

Prepared in cooperation with the
California Regional Water Quality Control Board, Lahontan Region

Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003



Data Series 89

Cover. Water-quality sampling in Virginia Creek near Bridgeport, California. Photo by Gerald Rockwell, March 12, 2001.

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By Gerald L. Rockwell and Paul D. Honeywell

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Data Series 89

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Conversion Factors and Water-Quality Abbreviations

Multiply	By	To obtain
acre-foot (acre-ft)	1,233	cubic meter (m ³)
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second (m ³ /s)
foot (ft)	0.3048	meter (m)
inch (in.)	25.4	millimeter (mm)
mile (mi)	1.609	kilometer (km)
ton (T)	0.9072	metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F}=(1.8\times^{\circ}\text{C})+32$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C}=(^{\circ}\text{F}-32)/1.8$$

Vertical coordinate information is referenced to National Geodetic Vertical Datum of 1929 (NGVD 29).

Horizontal coordinate information is referenced to North American Datum of 1983 (NAD 83).

Altitude, as used in this report, refers to distance above the vertical datum.

Water-Quality Abbreviations

µg/L, UG/L	microgram per liter
µm, UM	micrometer
µS/cm, US/CM	microsiemens per centimeter at 25°C
LRL	laboratory reporting level
mg/L, MG/L	milligram per liter
mL, ML	milliliter
MM of HG	millimeter of mercury
MRL	minimum reporting level
NTU	nephelometric turbidity unit
t/day, T/DAY	ton per day

Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003

By Gerald L. Rockwell and Paul D. Honeywell

Abstract

The U.S. Geological Survey in cooperation with the California Regional Water Quality Control Board, Lahonton Region, carried out a water-quality data-collection program of selected streams in and near Bridgeport Valley, California, during April 2000 to June 2003. These data were collected to provide information used by the California Regional Water Quality Control Board to develop total maximum daily load standards. Field measurements of streamflow, barometric pressure, dissolved oxygen, pH, specific conductance, and water temperature were made at 15 sites located on 6 streams. Water samples were analyzed for nutrients, major ions, turbidity, fecal coliform, fecal streptococci, and suspended sediment. Field data, turbidity, nutrient, major ion, and sediment concentrations and fecal coliform and fecal streptococci densities are given in tables for each site. Field blank data are also presented in a table.

Introduction

Bridgeport Valley (*fig. 1*) is located adjacent to the eastern slopes of the Sierra Nevada in Mono County, California. Altitude of the drainage basin ranges from 6,420 feet at the Bridgeport Reservoir outlet to over 12,000 feet at the Sierra Nevada crest. Most precipitation comes during the winter months in the form of snow. Streams flowing through Bridgeport Valley form the headwaters of the East Walker River. The main human activities in the valley are cattle ranching and tourism. The only town in the valley is Bridgeport (population 843), the county seat. Nearly all streams are diverted for irrigation at the head of the valley. From May through November nearly all the water in the mid-valley stream channels is irrigation return. Buckeye Creek has a second diversion at mid-valley that diverts up to 90 percent of the flow for irrigation. This water enters Bridgeport Reservoir through several small irrigation return channels. The reservoir, located near the valley mouth, was built in 1923 and has a capacity of

45,490 acre-feet. Walker River Irrigation District operates the reservoir. The water is used for irrigation on farms and ranches in Nevada.

Purpose and Scope

This report presents surface-water-quality data collected from selected streams in Bridgeport Valley (see *figure 1* and *table 1* for sampling site locations). The types of data presented include water discharge, turbidity, field measurements, and concentrations of nutrients, major ions, bacteria, and sediment. The purpose of this study was to provide data to aid in the development of total maximum daily load standards by the California Regional Water Quality Control Board, Lahontan Region, for the various streams in Bridgeport Valley.

Sampling sites were selected to account for the main surface-water sources entering Bridgeport Reservoir and to define variability in quality between the headwaters and the release from the reservoir. Monthly samples were taken during the first year (April 2000 to June 2001, at sites 2-5, 7-9, 11, and 13-15). Green Creek near Bridgeport (site 11) was added in June 2000. The main focus was on quantifying concentrations of nutrients and sediment. Monthly bacteria samples also were taken. Samples collected in May and September 2000 and January 2001 at each site were analyzed for major ions. One snowmelt diurnal (June 7, 2000) was sampled at three sites (sites 4, 9, and 14).

Sampling in the second year (July 2001 to June 2002) of the program was reduced owing to budget constraints. Bacteria and major ions analyses were discontinued. Robinson Creek at Highway 395 (site 8) and Buckeye Creek at Highway 395 (site 3) were discontinued. Samples were collected quarterly at the remaining sites. One storm sample (Nov. 22, 2001) was collected at five sites (sites 2, 4, 7, 9, and 14).

In the third year (June 2002 to June 2003), the program was limited to quarterly nutrient and sediment samples and one fecal coliform sample at four sites in canyon reaches tributary to the Bridgeport Valley floor (sites 1, 6, 10, and 12).

