3.30E-01
Uranium-238	9	9	1.88E+00	1.08E+01	5.16E+00	1.10E+00	7.22E+00	4.74E+00
Subreach 3.04								
Americium-241	1	1	1.06E-01	1.06E-01	1.06E-01	.	.	1.06E-01
Cesium-137	8	8	2.92E-01	7.92E+00	5.07E+00	9.99E-01	6.96E+00	5.50E+00
Cobalt-60	8	3	4.38E-02	1.87E-01	6.91E-02	2.38E-02	1.14E-01	4.97E-02
Curium-243/244	1	1	1.11E-02	1.11E-02	1.11E-02	.	.	1.11E-02
Curium-245/246	1	1	1.77E-02	1.77E-02	1.77E-02	.	.	1.77E-02
Curium-248	1	1	1.73E-02	1.73E-02	1.73E-02	.	.	1.73E-02
Plutonium-238	1	1	1.42E-02	1.42E-02	1.42E-02	.	.	1.42E-02

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Table B18 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Plutonium-239/240	1	1	1.54E-02	1.54E-02	1.54E-02	.	.	1.54E-02
Strontium-90	7	2	6.78E-02	2.23E+00	3.77E-01	4.05E-01	1.16E+00	6.78E-02
Technetium-99	6	3	1.23E+00	3.77E+00	2.32E+00	5.62E-01	3.46E+00	1.51E+00
Uranium-234	7	7	4.62E-01	6.08E+00	3.49E+00	8.08E-01	5.06E+00	3.10E+00
Uranium-235	7	7	4.18E-02	3.65E-01	1.69E-01	4.13E-02	2.49E-01	1.15E-01
Uranium-238	7	7	2.37E-01	5.21E+00	2.81E+00	7.84E-01	4.34E+00	2.00E+00
Subreach 4.01								
Cesium-137	11	11	1.02E-01	2.69E+01	7.53E+00	2.99E+00	1.29E+01	2.85E+00
Cobalt-60	11	4	3.51E-02	1.28E-01	9.80E-02	3.67E-03	1.05E-01	9.26E-02
Strontium-90	9	0	1.04E+00	1.32E+00	.	.	.	.
Subreach 4.02								
Cesium-137	6	6	3.26E-01	8.28E+00	2.21E+00	1.26E+00	4.75E+00	8.53E-01
Cobalt-60	6	1	1.04E-01	1.96E-01	1.96E-01	.	.	1.96E-01
Strontium-90	6	1	1.01E+00	3.41E+00	3.41E+00	.	.	3.41E+00
Subreach 4.03								
Cesium-137	8	8	2.93E+00	2.03E+01	9.71E+00	2.44E+00	1.43E+01	8.89E+00
Cobalt-60	8	5	7.77E-02	3.94E-01	1.97E-01	4.41E-02	2.81E-01	1.34E-01
Strontium-90	7	0	1.15E+00	3.25E+00	.	.	.	.
Subreach 4.04								
Americium-241	1	1	1.98E-01	1.98E-01	1.98E-01	.	.	1.98E-01
Cesium-137	12	12	1.88E+00	2.39E+01	8.83E+00	1.91E+00	1.23E+01	6.47E+00
Cobalt-60	12	9	1.30E-01	2.95E-01	2.00E-01	1.70E-02	2.31E-01	1.98E-01
Curium-243/244	1	1	1.96E-02	1.96E-02	1.96E-02	.	.	1.96E-02
Curium-245/246	1	1	2.91E-02	2.91E-02	2.91E-02	.	.	2.91E-02
Curium-248	1	1	2.69E-02	2.69E-02	2.69E-02	.	.	2.69E-02
Plutonium-238	1	1	2.12E-02	2.12E-02	2.12E-02	.	.	2.12E-02
Plutonium-239/240	1	1	2.59E-01	2.59E-01	2.59E-01	.	.	2.59E-01
Strontium-90	12	3	3.58E-01	1.61E+00	5.64E-01	1.63E-01	8.57E-01	3.58E-01
Uranium-234	1	1	2.22E+00	2.22E+00	2.22E+00	.	.	2.22E+00
Uranium-235	1	1	1.22E-01	1.22E-01	1.22E-01	.	.	1.22E-01
Uranium-238	1	1	1.88E+00	1.88E+00	1.88E+00	.	.	1.88E+00
Subreach 5								
Americium-241	2	2	3.79E-02	1.02E-01	6.99E-02	3.20E-02	2.72E-01	6.99E-02
Cesium-137	9	5	2.52E-02	1.24E+01	7.22E+00	9.08E-01	8.91E+00	5.42E+00
Cobalt-60	9	5	2.64E-02	1.72E-01	1.11E-01	8.31E-03	1.27E-01	9.87E-02

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Table B18 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Curium-243/244	2	2	1.34E-02	1.62E-02	1.48E-02	1.38E-03	2.35E-02	1.48E-02
Curium-245/246	2	2	3.49E-02	4.88E-02	4.19E-02	6.97E-03	8.59E-02	4.19E-02
Curium-248	2	2	2.22E-02	3.52E-02	2.87E-02	6.50E-03	6.98E-02	2.87E-02
Plutonium-238	2	2	2.28E-02	2.95E-02	2.62E-02	3.38E-03	4.75E-02	2.62E-02
Plutonium-239/240	2	2	1.00E-02	9.81E-02	5.41E-02	4.41E-02	3.32E-01	5.41E-02
Strontium-90	2	2	8.83E-02	1.30E-01	1.09E-01	2.07E-02	2.40E-01	1.09E-01
Uranium-234	2	2	1.91E+00	1.93E+00	1.92E+00	9.37E-03	1.97E+00	1.92E+00
Uranium-235	2	2	4.64E-02	8.86E-02	6.75E-02	2.11E-02	2.01E-01	6.75E-02
Uranium-238	2	2	1.60E+00	1.69E+00	1.65E+00	4.12E-02	1.91E+00	1.65E+00
Subreach 7.01								
Cesium-137	1	1	3.40E-01	3.40E-01	3.40E-01	.	.	3.40E-01
Cobalt-60	1	0	1.24E-01	1.24E-01	.	.	.	.
Strontium-90	1	1	2.14E+00	2.14E+00	2.14E+00	.	.	2.14E+00
Subreach 7.02								
Cesium-137	1	1	4.38E-01	4.38E-01	4.38E-01	.	.	4.38E-01
Cobalt-60	1	0	2.77E-01	2.77E-01	.	.	.	.
Strontium-90	1	0	9.67E-01	9.67E-01	.	.	.	.
Subreach 8								
Cesium-137	1	1	6.42E-01	6.42E-01	6.42E-01	.	.	6.42E-01
Cobalt-60	1	0	2.20E-01	2.20E-01	.	.	.	.
Strontium-90	1	0	1.65E+00	1.65E+00	.	.	.	.
Subreach 10								
Americium-241	1	1	5.45E-02	5.45E-02	5.45E-02	.	1 .	5.45E-02
Cesium-137	1	1	9.16E-01	9.16E-01	9.16E-01	.	.	9.16E-01
Cobalt-60	1	0	8.83E-02	8.83E-02	.	.	.	.
Curium-243/244	1	1	1.22E-02	1.22E-02	1.22E-02	.	.	1.22E-02
Curium-245/246	1	1	1.84E-02	1.84E-02	1.84E-02	.	.	1.84E-02
Curium-248	1	1	3.55E-02	3.55E-02	3.55E-02	.	.	3.55E-02
Plutonium-238	1	1	9.61E-03	9.61E-03	9.61E-03	.	.	9.61E-03
Plutonium-239/240	1	1	2.80E-02	2.80E-02	2.80E-02	.	.	2.80E-02
Strontium-90	1	1	1.00E-01	1.00E-01	1.00E-01	.	.	1.00E-01
Uranium-234	1	1	1.20E+00	1.20E+00	1.20E+00	.	.	1.20E+00
Uranium-235	1	1	6.03E-02	6.03E-02	6.03E-02	.	.	6.03E-02
Uranium-238	1	1	1.32E+00	1.32E+00	1.32E+00	.	.	1.32E+00

Table B18 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Subreach 13								
Cesium-137	5	1	1.22E-01	3.04E-01	3.04E-01	.	.	3.04E-01
Cobalt-60	5	0	1.20E-01	1.56E-01	.	.	.	.
Strontium-90	5	0	1.16E+00	2.56E+00	.	.	.	.
Technetium-99	5	0	1.26E+00	1.85E+00	.	.	.	.
Uranium-234	5	5	3.26E-01	1.44E+00	7.61E-01	1.93E-01	1.17E+00	6.33E-01
Uranium-235	5	2	2.99E-02	9.86E-02	4.48E-02	1.70E-02	8.10E-02	3.14E-02
Uranium-238	5	5	3.05E-01	9.66E-01	6.60E-01	1.17E-01	9.10E-01	7.70E-01
Subreach 18								
Cesium-137	3	3	1.59E-01	3.44E-01	2.26E-01	5.89E-02	3.98E-01	1.76E-01
Cobalt-60	3	0	4.59E-02	1.55E-01	.	.	.	.
Strontium-90	3	1	1.14E+00	1.22E+00	1.14E+00	.	.	1.14E+00
Subreach 22								
Americium-241	1	1	6.87E+00	6.87E+00	6.87E+00	.	.	6.87E+00
Cesium-137	1	1	7.89E+03	7.89E+03	7.89E+03	.	.	7.89E+03
Cobalt-60	1	1	3.26E+01	3.26E+01	3.26E+01	.	.	3.26E+01
Curium-243/244	1	1	0.00E+00	0.00E+00	0.00E+00	.	.	0.00E+00
Curium-245/246	1	1	6.00E-02	6.00E-02	6.00E-02	.	.	6.00E-02
Curium-248	1	1	2.00E-02	2.00E-02	2.00E-02	.	.	2.00E-02
Plutonium-238	1	1	1.63E+00	1.63E+00	1.63E+00	.	.	1.63E+00
Plutonium-239/240	1	1	7.41E+01	7.41E+01	7.41E+01	.	.	7.41E+01
Strontium-90	1	1	3.62E+02	3.62E+02	3.62E+02	.	.	3.62E+02
Uranium-234	1	1	5.42E+00	5.42E+00	5.42E+00	.	.	5.42E+00
Uranium-235	1	1	1.80E-01	1.80E-01	1.80E-01	.	.	1.80E-01
Uranium-238	1	1	3.87E+00	3.87E+00	3.87E+00	.	.	3.87E+00

Table B19. Summary statistics for radionuclide concentrations in porewater (pCi/L) by reach

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
Reach 1								
Cesium-137	5	0	5.09e+00	1.28e+01	0.00e+00	.	.	.
Cobalt-60	5	0	4.26e+00	1.02e+00	.	.	.	.
Strontium-90	5	0	1.69e+00	1.74e+01	.	.	.	.
Reach 2								
Cesium-137	7	0	4.79e+00	1.12e+01	.	.	.	.
Cobalt-60	7	0	4.60e+00	1.01e+01	.	.	.	.
Strontium-90	5	1	1.22e+00	9.79e+00	5.15e+00	.	.	5.15e+00
Uranium-234	1	1	1.48e-01	1.48e-01	1.48e-01	.	.	1.48e-01
Uranium-235	1	0	1.77e-01	1.77e-01	.	.	.	.
Uranium-238	1	1	8.38e-02	8.38e-02	8.39e-02	.	.	8.39e-02
Reach 3								
Cesium-137	24	0	4.78e+00	1.31e+01	.	.	.	.
Cobalt-60	24	0	4.51e+00	1.42e+01	.	.	.	.
Strontium-90	18	6	1.95e+00	1.97e+01	3.42e+00	1.05e+00	5.24e+00	1.97e+00
Uranium-234	25	24	1.80e-01	5.78e+01	6.14e+00	2.38e+00	1.02e+01	3.02e+00
Uranium-235	25	17	5.86e-02	3.20e+00	3.67e-01	1.34e-01	5.97e-01	1.43e-01
Uranium-238	25	24	3.45e-01	3.62e+01	4.09e+00	1.43e+00	6.55e+00	2.35e+00
Reach 4								
Cesium-137	29	0	5.00e+00	1.83e+01	.	.	.	.
Cobalt-60	29	0	3.97e+00	1.29e+01	.	.	.	.
Gross alpha activity	8	3	9.50e-01	2.40e+00	1.57e+00	1.36e-01	1.83e+00	1.45e+00
Gross beta activity	8	8	2.00e+00	1.11e+01	5.45e+00	9.46e-01	7.24e+00	5.03e+00
Strontium-90	30	3	1.18e+00	5.00e+00	2.06e+00	9.18e-02	2.21e+00	1.95e+00
Reach 7								
Cesium-137	2	0	5.44e+00	1.13e+01	.	.	.	.
Cobalt-60	2	0	4.53e+00	8.75e+00	.	.	.	.
Strontium-90	2	0	1.13e+00	2.09e+00	.	.	.	.
Reach 8								
Cesium-137	1	0	1.30e+01	1.30e+01	.	.	.	.
Cobalt-60	1	0	9.73e+00	9.73e+00	.	.	.	.
Strontium-90	1	0	2.97e+00	2.97e+00	.	.	.	.
Reach 13								
Cesium-137	5	0	5.17e+00	1.78e+01	.	.	.	.
Cobalt-60	5	0	5.70e+00	1.63e+01	.	.	.	.
Strontium-90	4	0	1.93e+00	2.41e+00	.	.	.	.
Uranium-234	4	4	3.33e-01	9.09e-01	5.09e-01	1.34e-01	8.25e-01	3.97e-01
Uranium-235	4	1	7.43e-02	1.94e-01	8.94e-02	.	.	8.94e-02
Uranium-238	4	4	3.08e-01	5.11e-01	4.28e-01	4.95e-02	5.44e-01	4.46e-01

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Table B19 (continued)

Analyte	Obs.	Detects	Min.	Max.	Mean	Std. Error	95% UCB	Median
<u>Reach 18</u>								
Cesium-137	2	0	1.01e+01	1.17e+01	.	.	.	.
Cobalt-60	2	0	7.49e+00	1.28e+01	.	.	.	.
Strontium-90	3	0	2.09e+00	2.53e+00	.	.	.	.

Appendix C
BIOTA CHARACTERIZATION

Table C1. Concentration of radionuclides in Clinch River fish (from ORNL 1966)
(pc/kg fresh weight)

Fish Species	Sample Period	⁹⁰ Sr		¹³⁷ Cs		¹⁰⁶ Ru		⁶⁰ Co	
		Flesh	Total ^a	Flesh	Total ^a	Flesh	Total ^a	Flesh	Total ^a
Carp	1960-1962 1963	(17) ^b 500±140 (20) 91±22	(40) 5100±1700	(71) 510±57 (20) 320±110	(39) 560±79	(69) 170±18	(39) 290±78	(67) 66±6.1	(39) 49±9.9
Carp sucker	1960-1962 1963	(18) 540±190 (20) 22±4.4	(39) 940±120 (39) 4800 ^d	(122) 1200±460 (20) 460±82	(37) 640±67	(22) 120±30	(37) 56±16	(22) 120±19	(37) 32±6.8
Buffalo	1960-1962 1963	(3) 240±89 (20) 43±14	(30) 830±110	(5) 480±94 (21) 560±84	(30) 590±92	(5) 110±32	(30) 150±38	(5) 78±21	(30) 32±6.8
Sight Feeders ^c	1960-1962	(109) 180±83		(126) 680±120		(127) 120±32		(127) 22±11	

Table C2. Comparison of mean values for various chemical parameters in fish in the lower Clinch River below Melton Hill Dam* (from TVA 1983)

Parameter	Bluegill	Largemouth Bass	Glizzard Shad	Lepomis	Approximate Range of Background Concentrations ^c	FDA Action Level
Mercury	0.30	0.23	0.05	0.37	0.05-0.20	1.0
Cadmium	0.01	0.01	0.01	0.01	0.02-0.07	—
Chromium	0.05	0.08	0.17	0.03	0.03-0.10	—
Copper	0.25	0.33	0.63	0.30	0.15-0.90	—
Lead	0.07	0.12	0.10	0.14	0.03-0.70	d
Nickel	0.72	0.55	0.51	0.60	0.20-0.60	—
Zinc	6.4	5.8	4.1	11.1	5-10	d
PCB	—	0.20	0.22	0.15	<0.10	5.0

^a Numbers given are averages of the available data, 1976-1983.

^b All concentrations given in $\mu\text{g/g}$ (ppm).

^c Based primarily on the state-wide mean concentrations for trace metals in fish (Sinclair et al. 1979) and on average concentrations in Melton Hill Reservoir at CRM 52.2.

^d The U.S. Food and Drug Administration (FDA) has no recommended action level for lead or zinc, but the Canadian Food and Drug Directorate has set standards of 10 and 100 ppm, respectively, for these metals.

Table C3. Comparison of average concentrations for selected parameters in fish from Poplar Creek^a (from TVA 1983)

Species	Mercury	Chromium	Nickel	PCB
Bluegill	0.31	0.16	0.78	0.17
Largemouth Bass	0.59	0.19	0.56	0.38
Gizzard Shad	0.04	0.07	1.28	0.27
Lepomis	0.43	0.03	0.66	0.30
Channel Catfish	0.39	0.33	1.42	1.6
Approximate Range of Background Concentrations ^b	(0.05–0.20)	(0.03–0.10)	(0.20–0.60)	<0.10

^a Numbers given are averages of the available data, 1976–1983. All concentrations given in $\mu\text{g/g}$ (ppm).

^b Based primarily on state-wide mean concentrations for trace metals in fish (Sinclair et al. 1979) and on average concentrations in Melton Hill Reservoir at CRM 52.2.

Table C4. Instream contaminant study – task 4, total PCBs** in fish flesh samples from 16 sites in the vicinity of Oak Ridge, Tennessee (from TVA 1985)

Sample Site	Species	1	2	3	4	Individuals					10	Mean
						5	6	7	8	9		
Seabro Creek	Channel catfish	U	U	U	U	U	U	U	U	U	U	–
McCoy Branch	Channel catfish Yellow bullhead	U U	1.0	U	U	U	U	U	U	U		0.1 –
Melton Hill Dam	Channel catfish Yellow bullhead	U U	U U	4.7* U	U							1.6 –
White Oak Creek Mile 0.2	Channel catfish Black bullhead	3.0* U	2.4 U	2.2	5.6*	2.7	3.5*	2.8	2.8			3.1* –
White Oak Lake	Common carp	U	0.2	0.6	U	1.0	U	U	0.4			0.3
Clinch River Mile 11.0	Channel catfish	1.1	1.5	0.3	2.1	0.9	0.4	1.7	0.7	0.5	U	0.9
Clinch River Mile 6.0	Channel catfish	0.4	0.6	1.1	0.2	0.6	0.5	0.6	1.6	0.8	1.0	0.7
Clinch River Mile 2.0	Channel catfish	0.3	0.4	0.9	0.6	0.7	1.5	0.6	0.7	0.7	U	0.6
Emory River Mile 1.0	Channel catfish	0.6	1.0	0.8	1.4	0.9	U	U	0.5	0.3	U	0.6
TRM 572	Channel catfish	U	0.3	U	0.2	0.2	0.5	U	0.4	0.4	0.3	0.2
TRM 558	Channel catfish	1.3	0.2	U	0.6	1.4	1.1	0.8	0.5	0.3	U	0.6
EFPC Mile 13.8	Bluegill Largemouth bass Common carp	U U 3.1*	U 0.5 3.7*	0.9 2.0								– 0.5 2.9
EFPC Mile 8.8	Rock bass	U	U	U	U	U	U	U	U	U	U	–
EFPC Mile 4.0	Channel catfish Spotted sucker Northern hog sucker	0.6 U U										0.6 – –
Bear Creek Mile 0.4	Rock bass	U	U	U	U	U	U	U	U	U	0.2	Trace
Poplar Creek Mile 0.2	Channel catfish	U	U	2.1	U	U	U	0.7	1.8	2.5	3.4*	1.1

U – Undetectable level; * – Above FDA action level; ** – Total concentrations obtained by summing detectable levels.

Table C5. Instream contaminant study – task 4, significant maximum concentrations for radioisotopes in fish flesh samples – pCi/g, dry weight (from TVA 1985)

Analysis/Isotope	NRC Reporting Level ^a	Tennessee River ^b	Lower Limit of Detection ^c	Clinch River	East Fork Poplar Creek	White Oak Lake	White Oak Embayment	Bear Creek
Gross Alpha	d	5	0.1	.07	.9	.05	.07	.02
Gross Beta	d	45	0.1	64	74	76	40	29
Sr-89	d	1.2	0.5	.1	.2	.2	-1.6 ^e	f
Sr-90	d	0.3	0.3	.01	.06	.25	1.3	f
Gamma Spectral Analysis^d								
Co-60	40	.03	.01	–	.03	.12	.07	–
Cs-134	4	–	.08	–	.11	.04	–	–
Cs-137	8	.2	.02	18	2.6	26	9.7	.4
K-40	d	20	1.00	18	22	17	14	18

a – Reporting levels for radioactivity concentrations in environmental samples as outlined in Draft NUREG-0472, Rev. 3, *Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors*, January 1983.

b – Maximum concentrations reported by TVA in fish samples collected from the Tennessee River from 1981–1983.

c – Lower limit of detection as determined by the method developed by Pasternack and Harley and described in HASL-300 and Nucl. Instr. Methods 21, 533-4- (1971).

d – No reporting level given.

e – Negative value is an artifact of counting statistics and does not infer a negative activity.

f – Analysis not performed.

g – dash indicates isotope not identified in gamma spectral analysis.

