

## **Appendix 5. Metal Concentrations in Sediment and Colloid Samples**

Table A5-1. Concentrations of selected elements in streambed sediment samples.

Table A5-2. Concentrations of selected elements in suspended colloid samples.

Table A5-3. Concentrations of selected elements in sequentially extracted suspended colloid samples.

**Table A5-1.** Concentrations of selected elements in streambed sediment samples

[Br., Bridge; Cr., Creek; R., River; Sac., Sacramento. mm/yy, month/year; µg/g, microgram per gram; µm, micrometer. &lt;, less than the indicated detection limit]

Sampling Site	Size Fraction	Date (mm/yy)	Aluminum (µg/g)	Antimony (µg/g)	Barium (µg/g)	Beryllium (µg/g)	Bismuth (µg/g)	Cadmium (µg/g)
Sac. R.–Rodeo	< 62 µm	10/96	76,000 ± 0	3.4 ± 0	350 ± 10	< 0.7 ± 0.07	1.6 ± 0.1	2.7 ± 0
Sac. R.–Churn Cr.	< 62 µm	10/96	67,000 ± 1,000	2.7 ± 0	400 ± 0	0.75 ± 0.05	0.92 ± 0.04	3.6 ± 0.2
Sac. R.–Balls Ferry	< 62 µm	10/96	84,000 ± 2,000	1.5 ± 0	510 ± 10	1.2 ± 0.1	0.53 ± 0.03	1.5 ± 0.1
Sac. R.–Bend Br.	< 62 µm	10/96	75,000 ± 2,000	1.1 ± 0	500 ± 0	0.99 ± 0.03	< 0.4 ± 0.02	0.91 ± 0.16
Sac. R.–Tehama	< 62 µm	10/96	58,000 ± 2,000	2.2 ± 0.1	260 ± 0	1.1 ± 0.1	0.53 ± 0.03	1.3 ± 0.1
Sac. R.–Colusa,	< 62 µm	11/96	71,000 ± 2,000	0.85 ± 0.02	460 ± 0	0.88 ± 0.06	< 0.4 ± 0.03	0.9 ± 0.09
Sac. R.–Verona	< 62 µm	11/96	76,000 ± 2,000	1.0 ± 0.1	470 ± 0	1.3 ± 0	< 0.5 ± 0.03	0.84 ± 0.02
Sac. R.–Freeport	< 62 µm	11/96	67,000 ± 2,000	0.97 ± 0.02	400 ± 0	1.1 ± 0.1	< 0.4 ± 0.01	0.82 ± 0.04
Cottonwood Cr.	< 62 µm	10/96	70,000 ± 0	1.1 ± 0	480 ± 0	1.2 ± 0.2	< 0.5 ± 0.01	0.39 ± 0.03
Cottonwood Cr.	< 62 µm	6/97	68,000 ± 1,000	1.1 ± 0	440 ± 0	1 ± 0.1	0.73 ± 0.03	0.37 ± 0.06
Cottonwood Cr.	whole sediment	6/97	62,000 ± 1,000	< 0.8 ± 0.05	490 ± 0	1 ± 0	0.66 ± 0.05	0.19 ± 0.04

  

Sampling Site	Size Fraction	Date (mm/yy)	Calcium (µg/g)	Cerium (µg/g)	Chromium (µg/g)	Cobalt (µg/g)	Copper (µg/g)	Dysprosium (µg/g)
Sac. R.–Rodeo	< 62 µm	10/96	12,000 ± 0	13 ± 1	110 ± 0	18 ± 0	240 ± 10	3.4 ± 0.2
Sac. R.–Churn Cr.	< 62 µm	10/96	13,000 ± 0	15 ± 0	140 ± 10	17 ± 0	250 ± 0	3.4 ± 0
Sac. R.–Balls Ferry	< 62 µm	10/96	15,000 ± 0	20 ± 0	140 ± 0	21 ± 0	100 ± 0	3.1 ± 0.1
Sac. R.–Bend Br.	< 62 µm	10/96	15,000 ± 0	25 ± 0	230 ± 0	22 ± 1	75 ± 2	3.4 ± 0
Sac. R.–Tehama	< 62 µm	10/96	19,000 ± 1,000	14 ± 0	180 ± 10	22 ± 0	78 ± 2	2.7 ± 0
Sac. R.–Colusa,	< 62 µm	11/96	16,000 ± 0	21 ± 0	210 ± 0	19 ± 0	70 ± 1	3.3 ± 0.2
Sac. R.–Verona	< 62 µm	11/96	18,000 ± 0	27 ± 0	250 ± 10	24 ± 1	78 ± 1	3.8 ± 0
Sac. R.–Freeport	< 62 µm	11/96	19,000 ± 0	22 ± 0	260 ± 0	22 ± 0	67 ± 2	3.2 ± 0.1
Cottonwood Cr.	< 62 µm	10/96	12,000 ± 0	18 ± 1	230 ± 0	23 ± 0	61 ± 2	2.8 ± 0
Cottonwood Cr.	< 62 µm	6/97	11,000 ± 0	17 ± 0	240 ± 0	21 ± 0	62 ± 3	2.6 ± 0
Cottonwood Cr.	whole sediment	6/97	11,000 ± 0	17 ± 0	240 ± 0	21 ± 0	45 ± 1	2.1 ± 0.1

**Table A5-1.** Concentrations of selected elements in streambed sediment samples—*Continued*

Sampling Site	Size Fraction	Date (mm/yy)	Erbium (µg/g)	Europium (µg/g)	Gadolinium (µg/g)	Holmium (µg/g)	Iron (µg/g)	Lanthanum (µg/g)
Sac. R.—Rodeo	< 62 µm	10/96	2.2 ± 0.2	0.70 ± 0.01	4.5 ± 0.3	0.64 ± 0.04	56,000 ± 1,000	4.7 ± 0.3
Sac. R.—Churn Cr.	< 62 µm	10/96	2.2 ± 0.1	0.62 ± 0.02	4.1 ± 0.1	0.61 ± 0	56,000 ± 2,000	5.4 ± 0.2
Sac. R.—Balls Ferry	< 62 µm	10/96	2.0 ± 0	0.67 ± 0.03	3.8 ± 0.1	0.58 ± 0.03	61,000 ± 2,000	6.9 ± 0
Sac. R.—Bend Br.	< 62 µm	10/96	2.1 ± 0.1	0.79 ± 0.02	4.5 ± 0	0.61 ± 0.01	49,000 ± 2,000	11 ± 0
Sac. R.—Tehama	< 62 µm	10/96	1.7 ± 0.1	0.63 ± 0	3.4 ± 0	0.53 ± 0	48,000 ± 2,000	4.8 ± 0
Sac. R.—Colusa,	< 62 µm	11/96	1.9 ± 0	0.76 ± 0.03	4.4 ± 0.2	0.62 ± 0.01	48,000 ± 1,000	8.1 ± 0
Sac. R.—Verona	< 62 µm	11/96	2.3 ± 0	0.87 ± 0.05	5.2 ± 0.1	0.68 ± 0.01	58,000 ± 2,000	11 ± 0
Sac. R.—Freeport	< 62 µm	11/96	2.0 ± 0.1	0.77 ± 0.02	4.4 ± 0.1	0.57 ± 0.02	54,000 ± 2,000	7.9 ± 0.2
Cottonwood Cr.	< 62 µm	10/96	1.8 ± 0.1	0.61 ± 0.01	3.5 ± 0.1	0.5 ± 0.02	50,000 ± 2,000	6.0 ± 0.2
Cottonwood Cr.	< 62 µm	6/97	1.6 ± 0.1	0.64 ± 0.03	3.8 ± 0.2	0.47 ± 0.02	55,000 ± 0	5.5 ± 0.2
Cottonwood Cr.	whole sediment	6/97	1.4 ± 0.1	0.57 ± 0.02	3.1 ± 0.2	0.37 ± 0.01	45,000 ± 0	701 ± 0.1

Sampling Site	Size Fraction	Date (mm/yy)	Lead (µg/g)	Lithium (µg/g)	Lutetium (µg/g)	Magnesium (µg/g)	Manganese (µg/g)	Mercury (µg/g)
Sac. R.—Rodeo	< 62 µm	10/96	36 ± 2	19 ± 2	0.33 ± 0	14,000 ± 0	680 ± 10	0.40 ± 0.01
Sac. R.—Churn Cr.	< 62 µm	10/96	36 ± 1	21 ± 0	0.36 ± 0	13,000 ± 0	640 ± 0	0.39 ± 0
Sac. R.—Balls Ferry	< 62 µm	10/96	24 ± 0	31 ± 0	0.33 ± 0.02	10,000 ± 0	760 ± 30	0.15 ± 0.01
Sac. R.—Bend Br.	< 62 µm	10/96	14 ± 1	29 ± 0	0.34 ± 0.02	19,000 ± 0	810 ± 10	0.08 ± 0
Sac. R.—Tehama	< 62 µm	10/96	14 ± 1	30 ± 1	0.26 ± 0.01	13,000 ± 0	700 ± 30	0.25 ± 0.02
Sac. R.—Colusa,	< 62 µm	11/96	12 ± 1	38 ± 1	0.33 ± 0.01	16,000 ± 0	690 ± 10	0.10 ± 0.01
Sac. R.—Verona	< 62 µm	11/96	19 ± 0	36 ± 0	0.35 ± 0.01	17,000 ± 0	980 ± 0	0.07 ± 0.01
Sac. R.—Freeport	< 62 µm	11/96	16 ± 1	33 ± 1	0.32 ± 0	15,000 ± 0	810 ± 10	0.27 ± 0.01
Cottonwood Cr.	< 62 µm	10/96	14 ± 0	46 ± 0	0.30 ± 0.02	17,000 ± 1,000	880 ± 40	0.06 ± 0.01
Cottonwood Cr.	< 62 µm	6/97	12 ± 0	48 ± 3	0.28 ± 0.01	18,000 ± 0	730 ± 10	0.06 ± 0.01
Cottonwood Cr.	whole sediment	6/97	9.7 ± 0.6	39 ± 0	0.23 ± 0	19,000 ± 0	650 ± 0	0.03 ± 0.01

**Table A5-1.** Concentrations of selected elements in streambed sediment samples—*Continued*

Sampling Site	Size Fraction	Date (mm/yy)	Molybdenum (µg/g)	Neodymium (µg/g)	Nickel (µg/g)	Potassium (µg/g)	Praseodymium (µg/g)	Rhenium (µg/g)
Sac. R.–Rodeo	< 62 µm	10/96	< 3 ± 0.9	8.3 ± 0.7	49 ± 3	5,100 ± 200	1.6 ± 0.1	< 0.009 ± 0.001
Sac. R.–Churn Cr.	< 62 µm	10/96	< 3 ± 0.6	8.8 ± 0.3	69 ± 1	5,900 ± 100	1.8 ± 0.1	< 0.009 ± 0.003
Sac. R.–Balls Ferry	< 62 µm	10/96	< 3 ± 0.4	10 ± 0	56 ± 0	8,200 ± 500	2.2 ± 0.1	< 0.009 ± 0.002
Sac. R.–Bend Br.	< 62 µm	10/96	< 3 ± 0.2	12 ± 0	150 ± 0	9,400 ± 300	2.8 ± 0	< 0.008 ± 0
Sac. R.–Tehama	< 62 µm	10/96	< 3 ± 0.2	8.1 ± 0.2	110 ± 0	4,600 ± 100	1.7 ± 0	< 0.009 ± 0.001
Sac. R.–Colusa,	< 62 µm	11/96	< 3 ± 0.2	11 ± 0	100 ± 0	9,000 ± 100	2.4 ± 0.1	< 0.008 ± 0.002
Sac. R.–Verona	< 62 µm	11/96	< 3 ± 0.2	14 ± 0	130 ± 0	9,300 ± 0	3.1 ± 0	< 0.009 ± 0.002
Sac. R.–Freeport	< 62 µm	11/96	< 3 ± 0	12 ± 0	110 ± 0	6,800 ± 0	2.4 ± 0.1	< 0.008 ± 0.003
Cottonwood Cr.	< 62 µm	10/96	< 3 ± 0.3	9.2 ± 0.2	150 ± 0	9,500 ± 500	2.0 ± 0.1	< 0.009 ± 0.001
Cottonwood Cr.	< 62 µm	6/97	< 3 ± 0.2	9.4 ± 0.5	160 ± 0	7,800 ± 0	1.9 ± 0.1	< 0.008 ± 0.003
Cottonwood Cr.	whole sediment	6/97	< 3 ± 0.4	8.7 ± 0.7	170 ± 0	9,300 ± 200	2.0 ± 0	< 0.009 ± 0.002

  

Sampling Site	Size Fraction	Date (mm/yy)	Rubidium (µg/g)	Samarium (µg/g)	Silica (µg/g)	Silver (µg/g)	Sodium (µg/g)	Strontium (µg/g)
Sac. R.–Rodeo	< 62 µm	10/96	16 ± 0	2.6 ± 0.2	660,000 ± 10,000	< 1 ± 0.4	19,000 ± 0	100 ± 0
Sac. R.–Churn Cr.	< 62 µm	10/96	10 ± 0	2.7 ± 0.1	600,000 ± 40,000	< 1 ± 0.4	14,000 ± 1,000	110 ± 0
Sac. R.–Balls Ferry	< 62 µm	10/96	13 ± 0	2.9 ± 0.1	600,000 ± 400,000	< 1 ± 0.3	14,000 ± 1,000	170 ± 0
Sac. R.–Bend Br.	< 62 µm	10/96	30 ± 0	3.5 ± 0	630,000 ± 40,000	< 1 ± 0.2	17,000 ± 1,000	150 ± 0
Sac. R.–Tehama	< 62 µm	10/96	4.4 ± 0.4	2.5 ± 0.1	680,000 ± 50,000	< 1 ± 0.2	18,000 ± 2,000	160 ± 0
Sac. R.–Colusa,	< 62 µm	11/96	19 ± 0	3.2 ± 0.1	670,000 ± 40,000	< 1 ± 0.1	19,000 ± 1,000	130 ± 0
Sac. R.–Verona	< 62 µm	11/96	21 ± 0	3.9 ± 0	610,000 ± 50,000	< 1 ± 0.3	15,000 ± 1,000	140 ± 0
Sac. R.–Freeport	< 62 µm	11/96	9.3 ± 0.1	3.2 ± 0	640,000 ± 50,000	< 1 ± 0.2	16,000 ± 1,000	140 ± 10
Cottonwood Cr.	< 62 µm	10/96	12 ± 0	2.7 ± 0	650,000 ± 50,000	< 1 ± 0.3	17,000 ± 2,000	120 ± 0
Cottonwood Cr.	< 62 µm	6/97	12 ± 0	2.5 ± 0	630,000 ± 20,000	< 1 ± 0.2	14,000 ± 0	110 ± 0
Cottonwood Cr.	whole sediment	6/97	25 ± 0	2.1 ± 0.1	680,000 ± 20,000	< 1 ± 0.2	16,000 ± 0	130 ± 0

**Table A5-1.** Concentrations of selected elements in streambed sediment samples—*Continued*

Sampling Site	Size Fraction	Date (mm/yy)	Terbium (µg/g)	Thallium (µg/g)	Thorium (µg/g)	Thulium (µg/g)	Tin (µg/g)	Titanium (µg/g)
Sac. R.—Rodeo	< 62 µm	10/96	0.55 ± 0.01	0.19 ± 0.02	1.5 ± 0.1	0.24 ± 0.01	< 5 ± 0.1	3,800 ± 0
Sac. R.—Churn Cr.	< 62 µm	10/96	0.58 ± 0	0.28 ± 0.04	2.0 ± 0	0.26 ± 0.01	150 ± 20	3,900 ± 0
Sac. R.—Balls Ferry	< 62 µm	10/96	0.52 ± 0.01	0.34 ± 0.02	4.1 ± 0	0.23 ± 0.01	130 ± 20	5,500 ± 0
Sac. R.—Bend Br.	< 62 µm	10/96	0.59 ± 0.02	0.24 ± 0.01	4.3 ± 0.2	0.24 ± 0.01	150 ± 20	4,700 ± 0
Sac. R.—Tehama	< 62 µm	10/96	0.52 ± 0.03	0.24 ± 0.01	3.3 ± 0.1	0.22 ± 0.03	68 ± 3	4,800 ± 200
Sac. R.—Colusa,	< 62 µm	11/96	0.59 ± 0	0.27 ± 0.01	3.6 ± 0.3	0.23 ± 0	130 ± 10	5,400 ± 0
Sac. R.—Verona	< 62 µm	11/96	0.63 ± 0.04	0.27 ± 0.01	4.4 ± 0	0.26 ± 0.02	140 ± 20	5,900 ± 0
Sac. R.—Freeport	< 62 µm	11/96	0.55 ± 0.01	0.27 ± 0.02	4.5 ± 0	0.24 ± 0.01	130 ± 10	6,000 ± 100
Cottonwood Cr.	< 62 µm	10/96	0.46 ± 0.01	0.32 ± 0.01	3.7 ± 0	0.21 ± 0.01	160 ± 40	5,100 ± 200
Cottonwood Cr.	< 62 µm	6/97	0.46 ± 0.01	0.30 ± 0	3.8 ± 0.1	0.18 ± 0	< 4 ± 0.3	5,100 ± 0
Cottonwood Cr.	whole sediment	6/97	0.34 ± 0.02	0.24 ± 0.02	3.0 ± 0	0.15 ± 0	< 5 ± 0.4	4,100 ± 0

Sampling Site	Size Fraction	Date (mm/yy)	Uranium (µg/g)	Vanadium (µg/g)	Ytterbium (µg/g)	Yttrium (µg/g)	Zinc (µg/g)	Zirconium (µg/g)
Sac. R.—Rodeo	< 62 µm	10/96	1.5 ± 0.1	150 ± 0	2.3 ± 0.1	16 ± 0	410 ± 10	150 ± 0
Sac. R.—Churn Cr.	< 62 µm	10/96	1.7 ± 0	170 ± 10	2.0 ± 0	15 ± 0	550 ± 20	150 ± 0
Sac. R.—Balls Ferry	< 62 µm	10/96	2.2 ± 0	190 ± 10	1.9 ± 0.1	14 ± 0	310 ± 10	240 ± 0
Sac. R.—Bend Br.	< 62 µm	10/96	2.1 ± 0	160 ± 10	1.9 ± 0	16 ± 0	220 ± 10	160 ± 0
Sac. R.—Tehama	< 62 µm	10/96	1.7 ± 0	160 ± 10	1.8 ± 0.1	11 ± 0	230 ± 10	240 ± 0
Sac. R.—Colusa,	< 62 µm	11/96	1.7 ± 0	160 ± 0	1.9 ± 0	15 ± 0	170 ± 10	210 ± 0
Sac. R.—Verona	< 62 µm	11/96	2.2 ± 0	190 ± 0	2.0 ± 0.1	17 ± 0	150 ± 0	190 ± 0
Sac. R.—Freeport	< 62 µm	11/96	2.2 ± 0.1	190 ± 10	1.8 ± 0.1	14 ± 0	160 ± 10	200 ± 0
Cottonwood Cr.	< 62 µm	10/96	2.1 ± 0	160 ± 10	1.7 ± 0.1	12 ± 0	110 ± 0	170 ± 0
Cottonwood Cr.	< 62 µm	6/97	2.1 ± 0	160 ± 0	1.7 ± 0	11 ± 0	120 ± 10	240 ± 10
Cottonwood Cr.	whole sediment	6/97	1.7 ± 0.1	130 ± 0	1.4 ± 0.1	9.6 ± 0.3	100 ± 10	200 ± 10

**Table A5-2.** Concentrations of selected elements in suspended colloid samples

[Values in parenthesis represent minimum values from incomplete dissolution, reported to one significant figure. Split replicate (1/2), first number identifies which replicate was analyzed, second number represents number of replicate samples. Ax, axial; Cap, capsule filter (Gelman); conc., concentration; CV–AFS, cold–vapor/atomic fluorescence spectrometry; dup, duplicate; ICP–AES, inductively coupled plasma–atomic emission spectrometry; ICP–MS, inductively coupled plasma–mass spectrometry; na, not analyzed; nd, not determined; R., River; Sac., Sacramento; mm/dd/yy, month/day/year; mg/L, milligram per liter;  $\mu\text{g/g}$ , microgram per gram;  $\mu\text{m}$ , micrometer]

