

APPENDIX B

CHEMICAL ANALYTES AND ANALYTICAL METHODS

Table B-1.
Field Measurements and Chemical Analyses of Water Samples

Analyte	Analysis Method	Water Target Reporting Limit ^a	Units
Temperature	Field Measurement	--	°C
Specific Conductivity	Field Measurement	--	µS/cm
Salinity	Field Measurement	--	ppt
pH	Field Measurement	--	pH units
Dissolved Oxygen	Field Measurement	--	mg/L
Transmissivity	Field Measurement	--	%
Dissolved Organic Carbon (DOC)	SM 5310 B	0.5	mg/L
Total Organic Carbon (TOC)	SM 5310 B	0.5	mg/L
Total Suspended Solids (TSS)	SM 2540 D	1.0	mg/L
Ammonia as N	SM 4500-NH ₃ D	0.05	mg/L
Nitrate as N	SM 4500-NO ₃ E	0.05	mg/L
Total Orthophosphate as P	SM 4500-P E	0.05	mg/L
Oil and Grease	EPA 1664B	1.0	mg/L
Methylene Blue Active Substances (MBAS)	SM 5540 C	0.05	mg/L
Aluminum ^b	EPA 1640	6.0	µg/L
Antimony ^b	EPA 1640	0.015	µg/L
Arsenic ^b	EPA 1640	0.015	µg/L
Barium ^b	EPA 200.8	0.5	µg/L
Beryllium ^b	EPA 1640	0.01	µg/L
Cadmium ^b	EPA 1640	0.005	µg/L
Chromium ^b	EPA 1640	0.025	µg/L
Cobalt ^b	EPA 1640	0.01	µg/L
Copper ^b	EPA 1640	0.01	µg/L
Iron ^b	EPA 1640	1.0	µg/L
Lead ^b	EPA 1640	0.005	µg/L
Manganese ^b	EPA 1640	0.02	µg/L
Mercury ^b	EPA 245.7	0.02	µg/L
Molybdenum ^b	EPA 1640	0.01	µg/L
Nickel ^b	EPA 1640	0.005	µg/L
Selenium ^b	EPA 1640	0.015	µg/L
Silver ^b	EPA 1640	0.02	µg/L
Thallium ^b	EPA 1640	0.01	µg/L
Tin ^b	EPA 1640	0.01	µg/L
Titanium ^b	EPA 1640	0.07	µg/L
Vanadium ^b	EPA 1640	0.04	µg/L
Zinc ^b	EPA 1640	0.005	µg/L
Polycyclic Aromatic Hydrocarbons (PAHs) ^c	EPA 625.1	5.0	ng/L

Notes:

a. Physis Environmental Laboratories, Inc. provided water target reporting limits.

b. Metals analysis consisted of both total and dissolved fractions. Samples for the dissolved fraction were filtered in the field immediately after collection.

c. Includes 1-methylnaphthalene, 1-methylphenanthrene, 2,3,5-trimethylnaphthalene, 2,6-dimethylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[e]pyrene, benzo[g,h,i]perylene, benzo[k]fluoranthene, biphenyl, chrysene, dibenz[a,h]anthracene, dibenzothiophene, fluoranthene, fluorene, indeno[1,2,3-c,d]pyrene, naphthalene, perylene, phenanthrene, and pyrene

°C = degree(s) Celsius; µg/L = microgram(s) per liter; µS/cm = microSiemen(s) per centimeter; EPA = United States Environmental Protection Agency; mg/L = milligram(s) per liter; N = nitrogen; ng/L = nanogram(s) per liter; P = phosphorus; ppt = part(s) per thousand; RL = reporting limit; SM = Standard Method