Table C6. Summary of inorganic and organic contaminant analysis of sport fish fillets by site, year, and species

INORGANICS

ANALYTE	TAXON	COMPOSITE	SITE	YEAR	N	# DETECTS	MIN	MAX	MEAN	STDERR	UCB
Arsenic	BLUGIL	N	CRM 1.0	1993	20	5	0.016	0.12	0.04592	0.00711	0.0582
Arsenic	BLUGIL	N	CRM 1.0	1994	10	9	0.006	0.042	0.0174	0.00396	0.0247
Arsenic	BLUGIL	N	CRM 10.0	1994	10	6	0.006	0.14	0.036	0.01407	0.0618
Arsenic	BLUGIL	N	CRM 125.0	1993	20	2	0.006	0.14	0.121	0.00138	0.1234
Arsenic	BLUGIL	N	CRM 125.0	1994	10	7	0.006	0.14	0.0852	0.01319	0.1094
Arsenic	BLUGIL	N	CRM 20.0	1993	20	3	0.006	0.13	0.0287	0.0068	0.0439
Arsenic	BLUGIL	N	CRM 20.0	1994	10	0	0.006	0.086	.	.	.
Arsenic	BLUGIL	N	CRM 21.5	1994	10	0	0.018	0.092	.	.	.
Arsenic	BLUGIL	N	PCM 1.0	1993	20	8	0.006	0.16	0.08464	0.00593	0.0949
Arsenic	BLUGIL	N	PCM 4.6	1994	10	9	0.026	0.12	0.06715	0.01048	0.0864
Arsenic	BLUGIL	N	PCM 5.3	1994	9	8	0.02	0.23	0.14222	0.0132	0.1668
Arsenic	BLUGIL	N	PRM 30.0	1993	20	15	0.006	0.18	0.06662	0.01431	0.0914
Arsenic	BLUGIL	N	TRM 555.0	1993	20	5	0.026	0.12	0.1105	0.00054	0.1114
Arsenic	BLUGIL	N	TRM 570.0	1993	20	4	0.014	0.07	0.02061	0.00388	0.0273
Arsenic	CHNCAT	N	CRM 1.0	1993	15	5	0.014	0.11	0.06347	0.00436	0.0712
Arsenic	CHNCAT	N	CRM 10.0	1994	10	1	0.006	0.012	0.012	.	.
Arsenic	LMBASS	N	CRM 1.0	1993	20	20	0.17	0.49	0.2655	0.01718	0.2952
Arsenic	LMBASS	N	CRM 1.0	1994	10	10	0.008	0.3	0.1748	0.02799	0.2261
Arsenic	LMBASS	N	CRM 10.0	1994	10	10	0.13	0.51	0.237	0.03621	0.3034
Arsenic	LMBASS	N	CRM 125.0	1993	20	20	0.012	0.33	0.2173	0.01986	0.2516
Arsenic	LMBASS	N	CRM 125.0	1994	10	10	0.16	0.42	0.246	0.02432	0.2906
Arsenic	LMBASS	N	CRM 20.0	1993	13	13	0.1	0.43	0.28462	0.025	0.3292
Arsenic	LMBASS	N	CRM 20.0	1994	5	5	0.19	0.38	0.302	0.03597	0.3787
Arsenic	LMBASS	N	CRM 21.5	1994	8	8	0.17	0.45	0.3	0.03311	0.3627
Arsenic	LMBASS	N	PCM 1.0	1993	20	20	0.084	0.42	0.2182	0.01976	0.2524
Arsenic	LMBASS	N	PCM 4.6	1994	7	6	0.052	0.32	0.14095	0.04374	0.2259
Arsenic	LMBASS	N	PCM 5.3	1994	2	1	0.052	0.12	0.12	.	.
Arsenic	LMBASS	N	PRM 30.0	1993	20	20	0.034	0.51	0.2516	0.0352	0.3125
Arsenic	LMBASS	N	TRM 555.0	1993	20	19	0.01	0.35	0.1721	0.01495	0.198
Arsenic	LMBASS	N	TRM 570.0	1993	20	19	0.01	0.38	0.238	0.01295	0.2604
Beryllium	BLUGIL	N	CRM 1.0	1993	20	0	0.0006	0.002	.	.	.
Beryllium	BLUGIL	N	CRM 1.0	1994	10	10	0.002	0.006	0.0032	0.00044	0.004
Beryllium	BLUGIL	N	CRM 10.0	1994	10	0	0.0008	0.0008	.	.	.
Beryllium	BLUGIL	N	CRM 125.0	1993	20	0	0.0008	0.0008	.	.	.
Beryllium	BLUGIL	N	CRM 125.0	1994	10	7	0.0008	0.01	0.0072	0.00055	0.0082
Beryllium	BLUGIL	N	CRM 20.0	1993	20	2	0.0006	0.004	0.0021	0.00014	0.0023
Beryllium	BLUGIL	N	CRM 20.0	1994	10	0	0.0008	0.0008	.	.	.
Beryllium	BLUGIL	N	CRM 21.5	1994	10	5	0.0008	0.004	0.004	0	0.004
Beryllium	BLUGIL	N	PCM 1.0	1993	20	5	0.0006	0.004	0.0021	0.00011	0.0023
Beryllium	BLUGIL	N	PCM 4.6	1994	10	6	0.004	0.01	0.009	0.00035	0.0096
Beryllium	BLUGIL	N	PCM 5.3	1994	9	9	0.004	0.01	0.00622	0.00078	0.0077
Beryllium	BLUGIL	N	PRM 30.0	1993	20	7	0.0008	0.016	0.0028	0.00074	0.0041
Beryllium	BLUGIL	N	TRM 555.0	1993	20	0	0.0006	0.0008	.	.	.
Beryllium	BLUGIL	N	TRM 570.0	1993	20	9	0.0006	0.004	0.0024	0.00019	0.0027
Beryllium	CHNCAT	N	CRM 1.0	1993	15	1	0.0008	0.002	0.002	.	.
Beryllium	CHNCAT	N	CRM 10.0	1994	10	3	0.0008	0.006	0.0042	0.00023	0.0046
Beryllium	LMBASS	N	CRM 1.0	1993	20	0	0.0008	0.0008	.	.	.
Beryllium	LMBASS	N	CRM 1.0	1994	10	0	0.0008	0.0008	.	.	.
Beryllium	LMBASS	N	CRM 10.0	1994	10	0	0.0008	0.006	.	.	.
Beryllium	LMBASS	N	CRM 125.0	1993	20	0	0.0006	0.0008	.	.	.
Beryllium	LMBASS	N	CRM 125.0	1994	10	10	0.002	0.006	0.0036	0.0005	0.0045
Beryllium	LMBASS	N	CRM 20.0	1993	13	3	0.0008	0.004	0.00215	0.00018	0.0025
Beryllium	LMBASS	N	CRM 20.0	1994	5	3	0.0008	0.002	0.002	0	0.002
Beryllium	LMBASS	N	CRM 21.5	1994	8	0	0.0008	0.0008	.	.	.
Beryllium	LMBASS	N	PCM 1.0	1993	20	6	0.0006	0.004	0.0024	0.0002	0.0027
Beryllium	LMBASS	N	PCM 4.6	1994	7	0	0.0008	0.008	.	.	.
Beryllium	LMBASS	N	PCM 5.3	1994	2	2	0.006	0.008	0.007	0.001	0.0133
Beryllium	LMBASS	N	PRM 30.0	1993	20	8	0.0006	0.004	0.002	0	0.002
Beryllium	LMBASS	N	TRM 555.0	1993	20	10	0.0008	0.004	0.0028	0.00023	0.0032
Beryllium	LMBASS	N	TRM 570.0	1993	20	20	0.002	0.006	0.0036	0.00023	0.004
Copper	BLUGIL	N	CRM 1.0	1994	10	1	0.254	2.8	2.8	.	.

Table C6 (continued)

Copper	BLUGIL	N	CRM 10.0	1994	10	3	0.17	0.6	0.51	0.01162	0.5313
Copper	BLUGIL	N	CRM 125.0	1993	2	1	0.29	0.416	0.29	.	.
Copper	BLUGIL	N	CRM 125.0	1994	10	0	0.012	0.472	.	.	.
Copper	BLUGIL	N	CRM 20.0	1994	10	10	0.092	1.1	0.2858	0.09695	0.4635
Copper	BLUGIL	N	CRM 21.5	1994	10	2	0.196	55	6.04	7.29853	19.419
Copper	BLUGIL	N	PCM 4.6	1994	10	1	0.166	1.2	1.2	.	.
Copper	BLUGIL	N	PCM 5.3	1994	9	2	0.012	1.4	0.86667	0.08889	1.032
Copper	BLUGIL	N	TRM 555.0	1993	18	9	0.186	0.6	0.30287	0.03007	0.3552
Copper	CHNCAT	N	CRM 1.0	1993	15	4	0.22	0.7	0.528	0.02017	0.5635
Copper	CHNCAT	N	CRM 10.0	1994	10	7	0.192	7.4	0.9599	0.73347	2.3044
Copper	LMBASS	N	CRM 1.0	1994	10	10	0.19	10	2.5314	1.16672	4.6701
Copper	LMBASS	N	CRM 10.0	1994	10	1	0.196	0.7	0.7	.	.
Copper	LMBASS	N	CRM 125.0	1994	10	0	0.226	0.394	.	.	.
Copper	LMBASS	N	CRM 20.0	1994	5	0	0.174	0.274	.	.	.
Copper	LMBASS	N	CRM 21.5	1994	8	0	0.156	0.386	.	.	.
Copper	LMBASS	N	PCM 4.6	1994	7	0	0.182	0.494	.	.	.
Copper	LMBASS	N	PCM 5.3	1994	2	0	0.234	0.244	.	.	.
Copper	LMBASS	N	TRM 555.0	1993	20	3	0.25	0.8	0.52	0.01857	0.5521
Mercury	BLUGIL	N	CRM 1.0	1993	20	11	0.03	0.6	0.09631	0.02941	0.1472
Mercury	BLUGIL	N	CRM 1.0	1994	10	0	0.1	0.16	.	.	.
Mercury	BLUGIL	N	CRM 10.0	1994	10	10	0.078	0.45	0.1858	0.03184	0.2442
Mercury	BLUGIL	N	CRM 125.0	1993	20	9	0.015	0.11	0.04493	0.00735	0.0576
Mercury	BLUGIL	N	CRM 125.0	1994	10	10	0.05	0.15	0.0938	0.01042	0.1129
Mercury	BLUGIL	N	CRM 20.0	1993	20	19	0.028	0.21	0.08531	0.01134	0.1049
Mercury	BLUGIL	N	CRM 20.0	1994	10	4	0.06	0.21	0.15	0.00766	0.164
Mercury	BLUGIL	N	CRM 21.5	1994	10	0	0.017	0.082	.	.	.
Mercury	BLUGIL	N	PCM 1.0	1993	20	19	0.1	0.81	0.3015	0.03925	0.3694
Mercury	BLUGIL	N	PCM 4.6	1994	10	10	0.21	0.43	0.34	0.02305	0.3822
Mercury	BLUGIL	N	PCM 5.3	1994	9	7	0.18	0.68	0.42556	0.05137	0.5211
Mercury	BLUGIL	N	PRM 30.0	1993	20	5	0.015	0.088	0.03036	0.00184	0.0335
Mercury	BLUGIL	N	TRM 555.0	1993	20	4	0.053	0.13	0.10056	0.00062	0.1016
Mercury	BLUGIL	N	TRM 570.0	1993	20	4	0.04	0.099	0.045	0.00305	0.0503
Mercury	CHNCAT	N	CRM 1.0	1993	15	14	0.015	0.76	0.26153	0.05238	0.3538
Mercury	CHNCAT	N	CRM 10.0	1994	10	5	0.1	0.56	0.193	0.04991	0.2845
Mercury	LMBASS	N	CRM 1.0	1993	20	17	0.11	0.77	0.292	0.03064	0.345
Mercury	LMBASS	N	CRM 1.0	1994	10	5	0.22	0.74	0.404	0.04047	0.4782
Mercury	LMBASS	N	CRM 10.0	1994	10	10	0.068	0.7	0.2947	0.05756	0.4002
Mercury	LMBASS	N	CRM 125.0	1993	20	19	0.05	0.85	0.3415	0.03913	0.4092
Mercury	LMBASS	N	CRM 125.0	1994	10	10	0.16	0.56	0.274	0.03757	0.3429
Mercury	LMBASS	N	CRM 20.0	1993	13	8	0.015	0.64	0.24631	0.05207	0.3391
Mercury	LMBASS	N	CRM 20.0	1994	5	4	0.015	0.66	0.348	0.09118	0.5424
Mercury	LMBASS	N	CRM 21.5	1994	8	6	0.052	0.4	0.20375	0.04278	0.2848
Mercury	LMBASS	N	PCM 1.0	1993	20	20	0.28	1.61	0.569	0.08519	0.7163
Mercury	LMBASS	N	PCM 4.6	1994	7	7	0.3	1.47	0.74857	0.16752	1.0741
Mercury	LMBASS	N	PCM 5.3	1994	2	2	0.69	1.87	1.28	0.59	5.0051
Mercury	LMBASS	N	PRM 30.0	1993	20	20	0.11	0.64	0.308	0.03477	0.3681
Mercury	LMBASS	N	TRM 555.0	1993	20	19	0.12	0.5	0.251	0.01975	0.2851
Mercury	LMBASS	N	TRM 570.0	1993	20	20	0.15	0.44	0.265	0.01941	0.2986
Selenium	BLUGIL	N	CRM 1.0	1993	20	20	0.3	0.6	0.42	0.02471	0.4627
Selenium	BLUGIL	N	CRM 1.0	1994	10	10	0.2	0.6	0.4	0.03651	0.4669
Selenium	BLUGIL	N	CRM 10.0	1994	10	9	0.012	0.9	0.46	0.07823	0.6034
Selenium	BLUGIL	N	CRM 125.0	1993	20	16	0.008	0.5	0.285	0.02224	0.3235
Selenium	BLUGIL	N	CRM 125.0	1994	10	9	0.012	0.7	0.3884	0.07438	0.5247
Selenium	BLUGIL	N	CRM 20.0	1993	20	19	0.008	0.4	0.3	0.01624	0.3281
Selenium	BLUGIL	N	CRM 20.0	1994	10	10	0.146	0.5	0.2574	0.03682	0.3249
Selenium	BLUGIL	N	CRM 21.5	1994	10	9	0.194	0.8	0.49	0.0436	0.5699
Selenium	BLUGIL	N	PCM 1.0	1993	20	20	0.124	0.4	0.2712	0.01735	0.3012
Selenium	BLUGIL	N	PCM 4.6	1994	10	8	0.158	0.5	0.31	0.04395	0.3906
Selenium	BLUGIL	N	PCM 5.3	1994	9	9	0.2	0.7	0.48889	0.05122	0.5841
Selenium	BLUGIL	N	PRM 30.0	1993	20	20	0.2	0.8	0.475	0.03067	0.528
Selenium	BLUGIL	N	TRM 555.0	1993	20	20	0.2	0.5	0.31	0.01906	0.343
Selenium	BLUGIL	N	TRM 570.0	1993	20	15	0.158	0.4	0.255	0.01862	0.2872
Selenium	CHNCAT	N	CRM 1.0	1993	15	9	0.012	0.156	0.06221	0.01245	0.0841
Selenium	CHNCAT	N	CRM 10.0	1994	9	3	0.012	0.074	0.04022	0.00635	0.052
Selenium	LMBASS	N	CRM 1.0	1993	20	20	0.2	0.7	0.33	0.02524	0.3736
Selenium	LMBASS	N	CRM 1.0	1994	10	10	0.3	0.6	0.48	0.0359	0.5458

Table C6 (continued)

Selenium	LMBASS	N	CRM 10.0	1994	10	5	0.024	0.5	0.33	0.02264	0.3715
Selenium	LMBASS	N	CRM 125.0	1993	20	20	0.4	0.6	0.48	0.01717	0.5097
Selenium	LMBASS	N	CRM 125.0	1994	10	10	0.184	0.7	0.3484	0.04831	0.437
Selenium	LMBASS	N	CRM 20.0	1993	13	13	0.3	0.4	0.35385	0.01439	0.3795
Selenium	LMBASS	N	CRM 20.0	1994	5	5	0.3	0.6	0.44	0.06	0.5679
Selenium	LMBASS	N	CRM 21.5	1994	8	8	0.2	0.5	0.3375	0.03239	0.3989
Selenium	LMBASS	N	PCM 1.0	1993	20	17	0.198	0.5	0.285	0.02097	0.3213
Selenium	LMBASS	N	PCM 4.6	1994	7	3	0.1	0.3	0.22857	0.02091	0.2692
Selenium	LMBASS	N	PCM 5.3	1994	2	1	0.16	0.2	0.2	.	.
Selenium	LMBASS	N	PRM 30.0	1993	20	13	0.4	0.6	0.45176	0.01582	0.4791
Selenium	LMBASS	N	TRM 555.0	1993	20	20	0.168	0.4	0.2734	0.0148	0.299
Selenium	LMBASS	N	TRM 570.0	1993	20	16	0.012	0.3	0.2245	0.01007	0.2419

ORGANICS(Semivolatiles)

ANALYTE	TAXON	COMPOSITE	SITE	YEAR	N	# DETECTS	MIN	MAX	MEAN	STDERR	UCB
1,2,4-Trichlorobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
1,2-Dichlorobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
1,3-Dichlorobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
1,4-Dichlorobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
2,2'-oxybis(1-chloropropane)	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
2,4,5-Trichlorophenol	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
2,4,6-Trichlorophenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2,4-Dichlorophenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2,4-Dimethylphenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2,4-Dinitrophenol	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
2,4-Dinitrotoluene	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2,6-Dinitrotoluene	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2-Chloronaphthalene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
2-Chlorophenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2-Methyl-4,6-dinitrophenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2-Methylnaphthalene	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
2-Methylphenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
2-Nitroaniline	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
2-Nitrophenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
3,3'-Dichlorobenzidine	CHNCAT	N	PCM 1.0	1994	9	0	0.13	0.13	.	.	.
3-Nitroaniline	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
4-Bromophenyl phenyl ether	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
4-Chloro-3-methylphenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
4-Chlorobenzenamine	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
4-Chlorophenylphenyl ether	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
4-Methylphenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
4-Nitroaniline	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
4-Nitrophenol	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
Acenaphthene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Acenaphthylene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Anthracene	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
Benzo(a)anthracene	CHNCAT	N	PCM 1.0	1994	9	0	0.033	0.033	.	.	.
Benzo(a)pyrene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Benzo(b)fluoranthene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Benzo(ghi)perylene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Benzo(k)fluoranthene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Benzoic acid	CHNCAT	N	PCM 1.0	1994	1	0	0.67	0.67	.	.	.
Benzyl alcohol	CHNCAT	N	PCM 1.0	1994	1	0	0.33	0.33	.	.	.
Bis(2-chloroethoxy)methane	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
Bis(2-chloroethyl) ether	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
Bis(2-ethoxyethyl)phthalate	CHNCAT	N	PCM 1.0	1994	9	0	0.033	0.12	.	.	.
Butylbenzylphthalate	CHNCAT	N	PCM 1.0	1994	9	0	0.033	0.033	.	.	.
Carbazole	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
Chrysene	CHNCAT	N	PCM 1.0	1994	9	0	0.033	0.033	.	.	.
Di-n-butylphthalate	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.081	.	.	.
Di-n-octylphthalate	CHNCAT	N	PCM 1.0	1994	1	0	0.13	0.13	.	.	.
Dibenz(a,h)anthracene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Dibenzofuran	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Diethylphthalate	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Dimethylphthalate	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.

Table C6 (continued)

Fluoranthene	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
Fluorene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Hexachlorobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Hexachlorobutadiene	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
Hexachlorocyclopentadiene	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
Hexachloroethane	CHNCAT	N	PCM 1.0	1994	10	0	0.13	0.13	.	.	.
Indeno(1,2,3-cd)pyrene	CHNCAT	N	PCM 1.0	1994	1	0	0.033	0.033	.	.	.
Isophorone	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
N-Nitroso-di-n-propylamine	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
N-Nitrosodiphenylamine	CHNCAT	N	PCM 1.0	1994	10	0	0.067	0.067	.	.	.
Naphthalene	CHNCAT	N	PCM 1.0	1994	10	3	0.028	0.033	0.029333	.00088192	0.03095
Nitrobenzene	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
Pentachlorophenol	CHNCAT	N	PCM 1.0	1994	10	0	1.7	1.7	.	.	.
Phenanthrene	CHNCAT	N	PCM 1.0	1994	10	0	0.033	0.033	.	.	.
Phenol	CHNCAT	N	PCM 1.0	1994	10	0	0.33	0.33	.	.	.
Pyrene	CHNCAT	N	PCM 1.0	1994	9	0	0.033	0.033	.	.	.

ORGANICS (PCBs/pesticides)

ANALYTE	TAXON	COMPOSITE	SITE	YEAR	N	# DETECTS	MIN	MAX	MEAN	STDERR	UCB
Chlordane, total	BLUGIL	Y	CRM 1.0	1992	1	1	0.057	0.057	0.057	.	.
Chlordane, total	CHNCAT	N	CRM 1.0	1991	10	10	0.11	0.44	0.223	0.03145	0.2806
Chlordane, total	CHNCAT	N	CRM 1.0	1992	19	19	0.06	0.28	0.1168	0.01236	0.1383
Chlordane, total	CHNCAT	N	CRM 1.0	1993	25	24	0.06	0.24	0.1162	0.00915	0.1318
Chlordane, total	CHNCAT	N	CRM 10.0	1993	10	10	0.06	0.18	0.0955	0.01109	0.1158
Chlordane, total	CHNCAT	N	CRM 10.0	1994	10	10	0.057	0.14	0.0837	0.00898	0.1002
Chlordane, total	CHNCAT	N	CRM 125.0	1992	20	18	0.06	0.13	0.0765	0.00413	0.0836
Chlordane, total	CHNCAT	N	CRM 125.0	1993	10	10	0.053	0.14	0.0832	0.00892	0.0996
Chlordane, total	CHNCAT	N	CRM 20.0	1993	20	20	0.1	0.32	0.1705	0.01589	0.198
Chlordane, total	CHNCAT	Y	CRM 51.0	1993	3	3	0.09	0.12	0.1067	0.00882	0.1324
Chlordane, total	CHNCAT	Y	ERM 1.0	1993	3	3	0.1	0.2	0.1417	0.03005	0.2294
Chlordane, total	CHNCAT	N	PCM 1.0	1992	20	20	0.054	0.19	0.0895	0.00785	0.1031
Chlordane, total	CHNCAT	Y	PCM 4.6	1993	3	3	0.052	0.112	0.0807	0.01737	0.1314
Chlordane, total	CHNCAT	N	PCM 5.3	1993	10	10	0.062	0.22	0.1162	0.0155	0.1446
Chlordane, total	CHNCAT	N	PRM 30.0	1991	10	9	0.07	0.11	0.0871	0.00471	0.0958
Chlordane, total	CHNCAT	N	PRM 30.0	1992	20	14	0.06	0.15	0.0783	0.00521	0.0873
Chlordane, total	CHNCAT	Y	TRM 520.0	1993	3	3	0.075	0.1	0.09	0.00764	0.1123
Chlordane, total	CHNCAT	N	TRM 530.0	1991	10	10	0.064	0.23	0.128	0.01569	0.1568
Chlordane, total	CHNCAT	N	TRM 530.0	1993	10	10	0.08	0.19	0.131	0.0137	0.1561
Chlordane, total	CHNCAT	N	TRM 545.0	1992	20	16	0.06	0.16	0.092	0.00707	0.1042
Chlordane, total	CHNCAT	N	TRM 561.0	1991	10	9	0.08	0.33	0.1867	0.03066	0.2429
Chlordane, total	CHNCAT	N	TRM 570.0	1991	10	10	0.064	0.38	0.1523	0.02843	0.2044
Chlordane, total	CHNCAT	N	TRM 570.0	1992	20	16	0.06	0.72	0.1489	0.0384	0.2152
Chlordane, total	COCARP	Y	CRM 1.0	1992	1	1	0.06	0.06	0.06	.	.
Chlordane, total	LMBASS	N	CRM 1.0	1991	10	10	0.062	0.137	0.0801	0.00719	0.0933
Chlordane, total	LMBASS	N	CRM 1.0	1993	20	20	0.054	0.11	0.0703	0.00346	0.0762
Chlordane, total	LMBASS	N	CRM 1.0	1994	10	9	0.054	0.1	0.065	0.00228	0.0692
Chlordane, total	LMBASS	N	CRM 10.0	1994	10	10	0.052	0.075	0.0621	0.00257	0.0668
Chlordane, total	LMBASS	N	CRM 125.0	1993	20	19	0.047	0.08	0.0615	0.00258	0.0659
Chlordane, total	LMBASS	N	CRM 125.0	1994	10	0	0.08	0.08	.	.	.
Chlordane, total	LMBASS	N	CRM 20.0	1993	13	13	0.054	0.09	0.0652	0.00293	0.0705
Chlordane, total	LMBASS	N	CRM 20.0	1994	5	3	0.075	0.09	0.078	0.00318	0.0848
Chlordane, total	LMBASS	N	CRM 21.5	1994	8	5	0.056	0.082	0.0695	0.00396	0.077
Chlordane, total	LMBASS	N	PCM 1.0	1993	20	20	0.055	0.11	0.0686	0.00372	0.075
Chlordane, total	LMBASS	N	PCM 4.6	1994	7	6	0.071	0.145	0.085	0.01029	0.105
Chlordane, total	LMBASS	N	PCM 5.3	1994	2	1	0.075	0.08	0.075	.	.
Chlordane, total	LMBASS	N	PRM 30.0	1991	10	7	0.074	0.08	0.0761	0.00051	0.0771
Chlordane, total	LMBASS	N	PRM 30.0	1993	20	20	0.052	0.079	0.0688	0.00203	0.0723
Chlordane, total	LMBASS	N	TRM 530.0	1991	10	9	0.065	0.08	0.0727	0.00158	0.0756
Chlordane, total	LMBASS	N	TRM 555.0	1993	20	16	0.06	0.08	0.0655	0.00171	0.0685
Chlordane, total	LMBASS	N	TRM 561.0	1991	10	10	0.061	0.09	0.0743	0.0025	0.0789
Chlordane, total	LMBASS	N	TRM 570.0	1991	10	9	0.052	0.087	0.0707	0.00356	0.0772
Chlordane, total	LMBASS	N	TRM 570.0	1993	20	20	0.059	0.1	0.0694	0.00279	0.0742
Chlordane, total	STBASS	N	CRM 1.0	1992	15	15	0.059	0.12	0.1009	0.00441	0.1086
Chlordane, total	STBASS	N	CRM 20.0	1993	15	15	0.1	0.17	0.1387	0.00424	0.1461
Chlordane, total	STBASS	N	PRM 30.0	1992	15	10	0.056	0.08	0.0609	0.00179	0.0641