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Colloid conc. (mg/L)	Sediment conc. (mg/L)	Aluminum	Antimony	Barium	Beryllium	Bismuth
					( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Shasta	07/12/96	(1/1)	2.9	3	85,000 $\pm$ 1,000	< 1 $\pm$ 0	280 $\pm$ 0	1.3 $\pm$ 0.2	< 0.6 $\pm$ 0.01
Sac. R.—Shasta	11/19/96	(1/1)	0.9	7	86,000 $\pm$ 1,000	3.4 $\pm$ 0.2	740 $\pm$ 10	< 2 $\pm$ 0.2	< 2 $\pm$ 0.1
Sac. R.—Shasta	12/12/96	(1/1)	1.4	2	(100,000) $\pm$ 0	(10) $\pm$ 0	(700) $\pm$ 0	(< 1) $\pm$ 0.1	(20) $\pm$ 1
Sac. R.—Shasta	05/29/97	(1/1)	9	7	110,000 $\pm$ 0	1.0 $\pm$ 0.0	470 $\pm$ 10	1.4 $\pm$ 0.1	< 0.5 $\pm$ 0.02
Sac. R.—Keswick	07/11/96	(1/1)	2.4	5	89,000 $\pm$ 1,000	1.9 $\pm$ 0.1	340 $\pm$ 0	< 1 $\pm$ 0	1.6 $\pm$ 0.0
Sac. R.—Keswick	11/21/96	(1/1)	3.3	3	98,000 $\pm$ 1,000	7.3 $\pm$ 0.1	310 $\pm$ 20	0.95 $\pm$ 0.16	5.1 $\pm$ 0.0
Sac. R.—Keswick	12/11/96	(1/1)	2.1	3	100,000 $\pm$ 3,600	3.9 $\pm$ 0.2	790 $\pm$ 20	1.3 $\pm$ 0.4	2.0 $\pm$ 0.1
Sac. R.—Keswick	01/02/97	(1/1)	13	11	72,000 $\pm$ 0	3.5 $\pm$ 0.0	780 $\pm$ 0	1.4 $\pm$ 0.0	0.87 $\pm$ 0.04
Sac. R.—Keswick	05/28/97	(1/1)	9	8	100,000 $\pm$ 0	1.4 $\pm$ 0.1	430 $\pm$ 0	1.3 $\pm$ 0.1	< 0.5 $\pm$ 0.03
Sac. R.—Bend Br.	07/11/96	(1/1)	4.3	5	66,000 $\pm$ 2,000	1.1 $\pm$ 0.1	280 $\pm$ 10	< 0.9 $\pm$ 0.11	< 0.6 $\pm$ 0.03
Sac. R.—Bend Br.	09/20/96	(1/1)	2.4	4	78,000 $\pm$ 3,000	1.4 $\pm$ 0.0	570 $\pm$ 20	1.5 $\pm$ 0.2	< 0.5 $\pm$ 0
Sac. R.—Bend Br.	11/22/96	(1/1)	7.7	15	100,000 $\pm$ 1,000	3.8 $\pm$ 0.2	600 $\pm$ 10	< 3 $\pm$ 0.1	4.2 $\pm$ 0.2
Sac. R.—Bend Br.	12/12/96	(1/1)	30	51	87,000 $\pm$ 0	1.6 $\pm$ 0.1	760 $\pm$ 0	1.9 $\pm$ 0.1	< 0.5 $\pm$ 0.02
Sac. R.—Bend Br.	01/03/97	(1/1)	113	355	83,000 $\pm$ 0	1.8 $\pm$ 0.0	720 $\pm$ 0	2.0 $\pm$ 0.0	< 0.4 $\pm$ 0.03
Sac. R.—Bend Br.	05/30/97	(1/2)	10	14	96,000 $\pm$ 1,000	1.5 $\pm$ 0.1	430 $\pm$ 0	1.3 $\pm$ 0.1	< 0.5 $\pm$ 0
Sac. R.—Bend Br.	05/30/97	(2/2)	10	14	96,000 $\pm$ 4,000	1.2 $\pm$ 0.0	420 $\pm$ 0	1.3 $\pm$ 0.1	< 0.5 $\pm$ 0.03
Sac. R.—Colusa	07/16/96	(1/1)	51	32	68,000 $\pm$ 1,000	1.2 $\pm$ 0.0	350 $\pm$ 10	0.96 $\pm$ 0.18	< 0.5 $\pm$ 0
Sac. R.—Colusa	09/25/96	(1/1)	15	30	51,000 $\pm$ 3,000	< 3 $\pm$ 0.1	420 $\pm$ 10	< 3 $\pm$ 0.5	< 2 $\pm$ 0
Sac. R.—Colusa	11/13/96	(1/1)	26	46	59,000 $\pm$ 1,000	1.2 $\pm$ 0.1	390 $\pm$ 0	1.1 $\pm$ 0.1	1.6 $\pm$ 0.0
Sac. R.—Colusa	12/16/96	(1/1)	110	51	47,000 $\pm$ 600	1.4 $\pm$ 0.1	260 $\pm$ 0	1.4 $\pm$ 0.1	0.31 $\pm$ 0.01
Sac. R.—Colusa	01/04/97	(1/1)	379	579	88,000 $\pm$ 1,000	1.9 $\pm$ 0.1	750 $\pm$ 10	2.0 $\pm$ 0.1	< 0.4 $\pm$ 0.03
Sac. R.—Colusa	06/03/97	(1/1)	27	37	93,000 $\pm$ 5,000	1.6 $\pm$ 0.1	510 $\pm$ 30	1.2 $\pm$ 0.1	2.6 $\pm$ 0.0
Sac. R.—Verona	07/18/96	(1/1)	21	28	70,000 $\pm$ 0	1.4 $\pm$ 0.0	440 $\pm$ 0	1.2 $\pm$ 0.0	< 0.5 $\pm$ 0.05
Sac. R.—Verona	09/26/96	(1/1)	27	32	80,000 $\pm$ 3,000	1.2 $\pm$ 0.0	590 $\pm$ 10	1.2 $\pm$ 0.1	< 0.7 $\pm$ 0.02
Sac. R.—Verona	11/14/96	(1/1)	21	24	79,000 $\pm$ 0	1.4 $\pm$ 0.0	470 $\pm$ 0	< 1 $\pm$ 0.1	< 0.8 $\pm$ 0.12
Sac. R.—Verona	12/18/96	(1/1)	50	52	53,700 $\pm$ 700	1.5 $\pm$ 0.1	350 $\pm$ 10	1.6 $\pm$ 0.0	0.32 $\pm$ 0.01
Sac. R.—Verona	06/04/97	(1/1)	34	38	85,000 $\pm$ 1,000	1.2 $\pm$ 0.0	550 $\pm$ 10	1.7 $\pm$ 0.2	< 0.4 $\pm$ 0.01
Sac. R.—Freeport	07/17/96	(1/1)	29	20	(40,000) $\pm$ 0	(2) $\pm$ 0.2	(300) $\pm$ 0	(2) $\pm$ 0.2	(0.5) $\pm$ 0.02
Sac. R.—Freeport	09/24/96	(1/1)	34	28	(30,000) $\pm$ 0	(2) $\pm$ 0.1	(300) $\pm$ 0	(2) $\pm$ 0.2	(0.6) $\pm$ 0.02
Sac. R.—Freeport	11/12/96	(1/1)	5.8	12	79,000 $\pm$ 2,000	1.1 $\pm$ 0.1	510 $\pm$ 10	1.5 $\pm$ 0.2	< 0.6 $\pm$ 0.02
Sac. R.—Freeport	12/17/96	(1/1)	36	64	82,000 $\pm$ 0	2.2 $\pm$ 0.0	550 $\pm$ 0	1.7 $\pm$ 0.1	< 0.5 $\pm$ 0.02

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Colloid conc. (mg/L)	Sediment conc. (mg/L)	Aluminum	Antimony	Barium	Beryllium	Bismuth
					( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Freeport	01/06/97	(1/2)	146	193	110,000 $\pm$ 0	1.3 $\pm$ 0.1	1,100 $\pm$ 0	2.6 $\pm$ 0.0	< 0.5 $\pm$ 0.02
Sac. R.—Freeport	01/06/97	(2/2)	146	193	100,000 $\pm$ 0	1.2 $\pm$ 0.1	940 $\pm$ 10	2.4 $\pm$ 0.2	< 0.4 $\pm$ 0.02
Sac. R.—Freeport	06/05/97	(1/1)	22	18	90,000 $\pm$ 1,000	1.2 $\pm$ 0.0	580 $\pm$ 20	1.6 $\pm$ 0.2	< 0.5 $\pm$ 0.05
Sac. R.—Freeport, dup	06/05/97	(1/1)	13	18	85,000 $\pm$ 0	1.2 $\pm$ 0.0	500 $\pm$ 0	1.5 $\pm$ 0.0	< 0.5 $\pm$ 0.02
Spring Cr.—Weir	12/11/96	(1/1)	6.1	na	98,000 $\pm$ 2,000	6.6 $\pm$ 0.1	290 $\pm$ 0	0.73 $\pm$ 0.33	3.7 $\pm$ 0.0
Spring Cr.—Weir	05/28/97	(1/1)	86	na	40,000 $\pm$ 1,000	6.0 $\pm$ 0.1	200 $\pm$ 0	2.0 $\pm$ 0.5	1.0 $\pm$ 0.2
Spring Cr.—Road	01/02/97	(1/1)	14	na	69,000 $\pm$ 6,000	12 $\pm$ 0	230 $\pm$ 20	< 2 $\pm$ 0.3	2.4 $\pm$ 0.1
Spring Cr. arm	07/12/96	(1/1)	0.6	na	33,000 $\pm$ 1,000	< 2 $\pm$ 0.1	280 $\pm$ 0	< 2 $\pm$ 0.2	< 1 $\pm$ 0.1
Spring Cr. arm	11/20/96	(1/1)	2.4	na	100,000 $\pm$ 0	< 3 $\pm$ 0.1	280 $\pm$ 10	< 2 $\pm$ 0.5	< 1 $\pm$ 0
Spring Cr. arm	12/11/96	(1/1)	4.5	na	100,000 $\pm$ 4,000	1.7 $\pm$ 0.2	120 $\pm$ 10	2.5 $\pm$ 0.3	0.80 $\pm$ 0.06
Spring Cr. arm	05/28/97	(1/1)	11	na	88,000 $\pm$ 2,000	2.0 $\pm$ 0.2	350 $\pm$ 10	1.3 $\pm$ 0.2	< 0.6 $\pm$ 0.03
Colusa Basin Drain	06/06/97	(1/1)	161	154	81,000 $\pm$ 1,000	1.2 $\pm$ 0.0	640 $\pm$ 10	1.8 $\pm$ 0.0	< 0.5 $\pm$ 0.01
Yolo Bypass	01/07/97	(1/1)	144	183	100,000 $\pm$ 0	2.0 $\pm$ 0.0	840 $\pm$ 10	2.2 $\pm$ 0.1	< 0.5 $\pm$ 0



Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Cadmium	Calcium	Cerium	Chromium	Cobalt	Copper
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS/ICP-AES
Sac. R.—Shasta	07/12/96	(1/1)	2.2 ± 0.2	19,000 ± 0	15 ± 1	98 ± 1	14 ± 0	170 ± 0
Sac. R.—Shasta	11/19/96	(1/1)	6.5 ± 0.2	8,500 ± 0	35 ± 1	93 ± 17	21 ± 1	300 ± 10
Sac. R.—Shasta	12/12/96	(1/1)	(3) ± 0.2	(4,000) ± 0	(6) ± 0.6	(200) ± 0	(20) ± 4	(900) ± 0
Sac. R.—Shasta	05/29/97	(1/1)	1.0 ± 0.1	8,500 ± 700	18 ± 0	140 ± 10	19 ± 0	130 ± 0
Sac. R.—Keswick	07/11/96	(1/1)	3.9 ± 0.0	22,000 ± 0	23 ± 1	89 ± 3	13 ± 1	170 ± 10
Sac. R.—Keswick	11/21/96	(1/1)	5.1 ± 0.1	6,200 ± 400	14 ± 0	130 ± 10	35 ± 0	510 ± 10
Sac. R.—Keswick	12/11/96	(1/1)	5.4 ± 0.1	7,000 ± 100	43 ± 1	100 ± 4	32 ± 0	991 ± 37
Sac. R.—Keswick	01/02/97	(1/1)	4.8 ± 0.1	5,100 ± 200	15 ± 0	110 ± 0	27 ± 0	760 ± 0
Sac. R.—Keswick	05/28/97	(1/1)	1.2 ± 0.1	8,100 ± 500	28 ± 1	370 ± 0	35 ± 0	140 ± 0
Sac. R.—Bend Br.	07/11/96	(1/1)	2.5 ± 0.1	23,000 ± 0	17 ± 1	91 ± 2	15 ± 1	180 ± 0
Sac. R.—Bend Br.	09/20/96	(1/1)	1.4 ± 0.0	17,000 ± 1,000	36 ± 1	160 ± 10	23 ± 0	140 ± 0
Sac. R.—Bend Br.	11/22/96	(1/1)	2.6 ± 0.3	6,300 ± 200	25 ± 1	300 ± 0	27 ± 1	710 ± 10
Sac. R.—Bend Br.	12/12/96	(1/1)	1.4 ± 0.1	9,700 ± 0	43 ± 0	320 ± 0	32 ± 0	200 ± 10
Sac. R.—Bend Br.	01/03/97	(1/1)	0.92 ± 0.11	9,800 ± 0	37 ± 1	200 ± 0	27 ± 0	140 ± 0
Sac. R.—Bend Br.	05/30/97	(1/2)	1.1 ± 0.0	8,300 ± 500	30 ± 0	360 ± 0	34 ± 0	140 ± 0
Sac. R.—Bend Br.	05/30/97	(2/2)	1.2 ± 0.1	8,200 ± 100	17 ± 0	360 ± 0	33 ± 0	150 ± 0
Sac. R.—Colusa	07/16/96	(1/1)	1.7 ± 0.0	18,000 ± 0	19 ± 0	120 ± 0	18 ± 0	170 ± 0
Sac. R.—Colusa	09/25/96	(1/1)	2.0 ± 0.2	59,000 ± 3,000	23 ± 1	110 ± 10	19 ± 0	220 ± 10
Sac. R.—Colusa	11/13/96	(1/1)	2.3 ± 0.1	9,100 ± 400	20 ± 0	130 ± 0	18 ± 0	170 ± 0
Sac. R.—Colusa	12/16/96	(1/1)	0.87 ± 0.12	9,600 ± 300	18 ± 1	184 ± 10	27 ± 0	130 ± 0
Sac. R.—Colusa	01/04/97	(1/1)	0.63 ± 0.01	10,000 ± 500	31 ± 0	190 ± 10	27 ± 0	100 ± 0
Sac. R.—Colusa	06/03/97	(1/1)	1.3 ± 0.1	9,000 ± 500	28 ± 1	250 ± 20	26 ± 0	130 ± 0
Sac. R.—Verona	07/18/96	(1/1)	2.8 ± 0.1	20,000 ± 0	23 ± 0	180 ± 0	22 ± 0	330 ± 0
Sac. R.—Verona	09/26/96	(1/1)	1.4 ± 0.1	36,000 ± 0	32 ± 0	170 ± 0	23 ± 0	180 ± 0
Sac. R.—Verona	11/14/96	(1/1)	1.8 ± 0.1	11,000 ± 0	20 ± 1	190 ± 10	25 ± 0	180 ± 0
Sac. R.—Verona	12/18/96	(1/1)	0.84 ± 0.05	10,000 ± 200	15 ± 0	193 ± 7	29 ± 0	130 ± 0
Sac. R.—Verona	06/04/97	(1/1)	0.97 ± 0.05	9,100 ± 500	36 ± 2	190 ± 10	25 ± 0	110 ± 0
Sac. R.—Freeport	07/17/96	(1/1)	(2) ± 0.1	(10,000) ± 0	(8) ± 0.1	(200) ± 10	(20) ± 1	(200) ± 10
Sac. R.—Freeport	09/24/96	(1/1)	(4) ± 0	(10,000) ± 0	(10) ± 0	(90) ± 1	(10) ± 2	(200) ± 20
Sac. R.—Freeport	11/12/96	(1/1)	1.2 ± 0.1	9,300 ± 200	27 ± 1	160 ± 0	23 ± 0	140 ± 0
Sac. R.—Freeport	12/17/96	(1/1)	0.78 ± 0.11	11,000 ± 0	29 ± 2	230 ± 0	26 ± 0	110 ± 0

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Cadmium	Calcium	Cerium	Chromium	Cobalt	Copper
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS/ICP-AES
Sac. R.—Freeport	01/06/97	(1/2)	0.57 $\pm$ 0.04	15,000 $\pm$ 0	95 $\pm$ 0	140 $\pm$ 0	28 $\pm$ 0	120 $\pm$ 0
Sac. R.—Freeport	01/06/97	(2/2)	0.56 $\pm$ 0.08	13,000 $\pm$ 0	85 $\pm$ 0	150 $\pm$ 0	29 $\pm$ 1	110 $\pm$ 0
Sac. R.—Freeport	06/05/97	(1/1)	1.1 $\pm$ 0.1	9,000 $\pm$ 300	36 $\pm$ 0	180 $\pm$ 0	24 $\pm$ 0	130 $\pm$ 0
Sac. R.—Freeport, dup	06/05/97	(1/1)	1.1 $\pm$ 0.1	8,800 $\pm$ 200	29 $\pm$ 1	190 $\pm$ 0	23 $\pm$ 1	140 $\pm$ 10
Spring Cr.—Weir	12/11/96	(1/1)	1.4 $\pm$ 0.1	1,000 $\pm$ 0	8.4 $\pm$ 0.1	60 $\pm$ 4	11 $\pm$ 0	470 $\pm$ 10
Spring Cr.—Weir	05/28/97	(1/1)	0.60 $\pm$ 0.19	600 $\pm$ 10	< 1 $\pm$ 0.01	30 $\pm$ 4	6.0 $\pm$ 0.8	300 $\pm$ 110
Spring Cr.—Road	01/02/97	(1/1)	0.56 $\pm$ 0.00	910 $\pm$ 160	8.8 $\pm$ 0.4	43 $\pm$ 5	11 $\pm$ 0	230 $\pm$ 0
Spring Cr. arm	07/12/96	(1/1)	2.5 $\pm$ 0.1	28,000 $\pm$ 0	14 $\pm$ 1	130 $\pm$ 10	19 $\pm$ 1	190 $\pm$ 10
Spring Cr. arm	11/20/96	(1/1)	6.5 $\pm$ 0.3	3,900 $\pm$ 200	58 $\pm$ 0	180 $\pm$ 10	18 $\pm$ 1	2,400 $\pm$ 0
Spring Cr. arm	12/11/96	(1/1)	12 $\pm$ 0	3,800 $\pm$ 200	101 $\pm$ 1	113 $\pm$ 5	14 $\pm$ 0	9,400 $\pm$ 122
Spring Cr. arm	05/28/97	(1/1)	1.2 $\pm$ 0.0	7,400 $\pm$ 200	24 $\pm$ 1	870 $\pm$ 30	71 $\pm$ 3	220 $\pm$ 10
Colusa Basin Drain	06/06/97	(1/1)	0.44 $\pm$ 0.07	9,100 $\pm$ 600	33 $\pm$ 1	180 $\pm$ 10	24 $\pm$ 0	85 $\pm$ 1
Yolo Bypass	01/07/97	(1/1)	0.80 $\pm$ 0.02	9,800 $\pm$ 400	39 $\pm$ 0	210 $\pm$ 10	28 $\pm$ 0	130 $\pm$ 0