A

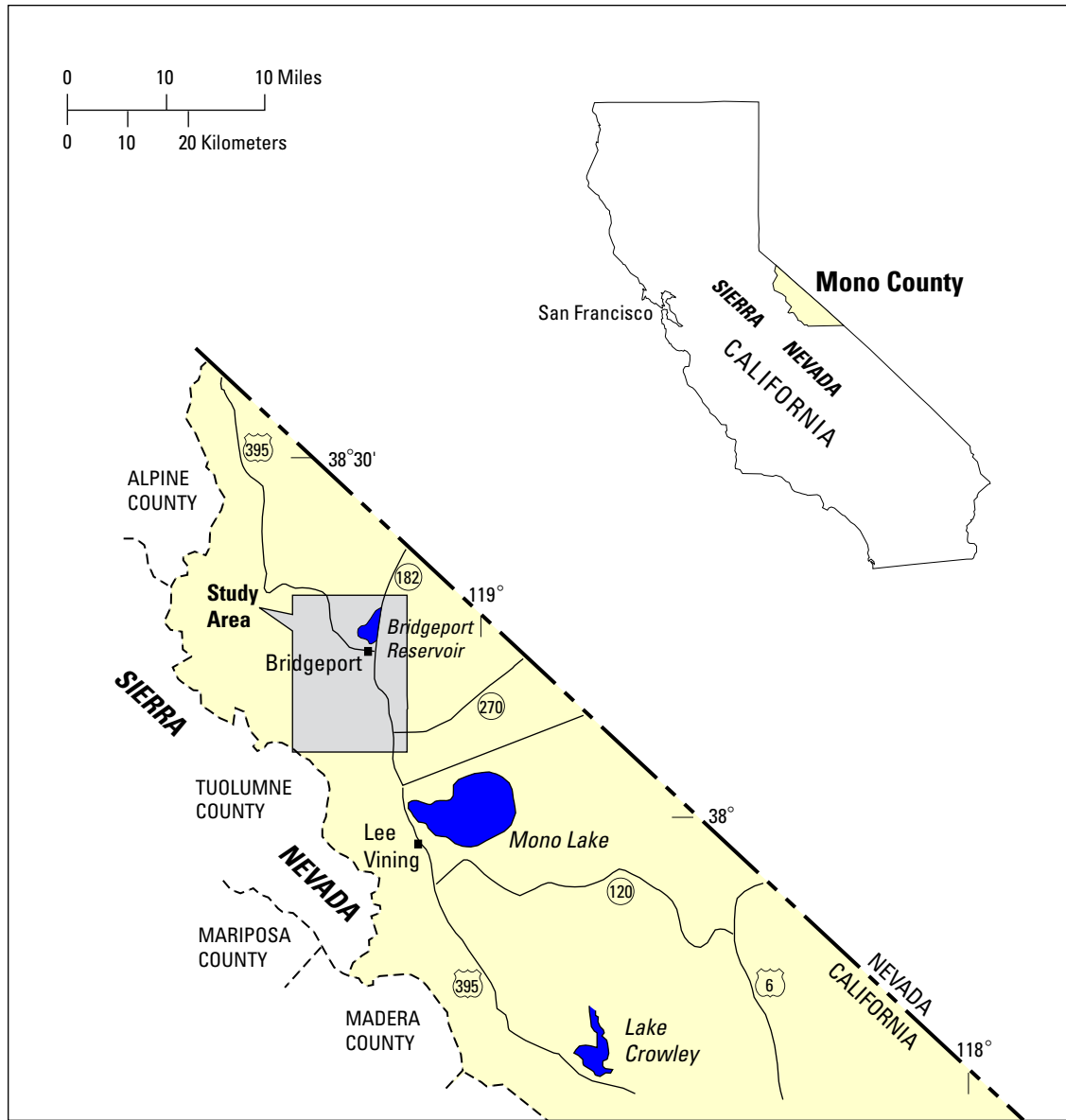


Figure 1. Location of the study area and sites in and near Bridgeport Valley, California, where water samples were collected, April 2000 to June 2003: **(A)** Study area, **(B)** Water-sample collection sites.

B

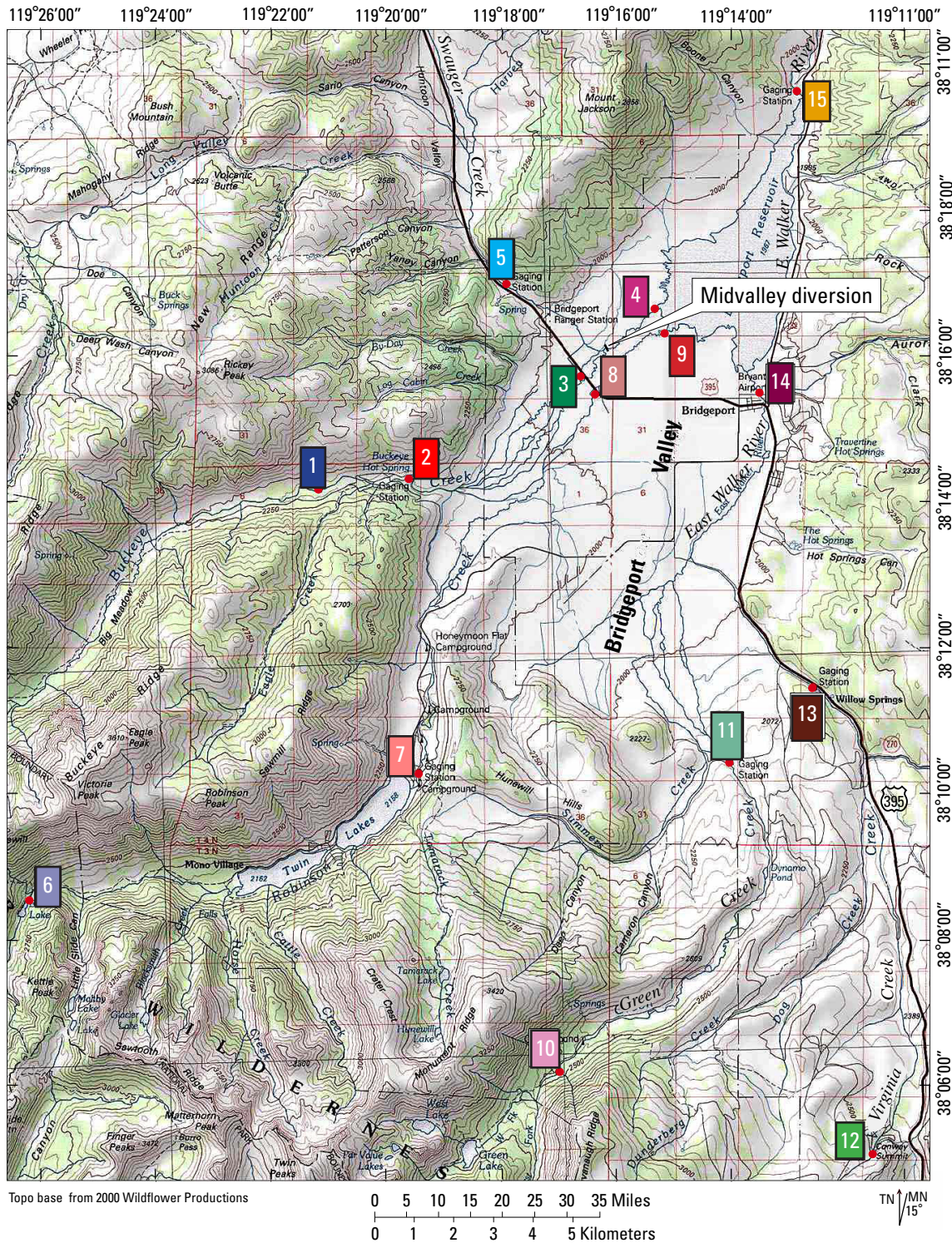


Figure 1. Location of the study area and sites in and near Bridgeport Valley, California, where water samples were collected, April 2000 to June 2003: (A) Study area, (B) Water-sample collection sites.—Continued
 Site numbers correspond with those in table 1. Click on site number to see data for that site.