Table C6 (continued)

Chlordane, total	STBASS	N	TRM 545.0	1992	15	14	0.06	0.21	0.1147	0.0077	0.1282
Chlordane, total	WHCRAP	Y	CRM 1.0	1992	1	1	0.059	0.059	0.059	.	.
Lipids	BLUGIL	Y	CRM 1.0	1992	1	1	6.9	6.9	6.9	.	.
Lipids	CHNCAT	N	CRM 1.0	1991	10	10	1.5	14	6.48	1.20183	8.6831
Lipids	CHNCAT	N	CRM 1.0	1992	19	19	0.8	21	6.5263	1.19765	8.6031
Lipids	CHNCAT	N	CRM 1.0	1993	25	25	1.3	14	6.56	0.63346	7.6438
Lipids	CHNCAT	N	CRM 10.0	1993	10	10	2.3	9.4	6.53	0.76566	7.9335
Lipids	CHNCAT	N	CRM 10.0	1994	10	10	1.1	8.6	4.83	0.84512	6.3792
Lipids	CHNCAT	N	CRM 125.0	1992	20	20	0.6	13	5.6	0.64015	6.7069
Lipids	CHNCAT	N	CRM 125.0	1993	10	10	2.6	13	6.53	1.03977	8.436
Lipids	CHNCAT	N	CRM 20.0	1993	20	20	3.2	12	8.03	0.56871	9.0134
Lipids	CHNCAT	Y	CRM 51.0	1993	3	3	5.9	7.3	6.7667	0.43716	8.0432
Lipids	CHNCAT	Y	ERM 1.0	1993	3	3	3.2	6.8	4.8333	1.05251	7.9066
Lipids	CHNCAT	N	PCM 1.0	1992	20	20	0.7	7.3	4.1	0.43286	4.8485
Lipids	CHNCAT	Y	PCM 4.6	1993	3	3	2.2	4.4	3.4333	0.64893	5.3282
Lipids	CHNCAT	N	PCM 5.3	1993	10	10	1.9	7	3.93	0.46381	4.7802
Lipids	CHNCAT	N	PRM 30.0	1991	10	10	1.1	8.8	4.95	0.75369	6.3316
Lipids	CHNCAT	N	PRM 30.0	1992	20	20	1	13	4.445	0.82738	5.8756
Lipids	CHNCAT	Y	TRM 520.0	1993	3	3	12	18	14.6667	1.76383	19.817
Lipids	CHNCAT	N	TRM 530.0	1991	10	10	1.6	11	5.33	1.01281	7.1866
Lipids	CHNCAT	N	TRM 530.0	1993	10	10	0.6	10	4.23	0.85245	5.7926
Lipids	CHNCAT	N	TRM 545.0	1992	20	20	1.4	10	4.66	0.49828	5.5216
Lipids	CHNCAT	N	TRM 561.0	1991	10	10	0.4	20	7.18	1.68099	10.2614
Lipids	CHNCAT	N	TRM 570.0	1991	10	10	1	15	5.65	1.17948	7.8121
Lipids	CHNCAT	N	TRM 570.0	1992	20	20	0.3	18	4.445	0.91696	6.0305
Lipids	COCARP	Y	CRM 1.0	1992	1	1	24	24	24	.	.
Lipids	LMBASS	N	CRM 1.0	1991	10	10	0.2	5	1.61	0.46343	2.4595
Lipids	LMBASS	N	CRM 1.0	1993	20	20	0.9	9	2.23	0.37085	2.8713
Lipids	LMBASS	N	CRM 1.0	1994	10	10	1	2.5	1.85	0.17717	2.1748
Lipids	LMBASS	N	CRM 10.0	1994	10	10	1	2.7	1.68	0.19368	2.035
Lipids	LMBASS	N	CRM 125.0	1993	20	19	0.1	3	1.51	0.19411	1.8456
Lipids	LMBASS	N	CRM 125.0	1994	10	10	0.4	1.8	1.22	0.14742	1.4902
Lipids	LMBASS	N	CRM 20.0	1993	13	13	0.5	3.4	1.5308	0.21554	1.9149
Lipids	LMBASS	N	CRM 20.0	1994	5	5	0.6	3.5	1.64	0.49659	2.6987
Lipids	LMBASS	N	CRM 21.5	1994	8	8	0.5	3.9	1.9875	0.47035	2.8786
Lipids	LMBASS	N	PCM 1.0	1993	20	20	0.2	2.3	1.19	0.09971	1.3624
Lipids	LMBASS	N	PCM 4.6	1994	7	7	0.2	2.4	1.2286	0.29335	1.7986
Lipids	LMBASS	N	PCM 5.3	1994	2	1	0.1	0.7	0.7	.	.
Lipids	LMBASS	N	PRM 30.0	1991	10	10	0.5	4.2	1.89	0.3391	2.5116
Lipids	LMBASS	N	PRM 30.0	1993	20	20	0.1	3.8	1.27	0.21473	1.6413
Lipids	LMBASS	N	TRM 530.0	1991	10	10	0.2	2.7	1.82	0.26026	2.2971
Lipids	LMBASS	N	TRM 555.0	1993	20	20	0.1	2.7	1.06	0.16	1.3367
Lipids	LMBASS	N	TRM 561.0	1991	10	10	0.5	4	1.94	0.35938	2.5988
Lipids	LMBASS	N	TRM 570.0	1991	10	10	0.4	3.9	1.81	0.40728	2.5566
Lipids	LMBASS	N	TRM 570.0	1993	20	20	0.3	9.1	2.775	0.55625	3.7368
Lipids	STBASS	N	CRM 1.0	1992	15	15	2.6	12	8.4133	0.90015	9.9988
Lipids	STBASS	N	CRM 20.0	1993	15	15	7.5	13	10.24	0.43881	11.0129
Lipids	STBASS	N	PRM 30.0	1992	15	13	0.1	14	8.6133	0.99924	10.3733
Lipids	STBASS	N	TRM 545.0	1992	15	15	2.5	21	10.4733	1.15521	12.508
Lipids	WHCRAP	Y	CRM 1.0	1992	1	1	0.6	0.6	0.6	.	.
PCB-1254	BLUGIL	Y	CRM 1.0	1992	1	1	0.2	0.2	0.2	.	.
PCB-1254	CHNCAT	N	CRM 1.0	1991	10	10	0.7	2	1.18	0.13888	1.4346
PCB-1254	CHNCAT	N	CRM 1.0	1992	19	19	0.1	1.8	0.5947	0.08966	0.7502
PCB-1254	CHNCAT	N	CRM 1.0	1993	25	24	0.1	1.1	0.4451	0.05084	0.5321
PCB-1254	CHNCAT	N	CRM 10.0	1993	10	10	0.15	0.9	0.422	0.07083	0.5518
PCB-1254	CHNCAT	N	CRM 10.0	1994	10	10	0.08	0.7	0.328	0.06588	0.4488
PCB-1254	CHNCAT	N	CRM 125.0	1992	20	13	0.05	0.2	0.0765	0.00804	0.0904
PCB-1254	CHNCAT	N	CRM 125.0	1993	10	9	0.05	0.1	0.0722	0.00401	0.0796
PCB-1254	CHNCAT	N	CRM 20.0	1993	20	20	0.4	1.5	0.7	0.06844	0.8183
PCB-1254	CHNCAT	Y	CRM 51.0	1993	3	3	0.12	0.16	0.1367	0.01202	0.1718
PCB-1254	CHNCAT	Y	ERM 1.0	1993	3	3	0.33	0.68	0.4767	0.10493	0.7831
PCB-1254	CHNCAT	N	PCM 1.0	1992	20	20	0.07	2	0.5335	0.09449	0.6969
PCB-1254	CHNCAT	Y	PCM 4.6	1993	3	3	0.27	0.46	0.3567	0.05548	0.5187
PCB-1254	CHNCAT	N	PCM 5.3	1993	10	10	0.12	0.59	0.351	0.05229	0.4469
PCB-1254	CHNCAT	N	PRM 30.0	1991	10	0	0.1	0.1	.	.	.
PCB-1254	CHNCAT	N	PRM 30.0	1992	20	10	0.05	0.3	0.0805	0.01298	0.103

Table C6 (continued)

PCB-1254	CHNCAT	Y	TRM 520.0	1993	3	3	0.5	0.67	0.5933	0.04978	0.7387
PCB-1254	CHNCAT	N	TRM 530.0	1991	10	10	0.2	0.8	0.47	0.05385	0.5687
PCB-1254	CHNCAT	N	TRM 530.0	1993	10	10	0.31	1.1	0.636	0.0868	0.7951
PCB-1254	CHNCAT	N	TRM 545.0	1992	20	20	0.1	1.2	0.425	0.05798	0.5253
PCB-1254	CHNCAT	N	TRM 561.0	1991	10	10	0.1	1.3	0.75	0.12225	0.9741
PCB-1254	CHNCAT	N	TRM 570.0	1991	10	10	0.2	0.9	0.58	0.07272	0.7133
PCB-1254	CHNCAT	N	TRM 570.0	1992	20	20	0.1	1.46	0.518	0.06911	0.6375
PCB-1254	COCARP	Y	CRM 1.0	1992	1	1	0.2	0.2	0.2	.	.
PCB-1254	LMBASS	N	CRM 1.0	1991	10	10	0.05	0.4	0.212	0.03915	0.2838
PCB-1254	LMBASS	N	CRM 1.0	1993	20	20	0.1	0.5	0.21	0.02283	0.2495
PCB-1254	LMBASS	N	CRM 1.0	1994	10	9	0.1	0.3	0.1756	0.01668	0.2061
PCB-1254	LMBASS	N	CRM 10.0	1994	10	10	0.08	0.4	0.178	0.03326	0.239
PCB-1254	LMBASS	N	CRM 125.0	1993	20	3	0.05	0.05	0.05	0	0.05
PCB-1254	LMBASS	N	CRM 125.0	1994	10	0	0.1	0.1	.	.	.
PCB-1254	LMBASS	N	CRM 20.0	1993	13	13	0.01	0.6	0.1862	0.04309	0.263
PCB-1254	LMBASS	N	CRM 20.0	1994	5	0	0.2	0.4	.	.	.
PCB-1254	LMBASS	N	CRM 21.5	1994	8	3	0.077	0.3	0.1079	0.02419	0.1537
PCB-1254	LMBASS	N	PCM 1.0	1993	20	19	0.05	0.7	0.335	0.03997	0.4041
PCB-1254	LMBASS	N	PCM 4.6	1994	7	7	0.05	0.6	0.3071	0.06764	0.4386
PCB-1254	LMBASS	N	PCM 5.3	1994	2	1	0.08	0.1	0.08	.	.
PCB-1254	LMBASS	N	PRM 30.0	1991	10	2	0.05	0.1	0.05	0	0.05
PCB-1254	LMBASS	N	PRM 30.0	1993	20	4	0.05	0.06	0.051	0.00077	0.0523
PCB-1254	LMBASS	N	TRM 530.0	1991	10	9	0.06	0.2	0.121	0.01798	0.154
PCB-1254	LMBASS	N	TRM 555.0	1993	20	20	0.07	0.4	0.1785	0.02162	0.2159
PCB-1254	LMBASS	N	TRM 561.0	1991	10	10	0.03	0.3	0.143	0.02504	0.1889
PCB-1254	LMBASS	N	TRM 570.0	1991	10	10	0.07	0.4	0.197	0.03445	0.2602
PCB-1254	LMBASS	N	TRM 570.0	1993	20	20	0.04	0.4	0.1915	0.02214	0.2298
PCB-1254	STBASS	N	CRM 1.0	1992	15	15	0.3	0.6	0.4533	0.02153	0.4913
PCB-1254	STBASS	N	CRM 20.0	1993	15	15	0.4	0.8	0.56	0.02895	0.611
PCB-1254	STBASS	N	PRM 30.0	1992	15	4	0.05	0.1	0.0573	0.00504	0.0662
PCB-1254	STBASS	N	TRM 545.0	1992	15	15	0.4	1	0.5067	0.03838	0.5743
PCB-1254	WHCRAP	Y	CRM 1.0	1992	1	1	0.06	0.06	0.06	.	.
PCB-1260	BLUGIL	Y	CRM 1.0	1992	1	1	0.4	0.4	0.4	.	.
PCB-1260	CHNCAT	N	CRM 1.0	1991	10	10	0.2	1.9	1.01	0.16763	1.3173
PCB-1260	CHNCAT	N	CRM 1.0	1992	19	19	0.3	3.2	1.0737	0.14865	1.3314
PCB-1260	CHNCAT	N	CRM 1.0	1993	25	25	0.1	1.9	0.6252	0.09525	0.7882
PCB-1260	CHNCAT	N	CRM 10.0	1993	10	10	0.15	1.1	0.557	0.09137	0.7245
PCB-1260	CHNCAT	N	CRM 10.0	1994	10	10	0.06	1.3	0.431	0.11594	0.6435
PCB-1260	CHNCAT	N	CRM 125.0	1992	20	20	0.1	0.7	0.31	0.0362	0.3726
PCB-1260	CHNCAT	N	CRM 125.0	1993	10	8	0.06	0.42	0.199	0.04142	0.2749
PCB-1260	CHNCAT	N	CRM 20.0	1993	20	20	0.05	2.4	1.0575	0.13714	1.2946
PCB-1260	CHNCAT	Y	CRM 51.0	1993	3	3	0.41	0.54	0.4733	0.03756	0.583
PCB-1260	CHNCAT	Y	ERM 1.0	1993	3	3	1.1	1.8	1.5	0.20817	2.1078
PCB-1260	CHNCAT	N	PCM 1.0	1992	20	20	0.2	2.4	1.03	0.133	1.26
PCB-1260	CHNCAT	Y	PCM 4.6	1993	3	3	0.21	0.82	0.52	0.17616	1.0344
PCB-1260	CHNCAT	N	PCM 5.3	1993	10	10	0.23	0.9	0.531	0.05517	0.6321
PCB-1260	CHNCAT	N	PRM 30.0	1991	10	10	0.1	0.5	0.22	0.04163	0.2963
PCB-1260	CHNCAT	N	PRM 30.0	1992	20	16	0.01	1.2	0.215	0.0567	0.313
PCB-1260	CHNCAT	Y	TRM 520.0	1993	3	3	0.12	0.2	0.15	0.02517	0.2235
PCB-1260	CHNCAT	N	TRM 530.0	1991	10	10	0.2	1.7	0.86	0.1529	1.1403
PCB-1260	CHNCAT	N	TRM 530.0	1993	10	10	0.3	1.4	0.918	0.11958	1.1372
PCB-1260	CHNCAT	N	TRM 545.0	1992	20	20	0.3	1.9	0.815	0.09741	0.9834
PCB-1260	CHNCAT	N	TRM 561.0	1991	10	10	0.4	2.2	1.19	0.19576	1.5489
PCB-1260	CHNCAT	N	TRM 570.0	1991	10	10	0.2	1.6	0.83	0.14146	1.0893
PCB-1260	CHNCAT	N	TRM 570.0	1992	20	20	0.3	1.9	1.015	0.09981	1.1876
PCB-1260	COCARP	Y	CRM 1.0	1992	1	1	0.5	0.5	0.5	.	.
PCB-1260	LMBASS	N	CRM 1.0	1991	10	10	0.08	0.4	0.218	0.03669	0.2853
PCB-1260	LMBASS	N	CRM 1.0	1993	20	20	0.08	0.9	0.2185	0.04229	0.2916
PCB-1260	LMBASS	N	CRM 1.0	1994	10	9	0.1	0.51	0.2108	0.04136	0.2866
PCB-1260	LMBASS	N	CRM 10.0	1994	10	9	0.06	0.4	0.161	0.03612	0.2272
PCB-1260	LMBASS	N	CRM 125.0	1993	20	6	0.04	0.1	0.047	0.0038	0.0536
PCB-1260	LMBASS	N	CRM 125.0	1994	10	0	0.1	0.1	.	.	.
PCB-1260	LMBASS	N	CRM 20.0	1993	13	12	0.01	0.3	0.1685	0.03065	0.2231
PCB-1260	LMBASS	N	CRM 20.0	1994	5	1	0.1	0.6	0.6	.	.
PCB-1260	LMBASS	N	CRM 21.5	1994	8	3	0.065	0.31	0.1007	0.03472	0.1665
PCB-1260	LMBASS	N	PCM 1.0	1993	20	19	0.01	0.9	0.341	0.06322	0.4503

Table C6 (continued)

PCB-1260	LMBASS	N	PCM 4.6	1994	7	7	0.1	0.5	0.2286	0.05654	0.3384
PCB-1260	LMBASS	N	PCM 5.3	1994	2	1	0.08	0.1	0.08	.	.
PCB-1260	LMBASS	N	PRM 30.0	1991	10	10	0.05	0.1	0.068	0.00533	0.0778
PCB-1260	LMBASS	N	PRM 30.0	1993	20	6	0.02	0.05	0.03	0.00365	0.0363
PCB-1260	LMBASS	N	TRM 530.0	1991	10	9	0.06	0.2	0.131	0.01942	0.1666
PCB-1260	LMBASS	N	TRM 555.0	1993	20	19	0.02	0.5	0.1444	0.03209	0.1999
PCB-1260	LMBASS	N	TRM 561.0	1991	10	10	0.09	0.4	0.159	0.03078	0.2154
PCB-1260	LMBASS	N	TRM 570.0	1991	10	10	0.07	0.4	0.255	0.04485	0.3372
PCB-1260	LMBASS	N	TRM 570.0	1993	20	19	0.01	0.5	0.1763	0.03195	0.2315
PCB-1260	STBASS	N	CRM 1.0	1992	15	15	0.4	0.9	0.6933	0.0396	0.7631
PCB-1260	STBASS	N	CRM 20.0	1993	15	15	0.2	0.6	0.3867	0.02737	0.4349
PCB-1260	STBASS	N	PRM 30.0	1992	15	3	0.05	0.1	0.0567	0.00537	0.0661
PCB-1260	STBASS	N	TRM 545.0	1992	15	15	0.6	1.4	0.8067	0.04827	0.8917
PCB-1260	WHCRAP	Y	CRM 1.0	1992	1	1	0.2	0.2	0.2	.	.

Table C7. Analysis of variance results for the inorganic contaminants in sportfish

Source	DF	F	P
Mercury			
Site	10	24.61	0.0001
Year	1	0.16	0.6908
Site*year	2	0.39	0.6754
Species	2	98.61	0.0001
Year*species	10	3.80	0.0001
Site*species	1	0.02	0.8956
Site*year*species	2	1.17	0.3122
Arsenic			
Site	10	2.40	0.0089
Year	1	0.03	0.8666
Site*year	2	6.86	0.0012
Species	2	217.41	0.0001
Year*species	10	6.56	0.0001
Site*species	1	1.17	0.2806
Site*year*species	2	0.84	0.4337
Beryllium			
Site	10	18.52	0.0001
Year	1	51.21	0.0001
Site*year	2	23.94	0.0001
Species	2	3.16	0.0434
Year*species	10	8.96	0.0001
Site*species	1	5.41	0.0205
Site*year*species	2	3.76	0.0242
Copper			
Site	7	0.96	0.4651
Year	1	0.00	0.9758
Site*year	0	—	—

Table C7 (continued)

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Source	DF	F	P
Species	2	0.27	0.7667
Year*species	6	1.44	0.2006
Site*species	0	—	—
Site*year*species	0	—	—
Selenium			
Site	10	12.04	0.0001
Year	1	2.02	0.1560
Site*year	2	1.04	0.3537
Species	2	56.93	0.0001
Year*species	10	5.74	0.0001
Site*species	1	0.07	0.7934
Site*year*species	2	11.60	0.0001

Table C8. Analysis of variance results for total PCB and total chlordanes in sportfish

Source	DF	F	P
Total PCB			
Site	13	136.20	0.0001
Year	3	0.32	0.8090
Site*year	8	0.86	0.5473
Species	3	17.92	0.0001
Year*species	10	2.01	0.0301
Site*species	2	3.13	0.0445
Site*year*species	0	—	—
Total Chlordane			
Site	13	3.33	0.0001
Year	3	2.75	0.0422
Site*year	8	2.68	0.0069
Species	1	55.79	0.0001
Year*species	6	4.46	0.0002
Site*species	1	12.27	0.0005
Site*year*species	0	—	—

Table C9. Total number of analyses, detectable results, minimum, maximum, mean, standard error, and upper 95% confidence bound for the 44 PCB congeners analyzed from fish tissue samples

ANALYTE	N	# DETECTS	MIN	MAX	MEAN	STDERR	UCB
PCB169T	326	1	0.010	0.01	0.010000	.	.
PCB018T	326	3	0.010	0.01	0.010000	0.000000	0.010000
PCB166T	326	3	0.010	0.07	0.010337	0.000293	0.010820
PCB076T	326	9	0.010	0.01	0.010000	0.000000	0.010000
PCB070T	326	21	0.005	0.01	0.005919	0.000292	0.006402
PCB167T	326	22	0.010	0.05	0.010337	0.000156	0.010594
PCB157T	326	38	0.005	0.20	0.007745	0.000816	0.009092
PCB126T	326	54	0.006	0.07	0.009411	0.000738	0.010628
PCB028T	326	61	0.010	0.01	0.010000	0.000000	0.010000
PCB031T	326	61	0.010	0.01	0.010000	0.000000	0.010000
PCB189T	326	61	0.005	0.02	0.006681	0.000230	0.007061
PCB044T	326	69	0.005	0.03	0.007290	0.000464	0.008056
PCB037T	326	91	0.005	0.04	0.007697	0.000402	0.008359
PCB158T	326	92	0.005	0.07	0.009763	0.000618	0.010782
PCB049T	326	98	0.005	0.07	0.010318	0.000537	0.011204
PCB195T	326	98	0.005	0.05	0.007730	0.000623	0.008758
PCB201T	326	99	0.005	0.10	0.011694	0.000770	0.012965
PCB128T	326	111	0.005	0.08	0.010798	0.000704	0.011959
PCB052T	326	113	0.006	0.10	0.012096	0.000710	0.013266
PCB099T	326	113	0.009	0.45	0.030291	0.002820	0.034943
PCB146T	326	129	0.006	0.11	0.015337	0.000946	0.016898
PCB194T	326	129	0.005	0.06	0.009824	0.000444	0.010556
PCB151T	326	142	0.006	0.11	0.014018	0.000834	0.015394
PCB183T	326	148	0.007	0.11	0.014356	0.000871	0.015792
PCB170T	326	169	0.007	0.20	0.013644	0.001027	0.015339
PCB101T	326	170	0.005	0.32	0.021701	0.001646	0.024416
PCB196T	326	194	0.006	0.10	0.014977	0.000893	0.01645
PCB114T	326	195	0.005	0.12	0.016226	0.000869	0.017658
PCB118T	326	213	0.005	0.30	0.030539	0.002131	0.034054
PCB138T	326	224	0.007	0.58	0.040282	0.003832	0.046603
PCB105T	326	261	0.006	0.05	0.009742	0.000218	0.010101
PCB095T	326	264	0.005	0.14	0.013320	0.000720	0.014508
PCB180T	326	269	0.01	0.40	0.045491	0.003435	0.051156
PCB087T	326	279	0.005	0.21	0.011701	0.000777	0.012983
PCB153T	326	283	0.01	0.48	0.055433	0.004337	0.062586
PCB171T	326	287	0.005	0.13	0.012910	0.000635	0.013958
PCB077T	326	293	0.006	0.35	0.024301	0.001880	0.027402
PCB081T	326	300	0.005	0.20	0.013337	0.000846	0.014734
PCB156T	326	302	0.005	0.09	0.013332	0.000586	0.014298
PCB066T	326	304	0.005	0.04	0.010675	0.000237	0.011065
PCB149T	326	307	0.005	0.12	0.015331	0.000819	0.016682
PCB123T	326	308	0.005	0.20	0.018597	0.001241	0.020644
PCB110T	326	310	0.006	0.18	0.021557	0.001283	0.023672
PCB132T	326	313	0.006	0.10	0.010176	0.000283	0.010644

Table C10. Summary of PCB congener detection percentage for catfish from 11 site/year samples in Watts Bar Reservoir. "o", "+", "-", and "." indicate 75–100%, 50–74%, 25–49%, and 0–24% detection, respectively. The sites are (1) CRM1, F(fall)92; (2) PCM1, F92; (3) TRM 545, F92; (4) TRM 570, F92; (5) CRM 1 S(spring)93; (6) Crm 20, S93; (7) CRM 10, F93; (8) CRM 1, F93; (9) PRM 5.3, F93; (10) TRM 530, F93; (11) CRM 10, S94.