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Dysprosium	Erbium	Europium	Gadolinium	Holmium	Iron
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Shasta	07/12/96	(1/1)	3.7 ± 0.1	2.1 ± 0.1	0.76 ± 0.00	4.6 ± 0.1	0.66 ± 0.01	57,000 ± 2,000
Sac. R.—Shasta	11/19/96	(1/1)	5.8 ± 0.0	3.2 ± 0.2	1.4 ± 0.1	8.6 ± 0.4	0.96 ± 0.03	54,000 ± 0
Sac. R.—Shasta	12/12/96	(1/1)	(1) ± 0.1	(0.9) ± 0.01	(0.2) ± 0.01	(0.9) ± 0.09	(0.2) ± 0	60,000 ± 1,000
Sac. R.—Shasta	05/29/97	(1/1)	3.6 ± 0.1	2.4 ± 0.0	0.79 ± 0.02	4.7 ± 0.1	0.70 ± 0.03	66,000 ± 5,000
Sac. R.—Keswick	07/11/96	(1/1)	3.8 ± 0.0	2.2 ± 0.1	0.94 ± 0.02	5.9 ± 0.2	0.66 ± 0.02	53,000 ± 0
Sac. R.—Keswick	11/21/96	(1/1)	7.1 ± 0.1	4.4 ± 0.0	1.1 ± 0.0	8.1 ± 0.1	1.4 ± 0.0	84,000 ± 6,000
Sac. R.—Keswick	12/11/96	(1/1)	12 ± 0	8.5 ± 0.2	2.2 ± 0.0	18 ± 1	2.5 ± 0.2	75,000 ± 1,700
Sac. R.—Keswick	01/02/97	(1/1)	5.1 ± 0.1	3.4 ± 0.1	0.78 ± 0.01	5.9 ± 0.2	0.99 ± 0.01	81,000 ± 0
Sac. R.—Keswick	05/28/97	(1/1)	4.0 ± 0.1	2.5 ± 0.0	0.89 ± 0.01	5.5 ± 0.0	0.73 ± 0.01	74,000 ± 5,000
Sac. R.—Bend Br.	07/11/96	(1/1)	3.2 ± 0.1	2.0 ± 0.1	0.68 ± 0.01	4.3 ± 0.1	0.59 ± 0.00	46,000 ± 2,000
Sac. R.—Bend Br.	09/20/96	(1/1)	3.9 ± 0.1	2.4 ± 0.1	0.99 ± 0.03	5.4 ± 0.1	0.72 ± 0.01	59,000 ± 2,000
Sac. R.—Bend Br.	11/22/96	(1/1)	4.5 ± 0.1	2.8 ± 0.3	0.88 ± 0.04	6.0 ± 0.3	0.81 ± 0.05	70,000 ± 0
Sac. R.—Bend Br.	12/12/96	(1/1)	4.8 ± 0.0	2.9 ± 0.1	1.2 ± 0.0	7.4 ± 0.0	0.82 ± 0.01	63,000 ± 0
Sac. R.—Bend Br.	01/03/97	(1/1)	4.1 ± 0.1	2.8 ± 0.0	1.0 ± 0.1	6.0 ± 0.0	0.80 ± 0.01	70,000 ± 0
Sac. R.—Bend Br.	05/30/97	(1/2)	4.1 ± 0.1	2.6 ± 0.0	0.94 ± 0.01	5.5 ± 0.1	0.76 ± 0.01	71,000 ± 4,000
Sac. R.—Bend Br.	05/30/97	(2/2)	3.3 ± 0.0	2.2 ± 0.0	0.66 ± 0.00	4.3 ± 0.0	0.62 ± 0.01	70,000 ± 1,000
Sac. R.—Colusa	07/16/96	(1/1)	3.3 ± 0.1	2.0 ± 0.0	0.70 ± 0.03	4.3 ± 0.2	0.60 ± 0.03	56,000 ± 3,000
Sac. R.—Colusa	09/25/96	(1/1)	3.0 ± 0.2	1.8 ± 0.1	0.71 ± 0.04	4.4 ± 0.4	0.54 ± 0.04	38,000 ± 2,000
Sac. R.—Colusa	11/13/96	(1/1)	3.6 ± 0.0	2.3 ± 0.1	0.79 ± 0.01	4.9 ± 0.1	0.68 ± 0.01	51,000 ± 2,000
Sac. R.—Colusa	12/16/96	(1/1)	2.7 ± 0.0	2.1 ± 0.1	0.53 ± 0.00	3.5 ± 0.0	0.59 ± 0.01	65,000 ± 2,200
Sac. R.—Colusa	01/04/97	(1/1)	3.7 ± 0.1	2.6 ± 0.1	0.85 ± 0.01	4.7 ± 0.0	0.73 ± 0.02	69,000 ± 4,000
Sac. R.—Colusa	06/03/97	(1/1)	3.9 ± 0.2	2.4 ± 0.2	0.87 ± 0.01	5.3 ± 0.0	0.74 ± 0.01	64,000 ± 4,000
Sac. R.—Verona	07/18/96	(1/1)	3.2 ± 0.0	2.0 ± 0.1	0.75 ± 0.00	4.4 ± 0.1	0.57 ± 0.02	55,000 ± 3,000
Sac. R.—Verona	09/26/96	(1/1)	3.6 ± 0.1	2.2 ± 0.1	0.86 ± 0.03	5.1 ± 0.1	0.65 ± 0.01	59,000 ± 2,000
Sac. R.—Verona	11/14/96	(1/1)	2.2 ± 0.1	1.4 ± 0.1	0.63 ± 0.01	3.5 ± 0.2	0.40 ± 0.02	67,000 ± 1,000
Sac. R.—Verona	12/18/96	(1/1)	2.3 ± 0.1	1.9 ± 0.1	0.49 ± 0.02	3.0 ± 0.0	0.50 ± 0.00	66,000 ± 1,000
Sac. R.—Verona	06/04/97	(1/1)	3.8 ± 0.0	2.4 ± 0.0	0.97 ± 0.03	5.4 ± 0.0	0.70 ± 0.01	64,000 ± 4,000
Sac. R.—Freeport	07/17/96	(1/1)	(1) ± 0.04	(0.5) ± 0.02	(0.2) ± 0.01	(1) ± 0.2	(0.2) ± 0.02	(50,000) ± 1,000
Sac. R.—Freeport	09/24/96	(1/1)	(1) ± 0	(0.7) ± 0.01	(0.3) ± 0.01	(2) ± 0.2	(0.2) ± 0	(40,000) ± 0
Sac. R.—Freeport	11/12/96	(1/1)	3.3 ± 0.1	2.1 ± 0.0	0.86 ± 0.00	4.8 ± 0.0	0.62 ± 0.01	65,000 ± 1,000
Sac. R.—Freeport	12/17/96	(1/1)	3.0 ± 0.2	1.9 ± 0.0	0.82 ± 0.06	4.8 ± 0.0	0.57 ± 0.00	67,000 ± 0

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Dysprosium	Erbium	Europium	Gadolinium	Holmium	Iron
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Freeport	01/06/97	(1/2)	4.9 $\pm$ 0.1	2.8 $\pm$ 0.0	1.3 $\pm$ 0.0	7.2 $\pm$ 0.0	0.88 $\pm$ 0.01	69,000 $\pm$ 1,000
Sac. R.—Freeport	01/06/97	(2/2)	4.6 $\pm$ 0.0	2.6 $\pm$ 0.0	1.3 $\pm$ 0.0	7.7 $\pm$ 0.2	0.77 $\pm$ 0.01	65,000 $\pm$ 1,000
Sac. R.—Freeport	06/05/97	(1/1)	3.7 $\pm$ 0.1	2.3 $\pm$ 0.0	1.0 $\pm$ 0.0	5.9 $\pm$ 0.0	0.65 $\pm$ 0.02	62,000 $\pm$ 1,000
Sac. R.—Freeport, dup	06/05/97	(1/1)	3.3 $\pm$ 0.0	2.0 $\pm$ 0.1	0.83 $\pm$ 0.02	4.6 $\pm$ 0.0	0.55 $\pm$ 0.01	61,000 $\pm$ 0
Spring Cr.—Weir	12/11/96	(1/1)	4.3 $\pm$ 0.3	3.8 $\pm$ 0.1	0.57 $\pm$ 0.06	4.9 $\pm$ 0.2	0.98 $\pm$ 0.06	110,000 $\pm$ 1,600
Spring Cr.—Weir	05/28/97	(1/1)	0.20 $\pm$ 0.00	0.20 $\pm$ 0.07	< 0.04 $\pm$ 0.005	0.30 $\pm$ 0.03	0.050 $\pm$ 0.005	500,000 $\pm$ 0
Spring Cr.—Road	01/02/97	(1/1)	2.6 $\pm$ 0.2	2.0 $\pm$ 0.1	0.34 $\pm$ 0.02	2.7 $\pm$ 0.0	0.55 $\pm$ 0.02	180,000 $\pm$ 0
Spring Cr. arm	07/12/96	(1/1)	4.0 $\pm$ 0.1	2.5 $\pm$ 0.0	0.91 $\pm$ 0.03	6.7 $\pm$ 0.1	0.72 $\pm$ 0.02	34,000 $\pm$ 1,000
Spring Cr. arm	11/20/96	(1/1)	31 $\pm$ 1	17 $\pm$ 0	4.3 $\pm$ 0.2	38 $\pm$ 2	5.2 $\pm$ 0.3	95,000 $\pm$ 1,000
Spring Cr. arm	12/11/96	(1/1)	50 $\pm$ 1	32 $\pm$ 0	7.7 $\pm$ 0.3	75 $\pm$ 3	10 $\pm$ 0	72,000 $\pm$ 2,200
Spring Cr. arm	05/28/97	(1/1)	3.4 $\pm$ 0.0	2.2 $\pm$ 0.2	0.85 $\pm$ 0.01	5.2 $\pm$ 0.0	0.63 $\pm$ 0.02	89,000 $\pm$ 2,000
Colusa Basin Drain	06/06/97	(1/1)	3.4 $\pm$ 0.0	2.1 $\pm$ 0.1	0.83 $\pm$ 0.02	4.5 $\pm$ 0.1	0.63 $\pm$ 0.00	69,000 $\pm$ 5,000
Yolo Bypass	01/07/97	(1/1)	4.4 $\pm$ 0.1	2.9 $\pm$ 0.0	0.95 $\pm$ 0.01	5.5 $\pm$ 0.0	0.82 $\pm$ 0.02	72,000 $\pm$ 3,000

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Lanthanum	Lead	Lithium	Lutetium	Magnesium	Manganese
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Shasta	07/12/96	(1/1)	5.3 ± 0.2	13 ± 0	33 ± 0	0.35 ± 0.02	11,000 ± 0	660 ± 20
Sac. R.—Shasta	11/19/96	(1/1)	18 ± 1	23 ± 1	33 ± 4	0.47 ± 0.05	9,300 ± 0	18,000 ± 0
Sac. R.—Shasta	12/12/96	(1/1)	(1.0) ± 0.07	(40) ± 1	(80) ± 5	(0.2) ± 0.01	(300) ± 0	(3,000) ± 0
Sac. R.—Shasta	05/29/97	(1/1)	7.2 ± 0.0	14 ± 1	37 ± 1	0.35 ± 0.02	16,000 ± 0	500 ± 50
Sac. R.—Keswick	07/11/96	(1/1)	10 ± 0	16 ± 0	31 ± 1	0.33 ± 0.02	16,000 ± 0	820 ± 0
Sac. R.—Keswick	11/21/96	(1/1)	4.2 ± 0.1	87 ± 1	25 ± 1	0.60 ± 0.01	19,000 ± 0	3,400 ± 100
Sac. R.—Keswick	12/11/96	(1/1)	18 ± 0	72 ± 2	26 ± 1	1.0 ± 0.0	14,800 ± 300	2,000 ± 30
Sac. R.—Keswick	01/02/97	(1/1)	5.0 ± 0.1	39 ± 1	24 ± 0	0.52 ± 0.01	14,000 ± 0	1,100 ± 0
Sac. R.—Keswick	05/28/97	(1/1)	12 ± 0	13 ± 0	37 ± 0	0.36 ± 0.01	33,000 ± 0	630 ± 50
Sac. R.—Bend Br.	07/11/96	(1/1)	6.7 ± 0.1	16 ± 0	28 ± 1	0.32 ± 0.00	15,000 ± 0	730 ± 0
Sac. R.—Bend Br.	09/20/96	(1/1)	16 ± 0	25 ± 1	50 ± 1	0.34 ± 0.02	22,000 ± 0	1,800 ± 0
Sac. R.—Bend Br.	11/22/96	(1/1)	9.2 ± 0.4	46 ± 1	50 ± 2	0.51 ± 0.03	34,000 ± 0	1,500 ± 0
Sac. R.—Bend Br.	12/12/96	(1/1)	18 ± 1	21 ± 1	53 ± 1	0.46 ± 0.01	37,000 ± 0	1,300 ± 0
Sac. R.—Bend Br.	01/03/97	(1/1)	15 ± 0	24 ± 1	51 ± 2	0.41 ± 0.01	24,000 ± 0	1,100 ± 0
Sac. R.—Bend Br.	05/30/97	(1/2)	13 ± 0	18 ± 0	35 ± 1	0.37 ± 0.02	32,000 ± 0	600 ± 30
Sac. R.—Bend Br.	05/30/97	(2/2)	6.5 ± 0.0	20 ± 0	36 ± 1	0.36 ± 0.01	32,000 ± 0	610 ± 0
Sac. R.—Colusa	07/16/96	(1/1)	6.7 ± 0.2	18 ± 0	38 ± 1	0.33 ± 0.02	16,000 ± 0	1,300 ± 0
Sac. R.—Colusa	09/25/96	(1/1)	10 ± 0	20 ± 1	37 ± 2	0.28 ± 0.04	37,000 ± 0	1,300 ± 100
Sac. R.—Colusa	11/13/96	(1/1)	7.8 ± 0.1	29 ± 1	38 ± 1	0.32 ± 0.01	13,000 ± 0	1,700 ± 100
Sac. R.—Colusa	12/16/96	(1/1)	8.0 ± 0.4	19 ± 1	49 ± 1	0.30 ± 0.01	15,000 ± 100	1,380 ± 40
Sac. R.—Colusa	01/04/97	(1/1)	13 ± 0	20 ± 1	60 ± 0	0.43 ± 0.02	22,000 ± 1,000	1,100 ± 100
Sac. R.—Colusa	06/03/97	(1/1)	11 ± 0	21 ± 2	47 ± 1	0.36 ± 0.01	25,000 ± 1,000	970 ± 60
Sac. R.—Verona	07/18/96	(1/1)	9.0 ± 0.1	24 ± 1	40 ± 1	0.32 ± 0.01	19,000 ± 0	1,600 ± 0
Sac. R.—Verona	09/26/96	(1/1)	14 ± 0	19 ± 0	51 ± 0	0.34 ± 0.02	34,000 ± 0	1,900 ± 0
Sac. R.—Verona	11/14/96	(1/1)	7.5 ± 0.4	31 ± 0	46 ± 2	0.22 ± 0.01	17,000 ± 0	2,200 ± 0
Sac. R.—Verona	12/18/96	(1/1)	7.1 ± 0.0	22 ± 1	47 ± 2	0.28 ± 0.02	16,000 ± 0	1,450 ± 0
Sac. R.—Verona	06/04/97	(1/1)	16 ± 0	20 ± 0	45 ± 1	0.35 ± 0.01	19,000 ± 0	1,100 ± 0
Sac. R.—Freeport	07/17/96	(1/1)	(3) ± 0	(20) ± 0	(40) ± 0	(0.06) ± 0.005	(10,000) ± 100	(2,000) ± 0
Sac. R.—Freeport	09/24/96	(1/1)	(4) ± 0	(20) ± 0	(30) ± 1	(0.09) ± 0.005	(10,000) ± 0	(1,000) ± 0
Sac. R.—Freeport	11/12/96	(1/1)	13 ± 0	26 ± 1	42 ± 2	0.34 ± 0.00	16,000 ± 0	1,900 ± 0
Sac. R.—Freeport	12/17/96	(1/1)	12 ± 1	24 ± 1	41 ± 0	0.31 ± 0.02	20,000 ± 0	1,300 ± 0

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

Site	Date	Split replicate	Lanthanum	Lead	Lithium	Lutetium	Magnesium	Manganese
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Freeport	01/06/97	(1/2)	39 $\pm$ 1	32 $\pm$ 1	39 $\pm$ 1	0.38 $\pm$ 0.01	20,000 $\pm$ 0	1,200 $\pm$ 0
Sac. R.—Freeport	01/06/97	(2/2)	32 $\pm$ 0	34 $\pm$ 1	39 $\pm$ 1	0.41 $\pm$ 0.01	16,000 $\pm$ 0	1,100 $\pm$ 0
Sac. R.—Freeport	06/05/97	(1/1)	15 $\pm$ 0	22 $\pm$ 0	48 $\pm$ 0	0.36 $\pm$ 0.01	18,000 $\pm$ 0	1,300 $\pm$ 0
Sac. R.—Freeport, dup	06/05/97	(1/1)	12 $\pm$ 0	22 $\pm$ 0	45 $\pm$ 2	0.29 $\pm$ 0.00	17,000 $\pm$ 0	1,200 $\pm$ 0
Spring Cr.—Weir	12/11/96	(1/1)	2.0 $\pm$ 0.1	76 $\pm$ 1	17 $\pm$ 0	0.63 $\pm$ 0.05	15,000 $\pm$ 200	450 $\pm$ 100
Spring Cr.—Weir	05/28/97	(1/1)	< 0.6 $\pm$ 0	100 $\pm$ 0	7.0 $\pm$ 1.0	0.050 $\pm$ 0.006	< 100 $\pm$ 0	< 20 $\pm$ 1
Spring Cr.—Road	01/02/97	(1/1)	2.5 $\pm$ 0.1	49 $\pm$ 2	16 $\pm$ 1	0.35 $\pm$ 0.02	12,000 $\pm$ 1,000	240 $\pm$ 30
Spring Cr. arm	07/12/96	(1/1)	8.4 $\pm$ 0.5	10 $\pm$ 0	14 $\pm$ 2	0.34 $\pm$ 0.02	39,000 $\pm$ 0	3,200 $\pm$ 0
Spring Cr. arm	11/20/96	(1/1)	12 $\pm$ 1	47 $\pm$ 3	17 $\pm$ 2	2.1 $\pm$ 0.0	5,500 $\pm$ 0	2,100 $\pm$ 0
Spring Cr. arm	12/11/96	(1/1)	45 $\pm$ 0	62 $\pm$ 0	9.3 $\pm$ 0.8	3.1 $\pm$ 0.1	3,400 $\pm$ 200	990 $\pm$ 30
Spring Cr. arm	05/28/97	(1/1)	9.2 $\pm$ 0.4	9.3 $\pm$ 0.4	34 $\pm$ 1	0.31 $\pm$ 0.01	65,000 $\pm$ 2,000	970 $\pm$ 30
Colusa Basin Drain	06/06/97	(1/1)	14 $\pm$ 0	18 $\pm$ 0	72 $\pm$ 0	0.30 $\pm$ 0.02	22,000 $\pm$ 1,000	1,500 $\pm$ 100
Yolo Bypass	01/07/97	(1/1)	16 $\pm$ 0	22 $\pm$ 0	59 $\pm$ 1	0.44 $\pm$ 0.00	25,000 $\pm$ 1,000	1,000 $\pm$ 0