Methods of Study

On-site measurements included streamflow, barometric pressure, dissolved oxygen, pH, water temperature, and specific conductance. Water samples were analyzed at the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) in Denver, Colorado, for nutrients and major ions. Suspended-sediment samples were analyzed at the USGS California District Sediment Laboratory in Marina, California. Fecal coliform and fecal streptococci were analyzed by USGS field personnel at a temporary laboratory set up in a U.S. Forest Service facility in Bridgeport.

Sampling Procedures

The on-site measurements of barometric pressure, dissolved oxygen, pH, specific conductance, water temperature, and chemical and bacterial samples were collected and processed using methods described in the USGS National Field Manual (U.S. Geological Survey, 1997 to present). Streamflow measurements were done using procedures described by Rantz (1982). Concentrations of nutrients and major ions were analyzed by the National Water Quality Laboratory according to methods described by Fishman (1993). Dissolved (filtered) samples were processed through 0.45 micron filters. Suspended sediment samples were obtained using methods described by Edwards and Glysson (1988). Sediment analysis was done at the USGS California District Sediment Laboratory using methods described by Guy (1969).

During the first year of sampling it was discovered that during the irrigation season, up to 90 percent of the flow in Buckeye Creek was being diverted upstream of site 4 at the mid-valley diversion (*fig. 1*). Therefore, sampling at site 4 did not reflect the true sediment and chemical quality contributed by Buckeye Creek to Bridgeport Reservoir. Subsequently, when sampling dates coincided with periods of diversion of water from Buckeye Creek (September 2001 and June 2002), a composite sample was collected using all of the irrigation return channels. These composite samples were proportioned based on the total streamflow at the mid-valley diversion. Each irrigation return channel was measured and then the proportional volume of water from the channel was added to the churn splitter. The composite better reflects the total sediment and chemical quality contributed by Buckeye Creek to Bridgeport Reservoir than would a single sample at site 4.

Quality Assurance Procedures

During each field run, a sequential replicate water sample or a field blank was taken. Replicate samples allow evaluation of variability introduced by sampling procedures. Field blanks consist of inorganic-free water that is subjected to the same aspects of sample collection, field processing, preservation, transportation, and laboratory handling as an environmental

sample. The National Water Quality Laboratory followed analytical quality assurance practices described by Pritt and Raese (1995) and Pirkey and Glodt (1998). Nearly all sediment samples were collected and analyzed in duplicate at each site. The USGS California District Sediment Laboratory followed quality assurance practices described in the laboratory's unpublished quality assurance plan. The results of the field-blank and replicate sampling are discussed in the next section.

Review of Data

Field data, turbidity, nutrient, major ion, and sediment concentrations and fecal coliform and fecal streptococci densities are listed in *tables 2-16*. Field blank data are listed in *table 17*.

Most of the field blank samples indicate that no contamination was introduced by sampling or analytical procedures. Three of the field blank samples, May 12, June 8, and September 14, 2002, indicated some contamination of the environmental samples may have occurred. A careful analysis of the data revealed the following:

- May 12, 2000: field blank data indicate possible aluminum and zinc contamination. These constituents were not analyzed for in the environmental samples, so the results were not affected.
- June 8, 2000: field blank data indicate possible dissolved ammonia and dissolved nitrite-plus-nitrate contamination. Dissolved ammonia data at sites 4 and 9 were flagged with a "V" to indicate possible contamination. All other environmental data associated with this blank appeared reasonable.
- September 14, 2000: field blank data indicate possible dissolved ammonia, nitrite plus nitrate, dissolved ammonia plus organic nitrogen, orthophosphate, total phosphorus, and calcium contamination. The calcium concentration (0.013 mg/L) in the blank sample was near the detection limit (0.010 mg/L) and much lower than in any of the environmental samples (4.84 to 19.8 mg/L). All of the environmental calcium data appeared reasonable. The analysis revealed possible contamination at six sites (sites 2, 3, 5, 7, 8, and 11). The dissolved ammonia value at site 7 was judged unreliable and removed from the table. Some data at these sites were flagged with a "V" to indicate possible contamination. All other environmental data associated with this blank appeared reasonable.

The sequential replicate samples collected at sites 4, 13, and 14 indicate that a reproducible sample can be collected using procedures described in this report.

In a few instances, the concentration of a specific element was greater in the dissolved (filtered through 0.45 micron filter) sample than the unfiltered (total) sample. In

these instances, differences may be due to normal variance in analytical results. The data were analyzed using the following criteria: If dissolved is greater than total the results are acceptable if it is within two times the long-term detection limit of the least precise of the two analytical methods. An analysis of the data indicates these differences are within the acceptable ranges except site 2, March 14, 2001 (*table 3*), orthophosphate and total phosphorus; site 5, March 13, 2001 (*table 6*), total and dissolved ammonia plus organic nitrogen; and site 15, October 11, 2000 (*table 16*), total and dissolved ammonia plus organic nitrogen. These values were removed from the tables.

The less-than (<) values reported for analytes in water samples are reported when an analyte either is not detected or is detected at a concentration less than the laboratory reporting level (LRL). The LRL is defined as generally equal to twice the annually determined long-term method detection level (Childress and others, 1999). The estimated (E) value is reported for data where the analyte is detected above the method detection limit, but below the minimum reporting level (MRL) (Childress and others, 1999). The MRL is defined as the smallest measured concentration of a substance that can be reliably measured using a given analytical method. For these samples, the compound has passed all criteria used to identify its presence, and only the concentration is estimated.

National Water Quality Laboratory procedures for turbidity changed during the project. The old procedure for static turbidity measurements using the Hach 2100A turbidimeter instrument was replaced with a dynamic flow-through procedure using the Hach 2100AN turbidimeter. Values less than 20 Nephelometric Turbidity Units (NTU) minimally are affected by the change in analytical procedures. Data may change for more turbid and colored samples, usually with increased values on the Hach 2100AN (Brown, 2000). Both methods have been published in this report where they are available.