	1	2	3	4	5	6	7	8	9	10	11
PCB018T	.	.	.	.	.	.	.	.	.	.	.
PCB028T	o	o	o	o	.	.	.	.	.	.	.
PCB031T	o	o	o	o	.	.	.	.	.	.	.
PCB037T	-	.	.	-	+	+	.	-	.	-	.
PCB044T	-	.	.	.	+	+	.	.	.	.	.
PCB049T	-	.	.	.	-	-	.	-	-	+	.
PCB052T	-	-	.	.	-	+	.	-	-	-	.
PCB066T	+	o	+	+	o	o	o	o	o	o	o
PCB070T	.	.	.	.	.	.	.	.	.	.	.
PCB076T	.	.	.	.	.	.	.	.	.	.	.
PCB077T	+	o	o	-	o	o	o	o	o	o	o
PCB081T	+	+	+	+	o	o	o	o	o	o	o
PCB087T	-	-	.	.	o	o	o	o	o	o	o
PCB095T	+	+	-	-	+	+	o	o	o	o	o
PCB099T	o	o	o	-	.	.	.	.	.	.	.
PCB101T	+	+	+	-	.	.	o	o	o	o	-
PCB105T	.	-	.	.	o	o	o	o	o	o	o
PCB110T	o	o	o	o	o	o	o	o	o	o	o
PCB114T	o	+	o	o	+	o	-	+	o	o	-
PCB118T	o	o	o	-	-	o	+	o	o	o	+
PCB123T	o	+	+	o	o	o	o	o	o	o	o
PCB126T	-	-	.	.	-	+	.	-	.	+	.
PCB128T	+	+	+	.	-	-	-	+	-	o	.
PCB132T	o	o	o	o	o	o	o	o	o	o	o
PCB138T	o	o	+	-	o	o	o	o	o	o	.
PCB146T	+	+	+	-	.	+	+	o	o	o	.
PCB149T	o	o	+	+	o	o	o	o	o	o	o
PCB151T	+	+	+	-	-	o	-	o	o	o	.
PCB153T	o	o	o	o	o	o	o	o	o	o	+
PCB156T	o	+	o	o	o	o	o	o	o	o	o
PCB157T	+	-	+	+	.	.	.	.	.	-	.
PCB158T	-	+	.	.	-	+	-	+	-	o	.
PCB166T	.	.	.	.	.	.	.	.	.	.	.
PCB167T	.	.	.	.	.	-	.	.	.	o	.
PCB169T	.	.	.	.	.	.	.	.	.	.	.
PCB170T	o	o	o	+	o	o	.	.	.	.	.
PCB171T	o	-	+	+	o	o	o	o	o	o	o
PCB180T	o	o	o	-	o	o	o	o	o	o	+
PCB183T	+	+	+	-	+	o	+	+	o	o	-
PCB189T	-	.	+	-	-	+	.	.	.	o	.
PCB194T	o	o	o	+	.	-	.	-	-	o	.
PCB195T	o	o	o	-	.	.	-	-	.	+	.
PCB196T	o	o	o	-	+	o	-	+	o	o	-
PCB201T	-	+	-	-	-	+	-	+	+	o	.

Table C11. Mean concentrations of total chlordane (mg/kg), PCBs (Aroclors 1254 and 1260, mg/kg) and lipids (% body weight) in mayflies and shad. No chlordanes were detected in any mayfly samples.

ANALYTE	TAXON	COMPOSITE	SITE	YEAR	N	# DETECTS	MIN	MAX	MEAN	STDERR	UCB
Chlordane, total	GIZZRD	N	CRM 1.0	1991	12	10	0.067	0.09	0.0762	0.00197	0.0797
Chlordane, total	GIZZRD	Y	CRM 1.0	1991	2	2	0.065	0.08	0.0725	0.0075	0.1199
Chlordane, total	GIZZRD	Y	CRM 1.0	1992	2	1	0.057	0.06	0.057	.	.
Chlordane, total	GIZZRD	N	CRM 1.0	1993	12	11	0.05	0.065	0.0555	0.00121	0.0576
Chlordane, total	GIZZRD	Y	CRM 10.0	1993	3	3	0.054	0.058	0.056	0.00115	0.0594
Chlordane, total	GIZZRD	Y	CRM 10.0	1994	3	3	0.054	0.069	0.0597	0.0047	0.0734
Chlordane, total	GIZZRD	N	CRM 125.0	1992	12	2	0.08	0.08	0.08	0	0.08
Chlordane, total	GIZZRD	Y	CRM 125.0	1993	3	3	0.067	0.074	0.0707	0.00203	0.0766
Chlordane, total	GIZZRD	N	CRM 20.0	1992	12	10	0.049	0.074	0.0603	0.0024	0.0646
Chlordane, total	GIZZRD	Y	CRM 20.0	1994	3	3	0.075	0.077	0.0763	0.00067	0.0783
Chlordane, total	GIZZRD	Y	CRM 51.0	1993	3	3	0.068	0.09	0.0753	0.00733	0.0967
Chlordane, total	GIZZRD	Y	ERM 1.0	1993	3	3	0.053	0.058	0.056	0.00153	0.0605
Chlordane, total	GIZZRD	Y	PCM 1.0	1992	2	2	0.07	0.1	0.085	0.015	0.1797
Chlordane, total	GIZZRD	N	PCM 1.0	1993	12	11	0.051	0.13	0.066	0.00636	0.0774
Chlordane, total	GIZZRD	Y	PRM 30.0	1991	2	2	0.062	0.067	0.0645	0.0025	0.0803
Chlordane, total	GIZZRD	Y	PRM 30.0	1992	2	0	0.08	0.08	.	.	.
Chlordane, total	GIZZRD	Y	TRM 530.0	1991	2	2	0.065	0.067	0.066	0.001	0.0723
Chlordane, total	GIZZRD	Y	TRM 530.0	1993	3	3	0.056	0.064	0.0593	0.0024	0.0664
Chlordane, total	GIZZRD	Y	TRM 545.0	1992	2	0	0.06	0.06	.	.	.
Chlordane, total	GIZZRD	Y	TRM 561.0	1991	2	1	0.068	0.07	0.068	.	.
Chlordane, total	GIZZRD	Y	TRM 570.0	1991	2	2	0.066	0.066	0.066	0	0.066
Chlordane, total	GIZZRD	N	TRM 570.0	1992	12	8	0.054	0.08	0.0601	0.00228	0.0642
Chlordane, total	GIZZRD	Y	TRM 570.0	1993	3	3	0.055	0.058	0.0567	0.00088	0.0592
Lipids	GIZZRD	N	CRM 1.0	1991	12	12	1	14	7.05	1.06902	8.9698
Lipids	GIZZRD	Y	CRM 1.0	1991	2	2	9.2	10	9.6	0.4	12.1255
Lipids	GIZZRD	Y	CRM 1.0	1992	2	2	19	21	20	1	26.3138
Lipids	GIZZRD	N	CRM 1.0	1993	12	12	0.5	7.5	4.2167	0.6708	5.4213
Lipids	GIZZRD	Y	CRM 10.0	1993	3	3	2.7	4.4	3.7333	0.52387	5.263
Lipids	GIZZRD	Y	CRM 10.0	1994	3	3	1.4	2	1.6	0.2	2.184
Lipids	GIZZRD	N	CRM 125.0	1992	12	12	3.6	13	7.4833	0.82681	8.9682
Lipids	GIZZRD	Y	CRM 125.0	1993	3	3	6.1	11	8.2333	1.44952	12.4659
Lipids	GIZZRD	N	CRM 20.0	1992	12	12	1.2	33	15.175	3.45716	21.3837
Lipids	GIZZRD	Y	CRM 20.0	1994	3	3	1.5	2.2	1.9333	0.21858	2.5716
Lipids	GIZZRD	Y	CRM 51.0	1993	3	3	2.8	4.4	3.4667	0.48074	4.8704
Lipids	GIZZRD	Y	ERM 1.0	1993	3	3	3.3	5.1	4.2	0.51962	5.7173
Lipids	GIZZRD	Y	PCM 1.0	1992	2	2	7	8.6	7.8	0.8	12.851
Lipids	GIZZRD	N	PCM 1.0	1993	12	12	0.3	6.4	3.55	0.52678	4.496
Lipids	GIZZRD	Y	PRM 30.0	1991	2	2	9.6	14	11.8	2.2	25.6903
Lipids	GIZZRD	Y	PRM 30.0	1992	2	2	0.1	10	5.05	4.95	36.3031
Lipids	GIZZRD	Y	TRM 530.0	1991	2	2	5.9	6	5.95	0.05	6.2657
Lipids	GIZZRD	Y	TRM 530.0	1993	3	3	0.4	2.8	1.8667	0.74237	4.0344
Lipids	GIZZRD	Y	TRM 545.0	1992	2	2	8.1	25	16.55	8.45	69.9012
Lipids	GIZZRD	Y	TRM 561.0	1991	2	2	4.4	7.1	5.75	1.35	14.2736
Lipids	GIZZRD	Y	TRM 570.0	1991	2	2	6.2	6.6	6.4	0.2	7.6628
Lipids	GIZZRD	N	TRM 570.0	1992	12	12	0.3	17	7.9667	1.83234	11.2573
Lipids	GIZZRD	Y	TRM 570.0	1993	3	3	1.6	2.3	1.8667	0.21858	2.5049
PCB-1254	GIZZRD	N	CRM 1.0	1991	12	11	0.05	0.2	0.0855	0.01169	0.1065
PCB-1254	GIZZRD	Y	CRM 1.0	1991	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1254	GIZZRD	Y	CRM 1.0	1992	2	2	0.07	0.08	0.075	0.005	0.1066
PCB-1254	GIZZRD	N	CRM 1.0	1993	12	12	0.1	0.19	0.1217	0.00903	0.1379
PCB-1254	GIZZRD	Y	CRM 10.0	1993	3	3	0.2	0.28	0.2267	0.02667	0.3045
PCB-1254	GIZZRD	Y	CRM 10.0	1994	3	3	0.1	0.3	0.2	0.05774	0.3686
PCB-1254	GIZZRD	N	CRM 125.0	1992	12	0	0.05	0.05	.	.	.
PCB-1254	GIZZRD	Y	CRM 125.0	1993	3	2	0.05	0.1	0.055	0.005	0.0696
PCB-1254	GIZZRD	N	CRM 20.0	1992	12	11	0.05	0.3	0.1233	0.02092	0.1609
PCB-1254	GIZZRD	Y	CRM 20.0	1994	3	0	0.1	0.1	.	.	.
PCB-1254	GIZZRD	Y	CRM 51.0	1993	3	3	0.06	0.08	0.07	0.00577	0.0869
PCB-1254	GIZZRD	Y	ERM 1.0	1993	3	3	0.14	0.16	0.15	0.00577	0.1669
PCB-1254	GIZZRD	Y	PCM 1.0	1992	2	2	0.4	0.4	0.4	0	0.4
PCB-1254	GIZZRD	N	PCM 1.0	1993	12	11	0.07	0.42	0.1717	0.03022	0.2259
PCB-1254	GIZZRD	Y	PRM 30.0	1991	2	0	0.1	0.1	.	.	.
PCB-1254	GIZZRD	Y	PRM 30.0	1992	2	0	0.05	0.05	.	.	.
PCB-1254	GIZZRD	Y	TRM 530.0	1991	2	2	0.06	0.3	0.18	0.12	0.9377

Table C11 (continued)

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PCB-1254	GIZZRD	Y	TRM 530.0	1993	3	3	0.06	0.15	0.1133	0.02728	0.193
PCB-1254	GIZZRD	Y	TRM 545.0	1992	2	2	0.01	0.1	0.055	0.045	0.3391
PCB-1254	GIZZRD	Y	TRM 561.0	1991	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1254	GIZZRD	Y	TRM 570.0	1991	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1254	GIZZRD	N	TRM 570.0	1992	12	10	0.05	0.2	0.1233	0.01691	0.1537
PCB-1254	GIZZRD	Y	TRM 570.0	1993	3	2	0.08	0.1	0.085	0.005	0.0996
PCB-1260	GIZZRD	N	CRM 1.0	1991	12	12	0.07	0.2	0.1725	0.01452	0.1986
PCB-1260	GIZZRD	Y	CRM 1.0	1991	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1260	GIZZRD	Y	CRM 1.0	1992	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1260	GIZZRD	N	CRM 1.0	1993	12	7	0.1	0.29	0.1492	0.02331	0.191
PCB-1260	GIZZRD	Y	CRM 10.0	1993	3	3	0.1	0.33	0.21	0.06638	0.4044
PCB-1260	GIZZRD	Y	CRM 10.0	1994	3	2	0.1	0.11	0.1033	0.00385	0.1146
PCB-1260	GIZZRD	N	CRM 125.0	1992	12	0	0.05	0.05	.	.	.
PCB-1260	GIZZRD	Y	CRM 125.0	1993	3	0	0.1	0.1	.	.	.
PCB-1260	GIZZRD	N	CRM 20.0	1992	12	10	0.05	0.6	0.1692	0.04567	0.2512
PCB-1260	GIZZRD	Y	CRM 20.0	1994	3	0	0.1	0.1	.	.	.
PCB-1260	GIZZRD	Y	CRM 51.0	1993	3	3	0.07	0.21	0.14	0.04041	0.258
PCB-1260	GIZZRD	Y	ERM 1.0	1993	3	2	0.1	0.15	0.1167	0.01925	0.1729
PCB-1260	GIZZRD	Y	PCM 1.0	1992	2	2	0.6	0.7	0.65	0.05	0.9657
PCB-1260	GIZZRD	N	PCM 1.0	1993	12	7	0.08	1.2	0.2121	0.09543	0.3835
PCB-1260	GIZZRD	Y	PRM 30.0	1991	2	0	0.1	0.1	.	.	.
PCB-1260	GIZZRD	Y	PRM 30.0	1992	2	0	0.05	0.05	.	.	.
PCB-1260	GIZZRD	Y	TRM 530.0	1991	2	2	0.1	0.1	0.1	0	0.1
PCB-1260	GIZZRD	Y	TRM 530.0	1993	3	1	0.06	0.1	0.06	.	.
PCB-1260	GIZZRD	Y	TRM 545.0	1992	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1260	GIZZRD	Y	TRM 561.0	1991	2	2	0.1	0.2	0.15	0.05	0.4657
PCB-1260	GIZZRD	Y	TRM 570.0	1991	2	2	0.1	0.1	0.1	0	0.1
PCB-1260	GIZZRD	N	TRM 570.0	1992	12	9	0.05	0.5	0.2333	0.03819	0.3019
PCB-1260	GIZZRD	Y	TRM 570.0	1993	3	1	0.05	0.1	0.05	.	.
PCB-1254	MAYFL	Y	CRM 1.0	1993	2	2	0.12	0.13	0.125	0.005	0.15657
PCB-1254	MAYFL	Y	CRM 1.0	1994	1	1	0.14	0.14	0.14	.	.
PCB-1254	MAYFL	Y	PCM 1.0	1993	2	2	0.085	0.097	0.091	0.006	0.12888
PCB-1254	MAYFL	Y	PCM 1.0	1994	1	1	0.1	0.1	0.1	.	.
PCB-1254	MAYFL	Y	TRM 570.0	1993	3	3	0.13	0.16	0.14	0.01	0.1692
PCB-1260	MAYFL	Y	CRM 1.0	1993	2	0	0.08	0.08	.	.	.
PCB-1260	MAYFL	Y	CRM 1.0	1994	1	0	0.08	0.08	.	.	.
PCB-1260	MAYFL	Y	PCM 1.0	1993	2	0	0.08	0.08	.	.	.
PCB-1260	MAYFL	Y	PCM 1.0	1994	1	0	0.08	0.08	.	.	.
PCB-1260	MAYFL	Y	TRM 570.0	1993	3	0	0.08	0.08	.	.	.

Table C12. Mean $\pm$ SE (N) concentrations (ppm, wet wt) of elements and Aroclor 1260¹ from homogenized fish² collected from great blue heron colonies located³ on and off the Oak Ridge Reservation

	ON ORR	OFF ORR	P ⁵
Mercury	0.06 $\pm$ 0.02 (13)	0.02 $\pm$ 0.00 (15)	0.030
Arsenic	0.30 $\pm$ 0.05 (13)	0.23 $\pm$ 0.03 (15)	0.238
Chromium	1.52 $\pm$ 0.54 (12)	0.37 $\pm$ 0.08 (15)	0.030
Aroclor 1260	0.20 $\pm$ 0.04 (13)	0.15 $\pm$ 0.03 (15)	0.269

¹All congeners concentration were <20 ppb.

²Various fish species collected from active nest or stomachs of collected great blue heron chicks.

³Includes the K25 and Melton Hill colonies.

⁴Includes the Long Island and Looney Island colonies.

⁵T-test P value.

Table C13. Metal¹ concentrations (ppm, wet wt) detected in great blue heron eggs from colonies located on² and off³ the Oak Ridge Reservation during 1992–1994

	ON ORR	OFF ORR	P ⁴
Mercury			
Mean	0.17	0.12	0.009
SE	0.02	0.02	
Min	0.04	0.04	
Max	0.31	0.29	
N	24	34	
Chromium			
Mean	0.18	0.11	0.046
SE	0.03	0.01	
Min	0.05	0.06	
Max	0.84	0.21	
N	25	26	

¹Arsenic was quantified in one egg at a concentration below the contract required detection limit.

²Includes K25 colony.

³Includes Long Island and Looney Island colonies.

⁴T-test P value.

Table C14. Metal concentrations (Mean $\pm$ SE) detected in tissues collected from great blue heron chicks from colonies located on¹ (N=38) and off² (N=35) the Oak Ridge Reservation during 1992–1994

	ON ORR	OFF ORR	P ³
Mercury			
Feather	1.71 $\pm$ 0.21	0.91 $\pm$ 0.08	0.001
Liver	0.24 $\pm$ 0.03	0.16 $\pm$ 0.02	0.028
Muscle	0.08 $\pm$ 0.01	0.09 $\pm$ 0.02	0.655
Chromium			
Feather	0.96 $\pm$ 0.17	1.16 $\pm$ 0.19	0.429
Liver	1.49 $\pm$ 0.48	1.26 $\pm$ 0.49	0.739
Muscle	1.86 $\pm$ 0.56	2.84 $\pm$ 0.81	0.322
Arsenic			
Feather	0.10 $\pm$ 0.01	0.10 $\pm$ 0.01	0.977
Liver	0.13 $\pm$ 0.03	0.12 $\pm$ 0.02	0.771
Muscle	0.15 $\pm$ 0.05	0.15 $\pm$ 0.04	0.938

¹Includes K25 and Melton Hill colonies.

²Includes Long Island and Looney Island colonies.

³T-test P value.

Table C15. Mean $\pm$ SE (N) Aroclor 1260 and congener concentrations¹ (ppm, wet wt) in great blue heron eggs collected from colonies located on² and off³ the Oak Ridge Reservation

	ON ORR	OFF ORR	P ⁴
Aroclor 1260	1.68 $\pm$ 0.48 (24)	0.27 $\pm$ 0.08 (34)	0.008
CB 81	0.13 $\pm$ 0.04 (16)	0.08 $\pm$ 0.02 (26)	0.365
CB 99	0.09 $\pm$ 0.03 (16)	0.02 $\pm$ 0.01 (26)	0.030
CB 101	0.04 $\pm$ 0.02 (16)	0.00 $\pm$ 0.00 (26)	0.018
CB 118	0.17 $\pm$ 0.04 (16)	0.08 $\pm$ 0.02 (26)	0.062
CB 123	0.11 $\pm$ 0.04 (16)	0.01 $\pm$ 0.00 (26)	0.015
CB 138	0.29 $\pm$ 0.05 (16)	0.14 $\pm$ 0.03 (26)	0.025
CB 146	0.09 $\pm$ 0.03 (16)	0.03 $\pm$ 0.01 (26)	0.036
CB 149	0.09 $\pm$ 0.05 (8)	0.03 $\pm$ 0.01 (14)	0.288
CB 153	0.37 $\pm$ 0.07 (16)	0.16 $\pm$ 0.04 (26)	0.019
CB 158	0.04 $\pm$ 0.02 (16)	0.06 $\pm$ 0.02 (26)	0.128
CB 167	0.05 $\pm$ 0.01 (16)	0.01 $\pm$ 0.00 (26)	0.008
CB 170	0.09 $\pm$ 0.02 (16)	0.04 $\pm$ 0.01 (26)	0.012
CB 180	0.27 $\pm$ 0.06 (16)	0.11 $\pm$ 0.02 (26)	0.021
CB 183	0.06 $\pm$ 0.01 (16)	0.02 $\pm$ 0.00 (26)	0.020
CB 194	0.04 $\pm$ 0.01 (16)	0.02 $\pm$ 0.00 (26)	0.076
CB 196	0.07 $\pm$ 0.02 (16)	0.03 $\pm$ 0.01 (26)	0.059

¹Concentrations of CBs 66, 76, 77, 95, 105, 110, 114, 126, 128, 132, 151, 156, 171, and 201 were <30 ppb and are not included.

²Includes the K25 colony.

³Includes the Long Island and Looney Island colonies.

⁴T-test P value.