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Mercury	Molybdenum	Neodymium	Nickel	Potassium	Praseodymium
			( $\mu\text{g/g}$ ) CVAFS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES-Ax	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Shasta	07/12/96	(1/1)	0.19 ± 0.01	< 4 ± 0.4	10 ± 0	80 ± 1	4,300 ± 100	2.0 ± 0.1
Sac. R.—Shasta	11/19/96	(1/1)	0.45 ± 0.00	< 10 ± 2	23 ± 1	98 ± 2	4,100 ± 400	4.7 ± 0.2
Sac. R.—Shasta	12/12/96	(1/1)	0.63 ± 0.02	(7) ± 0.6	(1) ± 0.1	(60) ± 14	(< 1,000) ± 0	(0.3) ± 0.03
Sac. R.—Shasta	05/29/97	(1/1)	0.17 ± 0.00	< 3 ± 0.2	12 ± 0	220 ± 0	6,600 ± 100	2.4 ± 0.0
Sac. R.—Keswick	07/11/96	(1/1)	0.31 ± 0.01	< 6 ± 0.2	15 ± 0	98 ± 4	5,600 ± 100	3.1 ± 0.1
Sac. R.—Keswick	11/21/96	(1/1)	0.50 ± 0.01	< 3 ± 0.1	12 ± 0	76 ± 1	5,700 ± 200	2.1 ± 0.0
Sac. R.—Keswick	12/11/96	(1/1)	0.87 ± 0.03	< 8 ± 4	37 ± 1	127 ± 0	6,400 ± 400	6.7 ± 0.5
Sac. R.—Keswick	01/02/97	(1/1)	0.62 ± 0.01	4.1 ± 0.1	9.9 ± 0.2	110 ± 0	6,800 ± 300	1.9 ± 0.0
Sac. R.—Keswick	05/28/97	(1/1)	0.24 ± 0.02	< 3 ± 0.3	15 ± 0	800 ± 20	6,000 ± 100	3.3 ± 0.1
Sac. R.—Bend Br.	07/11/96	(1/1)	0.22 ± 0.01	< 4 ± 0.3	11 ± 0	83 ± 0	5,500 ± 200	2.2 ± 0.0
Sac. R.—Bend Br.	09/20/96	(1/1)	0.26 ± 0.03	< 3 ± 0	17 ± 0	130 ± 0	12,000 ± 0	4.0 ± 0.1
Sac. R.—Bend Br.	11/22/96	(1/1)	0.43 ± 0.02	< 10 ± 1	13 ± 0	200 ± 0	13,000 ± 2,000	2.8 ± 0.1
Sac. R.—Bend Br.	12/12/96	(1/1)	0.19 ± 0.03	< 3 ± 0.2	20 ± 0	250 ± 0	15,000 ± 0	4.6 ± 0.1
Sac. R.—Bend Br.	01/03/97	(1/1)	0.24 ± 0.01	< 3 ± 0	17 ± 1	160 ± 0	12,000 ± 1,000	4.0 ± 0.1
Sac. R.—Bend Br.	05/30/97	(1/2)	0.20 ± 0.02	< 3 ± 0	16 ± 0	790 ± 10	5,800 ± 100	3.5 ± 0.0
Sac. R.—Bend Br.	05/30/97	(2/2)	0.20 ± 0.01	< 3 ± 0.1	10 ± 0	780 ± 10	5,600 ± 100	2.1 ± 0.1
Sac. R.—Colusa	07/16/96	(1/1)	0.22 ± 0.01	< 3 ± 0.1	11 ± 0	98 ± 1	6,900 ± 100	2.2 ± 0.1
Sac. R.—Colusa	09/25/96	(1/1)	0.30 ± 0.02	< 10 ± 0	13 ± 0	92 ± 3	13,000 ± 0	2.7 ± 0.1
Sac. R.—Colusa	11/13/96	(1/1)	0.45 ± 0.02	< 3 ± 0.1	12 ± 0	99 ± 2	8,000 ± 0	2.5 ± 0.0
Sac. R.—Colusa	12/16/96	(1/1)	0.20 ± 0.02	< 2 ± 0.47	11 ± 1	168 ± 1	4,900 ± 200	2.3 ± 0.1
Sac. R.—Colusa	01/04/97	(1/1)	0.23 ± 0.02	< 3 ± 0.2	15 ± 0	140 ± 0	15,000 ± 0	3.5 ± 0.0
Sac. R.—Colusa	06/03/97	(1/1)	0.22 ± 0.01	< 3 ± 0.1	14 ± 0	430 ± 0	9,200 ± 200	3.1 ± 0.1
Sac. R.—Verona	07/18/96	(1/1)	0.30 ± 0.01	< 3 ± 0.1	12 ± 0	120 ± 0	9,400 ± 100	2.6 ± 0.1
Sac. R.—Verona	09/26/96	(1/1)	0.58 ± 0.01	< 4 ± 0.6	16 ± 0	120 ± 0	14,000 ± 0	3.5 ± 0.1
Sac. R.—Verona	11/14/96	(1/1)	0.25 ± 0.02	< 5 ± 1.9	11 ± 0	130 ± 0	8,900 ± 200	2.3 ± 0.1
Sac. R.—Verona	12/18/96	(1/1)	0.24 ± 0.02	< 2 ± 0.61	9.8 ± 0.2	165 ± 2	6,400 ± 400	2.1 ± 0.1
Sac. R.—Verona	06/04/97	(1/1)	0.23 ± 0.00	< 2 ± 0.1	17 ± 1	240 ± 0	9,500 ± 100	4.1 ± 0.0
Sac. R.—Freeport	07/17/96	(1/1)	na ± na	(3) ± 0.3	(3) ± 0	(100) ± 0	na ± na	(0.7) ± 0.03
Sac. R.—Freeport	09/24/96	(1/1)	na ± na	(4) ± 0.3	(4) ± 0.2	(80) ± 2	(< 500) ± 0	(0.9) ± 0.01
Sac. R.—Freeport	11/12/96	(1/1)	0.29 ± 0.02	< 4 ± 0.3	15 ± 0	120 ± 0	8,900 ± 200	3.3 ± 0.0
Sac. R.—Freeport	12/17/96	(1/1)	0.25 ± 0.01	< 3 ± 0.2	15 ± 0	160 ± 0	8,900 ± 0	3.3 ± 0.0

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

Site	Date	Split replicate	Mercury	Molybdenum	Neodymium	Nickel	Potassium	Praseodymium
			( $\mu\text{g/g}$ ) CVAFS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES-Ax	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Freeport	01/06/97	(1/2)	0.14 $\pm$ 0.01	< 3 $\pm$ 0.1	33 $\pm$ 0	130 $\pm$ 0	15,000 $\pm$ 0	8.4 $\pm$ 0.0
Sac. R.—Freeport	01/06/97	(2/2)	0.19 $\pm$ 0.01	< 3 $\pm$ 0.4	31 $\pm$ 0	120 $\pm$ 0	12,000 $\pm$ 0	7.7 $\pm$ 0.2
Sac. R.—Freeport	06/05/97	(1/1)	0.18 $\pm$ 0.00	< 3 $\pm$ 0.1	18 $\pm$ 0	220 $\pm$ 0	9,700 $\pm$ 0	3.9 $\pm$ 0.0
Sac. R.—Freeport, dup	06/05/97	(1/1)	0.26 $\pm$ 0.01	< 3 $\pm$ 0.1	14 $\pm$ 0	220 $\pm$ 10	8,400 $\pm$ 100	3.2 $\pm$ 0.1
Spring Cr.—Weir	12/11/96	(1/1)	2.7 $\pm$ 0.1	8.9 $\pm$ 2.8	8.2 $\pm$ 0.3	37 $\pm$ 7	6,300 $\pm$ 500	1.3 $\pm$ 0.1
Spring Cr.—Weir	05/28/97	(1/1)	0.28 $\pm$ 0.01	20 $\pm$ 2	< 0.5 $\pm$ 0.04	60 $\pm$ 8	< 1,000 $\pm$ 0	< 0.1 $\pm$ 0
Spring Cr.—Road	01/02/97	(1/1)	3.8 $\pm$ 0.1	8.5 $\pm$ 0.2	4.8 $\pm$ 0.2	53 $\pm$ 0	7,400 $\pm$ 500	0.96 $\pm$ 0.02
Spring Cr. arm	07/12/96	(1/1)	0.41 $\pm$ 0.05	< 8 $\pm$ 0.6	13 $\pm$ 1	240 $\pm$ 0	4,100 $\pm$ 300	2.4 $\pm$ 0.1
Spring Cr. arm	11/20/96	(1/1)	0.49 $\pm$ 0.03	< 9 $\pm$ 0.8	45 $\pm$ 1	140 $\pm$ 10	2,700 $\pm$ 1,000	7.5 $\pm$ 0.3
Spring Cr. arm	12/11/96	(1/1)	0.97 $\pm$ 0.08	< 5 $\pm$ 0.3	127 $\pm$ 5	100 $\pm$ 9	< 900 $\pm$ 300	21 $\pm$ 0
Spring Cr. arm	05/28/97	(1/1)	0.25 $\pm$ 0.02	< 4 $\pm$ 0.1	11 $\pm$ 1	2,100 $\pm$ 0	3,400 $\pm$ 100	2.5 $\pm$ 0.1
Colusa Basin Drain	06/06/97	(1/1)	0.097 $\pm$ 0.019	< 3 $\pm$ 0	15 $\pm$ 0	170 $\pm$ 0	13,000 $\pm$ 0	3.6 $\pm$ 0.0
Yolo Bypass	01/07/97	(1/1)	0.34 $\pm$ 0.02	< 3 $\pm$ 0.1	18 $\pm$ 0	170 $\pm$ 0	16,000 $\pm$ 0	4.1 $\pm$ 0.1



Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Rhenium	Rubidium	Samarium	Silica (as SiO <sub>2</sub> )	Silver	Sodium
			(µg/g) ICP-MS	(µg/g) ICP-MS	(µg/g) ICP-MS	(µg/g) ICP-AES	(µg/g) ICP-MS	(µg/g) ICP-AES
Sac. R.—Shasta	07/12/96	(1/1)	< 0.01 ± 0.004	4.9 ± 0.1	3.3 ± 0.1	420,000 ± 40,000	< 2 ± 0.2	9,100 ± 600
Sac. R.—Shasta	11/19/96	(1/1)	< 0.03 ± 0.006	32 ± 1	5.5 ± 0.2	740,000 ± 20,000	< 4 ± 0.8	12,000 ± 1,000
Sac. R.—Shasta	12/12/96	(1/1)	(< 0.02) ± 0.002	(20) ± 2	(0.6) ± 0.08	nd ± nd	(4) ± 0.5	(70,000) ± 2,000
Sac. R.—Shasta	05/29/97	(1/1)	< 0.009 ± 0.0013	16 ± 0	3.5 ± 0.0	440,000 ± 30,000	< 1 ± 0.3	3,000 ± 300
Sac. R.—Keswick	07/11/96	(1/1)	< 0.02 ± 0.003	19 ± 1	3.9 ± 0.1	580,000 ± 10,000	< 2 ± 0.2	17,000 ± 1,000
Sac. R.—Keswick	11/21/96	(1/1)	< 0.01 ± 0	8.6 ± 0.7	4.9 ± 0.1	590,000 ± 50,000	< 1 ± 0.1	12,000 ± 1,000
Sac. R.—Keswick	12/11/96	(1/1)	< 0.01 ± 0.00	18 ± 0	12 ± 1	470,000 ± 9,000	< 2 ± 0	4,500 ± 200
Sac. R.—Keswick	01/02/97	(1/1)	< 0.008 ± 0.0004	5.8 ± 0.5	3.6 ± 0.1	510,000 ± 70,000	< 1 ± 0	5,900 ± 100
Sac. R.—Keswick	05/28/97	(1/1)	< 0.009 ± 0.0012	33 ± 0	4.1 ± 0.1	410,000 ± 20,000	< 1 ± 0.4	2,700 ± 100
Sac. R.—Bend Br.	07/11/96	(1/1)	< 0.01 ± 0.002	6.4 ± 0.2	3.1 ± 0.1	480,000 ± 50,000	< 2 ± 0.2	14,000 ± 1,000
Sac. R.—Bend Br.	09/20/96	(1/1)	< 0.009 ± 0.0011	48 ± 0	4.5 ± 0.1	450,000 ± 20,000	< 1 ± 0.1	11,000 ± 1,000
Sac. R.—Bend Br.	11/22/96	(1/1)	< 0.04 ± 0.017	30 ± 0	3.7 ± 0.3	780,000 ± 30,000	< 5 ± 0.3	14,000 ± 1,000
Sac. R.—Bend Br.	12/12/96	(1/1)	< 0.009 ± 0.0034	78 ± 0	5.2 ± 0.0	510,000 ± 50,000	< 1 ± 0.3	8,400 ± 600
Sac. R.—Bend Br.	01/03/97	(1/1)	< 0.008 ± 0.0012	24 ± 1	4.7 ± 0.3	520,000 ± 80,000	< 1 ± 0.1	5,900 ± 0
Sac. R.—Bend Br.	05/30/97	(1/2)	< 0.009 ± 0.0014	25 ± 0	4.2 ± 0.0	420,000 ± 20,000	< 1 ± 0.1	3,100 ± 200
Sac. R.—Bend Br.	05/30/97	(2/2)	< 0.009 ± 0.0017	5.7 ± 0.3	3.0 ± 0.1	520,000 ± 70,000	< 1 ± 0.2	3,600 ± 200
Sac. R.—Colusa	07/16/96	(1/1)	< 0.009 ± 0.0014	8.0 ± 0.5	3.1 ± 0.2	460,000 ± 40,000	< 1 ± 0.1	10,000 ± 1,000
Sac. R.—Colusa	09/25/96	(1/1)	< 0.03 ± 0.011	36 ± 1	3.2 ± 0.2	490,000 ± 60,000	< 5 ± 0.2	40,000 ± 5,000
Sac. R.—Colusa	11/13/96	(1/1)	< 0.009 ± 0.0009	16 ± 0	3.4 ± 0.1	720,000 ± 40,000	< 1 ± 0.1	16,000 ± 1,000
Sac. R.—Colusa	12/16/96	(1/1)	0 ± 0	8.0 ± 1.2	3.0 ± 0.2	510,000 ± 15,000	< 2 ± 0.19	9,100 ± 400
Sac. R.—Colusa	01/04/97	(1/1)	< 0.008 ± 0.0013	27 ± 0	4.0 ± 0.1	470,000 ± 30,000	< 1 ± 0.4	8,200 ± 400
Sac. R.—Colusa	06/03/97	(1/1)	< 0.01 ± 0.0018	20 ± 1	3.9 ± 0.0	710,000 ± 50,000	< 1 ± 0.3	15,000 ± 1,000
Sac. R.—Verona	07/18/96	(1/1)	< 0.01 ± 0.0032	16 ± 1	3.2 ± 0.1	510,000 ± 50,000	< 1 ± 0.2	13,000 ± 1,000
Sac. R.—Verona	09/26/96	(1/1)	< 0.01 ± 0.004	56 ± 1	3.9 ± 0.1	500,000 ± 50,000	< 2 ± 0.2	29,000 ± 3,000
Sac. R.—Verona	11/14/96	(1/1)	< 0.01 ± 0.002	23 ± 1	2.6 ± 0.2	570,000 ± 10,000	< 2 ± 1.6	8,200 ± 500
Sac. R.—Verona	12/18/96	(1/1)	0 ± 0	8.3 ± 0.6	2.6 ± 0.1	480,000 ± 7,000	< 2 ± 0.29	7,600 ± 400
Sac. R.—Verona	06/04/97	(1/1)	< 0.008 ± 0.0007	33 ± 0	4.4 ± 0.2	440,000 ± 50,000	< 1 ± 0.1	5,400 ± 500
Sac. R.—Freeport	07/17/96	(1/1)	(0.04) ± 0.005	(40) ± 1	(1) ± 0.06	(400,000) ± 0	(< 1) ± 0.1	(10,000) ± 0
Sac. R.—Freeport	09/24/96	(1/1)	(0.05) ± 0.006	(30) ± 2	(1) ± 0.1	(400,000) ± 0	(< 1) ± 0.1	(10,000) ± 0
Sac. R.—Freeport	11/12/96	(1/1)	< 0.01 ± 0.002	24 ± 0	3.5 ± 0.1	500,000 ± 60,000	< 2 ± 0.1	6,000 ± 700
Sac. R.—Freeport	12/17/96	(1/1)	< 0.009 ± 0.0036	15 ± 0	3.6 ± 0.1	470,000 ± 10,000	< 1 ± 0.2	7,600 ± 500

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Rhenium	Rubidium	Samarium	Silica (as SiO <sub>2</sub> )	Silver	Sodium
			(µg/g) ICP-MS	(µg/g) ICP-MS	(µg/g) ICP-MS	(µg/g) ICP-AES	(µg/g) ICP-MS	(µg/g) ICP-AES
Sac. R.—Freeport	01/06/97	(1/2)	< 0.009 ± 0.0006	65 ± 1	7.4 ± 0.1	530,000 ± 80,000	< 1 ± 0.1	9,500 ± 500
Sac. R.—Freeport	01/06/97	(2/2)	< 0.008 ± 0.0035	24 ± 0	6.4 ± 0.2	450,000 ± 10,000	< 1 ± 0.2	8,700 ± 200
Sac. R.—Freeport	06/05/97	(1/1)	< 0.009 ± 0.0032	30 ± 0	4.3 ± 0.1	470,000 ± 0	< 1 ± 0.3	6,200 ± 400
Sac. R.—Freeport, dup	06/05/97	(1/1)	< 0.009 ± 0.0025	21 ± 1	3.4 ± 0.1	470,000 ± 0	< 1 ± 0.1	5,800 ± 300
Spring Cr.—Weir	12/11/96	(1/1)	< 0.01 ± 0.01	5.0 ± 0.3	3.5 ± 0.2	380,000 ± 2,000	< 8 ± 4.21	4,300 ± 100
Spring Cr.—Weir	05/28/97	(1/1)	< 0.02 ± 0.015	10 ± 2	< 0.1 ± 0.02	< 200,000 ± 20,000	< 7 ± 2.28	< 5,000 ± 200
Spring Cr.—Road	01/02/97	(1/1)	< 0.02 ± 0.002	8.2 ± 0.4	1.8 ± 0.1	270,000 ± 30,000	4.4 ± 1.2	< 6,000 ± 800
Spring Cr. arm	07/12/96	(1/1)	< 0.02 ± 0.006	16 ± 1	3.7 ± 0.1	340,000 ± 30,000	< 3 ± 0.8	13,000 ± 1,000
Spring Cr. arm	11/20/96	(1/1)	< 0.03 ± 0.013	5.8 ± 0.4	19 ± 0	390,000 ± 20,000	< 4 ± 0.2	< 8,000 ± 400
Spring Cr. arm	12/11/96	(1/1)	< 0.01 ± 0	1.5 ± 0.2	46 ± 1	230,000 ± 8,000	< 2 ± 0	9,000 ± 300
Spring Cr. arm	05/28/97	(1/1)	< 0.01 ± 0.001	21 ± 1	3.2 ± 0.1	370,000 ± 10,000	< 2 ± 0.1	< 3,000 ± 100
Colusa Basin Drain	06/06/97	(1/1)	< 0.009 ± 0.0007	43 ± 1	3.9 ± 0.0	450,000 ± 30,000	< 1 ± 0	4,800 ± 400
Yolo Bypass	01/07/97	(1/1)	< 0.009 ± 0.0011	44 ± 1	4.7 ± 0.1	450,000 ± 50,000	< 1 ± 0.1	5,800 ± 100