Summary

The U.S. Geological Survey collected water-quality data from selected streams in and near Bridgeport Valley between April 2000 and June 2003. Water samples were collected and analyzed according to U.S. Geological Survey procedures. On-site measurements of streamflow, barometric pressure, dissolved oxygen, pH, water temperature, and specific conductance were made at 15 sites on 6 different streams. Water samples were collected for chemical analyses of nutrients and major ion concentrations. Water samples were also analyzed for turbidity, fecal coliform and fecal streptococci densities, and suspended sediment concentration. Field blanks and replicate samples were collected to assure the quality of the environmental-sample data. Data are presented in *tables 2-17*.

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Tables

8 Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003

Table 1. Location of sites in and near Bridgeport Valley, California, where water-quality samples were collected, April 2000 to June 2003.

[USGS, U.S. Geological Survey. mi², square mile. Site numbers correspond to those shown in *figure 1*. Click on the site number to see data for that site]

Site no. (fig. 1)	Table no.	USGS station no.	Station name	Drainage area (mi ²)	Elevation (feet)	Latitude	Longitude
1	2	381406119213501	Buckeye Creek above Campground, near Bridgeport	Not determined	7,210	38°14'06"	119°21'35"
2	3	10291500	Buckeye Creek near Bridgeport	44.1	6,945	38°14'18"	119°19'37"
3	4	10291800	Buckeye Creek at Highway 395, near Bridgeport	54.8	6,499	38°15'48"	119°16'39"
4	5	10292100	Buckeye Creek at Bridgeport Reservoir, near Bridgeport	110	6,459	38°16'37"	119°15'25"
5	6	10292000	Swauger Creek near Bridgeport	52.8	6,620	38°17'00"	119°17'55"
6	7	380834119261201	Robinson Creek below Barney Lake, near Bridgeport	Not determined	8,270	38°08'34"	119°26'12"
7	8	10290500	Robinson Creek at Twin Lakes Outlet, near Bridgeport	39.1	7,107	38°10'19"	119°19'26"
8	9	10291100	Robinson Creek at Highway 395, near Bridgeport	47.0	6,505	38°15'34"	119°16'23"
9	10	10291200	Robinson Creek at Bridgeport Reservoir, near Bridgeport	47.5	6,456	38°16'23"	119°15'15"
10	11	380621119165601	Green Creek above Campground, near Bridgeport	Not determined	8,065	38°06'21"	119°16'56"
11	12	10289500	Green Creek near Bridgeport	19.5	6,866	38°10'27"	119°14'01"
12	13	380505119113301	Virginia Creek at Conway Summit, near Lee Vining	Not determined	8,367	38°05'05"	119°11'33"
13	14	10289000	Virginia Creek near Bridgeport	63.6	6,742	38°11'27"	119°12'35"
14	15	10290200	East Walker River at Bridgeport	159	6,433	38°15'29"	119°13'33"
15	16	10293000	East Walker River near Bridgeport	359	6,391	38°19'42"	119°12'48"

Table 2. Site 1: Discharge, field measurements, and water-quality data for Buckeye Creek above Campground, near Bridgeport, California.

(Back to table 1. Back to figure 1)

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; t/day, ton per day. —, no data. <, less than. E, Estimated]

Date	Time	Discharge, inst. (cubic feet per second) (00061)	Turbidity lab Hach 2100AN (NTU) (99872)	Barometric pressure (mm of HG) (00025)	Oxygen, dissolved (mg/L) (00300)	Oxygen, dissolved (percent saturation) (00301)	pH water whole field (standard units) (00400)	Specific conductance (µs/cm) (00095)	Temperature, water (deg C) (00010)
Jun 5, 2002	1335	135	2.1	592	9.2	106	7.5	24	10.5
Sep 24	1300	8.4	1.3	588	—	—	8.2	89	11.0
Mar 11, 2003	1215	15	1.3	583	—	—	8.0	81	4.0
Jun 5	1350	190	3.3	589	9.2	104	5.3	25	9.5
Date	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO ₂ +NO ₃ dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)	Coliform, fecal, 0.7 UM-MF (cols/100 mL) (31625)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Jun 5, 2002	<0.015	<0.10	E0.07	0.016	<0.007	0.016	<1	25	9.1
Sep 24	<0.015	<.10	E.08	<.013	<.007	.006	—	1	.02
Mar 11, 2003	<.015	<.10	<.10	<.022	E.004	.010	—	4.0	.16
Jun 5	<.015	<.10	E.10	E.018	<.007	.023	—	31	16

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Table 3. Site 2: Discharge, field measurements, and water-quality data for Buckeye Creek near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids, residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Ortho-phosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 12, 2000	—	—	<0.002	E0.05	0.13	<0.005	0.002	0.014
May 10	1.6	31	<.002	E.08	.11	.005	.002	.010
Jun 8	—	—	<.002	E.05	E.10	.022	<.001	.018
Jul 13	—	—	<.002	<.10	<.10	.010	.004	.012
Aug 10	—	—	<.002	E.05	E.06	.021	.003	.009
Sep 14	4.6	63	.003	.10	.10	<.005	V.012	.010
Oct 12	—	—	.002	E.06	E.05	<.005	<.007	.006
Nov 14	—	—	<.002	<.10	.08	.009	<.007	.007
Dec 13	—	—	.018	.15	<.08	.006	<.007	.004
Jan 11, 2001	6.2	70	<.002	<.10	<.08	.033	.008	.007
Feb 16	—	—	.005	E.07	E.06	.055	E.004	.008
Mar 14	—	—	.004	E.06	E.04	.028	—	—
Apr 10	—	—	.011	<.10	.10	.017	<.007	.009
May 11	—	—	.002	E.06	.19	.017	E.005	.055
Jun 7	—	—	.005	<.10	E.04	.014	<.007	.012
Sep 13	—	—	.002	E.05	.09	.009	<.007	.007
Nov 22	—	—	<.015	E.08	.14	<.013	E.004	.014
Dec 19	—	—	<.015	<.10	E.07	.023	<.007	.006
Mar 20, 2002	—	—	<.015	<.10	E.06	E.010	<.007	.009
Jun 3	—	—	<.015	<.10	E.07	.018	<.007	.026