Table C16. Mean $\pm$ SE (N) Aroclor 1260 and congener concentrations (ppm, wet wt) in abdominal fat from great blue heron chicks collected from colonies located on¹ and off² the Oak Ridge Reservation

	ON ORR	OFF ORR	P ³
Aroclor 1260	48.63 $\pm$ 11.71 (16)	15.70 $\pm$ 2.64 (24)	0.014
CB 66	1.21 $\pm$ 0.75 (16)	0.23 $\pm$ 0.03 (24)	0.210
CB 76	0.78 $\pm$ 0.55 (16)	0.12 $\pm$ 0.02 (24)	0.250
CB 77	0.27 $\pm$ 0.10 (16)	0.20 $\pm$ 0.04 (24)	0.556
CB 81	1.54 $\pm$ 0.44 (16)	1.28 $\pm$ 0.30 (24)	0.761
CB 95	0.84 $\pm$ 0.54 (16)	0.14 $\pm$ 0.04 (24)	0.216
CB 99	2.70 $\pm$ 1.36 (16)	0.56 $\pm$ 0.15 (24)	0.138
CB 101	2.65 $\pm$ 1.37 (16)	0.47 $\pm$ 0.15 (24)	0.134
CB 105	0.73 $\pm$ 0.36 (16)	0.13 $\pm$ 0.02 (24)	0.115
CB 110	2.40 $\pm$ 1.16 (16)	0.49 $\pm$ 0.10 (24)	0.122
CB 114	0.07 $\pm$ 0.04 (16)	0.00 $\pm$ 0.00 (24)	0.999
CB 118	1.95 $\pm$ 0.82 (16)	0.79 $\pm$ 0.11 (24)	0.182
CB 123	2.53 $\pm$ 1.09 (16)	0.63 $\pm$ 0.11 (24)	0.102
CB 126	0.54 $\pm$ 0.13 (16)	0.33 $\pm$ 0.08 (24)	0.195
CB 128	0.95 $\pm$ 0.37 (16)	0.19 $\pm$ 0.02 (24)	0.058
CB 132	0.76 $\pm$ 0.41 (16)	0.14 $\pm$ 0.02 (24)	0.146
CB 138	5.13 $\pm$ 1.44 (16)	1.70 $\pm$ 0.23 (24)	0.032
CB 146	1.70 $\pm$ 0.37 (16)	0.75 $\pm$ 0.11 (24)	0.024
CB 149	2.76 $\pm$ 0.54 (7)	1.04 $\pm$ 0.24 (12)	0.018
CB 151	0.98 $\pm$ 0.35 (16)	0.33 $\pm$ 0.06 (24)	0.084
CB 153	6.24 $\pm$ 1.35 (16)	2.47 $\pm$ 0.45 (24)	0.016
CB 156	0.31 $\pm$ 0.09 (16)	0.12 $\pm$ 0.02 (24)	0.043
CB 158	0.19 $\pm$ 0.14 (16)	0.21 $\pm$ 0.08 (24)	0.905
CB 167	0.86 $\pm$ 0.30 (16)	0.29 $\pm$ 0.04 (24)	0.078
CB 170	1.57 $\pm$ 0.34 (16)	0.54 $\pm$ 0.07 (24)	0.010
CB 171	0.22 $\pm$ 0.09 (16)	0.17 $\pm$ 0.05 (24)	0.621
CB 180	4.27 $\pm$ 0.95 (16)	1.37 $\pm$ 0.25 (24)	0.009
CB 183	0.88 $\pm$ 0.25 (16)	0.35 $\pm$ 0.05 (24)	0.054
CB 194	0.63 $\pm$ 0.12 (16)	0.38 $\pm$ 0.05 (31)	0.078
CB 196	0.93 $\pm$ 0.21 (16)	0.37 $\pm$ 0.06 (24)	0.018
CB 201	0.53 $\pm$ 0.11 (16)	0.22 $\pm$ 0.03 (24)	0.012

¹Includes the K25 colony.

²Includes the Long Island and Looney Island colonies.

³T-test P value.

Table C17. Mean $\pm$ SE (N) Aroclor 1260 and congener concentrations¹ (ppm, wet wt) in liver tissue from great blue heron chicks collected from colonies located on² and off³ the Oak Ridge Reservation

	ON ORR	OFF ORR	P ⁴
Aroclor 1260	0.77 $\pm$ 0.23 (18)	0.23 $\pm$ 0.03 (22)	0.029
CB 110	0.06 $\pm$ 0.02 (18)	0.02 $\pm$ 0.00 (22)	0.050
CB 118	0.05 $\pm$ 0.02 (18)	0.01 $\pm$ 0.00 (22)	0.049
CB 138	0.07 $\pm$ 0.03 (18)	0.02 $\pm$ 0.00 (22)	0.077
CB 149	0.06 $\pm$ 0.03 (8)	0.02 $\pm$ 0.00 (10)	0.209
CB 151	0.04 $\pm$ 0.02 (18)	0.01 $\pm$ 0.00 (22)	0.048
CB 153	0.10 $\pm$ 0.03 (18)	0.03 $\pm$ 0.00 (22)	0.017
CB 180	0.07 $\pm$ 0.02 (18)	0.02 $\pm$ 0.00 (22)	0.021

¹Concentrations of CBs 66, 76, 77, 95, 99, 101, 105, 114, 123, 126, 128, 132, 146, 156, 158, 167, 170, 171, 183, 194, 196, and 201 were <30 ppb and are not included.

²Includes the K25 colony.

³Includes the Long Island and Looney Island colonies.

⁴T-test P value.

Table C18. Mean $\pm$ SE (N) Aroclor 1260 and congener concentrations¹ (ppm, wet wt) in muscle tissue from great blue heron chicks collected from colonies located on² and off³ the Oak Ridge Reservation

	ON ORR	OFF ORR	P ⁴
Aroclor 1260	1.05 $\pm$ 0.25 (18)	0.35 $\pm$ 0.08 (24)	0.015
CB 81	0.04 $\pm$ 0.01 (18)	0.04 $\pm$ 0.02 (24)	0.795
CB 110	0.06 $\pm$ 0.02 (18)	0.01 $\pm$ 0.00 (24)	0.027
CB 118	0.06 $\pm$ 0.01 (18)	0.02 $\pm$ 0.01 (24)	0.015
CB 138	0.09 $\pm$ 0.02 (18)	0.04 $\pm$ 0.01 (24)	0.033
CB 149	0.09 $\pm$ 0.03 (8)	0.03 $\pm$ 0.01 (12)	0.086
CB 153	0.16 $\pm$ 0.03 (18)	0.05 $\pm$ 0.01 (24)	0.009
CB 180	0.10 $\pm$ 0.02 (18)	0.03 $\pm$ 0.01 (24)	0.008

¹Concentrations of CBs 66, 76, 77, 95, 99, 101, 105, 114, 123, 126, 128, 132, 146, 151, 156, 167, 170, 171, 183, 194, 196, and 201 were <30 ppb and are not included.

²Includes the K25 colony.

³Includes the Long Island and Looney Island colonies.

⁴T-test P value, based on lipid adjusted concentrations.

Table C19. Reproductive, physiological, and biomarker measurements [Mean $\pm$ SE (N)] in great blue heron from colonies located on¹ and off² the Oak Ridge Reservation during 1992–1994

	ON ORR	OFF ORR
Mean eggs/nest	3.5 $\pm$ 0.2 (26)	3.2 $\pm$ 0.2 (27)
Egg shell thickness (mm)	0.427 $\pm$ 0.01 (33)	0.410 $\pm$ 0.01 (34)
Egg weight (g) ³	69.16 $\pm$ 0.97 (33)	66.36 $\pm$ 0.97 (34)
Mean chicks/nest	2.7 $\pm$ 0.1 (55)	2.7 $\pm$ 0.2 (30)
Chick weight/length ratio	2.06 $\pm$ 0.05 (38)	2.12 $\pm$ 0.06 (35)
Liver somatic index	4.50 $\pm$ 0.16 (38)	4.64 $\pm$ 0.23 (35)
Liver EROD activity ⁴	31.9 $\pm$ 2.7 (12)	41.3 $\pm$ 3.2 (12)
DNA double-strandedness (F) ⁵	73 $\pm$ 0.03 (26)	84 $\pm$ 0.02 (27)
Hematocrit	32 $\pm$ 0.8 (38)	31 $\pm$ 0.7 (26)

¹Includes K25 and Melton Hill colonies.

²Includes Long Island and Looney Island colonies.

³Means significantly different (T-test, P=0.048).

⁴1994 data; ethoxyresorufin-o-deethylase activity (pmole/mq protein/min); means significantly different (T-test, P=0.033).

⁵Means significantly different (T-test, P=0.006), F = fraction of double-stranded DNA.

Table C20. Percent by weight of the most common fish species collected from the Oak Ridge Reservation and Clinch River above Melton Hill Dam

Common Name	ORR %	Weight Kg	Clinch River %	Weight Kg
Sucker	17	280	3	12
Carp	20	330	24	97
Catfish	15	248	13	53
Shad	7	116	6	24
Buffalo	17	280	42	170
Other Species	24	396	12	49
TOTALS	100	1,650	100	405

Table C21. Mean mercury concentrations (ppm, wet wt) in homogenized fish¹ collected on the Oak Ridge Reservation², Clinch River above the Oak Ridge Reservation³, and from the ocean⁴ and diets fed to mink

	N ⁵	MEAN ⁶	SE	MIN	MAX
LOCATION					
On the ORR	10	0.35 ^a	0.03	0.17	0.43
Clinch River	10	0.07 ^b	0.00	0.05	0.09
Ocean	10	0.03 ^c	0.00	0.02	0.04
DIET					
A ⁷	10	0.02 ^a	0.00	0.02	0.03
B ⁸	10	0.05 ^b	0.00	0.04	0.06
C ⁹	10	0.09 ^c	0.00	0.08	0.11
D ¹⁰	10	0.15 ^d	0.01	0.12	0.18
E ¹¹	10	0.22 ^a	0.01	0.16	0.24

¹Various fish species.

²Poplar Creek between East Fork Poplar Creek and confluence with the Clinch River.

³Above Melton Hill Dam near Bull Run Power Plant.

⁴Mackerel purchased from commercial supplier.

⁵Number of aliquots analyzed.

⁶Means followed by different letters are significantly different, $P < 0.05$.

⁷75% ocean fish, 25% ranch mink diet.

⁸75% fish collected from the Clinch River above the Oak Ridge Reservation (ORR), 25% ranch mink diet.

⁹25% fish collected from Poplar Creek on the ORR, 50% ocean fish, 25% ranch mink diet.

¹⁰50% fish collected from Poplar Creek on the ORR, 25% ocean fish, 25% ranch mink diet.

¹¹75% fish collected from Poplar Creek on the ORR, 25% ranch mink diet.

Table C22. Mercury concentration (ppm, wet wt) in tissues from female mink fed (n=8/diet) various diets¹ and their 6-week old kits

		Diet A	Diet B	Diet C	Diet D	Diet E
ADULT FEMALE MINK						
Liver Hg	Mean ²	0.41 ^a	0.61 ^a	1.06 ^a	1.93 ^b	3.67 ^c
	SE	0.07	0.06	0.10	0.15	0.32
	Range	0.17-0.8	0.47-0.87	0.74-1.49	1.26-2.47	2.52-5.20
Kidney Hg	Mean	0.84 ^a	1.25 ^{ab}	2.22 ^{bc}	3.47 ^{cd}	4.35 ^d
	SE	0.13	0.18	0.35	0.52	0.34
	Range	0.25-1.46	0.53-1.96	1.24-4.22	2.38-7.00	3.33-6.25
Hair Hg	Mean	3.79 ^a	7.43 ^b	7.71 ^b	13.44 ^c	19.03 ^d
	SE	0.26	0.55	0.63	0.79	0.57
	Range	2.20-4.61	5.05-9.70	4.38-9.62	10.2-15.6	16.8-21.4
KITS						
Carcass	Mean	0.02 ^a	0.03 ^a	0.05 ^a		0.20 ^b
	SE	0.004	0.003	0.003		0.02
	Range	0.01-0.05	0.02-0.05	0.04-0.06		0.10-0.30
	N	9	9	8		9
Kidney Hg	Mean	0.03 ^a	0.03 ^a	0.06 ^a		0.19 ^b
	SE	0.001	0.003	0.003		0.02
	Range	0.02-0.04	0.02-0.04	0.05-0.07		0.11-0.31
	N	9	9	8		9

¹Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet D = 50% fish collected on the Oak Ridge Reservation and 25% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

²Means with different superscripts are significantly different, $P < 0.05$.

Table C23. Mean¹ ± SE lipid adjusted Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in homogenized fish² collected on the Oak Ridge Reservation³, Clinch River above the Oak Ridge Reservation⁴, and from the ocean⁵

	Ocean	Clinch River	ORR
CB 77	0.022 ^a ±0.000 (10)	0.039 ^b ±0.001 (10)	0.190 ^c ±0.004 (10)
CB 81	0.053 ^a ±0.001 (10)	0.592 ^b ±0.062 (10)	1.419 ^c ±0.262 (9)
CB 99	0.022 ^a ±0.000 (10)	0.076 ^b ±0.011 (10)	0.894 ^c ±0.015 (10)
CB 101	0.022 ^a ±0.000 (10)	0.142 ^b ±0.022 (10)	0.609 ^c ±0.010 (10)
CB 118	0.022 ^a ±0.000 (10)	0.468 ^{ab} ±0.219 (10)	1.150 ^b ±0.030 (9)
CB 123	0.022 ^a ±0.000 (10)	0.039 ^{ab} ±0.001 (10)	0.051 ^b ±0.010 (10)
CB 126	0.022 ^a ±0.000 (10)	0.039 ^b ±0.001 (10)	0.041 ^b ±0.001 (10)
CB 128	0.022 ^a ±0.000 (10)	0.178 ^b ±0.003 (10)	0.636 ^c ±0.012 (10)
CB 138	0.022 ^a ±0.000 (10)	0.706 ^b ±0.014 (10)	1.611 ^c ±0.052 (9)
CB 146	0.022 ^a ±0.000 (10)	0.388 ^b ±0.007 (10)	0.822 ^c ±0.023 (10)
CB 151	0.039 ^a ±0.002 (10)	0.496 ^b ±0.008 (10)	1.731 ^c ±0.048 (10)
CB 153	0.074 ^a ±0.002 (10)	2.813 ^b ±0.082 (10)	4.733 ^c ±0.123 (9)
CB 156	0.022 ^a ±0.000 (10)	0.039 ^b ±0.001 (10)	0.078 ^b ±0.037 (10)
CB 167	0.022 ^a ±0.000 (10)	0.044 ^b ±0.003 (10)	0.193 ^c ±0.003 (10)
CB 170	0.022 ^a ±0.000 (10)	0.455 ^b ±0.010 (10)	1.315 ^c ±0.025 (10)
CB 171	0.022 ^a ±0.000 (10)	0.039 ^b ±0.001 (10)	0.041 ^b ±0.001 (10)
CB 180	0.022 ^a ±0.000 (10)	3.021 ^b ±0.099 (10)	3.592 ^c ±0.088 (10)
CB 183	0.022 ^a ±0.000 (10)	0.690 ^b ±0.012 (10)	1.000 ^c ±0.016 (10)
CB 189	0.022 ^a ±0.000 (10)	0.039 ^b ±0.001 (10)	0.041 ^b ±0.001 (10)
CB 194	0.022 ^a ±0.000 (10)	0.376 ^b ±0.009 (10)	0.430 ^c ±0.006 (10)
CB 195	0.022 ^a ±0.000 (10)	0.042 ^b ±0.002 (10)	0.043 ^b ±0.002 (10)
CB 196	0.022 ^a ±0.000 (10)	0.570 ^b ±0.014 (10)	1.660 ^c ±0.041 (10)
CB 201	0.022 ^a ±0.000 (10)	0.486 ^b ±0.009 (10)	0.605 ^c ±0.008 (10)
Aroclor 1260	0.379 ^a ±0.008 (10)	21.917 ^b ±0.681 (10)	28.997 ^c ±0.659 (10)

¹Means with different superscripts are significantly different, P<0.05.

²Various fish species.

³Poplar Creek between East Fork Poplar Creek and confluence with the Clinch River.

⁴Above Melton Hill Dam near Bull Run Power Plant.

⁵Mackerel purchased from commercial supplier.

Table C24. Mean $\pm$ SE lipid adjusted Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in mink diets¹ (n=10/diet)

	Diet A	Diet B	Diet C	Diet D	Diet E
CB 77	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.046 $\pm$ 0.003	0.102 $\pm$ 0.002	0.116 $\pm$ 0.005
CB 81	0.027 $\pm$ 0.002	0.337 $\pm$ 0.051	0.507 $\pm$ 0.011	0.873 $\pm$ 0.022	1.158 $\pm$ 0.033
CB 99	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.276 $\pm$ 0.011	0.531 $\pm$ 0.014	0.520 $\pm$ 0.013
CB 101	0.031 $\pm$ 0.004	0.239 $\pm$ 0.032	0.288 $\pm$ 0.009	0.585 $\pm$ 0.012	0.396 $\pm$ 0.020
CB 118	0.025 $\pm$ 0.000	0.117 $\pm$ 0.010	0.192 $\pm$ 0.007	0.405 $\pm$ 0.007	0.668 $\pm$ 0.021
CB 123	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.212 $\pm$ 0.008	0.446 $\pm$ 0.008	0.076 $\pm$ 0.003
CB 126	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.027 $\pm$ 0.001	0.038 $\pm$ 0.003	0.033 $\pm$ 0.001
CB 128	0.025 $\pm$ 0.000	0.085 $\pm$ 0.003	0.104 $\pm$ 0.004	0.228 $\pm$ 0.005	0.351 $\pm$ 0.013
CB 138	0.080 $\pm$ 0.002	0.791 $\pm$ 0.087	0.331 $\pm$ 0.011	0.690 $\pm$ 0.009	1.048 $\pm$ 0.020
CB 146	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.141 $\pm$ 0.006	0.335 $\pm$ 0.007	0.501 $\pm$ 0.015
CB 151	0.025 $\pm$ 0.000	0.314 $\pm$ 0.010	0.254 $\pm$ 0.009	0.555 $\pm$ 0.009	1.058 $\pm$ 0.039
CB 153	0.025 $\pm$ 0.000	1.862 $\pm$ 0.025	0.766 $\pm$ 0.029	1.772 $\pm$ 0.026	3.126 $\pm$ 0.056
CB 156	0.025 $\pm$ 0.000	0.139 $\pm$ 0.013	0.065 $\pm$ 0.002	0.094 $\pm$ 0.015	0.033 $\pm$ 0.001
CB 167	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.027 $\pm$ 0.001	0.061 $\pm$ 0.003	0.103 $\pm$ 0.004
CB 170	0.025 $\pm$ 0.000	1.847 $\pm$ 0.964	0.154 $\pm$ 0.007	0.346 $\pm$ 0.008	0.798 $\pm$ 0.016
CB 171	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.061 $\pm$ 0.002	0.127 $\pm$ 0.003	0.033 $\pm$ 0.001
CB 180	0.025 $\pm$ 0.000	1.011 $\pm$ 0.266	0.507 $\pm$ 0.019	1.091 $\pm$ 0.018	2.292 $\pm$ 0.040
CB 183	0.025 $\pm$ 0.000	0.276 $\pm$ 0.053	0.170 $\pm$ 0.006	0.355 $\pm$ 0.007	0.573 $\pm$ 0.019
CB 189	0.025 $\pm$ 0.000	0.037 $\pm$ 0.001	0.027 $\pm$ 0.001	0.031 $\pm$ 0.000	0.033 $\pm$ 0.001
CB 194	0.025 $\pm$ 0.000	0.058 $\pm$ 0.022	0.072 $\pm$ 0.008	0.149 $\pm$ 0.020	0.245 $\pm$ 0.009
CB 195	0.025 $\pm$ 0.000	0.039 $\pm$ 0.003	0.027 $\pm$ 0.001	0.033 $\pm$ 0.002	0.033 $\pm$ 0.001
CB 196	0.025 $\pm$ 0.000	1.081 $\pm$ 0.084	0.184 $\pm$ 0.008	0.415 $\pm$ 0.008	1.071 $\pm$ 0.024
CB 201	0.025 $\pm$ 0.000	0.230 $\pm$ 0.034	0.060 $\pm$ 0.002	0.131 $\pm$ 0.003	0.338 $\pm$ 0.010
Aroclor 1260	0.169 $\pm$ 0.002	11.440 $\pm$ 0.327	4.697 $\pm$ 0.174	10.405 $\pm$ 0.250	20.670 $\pm$ 0.458

¹Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet D = 50% fish collected on the Oak Ridge Reservation and 25% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

Table C25. Mean $\pm$ SE lipid adjusted Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in liver tissue from female mink (n=8/diet) for various diets¹

	Diet A	Diet B	Diet C	Diet D	Diet E
CB 77	0.048 $\pm$ 0.016	0.081 $\pm$ 0.010	0.033 $\pm$ 0.004	0.095 $\pm$ 0.040	0.028 $\pm$ 0.005
CB 81	0.048 $\pm$ 0.016	0.054 $\pm$ 0.010	0.033 $\pm$ 0.004	0.095 $\pm$ 0.040	0.197 $\pm$ 0.117
CB 99	0.048 $\pm$ 0.016	0.117 $\pm$ 0.014	0.420 $\pm$ 0.061	0.962 $\pm$ 0.123	0.823 $\pm$ 0.215
CB 101	0.048 $\pm$ 0.016	0.053 $\pm$ 0.011	0.033 $\pm$ 0.004	0.145 $\pm$ 0.019	0.154 $\pm$ 0.015
CB 118	0.141 $\pm$ 0.008	0.590 $\pm$ 0.040	1.066 $\pm$ 0.153	2.157 $\pm$ 0.406	1.656 $\pm$ 0.332
CB 123	0.048 $\pm$ 0.016	0.041 $\pm$ 0.006	0.033 $\pm$ 0.004	0.095 $\pm$ 0.040	1.598 $\pm$ 0.228
CB 126	0.048 $\pm$ 0.016	0.224 $\pm$ 0.023	0.033 $\pm$ 0.004	0.095 $\pm$ 0.040	1.703 $\pm$ 0.251
CB 128	0.048 $\pm$ 0.016	0.174 $\pm$ 0.023	0.151 $\pm$ 0.024	0.353 $\pm$ 0.054	0.691 $\pm$ 0.097
CB 138	0.136 $\pm$ 0.023	2.063 $\pm$ 0.479	2.083 $\pm$ 0.224	4.816 $\pm$ 0.915	5.649 $\pm$ 0.465
CB 146	0.059 $\pm$ 0.015	0.627 $\pm$ 0.051	0.545 $\pm$ 0.055	1.188 $\pm$ 0.113	0.604 $\pm$ 0.111
CB 153	0.206 $\pm$ 0.020	5.075 $\pm$ 0.445	3.858 $\pm$ 0.365	8.063 $\pm$ 1.195	7.242 $\pm$ 1.658
CB 156	0.048 $\pm$ 0.016	0.228 $\pm$ 0.074	0.193 $\pm$ 0.037	0.480 $\pm$ 0.102	0.648 $\pm$ 0.102
CB 167	0.048 $\pm$ 0.016	0.125 $\pm$ 0.013	0.166 $\pm$ 0.020	0.244 $\pm$ 0.077	0.776 $\pm$ 0.100
CB 170	0.057 $\pm$ 0.015	2.249 $\pm$ 0.219	0.774 $\pm$ 0.144	1.971 $\pm$ 0.444	1.878 $\pm$ 0.194
CB 171	0.048 $\pm$ 0.016	0.041 $\pm$ 0.006	0.093 $\pm$ 0.013	0.217 $\pm$ 0.027	0.774 $\pm$ 0.065
CB 180	0.131 $\pm$ 0.015	6.576 $\pm$ 0.772	3.117 $\pm$ 0.390	6.980 $\pm$ 1.296	7.752 $\pm$ 0.815
CB 183	0.048 $\pm$ 0.016	0.412 $\pm$ 0.032	0.229 $\pm$ 0.024	0.479 $\pm$ 0.097	0.527 $\pm$ 0.086
CB 189	0.048 $\pm$ 0.016	0.044 $\pm$ 0.007	0.042 $\pm$ 0.007	0.137 $\pm$ 0.038	0.106 $\pm$ 0.013
CB 194	0.050 $\pm$ 0.016	1.887 $\pm$ 0.208	0.803 $\pm$ 0.086	1.795 $\pm$ 0.202	1.218 $\pm$ 0.174
CB 195	0.048 $\pm$ 0.016	0.041 $\pm$ 0.006	0.192 $\pm$ 0.018	0.457 $\pm$ 0.035	0.115 $\pm$ 0.015
CB 196	0.068 $\pm$ 0.015	2.998 $\pm$ 0.302	0.033 $\pm$ 0.004	0.095 $\pm$ 0.040	1.863 $\pm$ 0.985
CB 201	0.048 $\pm$ 0.016	2.085 $\pm$ 0.261	0.245 $\pm$ 0.084	1.448 $\pm$ 0.459	2.794 $\pm$ 0.356
Aroclor 1260	0.344 $\pm$ 0.132	0.270 $\pm$ 0.039	0.230 $\pm$ 0.021	0.723 $\pm$ 0.329	79.486 $\pm$ 8.112

¹Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet D = 50% fish collected on the Oak Ridge Reservation and 25% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

Table C26. Mean $\pm$ SE Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in fat tissue from female mink (n=8/diet) fed various diets¹