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Strontium	Terbium	Thallium	Thorium	Thulium	Tin
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Shasta	07/12/96	(1/1)	93 $\pm$ 1	0.62 $\pm$ 0.02	0.25 $\pm$ 0.03	3.3 $\pm$ 0.0	0.25 $\pm$ 0.02	200 $\pm$ 30
Sac. R.—Shasta	11/19/96	(1/1)	85 $\pm$ 1	1.0 $\pm$ 0.0	0.20 $\pm$ 0.01	3.4 $\pm$ 0.1	0.33 $\pm$ 0.00	160 $\pm$ 0
Sac. R.—Shasta	12/12/96	(1/1)	(70) $\pm$ 6	(0.2) $\pm$ 0.01	(0.6) $\pm$ 0.03	(2) $\pm$ 0.2	(0.1) $\pm$ 0.01	(300) $\pm$ 0
Sac. R.—Shasta	05/29/97	(1/1)	78 $\pm$ 1	0.71 $\pm$ 0.10	0.33 $\pm$ 0.01	4.2 $\pm$ 0.1	0.29 $\pm$ 0.04	71 $\pm$ 2
Sac. R.—Keswick	07/11/96	(1/1)	120 $\pm$ 0	0.64 $\pm$ 0.02	0.20 $\pm$ 0.02	3.4 $\pm$ 0.1	0.24 $\pm$ 0.00	9.9 $\pm$ 0.2
Sac. R.—Keswick	11/21/96	(1/1)	50 $\pm$ 1	1.3 $\pm$ 0.1	0.27 $\pm$ 0.03	2.7 $\pm$ 0.1	0.53 $\pm$ 0.07	360 $\pm$ 10
Sac. R.—Keswick	12/11/96	(1/1)	61 $\pm$ 3	2.5 $\pm$ 0.5	0.37 $\pm$ 0.03	4.8 $\pm$ 0.2	0.98 $\pm$ 0.04	313 $\pm$ 12
Sac. R.—Keswick	01/02/97	(1/1)	44 $\pm$ 1	0.95 $\pm$ 0.18	0.72 $\pm$ 0.03	2.3 $\pm$ 0.0	0.43 $\pm$ 0.07	59 $\pm$ 6
Sac. R.—Keswick	05/28/97	(1/1)	68 $\pm$ 0	0.79 $\pm$ 0.10	0.26 $\pm$ 0.00	4.3 $\pm$ 0.1	0.31 $\pm$ 0.04	120 $\pm$ 0
Sac. R.—Bend Br.	07/11/96	(1/1)	130 $\pm$ 0	0.54 $\pm$ 0.02	0.22 $\pm$ 0.01	2.9 $\pm$ 0.0	0.21 $\pm$ 0.00	210 $\pm$ 30
Sac. R.—Bend Br.	09/20/96	(1/1)	150 $\pm$ 0	0.82 $\pm$ 0.13	0.38 $\pm$ 0.01	5.7 $\pm$ 0.1	0.30 $\pm$ 0.05	58 $\pm$ 1
Sac. R.—Bend Br.	11/22/96	(1/1)	59 $\pm$ 5	0.75 $\pm$ 0.03	0.33 $\pm$ 0.10	4.4 $\pm$ 0.2	0.34 $\pm$ 0.01	83 $\pm$ 3
Sac. R.—Bend Br.	12/12/96	(1/1)	96 $\pm$ 2	0.78 $\pm$ 0.00	0.51 $\pm$ 0.01	6.1 $\pm$ 0.3	0.31 $\pm$ 0.03	36 $\pm$ 1
Sac. R.—Bend Br.	01/03/97	(1/1)	91 $\pm$ 2	0.76 $\pm$ 0.02	0.57 $\pm$ 0.02	6.4 $\pm$ 0.0	0.36 $\pm$ 0.05	48 $\pm$ 1
Sac. R.—Bend Br.	05/30/97	(1/2)	72 $\pm$ 0	0.80 $\pm$ 0.10	0.25 $\pm$ 0.01	4.7 $\pm$ 0.1	0.32 $\pm$ 0.04	110 $\pm$ 0
Sac. R.—Bend Br.	05/30/97	(2/2)	72 $\pm$ 1	0.56 $\pm$ 0.01	0.25 $\pm$ 0.01	3.8 $\pm$ 0.0	0.25 $\pm$ 0.01	270 $\pm$ 10
Sac. R.—Colusa	07/16/96	(1/1)	110 $\pm$ 0	0.55 $\pm$ 0.02	0.28 $\pm$ 0.03	3.7 $\pm$ 0.0	0.23 $\pm$ 0.01	170 $\pm$ 30
Sac. R.—Colusa	09/25/96	(1/1)	320 $\pm$ 10	0.54 $\pm$ 0.02	0.23 $\pm$ 0.06	3.1 $\pm$ 0.1	0.21 $\pm$ 0.00	640 $\pm$ 90
Sac. R.—Colusa	11/13/96	(1/1)	85 $\pm$ 2	0.80 $\pm$ 0.02	0.31 $\pm$ 0.01	3.4 $\pm$ 0.1	0.28 $\pm$ 0.04	110 $\pm$ 10
Sac. R.—Colusa	12/16/96	(1/1)	76 $\pm$ 4	0.52 $\pm$ 0.10	0.39 $\pm$ 0.04	3.6 $\pm$ 0.2	0.24 $\pm$ 0.01	14 $\pm$ 0
Sac. R.—Colusa	01/04/97	(1/1)	100 $\pm$ 0	0.73 $\pm$ 0.11	0.60 $\pm$ 0.02	5.4 $\pm$ 0.1	0.33 $\pm$ 0.05	54 $\pm$ 1
Sac. R.—Colusa	06/03/97	(1/1)	94 $\pm$ 1	0.79 $\pm$ 0.07	0.28 $\pm$ 0.03	4.9 $\pm$ 0.3	0.30 $\pm$ 0.04	100 $\pm$ 0
Sac. R.—Verona	07/18/96	(1/1)	140 $\pm$ 0	0.53 $\pm$ 0.02	0.28 $\pm$ 0.01	4.3 $\pm$ 0.0	0.23 $\pm$ 0.00	190 $\pm$ 40
Sac. R.—Verona	09/26/96	(1/1)	270 $\pm$ 0	0.63 $\pm$ 0.01	0.31 $\pm$ 0.02	4.8 $\pm$ 0.1	0.26 $\pm$ 0.01	230 $\pm$ 40
Sac. R.—Verona	11/14/96	(1/1)	92 $\pm$ 3	0.39 $\pm$ 0.02	0.33 $\pm$ 0.01	3.4 $\pm$ 0.1	0.16 $\pm$ 0.01	48 $\pm$ 1
Sac. R.—Verona	12/18/96	(1/1)	77 $\pm$ 1	0.45 $\pm$ 0.08	0.37 $\pm$ 0.01	3.4 $\pm$ 0.1	0.21 $\pm$ 0.00	11 $\pm$ 1
Sac. R.—Verona	06/04/97	(1/1)	94 $\pm$ 1	0.79 $\pm$ 0.11	0.34 $\pm$ 0.03	5.7 $\pm$ 0.2	0.29 $\pm$ 0.04	60 $\pm$ 3
Sac. R.—Freeport	07/17/96	(1/1)	(170) $\pm$ 0	(0.2) $\pm$ 0	(0.3) $\pm$ 0.02	(1) $\pm$ 0.1	(0.06) $\pm$ 0.007	(30) $\pm$ 0
Sac. R.—Freeport	09/24/96	(1/1)	(100) $\pm$ 0	(0.2) $\pm$ 0.02	(0.2) $\pm$ 0	(1) $\pm$ 0.3	(0.09) $\pm$ 0.005	(90) $\pm$ 0
Sac. R.—Freeport	11/12/96	(1/1)	95 $\pm$ 2	0.59 $\pm$ 0.01	0.35 $\pm$ 0.05	4.1 $\pm$ 0.1	0.22 $\pm$ 0.01	140 $\pm$ 0
Sac. R.—Freeport	12/17/96	(1/1)	91 $\pm$ 4	0.50 $\pm$ 0.02	0.42 $\pm$ 0.03	4.7 $\pm$ 0.0	0.22 $\pm$ 0.01	12 $\pm$ 1

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

Site	Date	Split replicate	Strontium	Terbium	Thallium	Thorium	Thulium	Tin
			( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Freeport	01/06/97	(1/2)	180 $\pm$ 0	1.0 $\pm$ 0.2	0.61 $\pm$ 0.00	21 $\pm$ 0	0.34 $\pm$ 0.07	49 $\pm$ 1
Sac. R.—Freeport	01/06/97	(2/2)	170 $\pm$ 0	0.84 $\pm$ 0.06	0.59 $\pm$ 0.01	17 $\pm$ 0	0.28 $\pm$ 0.01	< 4 $\pm$ 0.6
Sac. R.—Freeport	06/05/97	(1/1)	100 $\pm$ 0	0.63 $\pm$ 0.00	0.34 $\pm$ 0.01	5.4 $\pm$ 0.1	0.24 $\pm$ 0.00	17 $\pm$ 0
Sac. R.—Freeport, dup	06/05/97	(1/1)	94 $\pm$ 1	0.55 $\pm$ 0.01	0.34 $\pm$ 0.03	4.2 $\pm$ 0.1	0.21 $\pm$ 0.01	13 $\pm$ 1
Spring Cr.—Weir	12/11/96	(1/1)	15 $\pm$ 0	0.82 $\pm$ 0.22	0.55 $\pm$ 0.05	2.4 $\pm$ 0.0	0.48 $\pm$ 0.03	223 $\pm$ 2
Spring Cr.—Weir	05/28/97	(1/1)	10 $\pm$ 2	0.050 $\pm$ 0.005	0.40 $\pm$ 0.00	< 0.3 $\pm$ 0.47	0.040 $\pm$ 0.011	60 $\pm$ 2
Spring Cr.—Road	01/02/97	(1/1)	25 $\pm$ 0	0.46 $\pm$ 0.09	0.50 $\pm$ 0.03	1.7 $\pm$ 0.0	0.28 $\pm$ 0.05	190 $\pm$ 0
Spring Cr. arm	07/12/96	(1/1)	130 $\pm$ 0	0.69 $\pm$ 0.03	0.11 $\pm$ 0.03	1.8 $\pm$ 0.0	0.24 $\pm$ 0.02	19 $\pm$ 1
Spring Cr. arm	11/20/96	(1/1)	33 $\pm$ 3	4.9 $\pm$ 0.3	0.16 $\pm$ 0.05	3.5 $\pm$ 0.2	1.7 $\pm$ 0.0	730 $\pm$ 50
Spring Cr. arm	12/11/96	(1/1)	20 $\pm$ 1	10 $\pm$ 2	0.14 $\pm$ 0.01	2.5 $\pm$ 0.2	3.4 $\pm$ 0.0	323 $\pm$ 0
Spring Cr. arm	05/28/97	(1/1)	49 $\pm$ 1	0.59 $\pm$ 0.01	0.19 $\pm$ 0.01	3.5 $\pm$ 0.0	0.23 $\pm$ 0.02	24 $\pm$ 0
Colusa Basin Drain	06/06/97	(1/1)	120 $\pm$ 0	0.66 $\pm$ 0.10	0.44 $\pm$ 0.01	5.6 $\pm$ 0.1	0.26 $\pm$ 0.03	53 $\pm$ 2
Yolo Bypass	01/07/97	(1/1)	100 $\pm$ 0	0.84 $\pm$ 0.14	0.57 $\pm$ 0.04	6.9 $\pm$ 0.0	0.37 $\pm$ 0.07	63 $\pm$ 2

Table A5-2. Concentrations of selected elements in suspended colloid samples—Continued

Site	Date	Split replicate	Titanium	Uranium	Vanadium	Ytterbium	Yttrium	Zinc
			( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Shasta	07/12/96	(1/1)	3,400 $\pm$ 0	1.8 $\pm$ 0.1	150 $\pm$ 0	2.0 $\pm$ 0.1	16 $\pm$ 0	430 $\pm$ 20
Sac. R.—Shasta	11/19/96	(1/1)	3,300 $\pm$ 0	3.0 $\pm$ 0.3	220 $\pm$ 0	3.1 $\pm$ 0.2	27 $\pm$ 0	770 $\pm$ 40
Sac. R.—Shasta	12/12/96	(1/1)	(40,00) $\pm$ 0	(4) $\pm$ 0.1	(300) $\pm$ 0	(1) $\pm$ 0	(5) $\pm$ 0.5	(1,000) $\pm$ 0
Sac. R.—Shasta	05/29/97	(1/1)	3,800 $\pm$ 100	2.0 $\pm$ 0.1	160 $\pm$ 0	2.4 $\pm$ 0.0	15 $\pm$ 0	300 $\pm$ 30
Sac. R.—Keswick	07/11/96	(1/1)	3,200 $\pm$ 0	1.9 $\pm$ 0.2	130 $\pm$ 0	2.1 $\pm$ 0.1	18 $\pm$ 0	450 $\pm$ 10
Sac. R.—Keswick	11/21/96	(1/1)	3,900 $\pm$ 300	1.9 $\pm$ 0.1	270 $\pm$ 10	4.2 $\pm$ 0.1	26 $\pm$ 0	950 $\pm$ 60
Sac. R.—Keswick	12/11/96	(1/1)	3,580 $\pm$ 40	3.3 $\pm$ 0.2	267 $\pm$ 3	6.6 $\pm$ 0.2	57 $\pm$ 2	1,530 $\pm$ 30
Sac. R.—Keswick	01/02/97	(1/1)	3,300 $\pm$ 0	2.5 $\pm$ 0.1	330 $\pm$ 0	3.5 $\pm$ 0.0	21 $\pm$ 0	1,100 $\pm$ 0
Sac. R.—Keswick	05/28/97	(1/1)	3,400 $\pm$ 200	2.0 $\pm$ 0.0	170 $\pm$ 10	2.5 $\pm$ 0.0	19 $\pm$ 0	380 $\pm$ 30
Sac. R.—Bend Br.	07/11/96	(1/1)	3,200 $\pm$ 0	1.6 $\pm$ 0.0	130 $\pm$ 10	1.7 $\pm$ 0.1	15 $\pm$ 0	390 $\pm$ 20
Sac. R.—Bend Br.	09/20/96	(1/1)	4,000 $\pm$ 200	2.1 $\pm$ 0.0	170 $\pm$ 10	2.3 $\pm$ 0.1	19 $\pm$ 0	200 $\pm$ 10
Sac. R.—Bend Br.	11/22/96	(1/1)	4,000 $\pm$ 0	2.3 $\pm$ 0.0	200 $\pm$ 0	2.9 $\pm$ 0.1	22 $\pm$ 1	580 $\pm$ 10
Sac. R.—Bend Br.	12/12/96	(1/1)	3,800 $\pm$ 0	2.8 $\pm$ 0.1	180 $\pm$ 0	2.8 $\pm$ 0.2	23 $\pm$ 0	400 $\pm$ 0
Sac. R.—Bend Br.	01/03/97	(1/1)	4,300 $\pm$ 0	2.8 $\pm$ 0.1	230 $\pm$ 0	2.8 $\pm$ 0.0	20 $\pm$ 0	250 $\pm$ 10
Sac. R.—Bend Br.	05/30/97	(1/2)	3,500 $\pm$ 200	1.9 $\pm$ 0.0	170 $\pm$ 10	2.5 $\pm$ 0.1	19 $\pm$ 0	380 $\pm$ 20
Sac. R.—Bend Br.	05/30/97	(2/2)	3,500 $\pm$ 0	1.9 $\pm$ 0.1	160 $\pm$ 10	1.9 $\pm$ 0.0	15 $\pm$ 0	380 $\pm$ 10
Sac. R.—Colusa	07/16/96	(1/1)	3,500 $\pm$ 0	1.6 $\pm$ 0.1	140 $\pm$ 0	1.8 $\pm$ 0.0	14 $\pm$ 0	260 $\pm$ 0
Sac. R.—Colusa	09/25/96	(1/1)	2,400 $\pm$ 100	1.8 $\pm$ 0.2	120 $\pm$ 20	1.7 $\pm$ 0.1	15 $\pm$ 0	220 $\pm$ 20
Sac. R.—Colusa	11/13/96	(1/1)	3,400 $\pm$ 100	2.0 $\pm$ 0.0	150 $\pm$ 10	2.0 $\pm$ 0.0	16 $\pm$ 0	320 $\pm$ 20
Sac. R.—Colusa	12/16/96	(1/1)	4,520 $\pm$ 120	2.2 $\pm$ 0.2	210 $\pm$ 5	1.9 $\pm$ 0.0	12 $\pm$ 0	270 $\pm$ 10
Sac. R.—Colusa	01/04/97	(1/1)	5,000 $\pm$ 300	2.6 $\pm$ 0.0	240 $\pm$ 10	2.7 $\pm$ 0.1	16 $\pm$ 0	180 $\pm$ 10
Sac. R.—Colusa	06/03/97	(1/1)	3,800 $\pm$ 200	1.9 $\pm$ 0.1	170 $\pm$ 10	2.4 $\pm$ 0.1	18 $\pm$ 0	290 $\pm$ 20
Sac. R.—Verona	07/18/96	(1/1)	4,300 $\pm$ 0	2.0 $\pm$ 0.1	160 $\pm$ 10	1.7 $\pm$ 0.0	14 $\pm$ 0	280 $\pm$ 10
Sac. R.—Verona	09/26/96	(1/1)	4,100 $\pm$ 0	2.3 $\pm$ 0.1	180 $\pm$ 10	2.0 $\pm$ 0.1	17 $\pm$ 0	210 $\pm$ 20
Sac. R.—Verona	11/14/96	(1/1)	5,000 $\pm$ 0	2.4 $\pm$ 0.0	190 $\pm$ 0	1.4 $\pm$ 0.1	10 $\pm$ 0	290 $\pm$ 10
Sac. R.—Verona	12/18/96	(1/1)	4,650 $\pm$ 10	2.6 $\pm$ 0.0	209 $\pm$ 2	1.6 $\pm$ 0.0	9.5 $\pm$ 0.2	220 $\pm$ 10
Sac. R.—Verona	06/04/97	(1/1)	4,000 $\pm$ 100	2.2 $\pm$ 0.1	180 $\pm$ 10	2.2 $\pm$ 0.0	17 $\pm$ 0	220 $\pm$ 20
Sac. R.—Freeport	07/17/96	(1/1)	(4,000) $\pm$ 100	(2) $\pm$ 0.1	(170) $\pm$ 0	(0.4) $\pm$ 0.02	(4) $\pm$ 0.1	(300) $\pm$ 0
Sac. R.—Freeport	09/24/96	(1/1)	(2,000) $\pm$ 0	(2) $\pm$ 0.1	(100) $\pm$ 0	(0.6) $\pm$ 0.02	(7) $\pm$ 0.1	(500) $\pm$ 10
Sac. R.—Freeport	11/12/96	(1/1)	4,300 $\pm$ 100	2.6 $\pm$ 0.1	180 $\pm$ 0	2.1 $\pm$ 0.0	16 $\pm$ 0	310 $\pm$ 10
Sac. R.—Freeport	12/17/96	(1/1)	4,700 $\pm$ 0	2.6 $\pm$ 0.0	210 $\pm$ 0	1.9 $\pm$ 0.1	15 $\pm$ 0	200 $\pm$ 10