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 12, 2000	k2	k2	—	—	—	7.0	1.2
May 10	k2	k1	32	310	3.2	14	5.2
Jun 8	—	—	—	—	—	28	16.1
Jul 13	>60	54	—	—	—	6.0	1.4
Aug 10	56	39	—	—	—	1.0	.11
Sep 14	k11	k13	44	90	2.3	1.0	.05
Oct 12	k2	k4	—	—	—	4.0	.20
Nov 14	<1	k1	—	—	—	2.0	.12
Dec 13	k1	k1	—	—	—	2.0	.08
Jan 11, 2001	<1	k1	E9	50	E2.0	2.0	.06
Feb 16	<1	k2	—	—	—	1.0	.04
Mar 14	<1	k2	—	—	—	1.0	.03
Apr 10	<1	<1	—	—	—	5.0	.32
May 11	k2	k3	—	—	—	46	20.4
Jun 7	k1	k14	—	—	—	8.0	2.3
Sep 13	—	—	—	—	—	2.0	.07
Nov 22	—	—	—	—	—	2.0	.11
Dec 19	—	—	—	—	—	1.0	.05
Mar 20, 2002	—	—	—	—	—	2.0	.10
Jun 3	—	—	—	—	—	28	13.0

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Table 4. Site 3: Discharge, field measurements, and water-quality data for Buckeye Creek at Highway 395, near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids, residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Ortho-phosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 13, 2000	—	—	0.004	0.26	0.52	<0.005	0.10	0.116
May 11	2.4	50	.010	.13	.17	<.005	.002	.011
Jun 6	—	—	.002	E.08	.17	.013	<.001	.032
Jul 12	—	—	<.002	.14	.19	<.005	.006	.029
Aug 9	—	—	<.002	.29	.32	<.005	.011	.036
Sep 13	5.3	85	.009	.12	.14	V.046	.006	.018
Oct 12	—	—	.005	E.09	.14	<.005	<.007	.013
Nov 14	—	—	.003	<.10	.17	.005	<.007	.008
Dec 12	—	—	<.002	E.06	E.05	.005	<.007	.004
Jan 10, 2001	8.3	93	.003	<.10	E.05	.008	<.007	.008
Feb 14	—	—	.006	<.10	E.08	.035	<.007	.009
Mar 13	—	—	.012	E.08	E.04	.005	<.007	.010
Apr 12	—	—	.004	E.05	.09	.005	<.007	.010
May 9	—	—	<.002	.16	.41	.005	E.005	.115
Jun 5	—	—	.004	<.10	.12	<.005	<.007	.018
Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)	
Apr 13, 2000	k15	86	—	—	—	—	—	
May 11	73	38	61	350	19.2	9.0	1.1	
Jun 6	k180	119	—	—	—	28	11.3	
Jul 12	>600	380	—	—	—	10	1.2	
Aug 9	k288	560	—	—	—	4.0	.11	
Sep 13	533	k40	115	420	50.0	2.0	.02	
Oct 12	105	k58	—	—	—	5.0	.16	
Nov 14	41	28	—	—	—	4.0	.09	
Dec 12	k11	k2	—	—	—	10	.30	
Jan 10, 2001	k6	k4	80	230	56.3	5.0	.06	
Feb 14	k3	k2	—	—	—	3.0	.11	
Mar 13	k2	k11	—	—	—	2.0	.06	
Apr 12	k1	<1	—	—	—	2.0	.04	
May 9	k15	58	—	—	—	77	24.9	
Jun 5	50	44	—	—	—	9.0	1.3	

14 Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003

Table 5. Site 4: Discharge, field measurements, and water-quality data for Buckeye Creek at Bridgeport Reservoir, near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids, residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Ortho-phosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 11, 2000	—	—	0.007	0.18	0.28	<0.005	0.022	0.048
May 9	2.6	50	.010	.20	.26	<.005	.007	.029
Jun 7	—	—	.004	.11	.20	.031	.005	.045
Jun 7	—	—	.002	.12	.22	.012	.005	.045
Jun 7	—	—	V.017	.12	.20	.013	.006	.030
Jul 11	—	—	<.002	.14	.20	<.005	.009	.029
Aug 8	—	—	<.002	.41	.58	<.005	.044	.100
Sep 12	9.3	137	.009	.53	.58	<.005	.021	.059
Oct 11	—	—	.004	E.07	.24	<.005	.013	.038
Nov 15	—	—	.002	<.10	.17	.008	.008	.051
Dec 11	—	—	.002	E.07	.09	.008	.007	.040
Jan 12, 2001	9.3	94	.002	E.07	.09	.027	.013	.024
Jan 12 ¹	—	—	<.002	E.07	.14	.022	E.006	.040
Feb 15	—	—	.004	E.09	.08	.043	.007	.023
Mar 13	—	—	<.002	.10	.16	.007	.012	.040
Apr 11	—	—	.006	E.09	.16	<.005	.009	.024
May 10	—	—	.005	.17	.36	.008	.012	.089
Jun 6	—	—	.006	.16	.21	.007	.021	.057
Sep 12	—	—	.009	.16	.32	.008	.020	.092
Nov 22	—	—	<.015	.10	.26	<.013	.020	.073
Dec 18	—	—	<.015	<.10	.11	.025	.014	.039
Mar 20, 2002	—	—	<.015	<.10	.10	<.013	.016	.031
Jun 4	—	—	.018	.46	.63	<.013	E.005	.120

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 11, 2000	k2	k4	—	—	—	5.0	0.08
May 9	k13	23	57	560	13.6	19	2.9
Jun 7	>200	305	—	—	—	37	11.8
Jun 7	>300	160	—	—	—	32	9.7
Jun 7	192	120	—	—	—	16	3.9
Jul 11	>600	262	—	—	—	2.0	.12
Aug 8	k55	k71	—	—	—	4.0	.02
Sep 12	>600	520	81	300	30.5	12	.27
Oct 11	114	52	—	—	—	12	.64
Nov 15	37	38	—	—	—	46	3.1
Dec 11	k7	k20	—	—	—	15	1.1
Jan 12, 2001	k2	k7	27	360	30.4	14	.66
Jan 12 ¹	—	—	—	—	—	—	—
Feb 15	k2	k17	—	—	—	6.0	.35
Mar 13	k1	k6	—	—	—	16	1.3
Apr 11	k1	k2	—	—	—	3.0	.11
May 10	>120	>200	—	—	—	127	49.4
Jun 6	k1,630	154	—	—	—	18	2.5
Sep 12	—	—	—	—	—	3.0	.10
Nov 22	—	—	—	—	—	19	1.3
Dec 18	—	—	—	—	—	12	.68
Mar 20, 2002	—	—	—	—	—	5.0	.25
Jun 4	—	—	—	—	—	14	4.3

¹Replicate sample.