Table B-2.
Physical Characteristics and Chemical Analyses of Sediment Samples

Analyte	Analysis Method	Sediment Target Reporting Limit ^a	Units
Total Solids	SM 2540 B	0.1	%
Total Organic Carbon (TOC)	EPA 9060	0.01	%
Grain Size	SM 2560 D	0.1	%
Ammonia as N	SM 4500-NH ₃ D	0.2	mg/kg
Total Nitrogen	EPA 9060	4.0	mg/kg
Total Phosphorus	EPA 6020	4.0	mg/kg
Acid Volatile Sulfides	Plumb 1981 & TERL	0.1	mg/kg
Simultaneous Extracted Metals	EPA 200.8	0.0004–0.0124	μmol/g
Aluminum	EPA 6020	N/A	mg/kg
Antimony	EPA 6020	0.05	mg/kg
Arsenic	EPA 6020	0.05	mg/kg
Barium	EPA 6020	N/A	mg/kg
Beryllium	EPA 6020	0.05	mg/kg
Cadmium	EPA 6020	0.01	mg/kg
Chromium	EPA 6020	0.05	mg/kg
Copper	EPA 6020	0.01	mg/kg
Iron	EPA 6020	5.0	mg/kg
Lead	EPA 6020	0.01	mg/kg
Mercury	EPA 245.7	0.02	mg/kg
Nickel	EPA 6020	0.02	mg/kg
Selenium	EPA 6020	0.05	mg/kg
Silver	EPA 6020	0.02	mg/kg
Zinc	EPA 6020	0.05	mg/kg
Polycyclic Aromatic Hydrocarbons (PAHs) ^b	EPA 8270E	5.0	μg/kg
Chlorinated Pesticides ^c	EPA 8270E	0.5–20	μg/kg
Pyrethroid Pesticides ^d	EPA 8270E-MRM	0.5	μg/kg
Polychlorinated Biphenyl (PCB) Congeners ^e	EPA 8270E	0.25	μg/kg
Polybrominated Diphenyl Ethers (PBDEs) ^f	EPA 8270E-NCI	0.1	μg/kg
Neonicotinoids ^{g, i}	EPA 8270E-MRM	5.0	μg/kg
Per- and Polyfluoroalkyl Substances (PFAS) ^{h, j}	EPA 1633	1.0	μg/kg
Tire-wear Compounds ^{i, j}	EPA 8270E	10	μg/kg
Microplastics ^j	SCCWRP, 2023b	N/A	N/A

Notes:

- a. Sediment target reporting limits provided by Physis Environmental Laboratories, Inc. are on a dry-weight basis.
- b. Includes 1,6,7-trimethylnaphthalene, 1-methylnaphthalene, 1-methylphenanthrene, 2,6-dimethylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[e]pyrene, benzo[g,h,i]perylene, benzo[k]fluoranthene, biphenyl, chrysene, dibenz[a,h]anthracene, dibenzothiophene, fluoranthene, fluorene, indeno[1,2,3-c,d]pyrene, naphthalene, perylene, phenanthrene, and pyrene
- c. Includes 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, 4,4'-DDMU, 4,4'-DDT, aldrin, BHC-alpha, BHC-beta, BHC-delta, BHC-gamma, cis-chlordane, trans-chlordane, cis-nonachlor, DCPA (Dacthal), dicofol, dieldrin, endosulfan sulfate, endosulfan-I, endosulfan-II, endrin, endrin aldehyde, endrin ketone, heptachlor, heptachlor epoxide, methoxychlor, mirex, oxychlordane, perthane, toxaphene, and trans-nonachlor.
- d. Includes allethrin, bifenthrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, Danitol (fenpropathrin), deltamethrin/tralomethrin, esfenvalerate, fenvalerate, fluralinate, cis-permethrin, trans-permethrin, and prallethrin.
- e. Includes congeners: PCB-3, 5, 8, 15, 18, 27, 28, 29, 31, 33, 37, 44, 49, 52, 56(60), 66, 70, 74, 77, 81, 87, 95, 97, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 137, 138, 141, 149, 151, 153, 156, 157, 158, 167, 168+132, 169, 170, 174, 177, 180, 183, 187, 189, 194, 195, 199(200), 201, 203, 206, and 209.
- f. Includes PBDE-17, 28, 47, 49, 66, 85, 99, 100, 138, 153, 154, 183, 190, and 209.
- g. Includes acetamiprid, clothianidin, imidacloprid, thiacloprid, and thiamethoxam.
- h. Includes perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA).
- i. Includes 6PPD-quinone.
- j. Analyses for contaminants of emerging concern and microplastics only occurred at a subset of stations (see Table 2-1).
- μg/kg = microgram(s) per kilogram; μmol/g = micromole(s) per gram; EPA = United States Environmental Protection Agency; mg/kg = milligram(s) per kilogram; N = nitrogen; N/A = not applicable; RL = reporting limit; SCCWRP = Southern California Coastal Water Research Project; SM = Standard Method