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

Site	Date	Split replicate	Titanium	Uranium	Vanadium	Ytterbium	Yttrium	Zinc
			( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-MS	( $\mu\text{g/g}$ ) ICP-AES
Sac. R.—Freeport	01/06/97	(1/2)	4,900 $\pm$ 100	5.6 $\pm$ 0.0	180 $\pm$ 10	2.6 $\pm$ 0.1	21 $\pm$ 0	140 $\pm$ 10
Sac. R.—Freeport	01/06/97	(2/2)	4,700 $\pm$ 100	6.2 $\pm$ 0.0	170 $\pm$ 0	2.5 $\pm$ 0.0	19 $\pm$ 0	130 $\pm$ 10
Sac. R.—Freeport	06/05/97	(1/1)	4,100 $\pm$ 0	2.7 $\pm$ 0.1	170 $\pm$ 0	2.3 $\pm$ 0.0	18 $\pm$ 0	220 $\pm$ 10
Sac. R.—Freeport, dup	06/05/97	(1/1)	3,900 $\pm$ 0	2.7 $\pm$ 0.0	170 $\pm$ 0	2.0 $\pm$ 0.0	14 $\pm$ 0	210 $\pm$ 0
Spring Cr.—Weir	12/11/96	(1/1)	2,390 $\pm$ 10	1.2 $\pm$ 0.0	117 $\pm$ 3	3.6 $\pm$ 0.0	14 $\pm$ 1	460 $\pm$ 20
Spring Cr.—Weir	05/28/97	(1/1)	900 $\pm$ 10	0.50 $\pm$ 0.01	<3 $\pm$ 2.8	0.40 $\pm$ 0.02	3.0 $\pm$ 0.4	100 $\pm$ 10
Spring Cr.—Road	01/02/97	(1/1)	1,800 $\pm$ 200	0.78 $\pm$ 0.04	93 $\pm$ 10	2.3 $\pm$ 0.2	12 $\pm$ 0	120 $\pm$ 10
Spring Cr. arm	07/12/96	(1/1)	1,000 $\pm$ 0	1.5 $\pm$ 0.2	78 $\pm$ 1	2.1 $\pm$ 0.1	22 $\pm$ 1	280 $\pm$ 20
Spring Cr. arm	11/20/96	(1/1)	2,100 $\pm$ 0	4.3 $\pm$ 0.1	140 $\pm$ 0	15 $\pm$ 1	130 $\pm$ 10	2,600 $\pm$ 100
Spring Cr. arm	12/11/96	(1/1)	1,410 $\pm$ 50	6.1 $\pm$ 0.1	91 $\pm$ 2	21 $\pm$ 1	229 $\pm$ 10	4,940 $\pm$ 70
Spring Cr. arm	05/28/97	(1/1)	2,300 $\pm$ 100	1.9 $\pm$ 0.1	160 $\pm$ 10	2.0 $\pm$ 0.1	17 $\pm$ 0	340 $\pm$ 30
Colusa Basin Drain	06/06/97	(1/1)	4,300 $\pm$ 100	1.8 $\pm$ 0.0	190 $\pm$ 0	2.1 $\pm$ 0.1	15 $\pm$ 0	170 $\pm$ 20
Yolo Bypass	01/07/97	(1/1)	4,900 $\pm$ 200	2.9 $\pm$ 0.0	250 $\pm$ 10	2.9 $\pm$ 0.0	19 $\pm$ 0	180 $\pm$ 20

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

Site	Date	Split replicate	Zirconium ( $\mu\text{g/g}$ ) ICP-MS
Sac. R.—Shasta	07/12/96	(1/1)	230 $\pm$ 0
Sac. R.—Shasta	11/19/96	(1/1)	< 400 $\pm$ 0
Sac. R.—Shasta	12/12/96	(1/1)	(1,000) $\pm$ 200
Sac. R.—Shasta	05/29/97	(1/1)	250 $\pm$ 0
Sac. R.—Keswick	07/11/96	(1/1)	410 $\pm$ 0
Sac. R.—Keswick	11/21/96	(1/1)	510 $\pm$ 0
Sac. R.—Keswick	12/11/96	(1/1)	200 $\pm$ 7
Sac. R.—Keswick	01/02/97	(1/1)	240 $\pm$ 0
Sac. R.—Keswick	05/28/97	(1/1)	200 $\pm$ 0
Sac. R.—Bend Br.	07/11/96	(1/1)	160 $\pm$ 0
Sac. R.—Bend Br.	09/20/96	(1/1)	170 $\pm$ 0
Sac. R.—Bend Br.	11/22/96	(1/1)	660 $\pm$ 30
Sac. R.—Bend Br.	12/12/96	(1/1)	200 $\pm$ 0
Sac. R.—Bend Br.	01/03/97	(1/1)	250 $\pm$ 0
Sac. R.—Bend Br.	05/30/97	(1/2)	200 $\pm$ 0
Sac. R.—Bend Br.	05/30/97	(2/2)	230 $\pm$ 0
Sac. R.—Colusa	07/16/96	(1/1)	190 $\pm$ 0
Sac. R.—Colusa	09/25/96	(1/1)	< 400 $\pm$ 10
Sac. R.—Colusa	11/13/96	(1/1)	280 $\pm$ 0
Sac. R.—Colusa	12/16/96	(1/1)	214 $\pm$ 1
Sac. R.—Colusa	01/04/97	(1/1)	270 $\pm$ 0
Sac. R.—Colusa	06/03/97	(1/1)	610 $\pm$ 0
Sac. R.—Verona	07/18/96	(1/1)	180 $\pm$ 0
Sac. R.—Verona	09/26/96	(1/1)	170 $\pm$ 0
Sac. R.—Verona	11/14/96	(1/1)	< 200 $\pm$ 0
Sac. R.—Verona	12/18/96	(1/1)	213 $\pm$ 10
Sac. R.—Verona	06/04/97	(1/1)	190 $\pm$ 0
Sac. R.—Freeport	07/17/96	(1/1)	(200) $\pm$ 0
Sac. R.—Freeport	09/24/96	(1/1)	(100) $\pm$ 10
Sac. R.—Freeport	11/12/96	(1/1)	170 $\pm$ 0
Sac. R.—Freeport	12/17/96	(1/1)	190 $\pm$ 10

Table A5-2. Concentrations of selected elements in suspended colloid samples—*Continued*

<b>Site</b>	<b>Date</b>	<b>Split replicate</b>	<b>Zirconium (<math>\mu\text{g/g}</math>) ICP-MS</b>
Sac. R.—Freeport	01/06/97	(1/2)	200 $\pm$ 0
Sac. R.—Freeport	01/06/97	(2/2)	200 $\pm$ 0
Sac. R.—Freeport	06/05/97	(1/1)	180 $\pm$ 0
Sac. R.—Freeport, dup	06/05/97	(1/1)	180 $\pm$ 0
Spring Cr.—Weir	12/11/96	(1/1)	202 $\pm$ 11
Spring Cr.—Weir	05/28/97	(1/1)	< 200 $\pm$ 0
Spring Cr.—Road	01/02/97	(1/1)	< 300 $\pm$ 0
Spring Cr. arm	07/12/96	(1/1)	< 300 $\pm$ 0
Spring Cr. arm	11/20/96	(1/1)	< 400 $\pm$ 10
Spring Cr. arm	12/11/96	(1/1)	74 $\pm$ 4
Spring Cr. arm	05/28/97	(1/1)	< 100 $\pm$ 0
Colusa Basin Drain	06/06/97	(1/1)	180 $\pm$ 0
Yolo Bypass	01/07/97	(1/1)	270 $\pm$ 0



**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples

[Br., Bridge; Cr., Creek; dup, duplicate; R., River; Sac., Sacramento. Split replicate (1/2), first number identifies which replicate was analyzed, second number represents number of replicate samples. mm/dd/yy, month/day/year; na, not analyzed; µg/g, microgram per gram; <, less than the indicated detection limit]

Site	Date (mm/dd/yy)	Split Repli- cate	Aluminum µg/g (dry weight)				Antimony µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.–Shasta	05/29/97	1/1	4,800 ± 100	8,700 ± 100	38,000 ± 0	51,500 ± 200	< 0.2 ± 0.0	< 0.2 ± 0.0	0.8 ± 0.1	1.0 ± 0.3
Sac. R.–Keswick	01/02/97	1/1	4,500 ± 100	4,700 ± 700	45,000 ± 2,000	54,200 ± 2,800	< 0.2 ± 0.0	< 0.2 ± 0.0	3.3 ± 0.3	3.5 ± 0.5
Sac. R.–Keswick	05/28/97	1/1	4,500 ± 0	7,300 ± 300	89,000 ± 0	100,800 ± 300	< 0.2 ± 0.0	< 0.2 ± 0.0	1.0 ± 0.1	1.2 ± 0.3
Sac. R.–Bend Br.	12/12/96	1/1	3,100 ± 100	3,800 ± 100	64,000 ± 1,000	70,900 ± 1,200	< 0.2 ± 0.1	< 0.2 ± 0.1	1.4 ± 0.0	1.6 ± 0.2
Sac. R.–Bend Br.	01/03/97	1/1	4,400 ± 100	5,300 ± 300	62,000 ± 1,000	71,700 ± 1,400	< 0.2 ± 0.0	< 0.2 ± 0.1	1.7 ± 0.1	1.9 ± 0.3
Sac. R.–Bend Br.	05/30/97	1/1	4,600 ± 100	6,900 ± 0	na	na	< 0.2 ± 0.0	< 0.2 ± 0.0	na	na
Sac. R.–Colusa	12/16/96	1/1	3,200 ± 0	4,400 ± 500	51,000 ± 0	58,600 ± 500	< 0.2 ± 0.1	< 0.2 ± 0.0	1.0 ± 0.0	1.2 ± 0.2
Sac. R.–Colusa	01/04/97	1/2	3,600 ± 100	3,300 ± 300	71,000 ± 2,000	77,900 ± 2,400	< 0.2 ± 0.0	< 0.1 ± 0.0	1.6 ± 0.0	1.8 ± 0.2
Sac. R.–Colusa	01/04/97	2/2	3,800 ± 100	5,700 ± 500	97,000 ± 1,000	106,500 ± 1,600	< 0.2 ± 0.1	< 0.2 ± 0.0	1.7 ± 0.1	1.9 ± 0.3
Sac. R.–Colusa	06/03/97	1/1	3,900 ± 0	4,100 ± 800	81,000 ± 0	89,000 ± 800	< 0.2 ± 0.0	< 0.2 ± 0.1	1.1 ± 0.0	1.3 ± 0.2
Sac. R.–Verona	06/04/97	1/1	2,700 ± 0	4,400 ± 600	62,000 ± 0	69,100 ± 600	< 0.2 ± 0.0	< 0.2 ± 0.1	0.8 ± 0.0	1.0 ± 0.2
Sac. R.–Freeport	12/17/96	1/1	3,800 ± 200	4,300 ± 200	56,000 ± 2,000	64,100 ± 2,400	< 0.2 ± 0.0	< 0.2 ± 0.0	1.7 ± 0.1	1.9 ± 0.3
Sac. R.–Freeport	01/06/97	1/1	6,000 ± 100	7,200 ± 700	64,000 ± 1,000	77,200 ± 1,800	< 0.2 ± 0.1	< 0.2 ± 0.0	1.0 ± 0.0	1.2 ± 0.2
Sac. R.–Freeport	06/05/97	1/1	3,100 ± 100	4,500 ± 900	51,000 ± 2,000	58,600 ± 3,000	< 0.2 ± 0.0	< 0.2 ± 0.1	0.8 ± 0.0	1.0 ± 0.2
Sac. R.–Freeport, dup	06/05/97	1/1	3,500 ± 200	3,900 ± 1,000	51,000 ± 1,000	58,400 ± 2,200	< 0.2 ± 0.4	< 0.2 ± 0.0	0.9 ± 0.0	1.3 ± 0.4
Spring Cr.–Road	01/02/97	1/1	1,700 ± 200	3,000 ± 600	70,000 ± 1,000	74,700 ± 1,800	1.8 ± 0.2	2.2 ± 0.1	9.1 ± 0.1	13 ± 0
Spring Cr.–Weir	05/28/97	1/1	5,900 ± 0	5,700 ± 800	18,000 ± 1,000	29,600 ± 1,800	< 2 ± 0.0	< 1 ± 0	< 0.8 ± 0.3	< 4 ± 2
Spring Creek Arm	05/28/97	1/1	4,400 ± 0	6,700 ± 400	73,000 ± 1,000	84,100 ± 1,400	< 0.2 ± 0.0	< 0.2 ± 0.0	1.8 ± 0.1	2.0 ± 0.3
Yolo Bypass	01/07/97	1/1	4,100 ± 200	6,700 ± 400	91,000 ± 6,000	10,1800 ± 6,600	< 0.2 ± 0.0	< 0.2 ± 0.0	2.1 ± 0.0	2.3 ± 0.2
Colusa Basin Drain	06/06/97	1/1	2,800 ± 400	4,700 ± 600	70,000 ± 1,000	77,500 ± 2,000	< 0.2 ± 0.0	< 0.2 ± 0.0	1.4 ± 0.1	1.6 ± 0.3

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Barium µg/g (dry weight)				Cadmium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	210 ± 0	17 ± 0	93 ± 0	320 ± 0	0.7 ± 0.1	< 0.08 ± 0.03	< 0.08 ± 0.04	0.8 ± 0.2
Sac. R.—Keswick	01/02/97	1/1	140 ± 0	13 ± 0	360 ± 30	513 ± 30	3.9 ± 0.0	0.2 ± 0.1	0.2 ± 0.0	4.3 ± 0.1
Sac. R.—Keswick	05/28/97	1/1	180 ± 10	14 ± 1	250 ± 0	444 ± 11	0.7 ± 0.0	< 0.07 ± 0.08	< 0.08 ± 0.14	0.8 ± 0.1
Sac. R.—Bend Br.	12/12/96	1/1	140 ± 0	10 ± 0	490 ± 10	640 ± 10	0.6 ± 0.1	< 0.07 ± 0.02	0.1 ± 0.3	0.8 ± 0.3
Sac. R.—Bend Br.	01/03/97	1/1	220 ± 0	14 ± 0	420 ± 0	654 ± 0	0.5 ± 0.1	< 0.07 ± 0.12	0.2 ± 0.1	0.8 ± 0.3
Sac. R.—Bend Br.	05/30/97	1/1	180 ± 0	12 ± 0	na	na	0.6 ± 0.1	< 0.07 ± 0.03	na	na
Sac. R.—Colusa	12/16/96	1/1	200 ± 10	11 ± 0	280 ± 0	491 ± 10	0.6 ± 0.1	< 0.08 ± 0.11	0.1 ± 0.3	0.9 ± 0.4
Sac. R.—Colusa	01/04/97	1/2	200 ± 0	10 ± 1	520 ± 0	730 ± 1	0.3 ± 0.1	< 0.05 ± 0.08	< 0.06 ± 0.03	0.4 ± 0.2
Sac. R.—Colusa	01/04/97	2/2	220 ± 10	16 ± 1	700 ± 20	936 ± 31	0.3 ± 0.1	< 0.07 ± 0.05	< 0.08 ± 0.06	0.4 ± 0.2
Sac. R.—Colusa	06/03/97	1/1	180 ± 0	10 ± 1	330 ± 0	520 ± 1	0.9 ± 0.0	< 0.07 ± 0.07	< 0.08 ± 0.10	1.0 ± 0.1
Sac. R.—Verona	06/04/97	1/1	170 ± 0	10 ± 0	280 ± 0	460 ± 0	0.7 ± 0.0	< 0.07 ± 0.08	0.07 ± 0.00	0.8 ± 0.1
Sac. R.—Freeport	12/17/96	1/1	220 ± 0	15 ± 0	270 ± 0	505 ± 0	0.3 ± 0.0	0.1 ± 0.1	0.1 ± 0.1	0.5 ± 0.2
Sac. R.—Freeport	01/06/97	1/1	250 ± 0	20 ± 0	440 ± 0	710 ± 0	< 0.2 ± 0.0	< 0.07 ± 0.02	< 0.07 ± 0.04	< 0.3 ± 0.2
Sac. R.—Freeport	06/05/97	1/1	180 ± 0	11 ± 0	220 ± 10	411 ± 10	0.6 ± 0.1	0.6 ± 0.6	0.2 ± 0.2	1.4 ± 0.9
Sac. R.—Freeport, dup	06/05/97	1/1	200 ± 3	10 ± 0	160 ± 0	370 ± 3	0.8 ± 0.6	0.1 ± 0.1	0.2 ± 0.2	1.1 ± 0.9
Spring Cr.—Road	01/02/97	1/1	5.3 ± 0.2	3.3 ± 0.3	230 ± 0	239 ± 1	< 0.4 ± 0.2	< 0.2 ± 0.1	0.2 ± 0.3	< 1 ± 0.6
Spring Cr.—Weir	05/28/97	1/1	16 ± 0	12 ± 3	83 ± 5	111 ± 8	< 0.9 ± 0.00	< 0.5 ± 0.6	< 0.6 ± 0.6	< 3 ± 1.3
Spring Creek Arm	05/28/97	1/1	140 ± 20	11 ± 1	190 ± 0	341 ± 21	0.7 ± 0.1	< 0.07 ± 0.16	0.09 ± 0.09	0.9 ± 0.3
Yolo Bypass	01/07/97	1/1	240 ± 0	14 ± 0	670 ± 40	924 ± 40	0.2 ± 0.0	< 0.07 ± 0.07	0.1 ± 0.0	0.4 ± 0.1
Colusa Basin Drain	06/06/97	1/1	290 ± 0	14 ± 0	360 ± 0	664 ± 0	0.4 ± 0.1	< 0.07 ± 0.00	< 0.08 ± 0.02	0.5 ± 0.2

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Calcium µg/g (dry weight)				Chromium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.–Shasta	05/29/97	1/1	7,200 ± 200	290 ± 0	690 ± 30	8,180 ± 230	10 ± 0.5	19 ± 3	130 ± 0	159 ± 4
Sac. R.–Keswick	01/02/97	1/1	4,200 ± 100	< 50 ± 12	1,200 ± 0	5,425 ± 125	10 ± 4	11 ± 1	92 ± 1	113 ± 6
Sac. R.–Keswick	05/28/97	1/1	5,400 ± 300	250 ± 40	2,400 ± 0	8,050 ± 340	16 ± 1	60 ± 8	320 ± 0	396 ± 9
Sac. R.–Bend Br.	12/12/96	1/1	3,900 ± 100	340 ± 10	4,800 ± 100	9,040 ± 210	24 ± 7	54 ± 5	230 ± 0	308 ± 12
Sac. R.–Bend Br.	01/03/97	1/1	5,800 ± 100	360 ± 20	4,300 ± 100	10,460 ± 220	22 ± 3	42 ± 5	190 ± 0	254 ± 8
Sac. R.–Bend Br.	05/30/97	1/1	5,400 ± 100	260 ± 0	na	na	19 ± 1	68 ± 0	na	na
Sac. R.–Colusa	12/16/96	1/1	4,600 ± 200	530 ± 60	4,400 ± 0	9,530 ± 260	11 ± 2	32 ± 2	140 ± 0	183 ± 4
Sac. R.–Colusa	01/04/97	1/2	5,100 ± 0	260 ± 20	4,700 ± 0	10,060 ± 20	10 ± 0	20 ± 9	170 ± 0	200 ± 9
Sac. R.–Colusa	01/04/97	2/2	5,900 ± 300	460 ± 40	6,100 ± 0	12,460 ± 340	6.1 ± 1.3	26 ± 2	190 ± 10	222 ± 13
Sac. R.–Colusa	06/03/97	1/1	5,200 ± 0	150 ± 60	3,600 ± 0	8,950 ± 60	14 ± 1	31 ± 10	200 ± 0	245 ± 11
Sac. R.–Verona	06/04/97	1/1	4,500 ± 0	180 ± 40	2,700 ± 0	7,380 ± 40	8.3 ± 0.9	25 ± 4	120 ± 0	153 ± 5
Sac. R.–Freeport	12/17/96	1/1	6,000 ± 100	530 ± 0	6,000 ± 100	12,530 ± 200	11 ± 1	33 ± 3	200 ± 0	244 ± 4
Sac. R.–Freeport	01/06/97	1/1	4,500 ± 200	390 ± 10	9,200 ± 0	14,090 ± 210	6.7 ± 2.0	16 ± 4	130 ± 0	153 ± 6
Sac. R.–Freeport	06/05/97	1/1	4,900 ± 0	190 ± 60	2,800 ± 100	7,890 ± 160	9.3 ± 2.9	24 ± 6	120 ± 10	153 ± 19
Sac. R.–Freeport, dup	06/05/97	1/1	5,300 ± 90	140 ± 70	3,200 ± 0	8,640 ± 160	11 ± 3	20 ± 4	140 ± 0	171 ± 7
Spring Cr.–Road	01/02/97	1/1	< 100 ± 10	< 100 ± 10	820 ± 10	920 ± 110	9.4 ± 1.8	12 ± 10	31 ± 6	52 ± 18
Spring Cr.–Weir	05/28/97	1/1	< 400 ± 0	< 400 ± 200	< 1,000 ± 620	< 1,920 ± 960	< 30 ± 4	44 ± 39	< 50 ± 13	84 ± 79
Spring Creek Arm	05/28/97	1/1	3,100 ± 300	230 ± 20	4,300 ± 0	7,630 ± 320	38 ± 2	150 ± 10	640 ± 0	828 ± 12
Yolo Bypass	01/07/97	1/1	5,600 ± 100	500 ± 130	4,500 ± 200	10,600 ± 430	9.1 ± 2.9	42 ± 15	200 ± 0	251 ± 18
Colusa Basin Drain	06/06/97	1/1	6,400 ± 0	310 ± 40	1,800 ± 0	8,510 ± 40	8.4 ± 1	27 ± 6	140 ± 10	175 ± 17