16 Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003

Table 6. Site 5: Discharge, field measurements, and water-quality data for Swauger Creek near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Ortho-phosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 13, 2000	—	—	0.003	0.28	0.44	0.037	0.045	0.107
May 11	3.5	99	.004	.11	.19	.052	.038	.044
Jun 6	—	—	<.002	E.08	.17	.083	.035	.059
Jul 12	—	—	.009	.29	.29	.180	.056	.090
Aug 9	—	—	.012	.14	.25	.282	.060	.100
Sep 13	5.9	116	V.015	E.09	.25	V.148	.045	.091
Oct 12	—	—	.006	.23	.23	<.005	E.006	.023
Nov 14	—	—	<.002	<.10	.11	.141	.038	.051
Dec 12	—	—	<.002	E.09	<.08	.102	.037	.054
Jan 9, 2001	6.3	102	.003	E.09	.14	.084	.030	.047
Feb 14	—	—	.002	E.07	.12	.076	.032	.049
Mar 13	—	—	.005	—	—	.049	.030	.063
Apr 12	—	—	.006	.11	.27	.082	.035	.082
May 9	—	—	.013	.29	.51	.102	.067	.117
Jun 5	—	—	.007	.10	.17	.086	.057	.085
Sep 12	—	—	.009	.11	.15	.101	.057	.078
Dec 18	—	—	<.015	<.10	.13	.129	.034	.054
Mar 19, 2002	—	—	<.015	E.07	.19	.067	.032	.065
Jun 6	—	—	E.012	.31	.39	E.012	.056	.099
Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)	
Apr 13, 2000	k6	55	—	—	—	32	1.7	
May 11	k2	k8	64	370	16.8	8.0	.29	
Jun 6	59	89	—	—	—	3.0	.04	
Jul 12	50	>1,000	—	—	—	2.0	.02	
Aug 9	73	k182	—	—	—	5.0	.03	
Sep 13	250	310	65	620	14.9	18	.25	
Oct 12	k28	160	—	—	—	53	.80	
Nov 14	k8	96	—	—	—	4.0	.05	
Dec 12	k8	55	—	—	—	6.0	.10	
Jan 9, 2001	k2	88	22	260	5.9	8.0	.13	
Feb 14	k1	39	—	—	—	5.0	.09	
Mar 13	k1	30	—	—	—	13	.26	
Apr 12	k1	k16	—	—	—	20	.57	
May 9	k3	73	—	—	—	16	.24	
Jun 5	k128	k330	—	—	—	6.0	.06	
Sep 12	—	—	—	—	—	6.0	.05	
Dec 18	—	—	—	—	—	3.0	.04	
Mar 19, 2002	—	—	—	—	—	12	.24	
Jun 6	—	—	—	—	—	8.0	.07	

Table 7. Site 6: Discharge, field measurements, and water-quality data for Robinson Creek below Barney Lake, near Bridgeport, California.

(Back to table 1. Back to figure 1)

[NTU, nephelometric turbidity unit; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; t/day, ton per day. —, no data. <, less than. E, Estimated. k, Counts outside acceptable range]

Date	Time	Discharge, inst. cubic feet per second (00061)	Turbidity lab Hach 2100AN NTU (99872)	Barometric pressure mm of HG (00025)	Oxygen, dissolved mg/L (00300)	Oxygen, dissolved (percent saturation) (00301)	pH water whole field (standard units) (00400)	Specific conductance µs/cm (00095)	Temperature, water deg C (00010)
Jun 5, 2002	1025	61	2.8	568	9.1	104	6.9	8	8.0
Sep 24	1530	.94	.9	—	—	—	7.4	18	13.5
Mar 11, 2003	0910	4.6	1.2	580	—	—	7.7	40	2.0
Jun 4	1130	82	<1.0	564	—	—	5.5	8	5.5

Date	Nitrogen, ammonia dissolved mg/L as N (00608)	Nitrogen, ammonia + organic dissolved mg/L as N (00623)	Nitrogen ammonia + organic total mg/L as N (00625)	Nitrogen, NO2+NO3 dissolved mg/L as N (00631)	Orthophosphate, dissolved mg/L as P (00671)	Phosphorus total mg/L as P (00665)	Coliform, fecal, 0.7 UM-MF cols/100 mL (31625)	Sediment, suspended mg/L (80154)	Sediment, discharge, suspended t/day (80155)
Jun 5, 2002	<0.015	<0.10	E0.06	<0.013	<0.007	0.004	k1	<0.5	<0.01
Sep 24	<.015	.11	.16	<.013	<.007	.010	—	1.0	<.01
Mar 11, 2003	<.015	<.10	<.10	<.022	<.007	.008	—	1.0	.01
Jun 4	<.015	E.06	E.07	<.022	<.007	E.002	—	2.0	.44