	Diet A	Diet B	Diet C	Diet D	Diet E
CB 77	0.011 $\pm$ 0.005	0.035 $\pm$ 0.006	0.046 $\pm$ 0.006	0.083 $\pm$ 0.019	0.138 $\pm$ 0.011
CB 81	0.120 $\pm$ 0.042	0.339 $\pm$ 0.061	0.280 $\pm$ 0.052	0.429 $\pm$ 0.023	0.696 $\pm$ 0.078
CB 99	0.050 $\pm$ 0.018	0.169 $\pm$ 0.029	0.786 $\pm$ 0.168	1.447 $\pm$ 0.265	1.708 $\pm$ 0.272
CB 101	0.016 $\pm$ 0.006	0.098 $\pm$ 0.020	0.107 $\pm$ 0.018	0.263 $\pm$ 0.029	0.311 $\pm$ 0.037
CB 118	0.163 $\pm$ 0.066	0.464 $\pm$ 0.089	1.461 $\pm$ 0.276	2.943 $\pm$ 0.388	3.175 $\pm$ 0.299
CB 123	0.130 $\pm$ 0.036	0.458 $\pm$ 0.088	0.033 $\pm$ 0.006	0.063 $\pm$ 0.006	2.375 $\pm$ 0.330
CB 126	0.064 $\pm$ 0.029	1.171 $\pm$ 0.212	0.196 $\pm$ 0.032	0.481 $\pm$ 0.035	1.511 $\pm$ 0.160
CB 128	0.033 $\pm$ 0.020	0.299 $\pm$ 0.048	0.352 $\pm$ 0.059	0.781 $\pm$ 0.080	1.210 $\pm$ 0.097
CB 138	0.267 $\pm$ 0.135	2.800 $\pm$ 0.609	3.464 $\pm$ 0.638	9.543 $\pm$ 1.036	9.925 $\pm$ 0.833
CB 146	0.041 $\pm$ 0.015	0.500 $\pm$ 0.104	0.600 $\pm$ 0.097	1.421 $\pm$ 0.111	1.771 $\pm$ 0.179
CB 153	0.405 $\pm$ 0.230	5.538 $\pm$ 1.069	5.195 $\pm$ 0.988	15.714 $\pm$ 1.686	15.375 $\pm$ 1.349
CB 156	0.009 $\pm$ 0.003	0.469 $\pm$ 0.084	0.409 $\pm$ 0.073	0.914 $\pm$ 0.086	1.188 $\pm$ 0.077
CB 167	0.040 $\pm$ 0.019	0.350 $\pm$ 0.055	0.621 $\pm$ 0.109	1.347 $\pm$ 0.126	1.500 $\pm$ 0.125
CB 170	0.093 $\pm$ 0.051	2.278 $\pm$ 0.471	0.800 $\pm$ 0.157	2.043 $\pm$ 0.238	3.013 $\pm$ 0.168
CB 171	0.035 $\pm$ 0.017	0.521 $\pm$ 0.093	0.488 $\pm$ 0.086	1.083 $\pm$ 0.100	1.393 $\pm$ 0.084
CB 180	0.290 $\pm$ 0.188	7.175 $\pm$ 1.544	5.264 $\pm$ 1.034	14.571 $\pm$ 1.325	14.750 $\pm$ 1.161
CB 183	0.019 $\pm$ 0.012	0.559 $\pm$ 0.102	0.368 $\pm$ 0.069	0.899 $\pm$ 0.073	1.114 $\pm$ 0.143
CB 189	0.005 $\pm$ 0.001	0.090 $\pm$ 0.019	0.041 $\pm$ 0.006	0.130 $\pm$ 0.015	0.186 $\pm$ 0.018
CB 194	0.060 $\pm$ 0.035	2.103 $\pm$ 0.475	0.918 $\pm$ 0.174	2.386 $\pm$ 0.201	2.688 $\pm$ 0.351
CB 195	0.011 $\pm$ 0.007	0.419 $\pm$ 0.078	0.033 $\pm$ 0.006	0.063 $\pm$ 0.006	0.133 $\pm$ 0.021
CB 196	0.021 $\pm$ 0.014	0.778 $\pm$ 0.163	0.426 $\pm$ 0.091	1.064 $\pm$ 0.105	1.645 $\pm$ 0.295
CB 201	0.031 $\pm$ 0.019	0.889 $\pm$ 0.151	0.477 $\pm$ 0.080	1.226 $\pm$ 0.101	1.813 $\pm$ 0.178
Aroclor 1260	3.169 $\pm$ 1.849	61.250 $\pm$ 12.560	0.261 $\pm$ 0.044	105.86 $\pm$ 11.26	128.63 $\pm$ 7.73

¹Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet D = 50% fish collected on the Oak Ridge Reservation and 25% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

Table C27. Mean¹ ± SE Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in liver tissue from 6 week old mink kits from dams fed diets of fish collected from various sources²

	Diet A	Diet B	Diet C	Diet E
CB 77	0.003±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 81	0.004±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.007±0.001 (9)
CB 99	0.003 ^a ±0.000 (9)	0.006 ^a ±0.001 (9)	0.016 ^a ±0.005 (8)	0.049 ^b ±0.012 (9)
CB 101	0.004±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 118	0.012 ^a ±0.001 (9)	0.012 ^a ±0.002 (9)	0.068 ^b ±0.014 (8)	0.138 ^a ±0.025 (9)
CB 123	0.008±0.001 (9)	0.007±0.000 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 126	0.003 ^a ±0.000 (9)	0.007 ^a ±0.001 (9)	0.007 ^a ±0.001 (8)	0.014 ^b ±0.003 (9)
CB 128	0.003 ^a ±0.000 (9)	0.006 ^a ±0.001 (9)	0.020 ^a ±0.005 (8)	0.092 ^b ±0.034 (9)
CB 138	0.015 ^a ±0.002 (9)	0.058 ^a ±0.011 (9)	0.141 ^a ±0.033 (8)	0.547 ^b ±0.200 (9)
CB 146	0.004 ^a ±0.000 (9)	0.011 ^a ±0.002 (9)	0.033 ^a ±0.006 (8)	0.143 ^b ±0.042 (9)
CB 151	0.004±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 153	0.011 ^a ±0.002 (9)	0.065 ^a ±0.010 (9)	0.157 ^a ±0.039 (8)	0.509 ^b ±0.137 (9)
CB 156	0.003±0.000 (9)	0.008±0.001 (9)	0.009±0.001 (8)	0.006±0.001 (9)
CB 167	0.004 ^a ±0.000 (9)	0.007 ^a ±0.001 (9)	0.009 ^a ±0.002 (8)	0.028 ^b ±0.007 (9)
CB 170	0.004 ^a ±0.000 (9)	0.054 ^a ±0.009 (9)	0.078 ^b ±0.014 (8)	0.294 ^b ±0.118 (9)
CB 171	0.003±0.000 (9)	0.008±0.001 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 180	0.006 ^a ±0.001 (9)	0.109 ^a ±0.018 (9)	0.194 ^b ±0.040 (8)	0.629 ^b ±0.235 (9)
CB 183	0.004 ^a ±0.000 (9)	0.007 ^a ±0.000 (9)	0.013 ^a ±0.004 (8)	0.035 ^b ±0.009 (9)
CB 189	0.003±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.008±0.002 (9)
CB 194	0.004 ^a ±0.000 (9)	0.019 ^a ±0.003 (9)	0.041 ^b ±0.008 (8)	0.146 ^b ±0.055 (9)
CB 195	0.003±0.000 (9)	0.006±0.001 (9)	0.007±0.001 (8)	0.006±0.001 (9)
CB 196	0.004 ^a ±0.000 (9)	0.052 ^a ±0.011 (9)	0.084 ^b ±0.015 (8)	0.319 ^b ±0.128 (9)
CB 201	0.003 ^a ±0.000 (9)	0.014 ^a ±0.002 (9)	0.027 ^a ±0.005 (8)	0.142 ^b ±0.032 (9)
Aroclor 1260	0.099±0.016 (9)	0.151±0.099 (9)	0.058±0.009 (8)	0.048±0.008 (9)

¹Means with different superscripts are significantly different, $P \leq 0.05$.

²Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

Table C28. Mean¹ ± SE Aroclor 1260 and PCB congener concentrations (ppm, wet wt) in carcass² of 6 week old mink kits from dams fed diets of fish collected from various sources³

	Diet A	Diet B	Diet C	Diet E
CB 77	0.003±0.000 (9)	0.003±0.000 (9)	0.003±0.000 (8)	0.003±0.000 (9)
CB 81	0.003±0.000 (9)	0.003±0.000 (9)	0.003±0.000 (8)	0.005±0.001 (9)
CB 99	0.003 ^a ±0.000 (9)	0.009 ^a ±0.003 (9)	0.017 ^a ±0.003 (8)	0.096 ^b ±0.023 (9)
CB 101	0.003 ^a ±0.000 (9)	0.004 ^a ±0.001 (9)	0.006 ^a ±0.001 (8)	0.017 ^b ±0.002 (9)
CB 118	0.008 ^a ±0.001 (9)	0.030 ^a ±0.009 (9)	0.071 ^a ±0.018 (7)	0.245 ^b ±0.036 (9)
CB 123	0.003±0.000 (9)	0.011±0.005 (9)	0.003±0.000 (8)	0.008±0.001 (9)
CB 126	0.003±0.000 (9)	0.011±0.001 (9)	0.005±0.001 (8)	0.003±0.000 (9)
CB 128	0.003 ^a ±0.000 (9)	0.011 ^a ±0.004 (9)	0.012 ^a ±0.002 (8)	0.054 ^b ±0.007 (9)
CB 138	0.008 ^a ±0.001 (9)	0.112 ^a ±0.016 (9)	0.106 ^a ±0.021 (7)	0.634 ^b ±0.110 (9)
CB 146	0.003 ^a ±0.000 (9)	0.013 ^a ±0.002 (9)	0.019 ^a ±0.003 (8)	0.103 ^b ±0.017 (9)
CB 151	0.003±0.000 (9)	0.003±0.000 (9)	0.003±0.000 (8)	0.005±0.001 (9)
CB 153	0.009 ^a ±0.001 (9)	0.141 ^a ±0.024 (9)	0.119 ^a ±0.025 (7)	0.619 ^b ±0.096 (9)
CB 156	0.003 ^a ±0.000 (9)	0.017 ^{ab} ±0.003 (9)	0.022 ^b ±0.003 (8)	0.058 ^c ±0.008 (9)
CB 167	0.003 ^a ±0.000 (9)	0.014 ^{bc} ±0.002 (9)	0.010 ^{ab} ±0.002 (8)	0.022 ^c ±0.003 (9)
CB 170	0.003 ^a ±0.000 (9)	0.073 ^a ±0.012 (9)	0.047 ^a ±0.007 (8)	0.238 ^b ±0.036 (9)
CB 171	0.003 ^a ±0.000 (9)	0.021 ^a ±0.003 (9)	0.008 ^a ±0.004 (8)	0.017 ^b ±0.002 (9)
CB 180	0.004 ^a ±0.000 (9)	0.203 ^a ±0.026 (9)	0.121 ^a ±0.019 (7)	0.611 ^b ±0.080 (9)
CB 183	0.003 ^a ±0.000 (9)	0.011 ^a ±0.001 (9)	0.007 ^a ±0.002 (8)	0.031 ^b ±0.005 (9)
CB 189	0.003±0.000 (9)	0.003±0.000 (9)	0.003±0.000 (8)	0.008±0.001 (9)
CB 194	0.003 ^a ±0.000 (9)	0.025 ^a ±0.003 (9)	0.019 ^a ±0.004 (8)	0.089 ^b ±0.010 (9)
CB 195	0.003 ^a ±0.000 (9)	0.003 ^a ±0.000 (9)	0.004 ^a ±0.001 (8)	0.023 ^b ±0.003 (9)
CB 196	0.003±0.000 (9)	0.014±0.002 (9)	0.005±0.002 (8)	0.005±0.001 (9)
CB 201	0.003 ^a ±0.000 (9)	0.013 ^a ±0.002 (9)	0.012 ^a ±0.002 (8)	0.050 ^b ±0.009 (9)
Aroclor 1260	0.082±0.005 (9)	1.791±0.282 (9)	0.353±0.245 (8)	0.049±0.006 (9)

¹Means with different superscripts are significantly different, P<0.05. Diet groups were separated based on lipid adjusted concentrations.

²Whole body minus liver tissue.

³Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

Table C29. Reproductive performance of female mink fed diets of 75% fish from various sources¹

	Diet A	Diet B	Diet C	Diet D	Diet E
Females Whelping	6	7	4	6	8
Female Weights					
December ²	1269±64 ³	1245±63	1374±64	1258±64	1230±64
June ⁴	1168±84 ^a	1016±81	1134±81	1020±81	935±81 ^b
Gestation (days)	44.6	46.4	44.3	47.5	44.9
Kit Wts (6 wks)	328±14	311±10	333±20	307±12	295±11
Females	296±38				268±37
Males	376±42 ^a				312±44 ^b
Litter Size ⁵	6.9 ^a	7.3 ^a	7.8 ^a	6.0 ^{ab}	4.3 ^b
EROD ⁶	51±13 ^a	134±26 ^{ab}	124±32 ^{ab}	276±33 ^b	262.54±31 ^b

¹Diet A = 75% ocean fish, Diet B = 75% fish collected above the Oak Ridge Reservation, Diet C = 25% fish collected on the Oak Ridge Reservation and 50% ocean fish, Diet D = 50% fish collected on the Oak Ridge Reservation and 25% ocean fish, Diet E = 75% fish collected on the Oak Ridge Reservation.

²Beginning of study.

³Means followed by different superscripts are significantly different, P<0.05.

⁴End of study.

⁵Kits/female.

⁶Ethoxyresorufin-o-deethylase, pmoles/mg protein/min.

Table C30. Mean $\pm$ SE for bioindicators measured in female bluegill sunfish collected from various sites in the Clinch River, Poplar Creek, and Tennessee River

	CRM 1.0		CRM 20.0		PCM 1.0		TRM 570.0		TRM 555.0		CRM 125.0	
	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR
EROD	4.78	0.82	8.18	1.62	4.25	0.92	7.74	1.34	5.67	0.85	4.70	0.37
MPRO	19.49	1.43	22.55	1.87	21.35	2.47	17.16	2.67	17.63	3.29	20.98	1.99
CDFC	1.84	0.03	1.92	0.04	1.95	0.06	1.95	0.05	1.88	0.05	1.85	0.04
LSI	1.43 B	0.08	1.29 B	0.06	1.76	0.09	1.48	0.07	1.37 B	0.08	1.64	0.07
VSI	3.76	0.09	2.62 B	0.13	3.05	0.14	4.09 B	0.20	3.74	0.19	3.30	0.20
VEIP	4.00	0.00	3.94	0.06	3.92	0.08	4.00	0.00	4.00	0.00	4.00	0.00
SSI	0.06	0.01	0.10 B	0.01	0.08 B	0.01	0.06	0.00	0.07	0.01	0.05	0.00
PSTO	95.00 B	5.00	24.69	5.73	28.75	9.54	72.50	7.48	79.58 B	10.84	47.31	7.59
PINT	33.00	6.02	45.31	5.01	25.00	6.48	42.92	5.62	20.42 B	3.04	41.92	6.78
LMACA	0.19	0.12	1.62 B	0.40	0.16	0.05	1.13 B	0.26	0.42	0.12	0.28	0.14
LPARS	3.45	2.24	1.28	0.79	9.20	6.04	1.48	0.59	2.88	1.90	0.00	0.00
SMACA	4.18	1.59	2.13	0.50	3.23	1.46	4.70	1.36	5.58	2.18	4.35	0.45
SPARS	0.43	0.43	1.93	1.93	8.73	8.73	0.00	0.00	1.75	0.74	0.00	0.00
LNPMMA	0.58	0.38	1.25	0.60	0.12	0.07	2.95	0.92	0.50	0.33	0.25	0.25

Table C31. Mean $\pm$ SE for bioindicators measured in male bluegill sunfish collected from various sites in the Clinch River, Poplar Creek, and Tennessee River

	CRM 1.0		CRM 10.0		CRM 20.0		CRM 21.5		PCM 1.0		PCM 4.6		PCM 5.3		TRM 570.0		TRM 555.0		TRM 530.0		CRM 125.0	
	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR
EROD	9.38	0.81	7.57	1.85	21.02	2.95	11.34	2.80	13.20	1.57	19.53	6.21	16.19	1.78	11.77	1.95	11.72	2.64	8.11	2.96	9.44	1.79
MPRO	17.77	1.21	13.46	1.13	15.70	0.88	15.14	0.66	14.12	1.16	16.37	0.65	15.69	0.83	16.02	1.66	18.49	2.32	11.27	0.92	13.37	1.13
ALB	0.72	0.03	0.91	0.04	0.84	0.05	0.86	0.06	1.63	0.28	0.78	0.03	0.99	0.09	1.06	0.16	1.24	0.15	0.708	0.05	1.05	0.09
ALT	12.71	3.35	19.42	3.51	14.08	2.36	23.80	5.66	42.00	5.71	8.64	1.36	10.00	2.34	31.40	8.05	32.46	5.85	11.25	1.38	23.63	4.67
AST	65.52	6.94	183.33	37.90	82.75	12.71	152.80	46.06	119.00	14.41	122.64	22.73	74.57	14.90	167.33	37.98	94.50	16.50	79.83	10.57	129.74	16.41
BPRO	2.34	0.10	2.83	0.12	3.03	0.15	3.04	0.09	3.74	0.28	2.78	0.10	3.37	0.11	2.72	0.14	3.96	0.21	2.90	0.14	3.83	0.25
BUN	1.24	0.13	1.80	0.15	1.38	0.14	0.89	0.12	3.19	0.64	1.95	0.28	1.65	0.22	1.20	0.25	2.74	0.26	2.41	0.19	3.47	0.38
CREAT	0.13	0.03	0.18	0.07	0.11	0.01	0.09	0.02	0.22	0.07	0.12	0.01	0.13	0.05	0.21	0.03	0.11	0.01	0.15	0.02	0.10	0.01
CDFC	1.99	0.04	1.93	0.06	2.10	0.05	2.00	0.04	2.13	0.04	1.88	0.03	1.75	0.02	2.05	0.03	1.95	0.04	1.96	0.06	1.97	0.05
LSI	0.98	0.06	0.80	0.06	1.12	0.08	0.99	0.09	1.06	0.08	0.89	0.06	0.88	0.03	0.86	0.04	0.91	0.07	1.08	0.08	0.99	0.05
VSI	4.23	0.13	3.73	0.21	3.251	0.15	3.22	0.19	3.20	0.09	4.29	0.22	3.68	0.10	3.92	0.16	3.45	0.15	4.26	0.20	3.67	0.13
VEIP	3.86	0.08	3.92	0.08	3.60	0.11	3.20	0.29	3.82	0.12	3.55	0.16	3.67	0.17	4.00	0.00	4.00	0.00	3.38	0.22	3.85	0.11
SSI	0.07	0.01	0.10	0.01	0.10	0.01	0.097	0.02	0.07	0.01	0.08	0.01	0.11	0.02	0.04	0.00	0.08	0.02	0.07	0.01	0.05	0.00
PSTO	45.91	9.94	18.75	9.05	25.21	5.25	4.50	3.45	10.46	7.02	17.73	6.01	10.56	4.89	74.55	8.75	46.82	12.03	60.83	12.83	50.50	8.58
PINT	25.00	4.31	40.83	9.94	39.38	5.07	13.00	4.10	10.46	3.72	15.91	6.21	40.56	11.56	40.46	7.15	31.36	5.40	42.08	8.71	52.75	6.92
BTRJ	281.62	34.71	143.25	19.45	563.29	61.54	456.70	105.34	205.91	40.55	322.00	65.48	175.00	27.00	328.20	46.25	220.36	80.77	517.42	82.31	366.26	51.14
LMACA	0.20	0.09	0.69	0.19	0.28	0.11	0.27	0.09	0.46	0.22	1.92	1.67	0.90	0.60	0.26	0.11	0.38	0.27	0.35	0.20	0.35	0.08
LPARS	1.91	0.82	12.07	4.86	7.61	1.57	0.00	0.00	2.78	1.67	13.40	4.53	10.13	2.71	0.22	0.14	1.58	1.58	0.48	0.44	3.24	1.42
SMACA	4.35	0.65	2.56	0.93	1.74	0.29	1.49	0.49	3.20	0.97	2.32	0.40	1.52	0.41	2.78	1.09	4.90	2.82	3.06	0.82	2.57	0.81
SPARS	1.32	0.74	2.51	1.43	4.02	1.64	1.11	1.03	4.16	2.97	4.46	2.01	7.26	2.87	2.82	1.74	0.00	0.00	1.26	0.86	1.72	1.11
LNPMA	0.74	0.38	2.01	1.22	0.72	0.27	0.37	0.24	1.06	0.57	1.84	1.18	2.43	2.03	7.98	7.13	0.45	0.22	0.11	0.11	0.57	0.28

Table C32. Mean $\pm$ SE for bioindicators measured in female largemouth bass collected from various sites in the Clinch River, Poplar Creek, and Tennessee River

	CRM 1.0		CRM 10.0		CRM 20.0		CRM 21.5		PCM 1.0		PCM 4.6		PCM 5.3		TRM 570.0		TRM 555.0		TRM 530.0		CRM 125.0	
	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR
EROD	3.10	0.59	8.80	1.48	13.45	3.11	7.73	1.34	13.41	2.03	27.61	10.31	28.14	9.22	5.94	1.66	3.15	0.52	11.40	5.86	2.53	0.30
MPRO	34.86	2.07	23.48	0.94	29.27	1.92	24.64	1.34	26.73	1.04	24.43	3.24	24.21	2.38	32.25	1.76	38.81	1.70	22.29	3.14	36.62	1.75
ALB	1.43	0.05	.	.	0.83	0.03	.	.	0.49	0.03	1.05	0.15	.	.	1.23	0.13	.	.	.	.	.	.
ALT	7.00	1.83	.	.	11.67	7.17	.	.	9.44	2.26	5.50	0.50	.	.	5.33	2.33	.	.	.	.	.	.
AST	31.00	5.67	.	.	45.33	32.90	.	.	30.67	8.58	42.00	1.00	.	.	52.00	36.02	.	.	.	.	.	.
BPRO	3.88	0.20	.	.	3.33	0.13	.	.	1.79	0.06	3.65	0.55	.	.	3.93	0.35	.	.	.	.	.	.
BUN	2.62	0.35	.	.	1.10	0.18	.	.	0.87	0.13	2.03	0.71	.	.	1.76	0.19	.	.	.	.	.	.
CREAT	0.20	0.05	.	.	0.26	0.04	.	.	0.21	0.01	0.26	0.01	.	.	0.11	0.01	.	.	.	.	.	.
CDFC	1.54	0.04	1.61	0.08	1.41	0.05	1.46	0.07	1.48	0.03	1.39	0.10	1.41	0.07	1.43	0.03	1.49	0.05	1.62	0.06	1.27	0.03
LSI	1.31	0.04	1.56	0.11	1.27	0.14	1.24	0.04	1.34	0.06	0.97	0.04	0.79	0.10	1.44	0.05	1.30	0.04	1.63	0.17	1.16	0.06
VSI	5.04	0.22	5.77	0.55	5.36	0.38	4.63	0.65	4.66	0.18	4.16	0.26	4.08	0.33	4.56	0.18	3.86	0.15	5.22	0.15	3.31	0.15
VEIP	1.64	0.12	2.10	0.25	2.50	0.21	2.25	0.25	2.62	0.16	3.07	0.39	3.00	0.27	2.91	0.17	3.25	0.17	1.50	0.29	2.74	0.28
SSI	0.09	0.01	0.10	0.01	0.16	0.05	0.10	0.02	0.10	0.01	0.07	0.01	0.14	0.04	0.09	0.01	0.11	0.02	0.11	0.02	0.08	0.01
PSTO	2.14	1.46	1.00	1.00	21.25	8.66	0.00	0.00	26.15	7.74	1.43	0.92	9.00	6.60	14.05	6.85	2.08	2.08	21.67	21.67	0.00	0.00
PINT	1.43	1.43	5.00	2.74	12.92	7.14	0.83	0.83	6.15	2.50	5.71	2.54	12.00	6.25	7.62	3.27	0.00	0.00	5.00	5.00	0.00	0.00
BTRI	348.25	48.40	.	.	381.67	153.04	.	.	138.00	17.24	205.50	43.50	.	.	477.00	170.56	.	.	.	.	.	.
LMACA	0.85	0.25	0.90	.	0.81	0.33	0.64	0.20	0.90	0.31	0.96	0.55	1.35	1.35	0.63	0.20	0.90	0.32	0.65	0.45	1.60	0.60
LPARS	0.13	0.09	0.00	.	0.83	0.28	0.40	0.40	1.08	0.44	1.16	1.02	0.00	0.00	0.28	0.21	0.26	0.26	0.00	0.00	0.03	0.03
SMACA	3.53	0.62	4.20	.	4.33	1.16	2.08	0.37	2.82	0.42	4.48	2.15	0.70	0.70	2.00	0.74	3.60	1.35	2.55	0.85	.	.
SPARS	0.80	0.80	9.60	.	1.91	1.70	0.62	0.43	4.78	3.41	3.88	1.58	8.35	8.35	8.66	7.56	2.00	1.85	0.00	0.00	.	.
LNPMIA	1.03	0.65	0.70	.	0.84	0.30	0.20	0.13	0.51	0.20	1.04	0.38	0.85	0.85	0.41	0.18	0.00	0.00	0.05	0.05	0.30	0.30