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Cobalt µg/g (dry weight)				Copper µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	5.4 ± 0.1	3.1 ± 0.0	10 ± 1	19 ± 1	67 ± 1	12 ± 3	63 ± 0	142 ± 4
Sac. R.—Keswick	01/02/97	1/1	15 ± 0	2.1 ± 0.1	8.6 ± 0.4	26 ± 1	550 ± 10	67 ± 11	140 ± 0	757 ± 21
Sac. R.—Keswick	05/28/97	1/1	10 ± 0	4.8 ± 0.0	18 ± 2	33 ± 2	58 ± 4	15 ± 2	63 ± 1	136 ± 7
Sac. R.—Bend Br.	12/12/96	1/1	12 ± 0	4.2 ± 0.1	10 ± 1	26 ± 1	120 ± 0	25 ± 1	39 ± 0	184 ± 1
Sac. R.—Bend Br.	01/03/97	1/1	12 ± 1	3.9 ± 0.1	12 ± 0	28 ± 1	72 ± 2	18 ± 2	63 ± 1	153 ± 5
Sac. R.—Bend Br.	05/30/97	1/1	8.5 ± 0.1	5.9 ± 0.2	na	na	64 ± 1	18 ± 4	na	na
Sac. R.—Colusa	12/16/96	1/1	12 ± 1	3.4 ± 0.1	7.7 ± 1.0	23 ± 2	65 ± 3	18 ± 2	33 ± 0	116 ± 5
Sac. R.—Colusa	01/04/97	1/2	12 ± 0	2.9 ± 0.1	10 ± 0	25 ± 0	36 ± 3	9.7 ± 0.8	51 ± 0	97 ± 4
Sac. R.—Colusa	01/04/97	2/2	13 ± 0	4.0 ± 0.0	11 ± 1	28 ± 1	37 ± 2	18 ± 3	55 ± 1	110 ± 6
Sac. R.—Colusa	06/03/97	1/1	8.7 ± 0.3	3.4 ± 0.2	12 ± 0	24 ± 1	70 ± 1	12 ± 4	49 ± 1	131 ± 6
Sac. R.—Verona	06/04/97	1/1	7.4 ± 0.6	3.4 ± 0.1	8.8 ± 0.7	20 ± 1	46 ± 2	11 ± 2	34 ± 0	91 ± 4
Sac. R.—Freeport	12/17/96	1/1	11 ± 0	4.5 ± 0.0	11 ± 1	27 ± 1	57 ± 4	17 ± 2	49 ± 0	123 ± 6
Sac. R.—Freeport	01/06/97	1/1	11 ± 0	3.0 ± 0.1	13 ± 1	27 ± 1	29 ± 2	16 ± 3	65 ± 1	110 ± 6
Sac. R.—Freeport	06/05/97	1/1	7.6 ± 0.7	3.4 ± 0.0	8.8 ± 1.0	20 ± 2	59 ± 2	14 ± 4	34 ± 1	107 ± 7
Sac. R.—Freeport, dup	06/05/97	1/1	8.5 ± 0.2	2.9 ± 0.0	10 ± 1	21 ± 1	66 ± 10	17 ± 6	44 ± 1	127 ± 17
Spring Cr.—Road	01/02/97	1/1	1.2 ± 0.1	0.8 ± 0.1	5.3 ± 0.8	7.3 ± 1.0	38 ± 4	37 ± 10	160 ± 0	235 ± 14
Spring Cr.—Weir	05/28/97	1/1	1.1 ± 0.0	1.6 ± 0.2	< 5 ± 2	5 ± 3	120 ± 0	36 ± 12	39 ± 1	195 ± 13
Spring Creek Arm	05/28/97	1/1	21 ± 0	11.0 ± 0.0	37 ± 0	69 ± 0	120 ± 1	25 ± 6	78 ± 0	223 ± 7
Yolo Bypass	01/07/97	1/1	11 ± 0	4.1 ± 0.1	13 ± 0	28 ± 0	42 ± 2	22 ± 1	67 ± 1	131 ± 4
Colusa Basin Drain	06/06/97	1/1	7.9 ± 0.0	3.7 ± 0.0	8.4 ± 0.5	20 ± 1	31 ± 5	9 ± 1	30 ± 0	70 ± 6

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Iron µg/g (dry weight)				Lead µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.–Shasta	05/29/97	1/1	5,800 ± 200	7,400 ± 1,000	60,000 ± 1,000	73,200 ± 2,200	5.8 ± 0.2	1.9 ± 0.3	4.1 ± 0.4	12 ± 1
Sac. R.–Keswick	01/02/97	1/1	20,000 ± 0	6,800 ± 400	56,000 ± 1,000	82,800 ± 1,400	18 ± 0	2.7 ± 0.1	21 ± 1	42 ± 1
Sac. R.–Keswick	05/28/97	1/1	6,400 ± 300	8,200 ± 700	61,000 ± 1,000	75,600 ± 2,000	4.6 ± 0.2	1.5 ± 0.2	3.7 ± 0.1	10 ± 1
Sac. R.–Bend Br.	12/12/96	1/1	6,100 ± 100	6,800 ± 400	48,000 ± 1,000	60,900 ± 1,500	8.5 ± 0.3	2.1 ± 0.2	7.6 ± 1.5	18 ± 2
Sac. R.–Bend Br.	01/03/97	1/1	8,500 ± 200	8,400 ± 300	60,000 ± 1,000	76,900 ± 1,500	12 ± 2	2.5 ± 0.2	8.0 ± 0.1	23 ± 2
Sac. R.–Bend Br.	05/30/97	1/1	8,400 ± 100	8,600 ± 1,000	na	na	8.5 ± 0.2	1.7 ± 0.3	na	na
Sac. R.–Colusa	12/16/96	1/1	7,100 ± 300	7,900 ± 700	41,000 ± 0	56,000 ± 1,000	11 ± 3	1.9 ± 0.3	3.9 ± 0.3	17 ± 4
Sac. R.–Colusa	01/04/97	1/2	7,500 ± 100	5,400 ± 400	56,000 ± 0	68,900 ± 500	9.0 ± 0.2	1.9 ± 0.1	5.2 ± 0.2	16 ± 1
Sac. R.–Colusa	01/04/97	2/2	6,200 ± 300	9,000 ± 200	64,000 ± 0	79,200 ± 500	9.1 ± 0.2	3.2 ± 0.3	5.9 ± 0.2	18 ± 1
Sac. R.–Colusa	06/03/97	1/1	10,000 ± 0	4,900 ± 1,000	49,000 ± 0	63,900 ± 1,000	11 ± 0	1.0 ± 0.0	2.8 ± 0.5	15 ± 1
Sac. R.–Verona	06/04/97	1/1	7,000 ± 100	6,100 ± 600	40,000 ± 1,000	53,100 ± 1,700	14 ± 4	1.5 ± 0.3	3.1 ± 0.3	19 ± 5
Sac. R.–Freeport	12/17/96	1/1	9,600 ± 0	8,300 ± 800	56,000 ± 1,000	73,900 ± 1,800	14 ± 1	3.0 ± 0.3	6.6 ± 0.5	24 ± 2
Sac. R.–Freeport	01/06/97	1/1	6,400 ± 200	7,500 ± 800	57,000 ± 0	70,900 ± 1,000	12 ± 0	3.6 ± 0.1	12 ± 0	28 ± 0
Sac. R.–Freeport	06/05/97	1/1	8,100 ± 200	6,200 ± 1,000	39,000 ± 0	53,300 ± 1,200	13 ± 0	2.1 ± 0.8	3.3 ± 0.2	18 ± 1
Sac. R.–Freeport, dup	06/05/97	1/1	10,000 ± 10,000	4,900 ± 1,200	47,000 ± 0	61,900 ± 11,200	13 ± 3	1.2 ± 0.2	3.2 ± 0.2	17 ± 3
Spring Cr.–Road	01/02/97	1/1	120,000 ± 0	24,000 ± 0	60,000 ± 0	204,000 ± 0	13 ± 1	1.7 ± 0.5	27 ± 1	42 ± 3
Spring Cr.–Weir	05/28/97	1/1	280,000 ± 100	29,000 ± 6,000	15,000 ± 0	324,000 ± 6,100	66 ± 0	1.5 ± 0.9	4.4 ± 0.8	72 ± 2
Spring Creek Arm	05/28/97	1/1	8,800 ± 200	10,000 ± 1,000	72,000 ± 0	90,800 ± 1,200	4.1 ± 0.3	1.0 ± 0.2	2.6 ± 0.3	7.7 ± 0.8
Yolo Bypass	01/07/97	1/1	7,000 ± 0	8,500 ± 1,300	65,000 ± 0	80,500 ± 1,300	10 ± 0	2.5 ± 0.3	7.7 ± 0.2	20 ± 1
Colusa Basin Drain	06/06/97	1/1	6,000 ± 0	6,800 ± 200	49,000 ± 0	61,800 ± 200	9.5 ± 0	0.9 ± 0.5	3.6 ± 0.2	14 ± 1

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Lithium µg/g (dry weight)				Magnesium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	2.3 ± 0.4	7.1 ± 0.0	27 ± 2	36 ± 2	3,200 ± 100	3,700 ± 100	2,000 ± 100	8,900 ± 300
Sac. R.—Keswick	01/02/97	1/1	1.3 ± 0.3	3.4 ± 0.2	20 ± 2	25 ± 3	1,700 ± 0	2,400 ± 0	6,200 ± 500	10,300 ± 500
Sac. R.—Keswick	05/28/97	1/1	2.3 ± 0.5	5.1 ± 0.3	28 ± 1	35 ± 2	3,900 ± 200	7,200 ± 600	23,000 ± 0	34,100 ± 800
Sac. R.—Bend Br.	12/12/96	1/1	2.8 ± 0.6	6.5 ± 0.3	36 ± 2	45 ± 3	3,000 ± 100	5,900 ± 200	24,000 ± 0	32,900 ± 300
Sac. R.—Bend Br.	01/03/97	1/1	3.1 ± 0.7	8.3 ± 0.0	42 ± 6	53 ± 7	3,100 ± 0	4,100 ± 100	14,000 ± 0	21,200 ± 100
Sac. R.—Bend Br.	05/30/97	1/1	1.9 ± 0.3	6.0 ± 0.2	na	na	4,100 ± 100	7,900 ± 0	na	na
Sac. R.—Colusa	12/16/96	1/1	2.4 ± 0.7	6.1 ± 0.4	34 ± 6	43 ± 7	2,400 ± 100	3,800 ± 100	13,000 ± 0	19,200 ± 200
Sac. R.—Colusa	01/04/97	1/2	2.5 ± 0.0	6.1 ± 0.2	47 ± 0	56 ± 0	2,700 ± 0	2,200 ± 100	14,000 ± 0	18,900 ± 100
Sac. R.—Colusa	01/04/97	2/2	2.4 ± 0.0	8.4 ± 0.4	54 ± 3	65 ± 3	2,500 ± 100	3,500 ± 100	20,000 ± 0	26,000 ± 200
Sac. R.—Colusa	06/03/97	1/1	1.8 ± 0.0	5.2 ± 0.0	31 ± 2	38 ± 2	3,600 ± 100	4,000 ± 800	16,000 ± 0	23,600 ± 900
Sac. R.—Verona	06/04/97	1/1	1.4 ± 0.1	6.0 ± 0.4	29 ± 1	36 ± 2	2,400 ± 0	3,200 ± 100	10,000 ± 0	15,600 ± 100
Sac. R.—Freeport	12/17/96	1/1	2.0 ± 0.2	5.9 ± 0.3	38 ± 2	46 ± 3	2,700 ± 100	3,900 ± 0	12,000 ± 0	18,600 ± 100
Sac. R.—Freeport	01/06/97	1/1	2.3 ± 0.5	4.1 ± 0.2	31 ± 2	37 ± 3	1,700 ± 0	1,900 ± 200	8,500 ± 100	12,100 ± 300
Sac. R.—Freeport	06/05/97	1/1	1.7 ± 0.1	6.4 ± 0.6	26 ± 1	34 ± 2	2,600 ± 0	3,000 ± 500	7,900 ± 0	13,500 ± 500
Sac. R.—Freeport, dup	06/05/97	1/1	2.3 ± 1.3	5.0 ± 0.6	33 ± 0	40 ± 2	3,300 ± 70	2,600 ± 600	7,200 ± 0	13,100 ± 670
Spring Cr.—Road	01/02/97	1/1	< 0.7 ± 0.1	1.4 ± 0.6	9.5 ± 1.4	11 ± 2	340 ± 0	1,100 ± 200	11,000 ± 0	12,440 ± 200
Spring Cr.—Weir	05/28/97	1/1	< 2 ± 0	4.3 ± 3.1	< 8 ± 1	9 ± 8	98 ± 0	1,700 ± 300	2,700 ± 300	4,498 ± 600
Spring Creek Arm	05/28/97	1/1	1.8 ± 0.0	5.6 ± 0.3	25 ± 1	32 ± 1	6,300 ± 0	15,000 ± 0	46,000 ± 1000	67,300 ± 1,000
Yolo Bypass	01/07/97	1/1	2.9 ± 0.2	8.2 ± 0.7	51 ± 2	62 ± 3	2,700 ± 0	3,800 ± 700	17,000 ± 0	23,500 ± 700
Colusa Basin Drain	06/06/97	1/1	2.7 ± 0.2	9.7 ± 1.2	51 ± 0	63 ± 1	3,600 ± 0	3,600 ± 300	13,000 ± 0	20,200 ± 300

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Manganese µg/g (dry weight)				Mercury µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.–Shasta	05/29/97	1/1	300 ± 0	55 ± 3	190 ± 10	545 ± 13	< 0.05 ± 0.02	< 0.09 ± 0.04	< 0.05 ± 0.02	< 0.2 ± 0.1
Sac. R.–Keswick	01/02/97	1/1	730 ± 0	41 ± 2	330 ± 40	1,101 ± 42	< 0.05 ± 0.03	< 0.08 ± 0.05	0.2 ± 0.1	0.3 ± 0.2
Sac. R.–Keswick	05/28/97	1/1	370 ± 0	49 ± 2	230 ± 20	649 ± 22	< 0.05 ± 0.02	< 0.09 ± 0.08	< 0.04 ± 0.06	< 0.3 ± 0.1
Sac. R.–Bend Br.	12/12/96	1/1	630 ± 0	33 ± 1	510 ± 60	1,173 ± 61	< 0.05 ± 0.02	< 0.09 ± 0.17	< 0.05 ± 0.02	< 0.3 ± 0.2
Sac. R.–Bend Br.	01/03/97	1/1	590 ± 20	36 ± 2	570 ± 10	1,196 ± 32	< 0.05 ± 0.01	< 0.09 ± 0.03	< 0.04 ± 0.01	< 0.2 ± 0.1
Sac. R.–Bend Br.	05/30/97	1/1	340 ± 10	32 ± 2	na	na	< 0.05 ± 0.02	< 0.08 ± 0.02	na	na
Sac. R.–Colusa	12/16/96	1/1	730 ± 30	29 ± 1	370 ± 40	1,129 ± 71	< 0.05 ± 0.03	< 0.09 ± 0.03	< 0.05 ± 0.02	< 0.2 ± 0.1
Sac. R.–Colusa	01/04/97	1/2	470 ± 20	29 ± 1	510 ± 10	1,009 ± 31	< 0.04 ± 0.00	< 0.07 ± 0.05	0.07 ± 0.00	0.1 ± 0.1
Sac. R.–Colusa	01/04/97	2/2	500 ± 0	38 ± 1	580 ± 30	1,118 ± 31	< 0.05 ± 0.01	< 0.09 ± 0.05	< 0.04 ± 0.02	< 0.2 ± 0.1
Sac. R.–Colusa	06/03/97	1/1	670 ± 10	33 ± 0	240 ± 30	943 ± 40	< 0.05 ± 0.02	0.09 ± 0.22	0.06 ± 0.00	0.2 ± 0.2
Sac. R.–Verona	06/04/97	1/1	700 ± 0	26 ± 1	240 ± 10	966 ± 11	< 0.05 ± 0.02	< 0.08 ± 0.03	< 0.04 ± 0.00	< 0.2 ± 0.1
Sac. R.–Freeport	12/17/96	1/1	990 ± 0	120 ± 0	350 ± 40	1,460 ± 40	< 0.05 ± 0.01	< 0.09 ± 0.00	0.05 ± 0.02	0.1 ± 0.1
Sac. R.–Freeport	01/06/97	1/1	710 ± 0	37 ± 1	420 ± 40	1,167 ± 41	< 0.05 ± 0.03	< 0.08 ± 0.03	< 0.04 ± 0.03	< 0.2 ± 0.1
Sac. R.–Freeport	06/05/97	1/1	860 ± 10	28 ± 1	240 ± 20	1,128 ± 31	< 0.05 ± 0.01	< 0.09 ± 0.06	< 0.04 ± 0.06	< 0.2 ± 0.1
Sac. R.–Freeport, dup	06/05/97	1/1	920 ± 24	27 ± 3	260 ± 20	1,207 ± 47	< 0.05 ± 0.20	< 0.08 ± 0.06	0.1 ± 0.02	0.3 ± 0.2
Spring Cr.–Road	01/02/97	1/1	74 ± 3	25 ± 4	190 ± 10	289 ± 17	< 0.1 ± 0.0	0.7 ± 0.3	0.2 ± 0.10	1.0 ± 0.5
Spring Cr.–Weir	05/28/97	1/1	68 ± 10	72 ± 15	56 ± 3	196 ± 28	< 0.4 ± 0.02	< 0.6 ± 0.7	< 0.3 ± 0.2	< 2 ± 0.9
Spring Creek Arm	05/28/97	1/1	610 ± 50	34 ± 1	340 ± 20	984 ± 71	< 0.05 ± 0.01	< 0.09 ± 0.07	< 0.04 ± 0.03	< 0.2 ± 0.1
Yolo Bypass	01/07/97	1/1	540 ± 0	32 ± 2	520 ± 20	1,092 ± 22	< 0.05 ± 0.02	< 0.09 ± 0.01	< 0.04 ± 0.03	< 0.2 ± 0.1
Colusa Basin Drain	06/06/97	1/1	1,000 ± 10	26 ± 1	310 ± 20	1,336 ± 31	< 0.05 ± 0.02	< 0.09 ± 0.05	0.05 ± 0.06	< 0.3 ± 0.1