Table 8. Site 7: Discharge, field measurements, and water-quality data for Robinson Creek at Twin Lakes Outlet, near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 12, 2000	—	—	<0.002	<0.10	E0.08	<0.005	<0.001	E0.004
May 10	4.8	38	<.002	E.05	E.10	<.005	<.001	<.008
Jun 8	—	—	.002	<.10	E.07	.007	<.001	<.008
Jul 13	—	—	<.002	<.10	.14	<.005	.001	E.005
Aug 10	—	—	<.002	E.08	E.06	<.005	<.001	E.005
Sep 14	3.5	32	—	VE.08	E.08	V.037	—	—
Oct 12	—	—	.003	E.07	E.07	<.005	<.007	E.003
Nov 14	—	—	.002	E.06	.17	.006	<.007	.004
Dec 13	—	—	.004	.10	E.06	.053	<.007	.005
Jan 11, 2001	4.7	39	.002	E.05	.14	.005	E.004	.009
Feb 16	—	—	.006	E.09	E.07	<.005	<.007	.007
Mar 14	—	—	.006	E.06	<.08	<.005	<.007	.004
Apr 10	—	—	.006	<.10	E.08	<.005	<.007	.005
May 11	—	—	<.002	E.06	E.06	<.005	<.007	.004
Jun 7	—	—	.004	.11	E.08	<.005	<.007	.006
Sep 11	—	—	.002	E.07	.09	.008	<.007	.005
Nov 22	—	—	<.015	E.06	.12	<.013	<.007	.005
Dec 19	—	—	<.015	E.05	E.06	E.009	<.007	.006
Mar 21, 2002	—	—	<.015	<.10	.10	<.013	<.007	.005
Jun 3	—	—	<.015	E.06	E.07	<.013	<.007	.006
Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)	
Apr 12, 2000	<1	<1	—	—	—	1.0	0.10	
May 10	<1	<1	<10	30	<2.2	1.0	.39	
Jun 8	—	—	—	—	—	3.0	1.7	
Jul 13	k2	k10	—	—	—	2.0	.62	
Aug 10	k14	k6	—	—	—	1.0	.21	
Sep 14	k4	k10	E6	<20	<2.2	<.5	<.01	
Oct 12	<1	k6	—	—	—	7.0	.40	
Nov 14	k1	k4	—	—	—	1.0	.03	
Dec 13	<1	<1	—	—	—	3.0	.08	
Jan 11, 2001	<1	k2	<10	30	E1.7	3.0	.05	
Feb 16	<1	<1	—	—	—	1.0	.04	
Mar 14	<1	<1	—	—	—	<.5	<.01	
Apr 10	<1	<1	—	—	—	1.0	.08	
May 11	<1	<1	—	—	—	2.0	.71	
Jun 7	<1	<1	—	—	—	1.0	.32	
Sep 11	—	—	—	—	—	<.5	<.01	
Nov 22	—	—	—	—	—	1.0	.02	
Dec 19	—	—	—	—	—	2.0	.01	
Mar 21, 2002	—	—	—	—	—	1.0	.04	
Jun 3	—	—	—	—	—	2.0	.99	

Table 9. Site 8: Discharge, field measurements, and water-quality data for Robinson Creek at Highway 395, near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 13, 2000	—	—	0.005	0.30	0.36	0.007	0.004	0.023
May 11	3.9	47	<.002	E.08	.16	<.005	<.001	.012
Jun 6	—	—	.003	.12	.20	.008	<.001	.016
Jul 12	—	—	.002	.16	.22	.009	.003	.018
Aug 9	—	—	.003	.19	.21	<.005	.003	.016
Sep 13	4.0	58	.002	.10	.10	V.107	.001	E.005
Oct 12	—	—	.005	E.06	.08	<.005	<.007	.006
Nov 14	—	—	<.002	E.05	.15	.016	<.007	E.002
Dec 12	—	—	<.002	E.05	<.08	.011	<.007	<.004
Jan 10, 2001	5.8	66	.002	E.06	.08	.033	<.007	.004
Feb 14	—	—	.003	E.09	.10	.021	<.007	.010
Mar 13	—	—	.004	<.10	.17	<.005	<.007	.007
Apr 12	—	—	.012	E.09	.10	.023	<.007	.008
May 9	—	—	<.002	.23	.29	<.005	E.006	.034
Jun 5	—	—	.006	E.07	.14	<.005	<.007	.018

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 13, 2000	k7	134	—	—	—	8.0	0.24
May 11	k7	61	23	320	4.8	11	1.2
Jun 6	k202	136	—	—	—	9.0	3.0
Jul 12	450	100	—	—	—	4.0	.12
Aug 9	2,100	66	—	—	—	4.0	.10
Sep 13	3,600	88	54	240	11.6	<.5	<.01
Oct 12	k33	k14	—	—	—	12	.16
Nov 14	k5	k2	—	—	—	2.0	.01
Dec 12	k2	k1	—	—	—	2.0	.02
Jan 10, 2001	k2	k2	32	90	12.8	3.0	.02
Feb 14	k6	k13	—	—	—	6.0	.16
Mar 13	k1	k2	—	—	—	4.0	.16
Apr 12	<1	k6	—	—	—	3.0	.01
May 9	47	k139	—	—	—	7.0	.29
Jun 5	k633	69	—	—	—	8.0	.64

Table 10. Site 9: Discharge, field measurements, and water-quality data for Robinson Creek at Bridgeport Reservoir, near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 11, 2000	—	—	<0.002	0.11	0.13	<0.005	0.006	0.014
May 9	3.5	68	.004	.28	.35	<.005	.002	.018
Jun 7	—	—	.004	.14	.20	.010	<.001	.021
Jun 7	—	—	.002	.14	.26	.010	<.001	.027
Jun 7	—	—	V.016	.16	.23	.010	<.001	.025
Jul 11	—	—	<.002	.18	.22	.008	.003	.026
Aug 8	—	—	.005	.30	.35	<.005	.003	.026
Sep 12	5.0	84	.003	.15	.16	<.005	.007	.016
Oct 11	—	—	.005	.11	.12	<.005	E.005	.014
Nov 15	—	—	.008	<.10	.12	.009	.009	.009
Dec 11	—	—	<.002	E.07	<.08	.010	<.007	.010
Jan 12, 2001	6.9	95	<.002	<.10	E.06	.015	E.006	.013
Feb 15	—	—	.003	E.08	E.07	.015	E.005	.013
Mar 13	—	—	.008	.68	.80	.007	.018	.070
Apr 11	—	—	.008	.12	.16	.006	E.005	.016
May 10	—	—	.002	.29	.35	<.005	<.007	.037
Jun 6	—	—	.008	.11	.14	<.005	<.007	.015
Sep 12	—	—	.007	.17	.21	.007	<.007	.011
Nov 22	—	—	<.015	<.10	E.10	<.013	<.007	.008
Dec 18	—	—	<.015	E.07	E.10	<.013	.008	.018
Mar 20, 2002	—	—	<.015	<.10	.11	<.013	.009	.019
Jun 4	—	—	<.015	.28	.34	<.013	<.007	.024