Table C33. Mean $\pm$ SE for bioindicators measured in male largemouth bass collected from various sites in the Clinch River, Poplar Creek, and Tennessee River

	CRM1.0		CRM100		CRM200		CRM215		PCM1.0		PCM4.6		PCM5.3		TRM5700		TRM5550		TRM5300		CRM1250	
	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR	MEAN	STDERR
EROD	12.24	2.65	23.91 B	4.04	17.03	232	23.96	3.04	39.67 AB	532	43.68 AB	18.00	31.73	.	11.19	2.78	6.68	1.49	17.05	3.06	9.64	1.64
MPRO	22.00 A	1.47	14.36	1.19	24.77 A	1.84	16.59	1.43	21.08 A	1.03	15.94	4.78	25.78	.	16.55	1.80	26.37 AB	1.33	12.38 B	1.25	19.59 A	1.06
ALB	1.05	0.02	0.97	0.06	0.85 B	0.03	0.90	.	0.91	0.04	1.00	0.10	.	.	1.02	0.02	1.18 A	0.04	0.93	0.04	1.04	0.05
ALT	10.79 A	2.25	12.11	2.70	19.44	9.60	15.00	.	9.13	3.18	4.50	1.50	.	.	7.06 A	2.07	5.60 A	1.63	26.33 B	6.73	10.05 A	2.63
AST	59.58	7.89	65.33	16.09	70.44	25.57	42.00	.	36.13	11.66	46.00	23.00	.	.	65.06	18.85	30.50	4.06	89.67	24.53	37.84	10.25
BPRO	4.24	0.13	3.87	0.31	3.44 AB	0.13	4.10	.	3.83 A	0.32	3.75	0.45	.	.	4.04	0.13	4.68	0.14	4.67	0.15	4.25	0.14
BUN	1.48	0.16	1.70	0.27	1.89	0.25	0.95	.	2.29	0.43	2.61	0.67	.	.	1.66	0.21	2.69	0.31	1.67	0.13	1.90	0.16
CREAT	0.20	0.02	0.18	0.03	0.20	0.03	0.25	.	0.30 AB	0.08	0.25	0.09	.	.	0.18	0.01	0.26 AB	0.03	0.12	0.02	0.12	0.01
CDFC	1.47 B	0.03	1.40	0.03	1.34 A	0.05	1.32	0.16	1.42 B	0.03	1.44	0.03	1.34	.	1.45 B	0.04	1.35 A	0.05	1.53 B	0.04	1.27 A	0.01
LSI	0.79	0.04	1.42 B	0.14	0.90 A	0.08	0.80 A	0.12	0.97 A	0.09	1.07	0.23	0.49 A	.	1.25 AB	0.09	0.77 A	0.06	1.62 B	0.16	0.70 A	0.04
VSI	5.24 B	0.25	5.00 B	0.40	4.94 B	0.39	4.42	1.51	5.25 B	0.30	4.24	0.67	3.50	.	5.27 B	0.24	4.29 B	0.17	5.14 B	0.23	3.12 A	0.12
VEIP	1.66	0.14	1.85	0.17	2.12	0.22	2.75	1.25	1.75	0.15	2.00	0.50	4.00 A	.	2.21	0.18	3.10 AB	0.27	1.50	0.17	2.15	0.20
SSI	0.13	0.02	0.14	0.01	0.16 B	0.03	0.14	0.08	0.11	0.02	0.07	0.01	0.04	.	0.12	0.01	0.10	0.01	0.14	0.01	0.09	0.01
PSTO	0.00	0.00	0.50	0.50	2.69	2.69	32.50	32.50	6.50	6.50	2.50	2.50	0.00	.	18.53	8.47	20.00	13.33	10.00	9.39	0.00	0.00
PINT	0.00	0.00	2.00	1.53	1.15	1.15	17.50	17.50	2.00	1.53	2.50	2.50	0.00	.	6.47	2.87	10.00	10.00	3.33	1.67	2.75	1.87
BTRI	220.21 B	30.47	204.78	26.61	216.11 B	79.76	1210.00 AB	.	354.88 B	83.22	138.00	30.00	.	.	211.77 B	26.68	189.20	39.65	219.56 B	25.08	68.11 A	4.96
LMACA	2.02 AB	0.69	0.41	0.12	0.33	0.16	0.65	0.15	0.71	0.28	0.10	0.10	.	.	0.30	0.08	0.80	0.26	0.26	0.14	0.54	0.11
LPARS	0.64	0.38	2.49 AB	1.13	0.77	0.35	0.00	0.00	0.13	0.08	0.30	0.10	.	.	1.31	0.73	0.00	0.00	0.00	0.00	0.08	0.07
SMACA	3.82	0.87	2.38	0.44	3.43	0.59	1.10	0.50	3.43	0.90	1.40	0.30	.	.	2.60	0.65	5.08	1.83	2.68	0.84	5.03	0.88
SPARS	0.95	0.73	5.89	2.91	0.50	0.47	0.00	0.00	3.40	1.72	24.20 AB	12.70	.	.	9.18 AB	3.71	0.43	0.39	0.24	0.24	0.16	0.16
LNPNMA	1.06	0.52	1.46	0.41	1.40	0.96	1.05	0.75	0.49	0.20	0.00	0.00	.	.	0.69	0.39	0.00	0.00	1.04	0.51	0.29	0.19

Table C34. Relative rankings of the severity of histopathological lesions in the liver and spleen of bluegill sunfish at collection sites in the Clinch River, Poplar Creek, and the reference site, Norris Reservoir (CRM 125). The overall rank for each site is the average of all liver and spleen lesions at that site. Lower ranks represent higher lesion rate.

	CRM 125	CRM 21.5	CRM 20.0	CRM 10.0	CRM 1.0	TRM 530	PCM 5.3	PCM 4.6
LIVER								
Glycogen Depletion	7	6	8	3	4	5	1.5	1.5
Vacuolated Hepatocytes	2.5	4	8	2.5	5	6	1	7
Macrophage Aggregates	4	1	8	2	3	6	5	7
Focal Necrosis	3.5	1	5	6	7.5	7.5	3.5	2
Granulomas	0	0	1	0	0	0	0	0
Parasites	5	6	3	4	7	8	2	1
SPLEEN								
Macrophage Aggregates	8	7	4	5	6	1	2.5	2.5
Parasites	5	7	2	6	1	8	3.5	3.5
Total	4.4	4.4	4.88	3.6	4.2	5.56	2.3	3.06
Overall Rank	6	4	7	3	5	8	1	2

Table C35. Relative rankings of the severity of histopathological lesions in the liver and spleen of largemouth bass at collection sites in the Clinch River, Poplar Creek, Tennessee River, and the reference site, Norris Reservoir (CRM 125). The overall rank for each site is the average of all liver and spleen lesions at that site. Lower ranks represent higher lesion rate.

	CRM 125	CRM 21.5	CRM 20.0	CRM 10.0	CRM 1.0	TRM 570	TRM 530	PCM 5.3	PCM 4.6	PCM 1.0
LIVER										
Glycogen Depletion	5.5	2	5.5	10	5.5	9	7	5.5	1	8
Vacuolated Hepatocytes	3	5	7.5	4	2	7.5	7.5	7.5	1	7.5
Macrophase Aggregates	9	10	7.5	5	3	1	7.5	4	6	2
Focal Necrosis	7.5	3	2	7.5	7.5	7.5	7.5	7.5	1	7.5
Granulomas	9.5	2	1	5	3	6	7	9.5	4	8
Parasites	8.5	6	1	5	8.5	3	2	4	7	8.5
SPLEEN										
Macrophase Aggregates	1	9	2	3	4	8	7	10	6	5
Focal Necrosis	8.5	3.5	9	2	8.5	6	10	1	3.5	7
Granulomas	6	4	1.5	5	3	8	9.5	7.5	1.5	7
Parasites	10	8	7	2.5	6	5	9	2.5	2.5	4
Total	6.85	5.30	4.40	4.90	5.10	6.10	7.40	5.1	3.35	6.45
Overall Rank	9	6	2	3	4.5	7	10	4.5	1	8

Table C36. Reproductive status of male largemouth bass collected at the beginning of the 1993 breeding season from sites in Poplar Creek, Clinch River, Tennessee River, and Norris Lake

Site ^a	GSI ^b	Plasma Testosterone (pg/ml)	Plasma Estradiol (pg/ml)	Testes Stage ^c
CRM 125	0.586±0.046 (9)	2441±662 (9)	89±39 (9)	4.1±0.1 (9)
PRM 30	0.534±0.035 (11)	2056±652 (11)	162±48 (11)	4.0±0 (11)
PCM 1	0.409±0.058 (5)	1071±476 (5)	50±0 (5)	4.0±0 (5)
CRM 20	0.439±0.050 (8)	1240±438 (8)	327±42 (8)	4.1±0.1 (8)
CRM 0.5	0.483±0.028 (13)	1971±348 (13)	292±47 (13)	3.9±0.1 (13)
TRM 570	0.463±0.023 (10)	2581±343 (10)	50±0 (10)	4.1±0 (10)
TRM 557	0.451±0.032 (10)	2015±494 (10)	170±49 (10)	4.0±0.1 (10)

^a CRM = Clinch River Mile, PRM = Powell River (Norris Lake) Mile, PCM = Poplar Creek Mile, and TRM = Tennessee River Mile

^b GSI = Gonadal-Somatic Index ([gonad wt./body wt.]*100)

^c Stage 0 = no obvious germ cell tissue; stage 1 = primarily spermatogonia (may be some degenerating sperm); stage 2 = spermatogonia and spermatocytes; stage 3 = some spermatids and spermatozoa present as well; stage 4 = tubules filled with sperm, still active spermatogenesis; stage 5 = only sperm and possibly scattered spermatogenic cysts

Table C37. Reproductive status of female largemouth bass collected at the beginning of the 1993 breeding season from sites in Poplar Creek, Clinch River, Tennessee River, and Norris Lake

Site ^a	GSI ^b	Atretic ^c Oocytes (oocytes/g)	Ovary Parasites (cysts/g)	Vitellogenic Oocytes (oocytes/g)	Batch ^d Fecundity (oocytes/g)	Fecundity ^e (oocytes/g)	Plasma Estradiol (pg/ml)	Plasma Testosterone (pg/ml)
CRM125	4.90±0.47 (14)	1.29±0.40 (14)	0 (14)	60.2±10.7 (14)	22.3 ±2.7 (10)	58.1 ±10.6 (14)	4600±552 (14)	4635±1455 (14)
PRM 30	4.41±0.24 (12)	0.70±0.22 (12)	0 (12)	55.3±3.9 (12)	17.0 ±1.7 (12)	56.1 ±3.2 (12)	5810±1062 (12)	5454±942 (12)
PCM 1	4.20±0.62 (17)	2.20±1.39 (15)	0.01±0.01 (15)	59.2±12.1 (15)	18.1 ±2.9 (8)	44. 2±6.5 (15)	4082±1088 (15)	4103±1065 (15)
CRM 20	4.65±0.63 (5)	8.18±4.33 (5)	0 (5)	41.5 ±5.2 (5)	16.0 ±0.6 (4)	46.1 ±7.2 (5)	2041±756 (5)	3892±2648 (5)
CRM 0.5	6.34±0.70 (10)	0.98±0.53 (10)	0 (10)	54.9 ±6.9 (10)	17.2 ±2.7 (9)	57.0 ±6.1 (10)	2962±376 (10)	1063±119 (10)
TRM 570	6.42±0.34 (18)	0.84±0.22 (18)	0 (18)	60.6 ±3.6 (18)	17.0 ±1.4 (13)	60.0 ±2.3 (18)	3729±404 (18)	5479±1070 (14)
TRM 557	7.23±0.52 (8)	1.27±0.23 (8)	0 (8)	55.4 ±4.1 (8)	16.6 ±1.6 (6)	56.3 ±2.6 (8)	3704±818 (8)	3758±1297 (8)

^a CRM = Clinch River Mile, PRM = Powell River (Norris Lake) Mile, PCM = Poplar Creek Mile, and TRM = Tennessee River Mile

^b GSI = Gonadal-Somatic Index ([gonad wt./body wt.] *100)

^c Atretic oocytes are dead and/or reabsorbing oocytes

^d Batch fecundity is the enumeration of obviously maturing oocytes, mature eggs, and/or shed follicles in fish collected immediately prior to or during a spawn

^e Fecundity is the enumeration of all oocytes and/or shed follicles in an ovary regardless of gamete developmental stage

Table C38. Reproductive status of male bluegill sunfish collected at the beginning of the 1993 breeding season from sites in Poplar Creek, Clinch River, Tennessee River, and Norris Lake

Site ^a	GSI ^b	Plasma Testosterone (pg/ml)	Plasma Estradiol (pg/ml)	Testes Stage ^c	Testes Composition ^d			
					Spermatogonia	Spermatocytes	Sperm	Duct
CRM 125	0.993±0.230 (10)	2399±550 (10)	71±22 (10)	3.6±0.2 (10)	0.47±0.30 (10)	8.37±1.90 (10)	3.07±0.68 (10)	0.43±0.09 (10)
CRM 0.5	0.616±0.138 (12)	1529±298 (11)	50±0 (11)	3.3±0.2 (12)	0.31±0.18 (12)	7.81±0.69 (12)	1.47±0.32 (12)	0.31±0.09 (12)
PRM 30	0.979±0.277 (10)	3777±906 (10)	50±0 (10)	3.7±0.1 (10)	0.63±0.25 (10)	7.67±1.48 (10)	3.40±0.65 (10)	0.30±0.12 (10)
TRM 570	1.000±0.131 (11)	3829±805 (10)	50±0 (10)	3.6±0.1 (11)	0.09±0.06 (11)	11.00±1.02 (11)	2.42±0.41 (11)	0.27±0.15 (11)
PCM 1	1.353±0.096 (11)	5475±5712 (10)	65±11 (10)	3.7±0.1 (11)	0.03±0.03 (11)	12.15±0.69 (11)	3.61±0.44 (11)	0.55±0.23 (11)
TRM 557	1.244±0.185 (11)	5430±928 (11)	192±52 (11)	3.7±0.1 (11)	0.15±0.15 (11)	9.39±0.53 (11)	3.55±0.48 (11)	0.06±0.06 (11)
CRM 20	0.748±0.125 (13)	3837±693 (12)	155±55 (12)	3.4±0.2 (13)	0.56±0.24 (13)	8.97±1.30 (13)	2.23±0.50 (13)	0.18±0.08 (13)

^a CRM = Clinch River Mile, PRM = Powell River (Norris Lake) Mile, PCM = Poplar Creek Mile, and TRM = Tennessee River Mile

^b GSI = Gonadal-Somatic Index ([gonad wt./body wt.]³*100)

^c Stage 0 = no obvious germ cell tissue; stage 1 = primarily spermatogonia (may be some degenerating sperm); stage 2 = spermatogonia and spermatocytes; stage 3 = some spermatids and spermatozoa present as well; stage 4 = tubules filled with sperm, still active spermatogenesis; stage 5 = only sperm and possibly scattered spermatogenic cysts

^d mean relative units occupied by various spermatogenic stages measured along the diameters of three cross-sections through a testis

Table C39. Reproductive status of female bluegill sunfish collected at the beginning of the 1993 breeding season from sites in Poplar Creek, Clinch River, Tennessee River, and Norris Lake

Site ^a	GSI ^b	Atretic ^c Oocytes (oocytes/g)	Ovary Parasites (cysts/g)	Vitellogenic Oocytes (oocytes/g)	Batch ^d Fecundity (oocytes/g)	Plasma Estradiol (pg/ml)	Plasma Testosterone (pg/ml)
CRM 125	6.36±0.77 (13)	0.36±0.12 (13)	0.06±0.05 (13)	168±17 (13)	143±14 (12)	4633±987 (11)	3449±1379 (11)
CRM 0.5	7.21±0.95 (10)	3.51±1.09 (10)	0 (10)	162±15 (10)	129±8 (10)	2051±394 (10)	2221±553 (10)
PRM 30	7.48±0.50 (12)	0.52±0.35 (12)	0.12±0.09 (12)	153±10 (12)	127±10 (12)	2877±554 (12)	1958±328 (12)
TRM 570	7.94±0.81 (12)	2.33±0.97 (12)	0 (12)	172±13 (12)	126±8 (11)	3579±663 (11)	4850±1196 (11)
PCK 1.0	9.87±1.20 (12)	4.47±1.97 (12)	0.36±0.14 (12)	225±27 (12)	155±16 (12)	1682±362 (12)	1472±349 (12)
TRM 557	7.80±0.98 (12)	1.07±0.48 (12)	0.05±0.05 (12)	154±19 (12)	121±13 (12)	2958±775 (12)	918±175 (12)
CRM 20	7.64±0.89 (16)	2.71±1.41 (16)	0 (16)	163±13 (16)	135±8 (15)	3433±559 (16)	3274±684 (16)

^a CRM = Clinch River Mile, PRM = Powell River (Norris Lake) Mile, PCM = Poplar Creek Mile, and TRM = Tennessee River Mile

^b GSI = Gonadal-Somatic Index ([gonad wt./body wt.] * 100)

^c Atretic oocytes are dead and/or reabsorbing oocytes

^d Batch fecundity is the enumeration of a clutch of simultaneously developing oocytes, mature eggs, and/or shed follicles

Appendix D

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was passed by Congress and signed into law on December 11, 1980 (Public Law 96-510). This act was intended to provide for "liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and the cleanup of inactive waste disposal sites." The Superfund Amendments and Reauthorization Act (SARA), adopted on October 17, 1986 (Public Law 99-499), did not substantially alter the original structure of CERCLA but provided extensive amendments to it.

In particular, § 121(d) of CERCLA specifies that remedial actions for cleanup of hazardous substances must comply with requirements or standards under federal or more stringent state environmental laws that are applicable or relevant and appropriate to the hazardous substances or particular circumstances at a site. Inherent in the interpretation of applicable or relevant and appropriate requirements (ARARs) is the assumption that protection of human health and the environment is ensured.

The purpose of this report is to supply a preliminary list of available federal and state chemical-, location-, and action-specific ARARs for the remediation of the CR/PC OU. Results of the site characterization and baseline risk assessment (see Chap. 5 of this RI/FS report) indicate that surface water in the CR/PC OU does not pose a risk to human health via any pathway. Risk to human health from dredged sediments is a factor for consideration. The ecological risk assessment suggests a risk to ecological receptors from both surface water (Sect. 6.2) and sediment (Sect. 6.3).

CERCLA on-site remedial response actions must comply only with the substantive requirements of a regulation and not the administrative requirements to obtain federal, state, or local permits [CERCLA § 121(e) and FFA § XXII]. CERCLA defines "on-site" to mean "the areal extent of contamination and all suitable areas in very close proximity" (40 CFR 300.5). To ensure that CERCLA response actions proceed as rapidly as possible, the EPA has reaffirmed this position in the final National Contingency Plan (NCP) (55 *FR* 8756, March 8, 1990). *Substantive requirements* pertain directly to the actions or conditions at a site; *administrative requirements* facilitate their implementation. EPA recognizes that certain of the administrative requirements, such as consultation with state agencies, reporting, etc., are accomplished through the state involvement and public participation requirements of the NCP. These administrative requirements should be observed if they are useful in determining cleanup standards at the site (55 *FR* 8757). It is assumed for development of ARARs for the CR/PC OU that all remedial activities are "on-site."

1. CHEMICAL-SPECIFIC ARARs

"Chemical-specific requirements set health- or risk-based concentration limits or discharge limitations in various environmental media for specific hazardous substances, pollutants, or contaminants" (53 *FR* 51437). These requirements generally set protective cleanup levels for the chemicals of concern in the designated media or indicate a safe level of discharge that may be incorporated when a specific remedial activity is being considered. The only medium under consideration in the FS is contaminated sediment. However, ARARs for cleanup of contaminated surface water are presented here for comparison with surface water sampling results to confirm this decision. Potential chemicals of concern for human health and ecological receptors are listed in Chaps. 5 and 6, respectively, of this RI report.

1.1 Surface Water

Under the Tennessee Water Quality Control Act, the Tennessee Water Quality Control Board has classified the Clinch River for domestic water supply, industrial water supply, fish and aquatic life, recreation, irrigation, livestock watering and wildlife uses, and navigation [Chap. 1200-4-4 of the Rules of the Tennessee Department of Environment and Conservation (TDEC)]. Poplar Creek from mile 0.0 to 0.5 is classified for all but domestic water supply and navigation. Poplar Creek from mile 0.5 to 5.5 and McCoy Branch are classified for fish and aquatic life, recreation, irrigation, livestock watering, and wildlife uses.

TDEC has revised its water quality standards and promulgated the current Safe Drinking Water Act maximum contaminant levels (MCLs) as water quality criteria (WQC) for domestic water supplies (effective date August 30, 1991). Table D.1 lists these WQC for Clinch River. The EPA has promulgated an MCL for polychlorinated biphenyls (PCBs), effective July 1992. TDEC has proposed this MCL as a WQC for domestic water supply (Proposed 1994 Revisions to Water Quality Standards, December 5, 1994). The EPA has also promulgated an MCL of 4 mrem/year for man-made radionuclides in community water systems (40 CFR 141.16); if two or more radionuclides are present, the sum of their total dose equivalent shall not exceed 4 mrem/year.

TDEC includes WQC for protection of recreational uses (applicable for Clinch River, McCoy Branch, and Poplar Creek). These human health criteria are derived to protect the consumer from consumption of contaminated fish; these criteria are the WQC for the protection of human health from consumption of fish alone. For carcinogens, the TDEC WQC are based on a risk of 10^{-5} rather than the 10^{-6} risk on which the federal WQC are based. Federal WQC derived for the protection of human health from the consumption of aquatic organisms are listed in Table D.1 for those chemicals lacking a TDEC WQC for recreation. Proposed TDEC WQC for these chemicals are listed in parentheses on the table, and may be "to be considered" (TBC) guidance until promulgated (promulgation expected April 1995). Table D.1 also lists TDEC WQC for the protection of freshwater aquatic life.

1.2 Sediment

There is no legislation available governing cleanup criteria for protection of either humans or ecological receptors from contaminated sediments. However, in the EPA guidance report for remedial actions at Superfund sites containing PCBs, preliminary remediation goals (PRGs) are set at 1 ppm for residential land use (a risk of 10^{-5}) and between 10 and 25 ppm for industrial and/or remote areas (a risk of 10^{-4}). Alternatives should reduce concentrations to these levels, or limit exposures; EPA estimates that for every 10 in. of cap, risk is reduced by an order of magnitude. EPA also presents an approach to deriving cleanup levels for PCBs in sediments (EPA 1990). This approach results in "sediment quality criteria" as a function of organic carbon concentration and is meant to protect wildlife consumers of freshwater benthic species. The above values may be TBC guidance, not ARARs for estimation of PRGs for either protection of human health or ecological receptors.