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Nickel µg/g (dry weight)				Silica (as SiO <sub>2</sub> ) µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	32 ± 1	53 ± 1	140 ± 10	225 ± 12	12,000 ± 0	19,000 ± 0	490,000 ± 10,000	521,000 ± 10,000
Sac. R.—Keswick	01/02/97	1/1	14 ± 1	14 ± 2	64 ± 1	92 ± 4	11,000 ± 0	9,200 ± 1,100	460,000 ± 20,000	480,200 ± 21,100
Sac. R.—Keswick	05/28/97	1/1	99 ± 2	160 ± 0	510 ± 30	769 ± 32	8,900 ± 100	14,000 ± 0	420,000 ± 10,000	442,900 ± 10,100
Sac. R.—Bend Br.	12/12/96	1/1	39 ± 0	46 ± 2	120 ± 0	205 ± 2	7,000 ± 300	10,000 ± 400	510,000 ± 10,000	527,000 ± 10,700
Sac. R.—Bend Br.	01/03/97	1/1	26 ± 1	32 ± 1	100 ± 0	158 ± 2	7,300 ± 100	11,000 ± 0	510,000 ± 10,000	528,300 ± 10,100
Sac. R.—Bend Br.	05/30/97	1/1	97 ± 4	200 ± 10	na	na	12,000 ± 0	17,000 ± 0	na	na
Sac. R.—Colusa	12/16/96	1/1	26 ± 0	30 ± 1	69 ± 6	125 ± 7	6,600 ± 200	11,000 ± 1,000	440,000 ± 10,000	457,600 ± 11,200
Sac. R.—Colusa	01/04/97	1/2	20 ± 0	20 ± 0	84 ± 1	124 ± 1	6,500 ± 0	6,900 ± 600	470,000 ± 10,000	483,400 ± 10,600
Sac. R.—Colusa	01/04/97	2/2	19 ± 1	26 ± 1	91 ± 3	136 ± 5	5,900 ± 300	12,000 ± 1,000	540,000 ± 0	557,900 ± 1,300
Sac. R.—Colusa	06/03/97	1/1	69 ± 6	91 ± 2	260 ± 10	420 ± 18	9,100 ± 100	11,000 ± 0	460,000 ± 50,000	480,100 ± 50,100
Sac. R.—Verona	06/04/97	1/1	26 ± 1	52 ± 0	130 ± 0	208 ± 1	7,300 ± 100	12,000 ± 1,000	340,000 ± 10,000	359,300 ± 11,100
Sac. R.—Freeport	12/17/96	1/1	25 ± 1	34 ± 0	100 ± 10	159 ± 11	8,100 ± 100	12,000 ± 1,000	540,000 ± 20,000	560,100 ± 21,100
Sac. R.—Freeport	01/06/97	1/1	14 ± 0	20 ± 1	82 ± 8	116 ± 9	8,600 ± 100	10,000 ± 1,000	500,000 ± 10,000	518,600 ± 11,100
Sac. R.—Freeport	06/05/97	1/1	25 ± 1	46 ± 0	110 ± 10	181 ± 11	6,800 ± 0	11,000 ± 2,000	390,000 ± 10,000	407,800 ± 12,000
Sac. R.—Freeport, dup	06/05/97	1/1	38 ± 0.9	44 ± 3	140 ± 10	222 ± 14	11,000 ± 400	10,000 ± 2,000	450,000 ± 20,000	471,000 ± 22,400
Spring Cr.—Road	01/02/97	1/1	< 1 ± 0	< 7 ± 2	< 30 ± 10	< 38 ± 19	3,300 ± 300	6,600 ± 1,300	310,000 ± 20,000	319,900 ± 21,600
Spring Cr.—Weir	05/28/97	1/1	< 3 ± 10	< 20 ± 10	< 100 ± 30	< 130 ± 66	7,700 ± 0	22,000 ± 2,000	< 500,000 ± 40,000	279,700 ± 252,000
Spring Creek Arm	05/28/97	1/1	250 ± 0	450 ± 0	1,300 ± 0	2,000 ± 0	13,000 ± 100	16,000 ± 0	400,000 ± 10,000	429,000 ± 10,100
Yolo Bypass	01/07/97	1/1	24 ± 1	34 ± 1	120 ± 0	178 ± 2	6,100 ± 0	12,000 ± 2,000	480,000 ± 20,000	498,100 ± 22,000
Colusa Basin Drain	06/06/97	1/1	16 ± 0	38 ± 0	87 ± 1	141 ± 1	5,500 ± 0	15,000 ± 2,000	400,000 ± 10,000	420,500 ± 12,000



**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Strontium µg/g (dry weight)				Thallium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	40 ± 1	3.4 ± 0.1	9 ± 0	53 ± 1	0.04 ± 0.01	< 0.04 ± 0.00	0.3 ± 0.0	0.4 ± 0.0
Sac. R.—Keswick	01/02/97	1/1	24 ± 1	1.3 ± 0.2	14 ± 1	39 ± 2	0.05 ± 0.01	< 0.03 ± 0.01	0.6 ± 0.0	0.7 ± 0.0
Sac. R.—Keswick	05/28/97	1/1	30 ± 1	2.0 ± 0	29 ± 1	61 ± 2	0.03 ± 0.01	< 0.03 ± 0.01	0.2 ± 0.0	0.2 ± 0.0
Sac. R.—Bend Br.	12/12/96	1/1	24 ± 1	2.0 ± 0.1	48 ± 4	74 ± 5	0.03 ± 0.02	< 0.03 ± 0.00	0.4 ± 0.0	0.4 ± 0.0
Sac. R.—Bend Br.	01/03/97	1/1	39 ± 1	2.9 ± 0.2	50 ± 2	92 ± 3	0.04 ± 0.01	< 0.04 ± 0.01	0.5 ± 0.0	0.6 ± 0.0
Sac. R.—Bend Br.	05/30/97	1/1	30 ± 0	2.5 ± 0.2	na	na	0.03 ± 0.01	< 0.03 ± 0.01	na	na
Sac. R.—Colusa	12/16/96	1/1	34 ± 1	2.7 ± 0	47 ± 1	84 ± 2	0.03 ± 0.01	< 0.04 ± 0.01	0.3 ± 0.0	0.4 ± 0.0
Sac. R.—Colusa	01/04/97	1/2	46 ± 0	2.8 ± 0.1	49 ± 2	98 ± 2	0.03 ± 0.01	< 0.03 ± 0.01	0.5 ± 0.0	0.5 ± 0.0
Sac. R.—Colusa	01/04/97	2/2	50 ± 1	4.0 ± 0.2	69 ± 1	123 ± 2	0.09 ± 0.01	< 0.03 ± 0.01	0.5 ± 0.0	0.6 ± 0.0
Sac. R.—Colusa	06/03/97	1/1	35 ± 3	2.4 ± 0	46 ± 2	83 ± 5	< 0.02 ± 0.01	< 0.03 ± 0.00	0.2 ± 0.1	0.2 ± 0.1
Sac. R.—Verona	06/04/97	1/1	33 ± 1	2.3 ± 0.3	37 ± 0	72 ± 1	< 0.02 ± 0.01	< 0.03 ± 0.01	0.3 ± 0.0	0.3 ± 0.0
Sac. R.—Freeport	12/17/96	1/1	40 ± 0	3.9 ± 0.3	53 ± 3	97 ± 3	0.03 ± 0.01	< 0.04 ± 0.00	0.4 ± 0.0	0.5 ± 0.0
Sac. R.—Freeport	01/06/97	1/1	35 ± 1	5.9 ± 0.5	94 ± 2	135 ± 4	0.05 ± 0.01	< 0.03 ± 0.00	0.5 ± 0.0	0.6 ± 0.0
Sac. R.—Freeport	06/05/97	1/1	34 ± 0	2.3 ± 0.1	33 ± 1	69 ± 1	< 0.02 ± 0	< 0.03 ± 0.00	0.3 ± 0.0	0.3 ± 0.0
Sac. R.—Freeport, dup	06/05/97	1/1	42 ± 1	2.3 ± 0.2	38 ± 1	82 ± 2	< 0.02 ± 0.1	< 0.03 ± 0.01	0.3 ± 0.0	0.4 ± 0.1
Spring Cr.—Road	01/02/97	1/1	< 1 ± 0	< 0.4 ± 0.4	14 ± 1	15 ± 2	< 0.05 ± 0.01	< 0.08 ± 0.02	0.4 ± 0.0	0.5 ± 0.1
Spring Cr.—Weir	05/28/97	1/1	< 4 ± 0	< 1 ± 0	< 5 ± 0	< 10 ± 5	< 0.2 ± 0	< 0.3 ± 0.0	< 0.2 ± 0.1	< 0.7 ± 0.4
Spring Creek Arm	05/28/97	1/1	18 ± 0	1.5 ± 0.1	26 ± 1	46 ± 1	0.03 ± 0.01	< 0.03 ± 0.00	0.2 ± 0.0	0.2 ± 0.0
Yolo Bypass	01/07/97	1/1	49 ± 1	3.3 ± 0.2	50 ± 1	102 ± 2	0.03 ± 0.01	< 0.03 ± 0.00	0.6 ± 0.0	0.6 ± 0.0
Colusa Basin Drain	06/06/97	1/1	71 ± 2	3.0 ± 0.2	36 ± 0	110 ± 2	< 0.02 ± 0.01	< 0.03 ± 0.00	0.3 ± 0.0	0.3 ± 0.0

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Thorium µg/g (dry weight)				Titanium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	< 0.01 ± 0.00	1.8 ± 0.0	0.5 ± 0.0	2.3 ± 0.0	21 ± 2	120 ± 0	4,300 ± 100	4,441 ± 102
Sac. R.—Keswick	01/02/97	1/1	< 0.01 ± 0.00	0.9 ± 0.0	0.7 ± 0.0	1.6 ± 0.0	7 ± 0	40 ± 4	3,300 ± 0	3,347 ± 4
Sac. R.—Keswick	05/28/97	1/1	< 0.01 ± 0.00	1.6 ± 0.0	2.3 ± 0.1	3.9 ± 0.1	20 ± 1	82 ± 1	3,400 ± 100	3,502 ± 102
Sac. R.—Bend Br.	12/12/96	1/1	< 0.01 ± 0.00	1.4 ± 0.0	3.7 ± 0.3	5.1 ± 0.3	11 ± 1	52 ± 3	3,500 ± 100	3,563 ± 104
Sac. R.—Bend Br.	01/03/97	1/1	0.03 ± 0.00	2.5 ± 0.1	2.9 ± 0.2	5.4 ± 0.3	18 ± 2	58 ± 3	4,500 ± 100	4,576 ± 105
Sac. R.—Bend Br.	05/30/97	1/1	< 0.01 ± 0.00	1.6 ± 0.0	na	na	23 ± 0	83 ± 0	na	na
Sac. R.—Colusa	12/16/96	1/1	< 0.01 ± 0.00	1.4 ± 0.1	2.0 ± 0.1	3.4 ± 0.2	13 ± 1	61 ± 3	3,600 ± 0	3,674 ± 4
Sac. R.—Colusa	01/04/97	1/2	< 0.01 ± 0.00	2.0 ± 0.1	3.7 ± 0.0	5.7 ± 0.1	18 ± 2	42 ± 3	4,900 ± 0	4,960 ± 5
Sac. R.—Colusa	01/04/97	2/2	0.01 ± 0.00	2.4 ± 0.0	3.9 ± 0.2	6.3 ± 0.2	17 ± 2	74 ± 4	5,500 ± 0	5,591 ± 6
Sac. R.—Colusa	06/03/97	1/1	< 0.01 ± 0.00	0.9 ± 0.1	3.6 ± 0.1	4.5 ± 0.2	17 ± 0	54 ± 0	3,700 ± 0	3,771 ± 0
Sac. R.—Verona	06/04/97	1/1	< 0.01 ± 0.00	1.4 ± 0.1	2.8 ± 0.1	4.2 ± 0.2	13 ± 1	48 ± 3	3,300 ± 0	3,361 ± 4
Sac. R.—Freeport	12/17/96	1/1	< 0.01 ± 0.00	2.2 ± 0.1	2.7 ± 0.0	4.9 ± 0.1	13 ± 1	50 ± 5	4,900 ± 0	4,963 ± 6
Sac. R.—Freeport	01/06/97	1/1	0.07 ± 0.01	7.7 ± 0.1	5.8 ± 0.1	14 ± 0	49 ± 1	150 ± 10	4,700 ± 0	4,899 ± 11
Sac. R.—Freeport	06/05/97	1/1	< 0.01 ± 0.00	1.4 ± 0.1	2.1 ± 0.3	3.5 ± 0.4	16 ± 1	51 ± 7	3,400 ± 0	3,467 ± 8
Sac. R.—Freeport, dup	06/05/97	1/1	< 0.01 ± 0.05	1.5 ± 0.0	1.7 ± 0.1	3.2 ± 0.1	20 ± 9	43 ± 7	3,900 ± 0	3,963 ± 16
Spring Cr.—Road	01/02/97	1/1	0.05 ± 0.02	0.5 ± 0.1	0.9 ± 0.1	1.5 ± 0.2	47 ± 2	66 ± 5	1,800 ± 0	1,913 ± 7
Spring Cr.—Weir	05/28/97	1/1	< 0.1 ± 0.0	0.6 ± 0.2	0.4 ± 0.1	1.1 ± 0.4	< 7 ± 1	220 ± 10	380 ± 50	604 ± 64
Spring Creek Arm	05/28/97	1/1	< 0.01 ± 0.00	1.7 ± 0.0	2.0 ± 0.1	3.7 ± 0.1	16 ± 1	68 ± 2	2,200 ± 100	2,284 ± 103
Yolo Bypass	01/07/97	1/1	0.01 ± 0.01	2.5 ± 0.0	5.0 ± 0.1	7.5 ± 0.1	19 ± 1	75 ± 14	5,400 ± 0	5,494 ± 15
Colusa Basin Drain	06/06/97	1/1	< 0.01 ± 0.00	1.9 ± 0.0	3.8 ± 0.0	5.7 ± 0.0	9 ± 1	34 ± 1	4,000 ± 0	4,043 ± 2

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Uranium µg/g (dry weight)				Vanadium µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum	Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	0.7 ± 0.0	0.4 ± 0.0	1.0 ± 0.1	2.1 ± 0.1	31 ± 1	12 ± 1	130 ± 0	173 ± 2
Sac. R.—Keswick	01/02/97	1/1	0.6 ± 0.1	0.4 ± 0.0	1.6 ± 0.1	2.6 ± 0.2	67 ± 3	10 ± 0	260 ± 0	337 ± 3
Sac. R.—Keswick	05/28/97	1/1	0.7 ± 0.0	0.4 ± 0.0	0.9 ± 0.1	2.0 ± 0.1	30 ± 2	10 ± 0	130 ± 0	170 ± 2
Sac. R.—Bend Br.	12/12/96	1/1	0.3 ± 0.0	0.2 ± 0.0	1.6 ± 0.0	2.1 ± 0.0	19 ± 2	6.3 ± 0.2	150 ± 0	175 ± 2
Sac. R.—Bend Br.	01/03/97	1/1	0.5 ± 0.0	0.3 ± 0.0	2.4 ± 0.1	3.2 ± 0.1	26 ± 2	8.0 ± 0.3	210 ± 0	244 ± 2
Sac. R.—Bend Br.	05/30/97	1/1	0.5 ± 0.0	0.3 ± 0.0	na	na	33 ± 2	11 ± 0	na	na
Sac. R.—Colusa	12/16/96	1/1	0.3 ± 0.0	0.2 ± 0.0	1.4 ± 0.0	1.9 ± 0.0	24 ± 2	8.2 ± 0.3	140 ± 0	172 ± 2
Sac. R.—Colusa	01/04/97	1/2	0.4 ± 0.0	0.2 ± 0.0	2.1 ± 0.1	2.7 ± 0.1	22 ± 1	4.9 ± 0.1	210 ± 0	237 ± 1
Sac. R.—Colusa	01/04/97	2/2	0.4 ± 0.0	0.3 ± 0.0	2.2 ± 0.0	2.9 ± 0.0	18 ± 2	8.4 ± 0.4	230 ± 0	256 ± 2
Sac. R.—Colusa	06/03/97	1/1	0.3 ± 0.0	0.4 ± 0.0	1.1 ± 0.0	1.8 ± 0.0	38 ± 2	5.2 ± 0.1	130 ± 0	173 ± 2
Sac. R.—Verona	06/04/97	1/1	0.4 ± 0.0	0.4 ± 0.0	1.1 ± 0.0	1.9 ± 0.0	26 ± 2	6.5 ± 0.6	110 ± 0	143 ± 3
Sac. R.—Freeport	12/17/96	1/1	0.6 ± 0.0	0.4 ± 0.0	1.8 ± 0.1	2.8 ± 0.1	33 ± 3	7.8 ± 0	180 ± 0	221 ± 3
Sac. R.—Freeport	01/06/97	1/1	1.5 ± 0.0	1.3 ± 0.1	2.8 ± 0.1	5.6 ± 0.2	21 ± 2	11 ± 0	150 ± 0	182 ± 2
Sac. R.—Freeport	06/05/97	1/1	0.5 ± 0.0	0.4 ± 0.0	1.0 ± 0.0	1.9 ± 0.0	26 ± 1	7.1 ± 0.2	110 ± 0	143 ± 1
Sac. R.—Freeport, dup	06/05/97	1/1	0.6 ± 0.3	0.5 ± 0.0	1.3 ± 0.1	2.4 ± 0.4	36 ± 4	5.7 ± 0.6	130 ± 0	172 ± 5
Spring Cr.—Road	01/02/97	1/1	0.1 ± 0.0	0.1 ± 0.0	0.4 ± 0.1	0.6 ± 0.1	42 ± 1	9.4 ± 1.3	87 ± 2	138 ± 4
Spring Cr.—Weir	05/28/97	1/1	0.3 ± 0.0	0.2 ± 0.1	< 0.5 ± 0.1	0.8 ± 0.4	49 ± 1	< 8 ± 1	< 20 ± 6	63 ± 15
Spring Creek Arm	05/28/97	1/1	0.7 ± 0.0	0.3 ± 0.1	0.7 ± 0.0	1.7 ± 0.1	26 ± 2	11 ± 0	130 ± 0	167 ± 2
Yolo Bypass	01/07/97	1/1	0.6 ± 0.0	0.3 ± 0.0	2.3 ± 0.0	3.2 ± 0.0	28 ± 2	9.2 ± 0.1	240 ± 0	277 ± 2
Colusa Basin Drain	06/06/97	1/1	0.1 ± 0.0	0.1 ± 0.0	1.4 ± 0.0	1.6 ± 0.0	17 ± 2	4.4 ± 0.1	150 ± 0	171 ± 2

**Table A5-3.** Concentrations of selected elements in sequentially extracted suspended colloid samples—*Continued*

Site	Date (mm/dd/yy)	Split Repli- cate	Zinc µg/g (dry weight)			
			Reducible	Oxidizable	Residual	Sum
Sac. R.—Shasta	05/29/97	1/1	160 ± 0	26 ± 3	100 ± 10	286 ± 13
Sac. R.—Keswick	01/02/97	1/1	750 ± 20	100 ± 10	230 ± 40	1080 ± 70
Sac. R.—Keswick	05/28/97	1/1	220 ± 0	28 ± 2	98 ± 6	346 ± 8
Sac. R.—Bend Br.	12/12/96	1/1	220 ± 0	33 ± 4	86 ± 10	339 ± 14
Sac. R.—Bend Br.	01/03/97	1/1	99 ± 3	28 ± 2	110 ± 0	237 ± 5
Sac. R.—Bend Br.	05/30/97	1/1	210 ± 0	40 ± 10	na	na
Sac. R.—Colusa	12/16/96	1/1	100 ± 5	25 ± 2	73 ± 6	198 ± 13
Sac. R.—Colusa	01/04/97	1/2	36 ± 1	18 ± 3	96 ± 2	150 ± 6
Sac. R.—Colusa	01/04/97	2/2	36 ± 1	19 ± 2	110 ± 0	165 ± 3
Sac. R.—Colusa	06/03/97	1/1	140 ± 10	19 ± 3	79 ± 30	238 ± 43
Sac. R.—Verona	06/04/97	1/1	70 ± 3	26 ± 4	63 ± 5	159 ± 12
Sac. R.—Freeport	12/17/96	1/1	76 ± 2	24 ± 3	84 ± 6	184 ± 11
Sac. R.—Freeport	01/06/97	1/1	22 ± 1	15 ± 2	86 ± 13	123 ± 16
Sac. R.—Freeport	06/05/97	1/1	77 ± 5	29 ± 5	110 ± 3	216 ± 13
Sac. R.—Freeport, dup	06/05/97	1/1	86 ± 5	20 ± 3	76 ± 5	182 ± 13
Spring Cr.—Road	01/02/97	1/1	< 9 ± 0	24 ± 10	65 ± 5	94 ± 20
Spring Cr.—Weir	05/28/97	1/1	< 30 ± 0	< 60 ± 9	21 ± 4	66 ± 49
Spring Creek Arm	05/28/97	1/1	200 ± 2	32 ± 1	76 ± 2	308 ± 5
Yolo Bypass	01/07/97	1/1	40 ± 2	21 ± 0	120 ± 10	181 ± 12
Colusa Basin Drain	06/06/97	1/1	26 ± 3	24 ± 4	88 ± 2	138 ± 9