2. RADIATION PROTECTION STANDARDS

Very few applicable standards are available for the cleanup of radioactive contamination at CERCLA sites. The Atomic Energy Act (AEA) of 1954 and its amendments delegated authority for control of nuclear energy to DOE, the U.S. Nuclear Regulatory Commission (NRC), and EPA.

DOE has proposed radiation protection requirements for the public and environment for all sources of exposure and from all DOE sources of radiation [10 CFR 834, Notice of Proposed Rulemaking (NPRM) 58 *FR* 16268, March 25, 1993; final rule expected May 1995]. The proposed rule, when final, would codify the requirements of DOE Order 5400.5. The radiation exposure limits as defined in proposed 10 CFR 834, "Radiation Protection of the Public and the Environment," are an effective dose equivalent of 100 mrem/year from all exposure pathways and all sources of radiation from the activity and from all other sources (excluding dose from radon and its decay products, diagnostic or therapeutic medical radiation exposures, consumer products, and natural background). In addition, effluent releases to surface water must not result in exposures to aquatic organisms that exceed an absorbed dose of 1 rad/d. The overriding principle of the regulation is that all releases of radioactive material shall be "as low as reasonably achievable" (ALARA). Until this rule is promulgated, it or DOE Order 5400.5 may be considered TBC guidance.

Residual radioactive material is defined in DOE Order 5400.5 as that level of radioactive material that is acceptable for use of property without restrictions on use. Residual concentrations of radionuclides in soils or sediments shall be derived using the basic dose limit of 100 mrem/year, and the DOE RESRAD model with site-specific input parameters or any other pathways analysis model, with DOE approval.

3. LOCATION-SPECIFIC ARARs

Location-specific requirements "set restrictions upon the concentration of hazardous substances or the conduct of activities solely because they are in special locations" (53 *FR* 51437). Preconstruction activities performed for alternative 3, such as building of access roads or removal of bank vegetation, as well as actual containment construction activities, may trigger certain location-specific ARARs. The following location-specific ARARs will not apply to either the no action or the institutional controls alternatives since no such activities will be performed.

3.1 Wetlands and floodplains

The Clinch River drainage basin includes a number of wetland areas that may require protection. If any preconstruction or construction activities would affect such wetlands, consideration should be given to Executive Order 11990 and 10 CFR 1022 for applicable requirements. In addition, regulations protecting floodplains are found in Executive Order 11988 and 10 CFR 1022. Table D.2 summarizes the substantive portions of these regulations.

3.2 Aquatic Resources

As mentioned previously, CERCLA on-site remedial response actions must comply only with the substantive requirements of a regulation and not the administrative requirements to obtain federal, state, or local permits [CERCLA § 121(e)]. However, the TVA, the U. S. Army Corps of Engineers (COE), and the TDEC Division of Water Pollution Control retain authority for approving activities impacting TVA lands, waters of the United States, or waters of the state, respectively.

3.2.1 TVA authority

The TVA Act § 26a regulates lands under TVA jurisdiction within the Tennessee River Valley. Sect. 26(a) requires that TVA approval be obtained prior to the "construction, operation, or maintenance of any dam, appurtenant works, or other obstruction affecting navigation, flood control, or public lands

or reservations along or in the Tennessee River or any of its tributaries." On-shore capping activities within the 100- or 500-year floodplain as well as other activities, such as road construction, may require a Section 26(a) authorization; use of TVA public use boat ramps for dredging operations might require land use permits.

3.2.2 COE authority

The substantive requirements of the COE authorization for activities occurring in navigable waters, under the authority of § 10 of the Rivers and Harbors Act (RHA), or waters of the United States, under the authority of § 404 of the Clean Water Act (CWA), may also be triggered (Table D.2). CERCLA activities must comply with the substantive requirements of any permitting process. COE Regulatory Guidance Letter 85-7 and its extension adopt this policy for on-site EPA or state response actions at the location of the release or threatened release pursued under the authority of CERCLA.

The COE has established the ordinary high water mark for impoundments to be the normal summer pool elevation; for Watts Bar Lake, this elevation is El. 741.0 msl. A regional survey by the COE identified "navigable waters" in the area (Public Notice ORNOR-F86-23, May 8, 1986); Poplar Creek from its mouth to River Mile 18.3 has been designated a navigable water. However, no tributaries to Poplar Creek have received such a designation.

The COE Nationwide Permit (NWP) program establishes COE authorization for activities that have minimal impact on "waters of the U.S." (33 CFR 330, Appendix A). NWP 38 authorizes activities required to effect the containment, stabilization, or removal of hazardous and toxic materials by a government agency with established legal or regulatory authority, provided the COE District Engineer is notified in accordance with the "Notification" general condition [33 CFR 330, Appendix A(C)(13)]. Other NWPs that might apply are NWP 13 (*Bank Stabilization*) and NWP 18 (*Minor Discharges*).

If an activity does not meet all the requirements of an NWP, or involves alterations that cause more than minimal individual or cumulative adverse effects to waters of the United States, an individual permit application may be required, with further substantive requirements dictated by the COE. Note that as mentioned previously, administrative and procedural requirements are not ARARs for on-site CERCLA activities. However, adherence to the COE notification process is strongly recommended by EPA because of the effectiveness of the COE permitting process in identifying and protecting sensitive resources.

3.2.3 TDEC authority

The substantive requirements of the TDEC Aquatic Resource Alteration regulations found at Chapter 1200-4-7 may be applicable to preconstruction or construction activities. General permits exist for activities that would cause minimal individual or cumulative impacts to water quality, and included permits are available for such things as bank stabilization and debris removal. Individual permits are required for activities that cannot meet the conditions of the general permits, which include a prohibition of activities in waterways containing contaminated sediments. However, permits are not required for CERCLA activities [CERCLA § 121(e) and FFA § XXII]. If any remedial actions at the CR/PC OU cannot be accomplished under the substantive general permit conditions, consultation with TDEC is recommended to ensure that TDEC is aware of the portion of the river affected and the character and scope of the project with sufficient detail to determine probable water quality impacts.

3.3 Endangered and Threatened Species

DOE had designated areas on the ORR as DOE-National Environmental Research Park (NERP) Natural Areas (NAs), which have been established to protect rare plant and animal species. One such area, NA-8, the McCoy Embayment "barren" has also been registered as a state NA as it contains a state-listed endangered species of plant, the tall larkspur (*Delphinium exaltatum*). Construction activities that would affect this area must be avoided (TCA 11-14-101 *et seq.*).

The possibility exists that there may be other protected species of plants in the area of this OU. Should any remedial activity in the CR/PC OU affect any federal-listed endangered or threatened plant species, the provisions found in the Endangered Species Act of 1973 (16 USC 1531 *et seq.*) and 50 CFR 402 may be applicable.

3.4 Archaeological and Historical Resources

There have been no known cultural resource surveys of the entire area found in the CR/PC OU; however, surveys that encompassed portions of the Clinch River indicate the presence of archaeological and historical resources. Therefore, before the start of any ground-breaking activities, consultation should be initiated with the Tennessee State Historic Preservation Officer and Advisory Council on Historic Preservation, pursuant to §106 of the National Historic Preservation Act (16 USC 470f) and its implementing regulations (36 CFR 800). Although such consultation is an administrative requirement, and not required for on-site activities, such consultation will ensure compliance with the substantive requirements of any other applicable cultural resource laws [Archaeological Resources Recovery Act (16 USC 470aa-ll), 43 CFR 7, Archaeological and Historic Preservation Act (16 USC 469a-c)].

Several cemeteries can be found along Poplar Creek. Building of any access roads or general construction activities must avoid damaging any gravesites pursuant to TCA 39-17-311.

4. ACTION-SPECIFIC ARARS

Performance, design, or other action-specific requirements set controls or restrictions on particular kinds of activities related to the management of hazardous waste (53 FR 51437). Selection of a particular remedial action at a site will invoke the appropriate action-specific ARARs that may specify particular performance standards or technologies, as well as specific environmental levels for discharged or residual chemicals. Remediation alternatives include (1) no action, (2) institutional controls and advisories, and (3) containment combined with institutional controls. Section 10 of the FS report presents a detailed analysis of these alternatives.

4.1 No Action Response

As confirmed by EPA Guidance (OSWER Directive 9234.2-01/FS-A, June 1991, "ARARs Q's and A's"), there are no ARARs for the no action alternative.

4.2 Use of Institutional Controls and Advisories

Institutional controls could be implemented to limit access and exposure. There are no regulatory requirements specifying institutional controls for CERCLA units. However, the NCP at 40 CFR 300.430(e)(3)(ii) suggests consideration of one or more alternatives that involve little or no treatment,

but provide protection of human health and the environment through the use of institutional controls. The preamble to the NCP provides examples of institutional controls that include land and water use restrictions, deed restrictions, well-drilling prohibitions, building permits, and well use advisories and deed notices (55 *FR* 3706). In addition, DOE Order 5400.5, Chapter IV, requires administrative (institutional) controls for long-term management in areas containing residual radioactivity. Active controls specified in the Order, which may be considered TBC guidance include land restrictions, fences, and warning signs.

Although not an ARAR for the CR/PC OU, institutional controls in the form of statutory authority of either TDEC or the TVA and the COE are already in place. An Interagency Agreement (IAG) for WBR Permit Coordination has been signed by TDEC, COE, TVA, and DOE. Under this agreement, a screening list identifies three categories of actions disturbing sediments: no significant sediment disturbance (NSSD); marginal sediment disturbance (MSD); and potential major sediment disturbance (PMSD). The screening list of action categories was amended to include in the NSSD category all proposed projects (other than between CRM 4.3 and White Oak Creek) if the project does not have any sediment disturbance below Elev. 735 msl, and provided the work is accomplished when pool elevation is below the project site (Amendment 1, IAG Watt's Bar Reservoir Permit Coordination, January 28, 1992). For permit applications for activities that fall within the MSD or PMSD categories, DOE must supply existing sediment data and acquire additional sediment data if needed [IAG, Sect. IV(C)].

Under the Tennessee Water Quality Control Act, § 69-3-107(15), authority is granted the Commission to "inspect waters of the state where good cause is shown that the public health is threatened by pollutants therein, and, upon verification by the commissioner, post or cause to be posted such signs as required to give notice to the public of the potential or actual dangers of specific uses of such waters or restrictions of uses thereof." To that end, posting of advisories is not an ARAR or TBC for remediation of the CR/PC OU; however, it implements the institutional controls suggested for alternatives 2 and 3 (i.e., posting of warning signs).

Currently, the TDEC Division of Water Pollution Control develops fish advisories based on the Food and Drug Administration (FDA) action levels for poisonous or deleterious substances in human food. "Do not consume" advisories are issued when warranted for the protection of typical consumers and a "precautionary advisory" is issued when warranted for protection of atypical consumers. Atypical consumers are those especially sensitive due to physiological factors or previous exposures.

The TDEC Division of Water Pollution Control has issued proposed revisions to Chapt. 1200-4-3 and 1200-4-4 of the TDEC Water Quality Standards. This proposal includes the modification and promulgation of procedures for issuing fish advisories. The revision would create a new subparagraph regarding fish consumption advisories [TDEC 1200-4-3-.03(j)]. Such advisories would be warranted if the calculated risk of additional cancer risk exceeds 10^{-4} for typical consumers and 10^{-5} for atypical consumers. The proposed change includes a methodology for calculating risk. Notices are posted for "Do not consume advisories" and "Precautionary advisories," as described above. This rule was submitted to the Attorney General's Office in December 1994; promulgation of the final rule is expected in April 1995).

4.3 Containment

This alternative is proposed only for Poplar Creek and upper and lower McCoy Branch. Source containment options include capping near-shore or on-shore contaminated sediments. Containment activities will be combined with turbid water technologies to decrease the release of sediments into the

streams. Activities in wetlands and floodplains should be designed to minimize impacts and restore and preserve natural and beneficial uses (see Sect. 3 of this Appendix for location-specific ARARs).

4.3.1 Fugitive dust control

Preconstruction activities such as building of access roads or equipment movement may result in airborne pollutants. The primary concern is elevation of particulate concentrations. The TDEC Division of Air Pollution Control (APC) has promulgated regulations governing fugitive dust emissions (TDEC 1200-3-8-.01). These are listed in Table D.2, and are applicable to remedial activities at the OU.

4.3.2 Turbidity controls

Storm water discharges from activities at industrial sites involving construction operations that result in the disturbance of 5 acres or more total land have been included in the final rule for National Pollutant Discharge Elimination System (NPDES) permits for storm water discharges (40 CFR 122) and incorporated into the TDEC permitting regulations. Consultation with TDEC is required to ensure compliance with the substantive requirements of the NPDES permitting process for storm water discharges during construction activities (TDEC 1200-4-10-.05). These requirements are listed in Table D.2 and would be applicable to remedial activities impacting 5 acres or more, and relevant and appropriate for those affecting less than 5 acres.

The Tennessee Antidegradation Statement (TDEC 1200-4-3-.06) requires that all cost effective and reasonable best management practices for nonpoint-source control shall be implemented; this would be applicable for turbidity control of sediments released during construction of containment areas. In addition, the TDEC narrative WQC for protection of aquatic life prohibits the presence of turbidity in such amounts or of such character that will materially affect fish and aquatic life [TDEC 1200-4-3-.03(d)].

REFERENCES

- EPA (U.S. Environmental Protection Agency). 1990. *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*, EPA/540/G-90/007, EPA Office of Emergency and Remedial Response, Washington, DC, August.
- Suter, G.W. II, M.A. Futrell, and G.A. Kerchner, 1992. *Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on the Oak Ridge Reservation, Oak Ridge, Tennessee*. ORNL/ER-139, Environmental Restoration Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Table D.1. Tennessee water quality criteria for designated water uses ($\mu\text{g/L}$)^a

Chemical	Domestic water supply	Recreation ^b	Fish and aquatic life	
			CMC ^c	CCC ^d
COCs^e for human health				
Arsenic ^b	50	1.4 ^f		
Antimony	NA	NA		
Manganese	50 ^g	NA		
Silver	NA	NA ^h		
Phthlates				
Bis(2-ethylhexyl)phthalate ^b	6	59		
di-n-Octyl phthalate				
Polychlorinated biphenyls (total) ^b	0.5	0.00045 ^f		
All man-made radionuclides	4 mrem/year ⁱ	NA		
COCs for Ecological receptors				
Cadmium ^j			4	1
Carbon disulfide			NA	NA
Copper ^j			18	12
Iron				1000
Mercury			2.4	0.012
Nickel			1400	160
Bis(2-ethylhexyl)phthalate			NA	NA
Polychlorinated biphenyl 1254			NA	0.001
Silver ^j			4	NA
Zinc ^j			117	106
All man-made radionuclides			NA	1 rad/day ^k

^aRules of the TDEC, Chapter 1200-4-3.^bIngestion of aquatic organisms only. Based on a 10^{-5} risk level for carcinogens.^cCMC = criterion maximum concentration.^dCCC = criterion continuous concentration.^eCOC = contaminant of concern^fTDEC has proposed WQC for these chemicals; they currently may be considered TBC guidance. However, when promulgated they will be applicable (Proposed 1994 Revisions to Water Quality Standards expected to be promulgated April 1995).^g^hWQC withdrawn in the National Toxics Rule [57 FR 60848 (December 22, 1992)]. TDEC has proposed to remove these WQC from their standards (Final rule expected April 1995).ⁱAnnual dose equivalent to total body or any internal organ (40 CFR 141.16).^jCalculated for a water hardness of 100 mg/L, the approximate average hardness of the Clinch River; values presented are for the dissolved form of this metal (Suter et al. 1992).^kDOE Order 5400.5, "Radiation Protection of the Public and the Environment" (Proposed as 10 CFR 834, 58 FR 16268, March 25, 1993) (TBC guidance).

Table D2. ARARs^a and TBC^b guidance for alternatives 1-3 for the Clinch River/Poplar Creek OU

Actions	Requirements	Prerequisites	Citation
Alternative 1 - no action	None	No remedial actions are implemented - TBC	OSWER ^d Directive 9234.2-01/FS-A
Alternative 2 - Institutional controls	Residual concentrations of radionuclides in soils shall be derived using the basic dose limit of 100 mrem/year, and the DOE^e RESRAD^f model with site-specific input parameters The general public must not receive an effective dose equivalent greater than 100 mrem/year All releases of radioactive material must be "as low as reasonably achievable" (ALARA) None	Residual radioactive materials left in place without restrictions - TBC	DOE Order 5400.5(IV)
Chemical- or radionuclide-specific		Dose received by the general public from all sources of radiation exposure and routine activities, including remedial action, at a DOE facility - TBC	DOE Order 5400.5
Location-specific		Releases of radioactive material from DOE activities — TBC	DOE Order 5400.5
Action-specific	Controls include periodic monitoring, as appropriate; appropriate shielding; physical barriers to prevent access, fences, warning signs, and restrictions on land use Controls recommended for long-term management of contamination left in place include restrictions on land use, deed restrictions, well-drilling prohibitions, etc.	Interim management of residual radioactive material above acceptable dose limits - TBC	DOE Order 5400.5(IV)(6)(c)
Institutional controls		Long-term management of contamination left in place - TBC	40 CFR ^g 300.430(c)(3)
Alternative 3 - containment	The general public must not receive an effective dose equivalent greater than 100 mrem/year All releases of radioactive material must be "as low as reasonably achievable" (ALARA)	Dose received by the general public from all sources of radiation exposure and routine activities, including remedial action, at a DOE facility - TBC	DOE Order 5400.5
Chemical- or radionuclide-specific		Releases of radioactive material from DOE activities — TBC	DOE Order 5400.5

Table D2 (continued)

Actions	Requirements	Prerequisites	Citation
Location-specific			
Presence of wetlands as defined in Executive Order 11990 §7(c)	Residual concentrations of radionuclides in soils shall be derived using the basic dose limit of 100 mrem/year, and the DOE RESRAD model with site-specific input parameters	On-shore placement of residual radioactive materials without restrictions - TBC	DOE Order 5400.5(IV)
	Whenever possible, actions involving federal activities and programs affecting land use must avoid or minimize adverse impacts on wetlands and act to preserve and enhance their natural and beneficial values. New construction in wetlands areas should be particularly avoided unless there are no practicable alternatives. Wetlands protection considerations shall be incorporated into planning, regulating, and decision-making processes	Actions taken in wetlands areas - applicable	Executive Order 11990; 10 CFR 1022
Presence of wetlands as defined in 40 CFR 230.3(t) and 33 CFR 328.3(b)	Action to avoid degradation or destruction of wetlands must be taken to the extent possible. Discharges for which there is a practicable alternative with less adverse impacts or those which would cause or contribute to significant degradation are prohibited	Actions taken in wetlands areas - applicable	Clean Water Act §404 40 CFR 230 33 CFR 323
Activities in "waters of the U.S." as defined in 40 CFR 230.3	Compliance with the general and specific terms and conditions of NWP ¹ 13 (<i>Bank Stabilization</i>), NWP 18 (<i>Minor Discharges</i>), NWP 38 (<i>Cleanup of Hazardous and Toxic Waste</i>), or others if authorized by COE ¹ for minor adverse environmental effects *	Actions taken in "waters of the U.S." - applicable	33 CFR 330, Appendix A
	Notification to COE to ensure compliance with the substantive requirements of the individual permitting process for alterations to "waters of the U.S." which cause more than minimal individual or cumulative adverse environmental effects *	Actions taken in "waters of the U.S." - applicable	33 CFR 325.1

Table D2 (continued)

Actions	Requirements	Prerequisites	Citation
Within area encompassing or affecting waters of the state of Tennessee as defined in TCA 69-3-103(32)	Discharge of "substances" into the waters of the state which "will result or will likely result in harm, potential harm or detriment to the health of animals, birds, fish, or aquatic life" is prohibited	Actions taken in "waters of the state" - applicable	TCA 69-3-101 <i>et seq.</i> ; TDEC 1200-4-4
Within "lowland and relatively flat areas adjoining inland and coastal waters and other floodprone areas....." [Executive Order 11988 §6(c)]	Compliance with the substantive requirements of general or individual aquatic resource alteration permit process for bank stabilization, channel relocation, wetlands disturbance* Action shall be taken to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values of floodplains during federal activities involving acquisition, management, and disposition of lands and facilities or conducting any federal activities and programs affecting land use. The potential effects of actions in floodplains shall be evaluated and considered of flood hazards and floodplain management ensured. If action is taken in floodplains, alternatives that avoid adverse effects and incompatible development and minimize potential harms shall be considered	Actions taken in "waters of the state" - applicable Actions taken in floodplains - applicable	TDEC 1200-4-7 Executive Order 11988; 10 CFR 1022
Presence of endangered or threatened species or critical habitat of such species as designated in 50 CFR 17, 50 CFR 226, or 50 CFR 227	Actions that jeopardize species/habitats must be avoided or appropriate mitigation measures taken. Consultation with Department of Interior and/or state agencies is required for CERCLA off-site activities and recommended for CERCLA on-site activities	Action that is likely to jeopardize or adversely modify critical habitat - applicable to off-site activities	Endangered Species Act (16 USC 1531 <i>et seq.</i>); 50 CFR 402; Tennessee Rare Plant Protection and Conservation Act (TCA 11-26-201 <i>et seq.</i>)
Location encompassing a state-designated natural area	The scientific, scenic, recreational, and educational values of these areas must be preserved and steps taken to prevent impairment	Actions which are likely to impact or adversely modify designated natural areas - applicable	TCA 11-14-101 <i>et seq.</i>
Presence of archaeological and historical resources on public land	Consultation with Tennessee State Historic Preservation Officer and Advisory Council on Historic Preservation before the initiation of any ground-breaking activities for off-site CERCLA actions. Steps must be taken to mitigate adverse effects on such resources.	Action that would affect archaeological or historical resources - applicable to off-site activities	National Historic Preservation Act (16 USC 470; 36 CFR 800 <i>et seq.</i>)

Table D2 (continued)

Actions	Requirements	Prerequisites	Citation
Presence of cemetery	It is unlawful to intentionally desecrate a place of burial	Actions which would impact a cemetery - appli- cable	TCA 39-17-311
Action-specific			
Construction/containment activities	Use sediment and erosion controls and best management practices to control run-off from construction activities at an industrial site that result in disturbances of 5 acres or greater total land	Construction activities at industrial sites - relevant and appropriate	40 CFR 122 TDEC 1200-4-10-.05
Turbidity controls	Prohibits the presence of turbidity in such amounts or of such character that will materially affect fish and aquatic life Requires that all cost effective and reasonable best management practices for nonpoint source control shall be implemented	Containment activities in "waters of the state" - applicable	TDEC 1200-4-3-.03(d)
Fugitive dust controls during preconstruction activities (road building, bank stabilization)	Take reasonable precautions to prevent particulate matter from becoming airborne; no visible emissions are permitted beyond property boundary lines for more than 5 min/hr or 20 min/day.	Containment activities in "waters of the state" - applicable	TDEC 1200-3-8-.010

^aARARs = applicable or relevant and appropriate requirements.

^bTBC = to be considered; all entries on table are potential ARARs unless noted as TBC.

^cTDEC = Tennessee Department of Environment and Conservation.

^dOSWER = EPA Office of Solid Waste and Emergency Response.

^eDOE = U.S. Department of Energy.

^fRESRAD = residual radioactive materials guidelines.

^gCFR = Code of Federal Regulations.

^hNWP = Nationwide Permit.

ⁱCOE = U.S. Army Corps of Engineers

^jTCA = Tennessee Code Annotated.

* = Although administrative and procedural requirements are not ARARs for on-site CERCLA activities, adherence to these steps is strongly recommended by EPA because of the effectiveness of these procedures in identifying and protecting sensitive resources.