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 11, 2000	k2	k8	—	—	—	1.0	0.01
May 9	k16	88	58	340	7.2	17	1.7
Jun 7	k253	132	—	—	—	14	4.6
Jun 7	280	110	—	—	—	21	7.0
Jun 7	—	—	—	—	—	13	4.3
Jul 11	>600	350	—	—	—	5.0	.20
Aug 8	k50	k100	—	—	—	8.0	.26
Sep 12	k670	263	66	200	16.4	<.5	<.01
Oct 11	69	k18	—	—	—	5.0	.09
Nov 15	55	k6	—	—	—	2.0	4.2
Dec 11	k5	k4	—	—	—	3.0	.05
Jan 12, 2001	k2	k3	25	130	28.1	<.5	<.01
Feb 15	<1	k2	—	—	—	1.0	.01
Mar 13	k3	59	—	—	—	6.0	.15
Apr 11	k1	k6	—	—	—	4.0	.06
May 10	50	111	—	—	—	9.0	.53
Jun 6	54	62	—	—	—	2.0	.13
Sep 12	—	—	—	—	—	3.0	.08
Nov 22	—	—	—	—	—	2.0	.05
Dec 18	—	—	—	—	—	1.0	.01
Mar 20, 2002	—	—	—	—	—	2.0	.01
Jun 4	—	—	—	—	—	4.0	.69

24 Water-Quality Data for Selected Stream Sites in Bridgeport Valley, Mono County, California, April 2000 to June 2003

Table 11. Site 10: Discharge, field measurements, and water-quality data for Green Creek above Campground, near Bridgeport, California.

(Back to table 1. Back to figure 1)

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated]

Date	Time	Discharge, inst. (cubic feet per second) (00061)	Turbidity lab Hach 2100AN (NTU) (99872)	Barometric pressure (mm of HG) (00025)	Oxygen, dissolved (mg/L) (00300)	Oxygen, dissolved (percent saturation) (00301)	pH water whole field (standard units) (00400)	Specific conductance (µs/cm) (00095)	Temperature, water (deg C) (00010)
Jun 6, 2002	0850	119	0.5	570	9.3	105	7.4	43	8.0
Sep 23	1530	9.0	.5	—	—	—	7.7	57	13.0
Mar 10, 2003	1515	5.5	<1.0	565	—	—	7.1	63	3.0
Jun 5	1030	152	1.1	572	9.2	100	5.7	39	6.5
Date	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO ₂ +NO ₃ dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)	Coliform, fecal, 0.7 UM-MF (cols/100 mL) (31625)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Jun 6, 2002	<0.015	<0.10	E0.07	0.031	<0.007	0.006	<1	4.0	1.3
Sep 23	<.015	<.10	E.07	<.013	<.007	<.004	—	2.0	.05
Mar 10, 2003	<.015	<.10	E.06	.022	<.007	E.003	—	1.0	.01
Jun 5	<.015	<.10	E.06	.038	<.007	.004	—	2.0	.82

Table 12. Site 11: Discharge, field measurements, and water-quality data for Green Creek near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; $\mu\text{s}/\text{cm}$, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; $\mu\text{g}/\text{L}$, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. V, Analyte detected in both the environmental sample and the associated blank(s). k, Counts outside acceptable range]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Jun 6, 2000	—	—	0.004	<0.10	E0.09	0.011	<0.001	E0.004
Jul 12	—	—	<.002	<.10	<.10	.006	.001	E.004
Aug 9	—	—	.002	.15	.18	.023	.017	.034
Sep 13	12.2	40	.006	E.07	E.06	<.005	V.019	<.008
Oct 10	—	—	.003	<.10	.11	<.005	<.007	E.003
Nov 13	—	—	.002	<.10	E.06	.005	<.007	.004
Dec 12	—	—	<.002	E.07	E.06	.012	<.007	<.004
Jan 10, 2001	14.0	55	<.002	<.10	E.06	.015	<.007	E.002
Feb 14	—	—	.006	<.10	E.08	.038	<.007	E.003
Mar 14	—	—	.009	<.10	<.08	.015	<.007	E.003
Apr 10	—	—	.004	<.10	.10	.030	<.007	.004
May 10	—	—	<.002	E.06	.14	.006	<.007	.012
Jun 6	—	—	.006	<.10	.09	.007	<.007	.009
Sep 11	—	—	.003	E.05	E.06	.008	<.007	.004
Dec 19	—	—	<.015	<.10	E.06	E.009	<.007	E.002
Mar 19, 2002	—	—	<.015	<.10	.11	<.013	<.007	.004
Jun 6	—	—	<.015	<.10	E.08	<.013	<.007	.011
Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved ($\mu\text{g}/\text{L}$ as FE) (01046)	Iron, total recoverable ($\mu\text{g}/\text{L}$ as FE) (01045)	Manganese, dissolved ($\mu\text{g}/\text{L}$ as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)	
Jun 6, 2000	k2	29	—	—	—	5.0	1.7	
Jul 12	37	22	—	—	—	4.0	.52	
Aug 9	k2	k4	—	—	—	1.0	.06	
Sep 13	k1	k10	33	60	3.1	2.0	.04	
Oct 10	k4	k8	—	—	—	—	—	
Nov 13	k1	28	—	—	—	8.0	.15	
Dec 12	<1	k2	—	—	—	1.0	.01	
Jan 10, 2001	<1	k4	13	50	E2.0	1.0	.02	
Feb 14	<1	k1	—	—	—	2.0	.06	
Mar 14	<1	k11	—	—	—	<.5	<.01	
Apr 10	<1	64	—	—	—	2.0	.10	
May 10	k2	k8	—	—	—	8.0	1.9	
Jun 6	k2	k5	—	—	—	2.0	.25	
Sep 11	—	—	—	—	—	3.0	.05	
Dec 19	—	—	—	—	—	1.0	.02	
Mar 19, 2002	—	—	—	—	—	2.0	.04	
Jun 6	—	—	—	—	—	9.0	2.7	

Table 13. Site 12: Discharge, field measurements, and water-quality data for Virginia Creek at Conway Summit, near Lee Vining, California.

(Back to table 1. Back to figure 1)

[NTU, nephelometric turbidity unit; mm, millimeter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mg/L, milligram per liter; mL, milliliter; t/day, ton per day. —, no data. <, less than. E, Estimated]

Date	Time	Discharge, inst. (cubic feet per second) (00061)	Turbidity lab Hach 2100AN (NTU) (99872)	Barometric pressure (mm of HG) (00025)	pH water whole field (standard units) (00400)	Specific conductance (µs/cm) (00095)	Temperature, water (deg C) (00010)	Nitrogen, ammonia dissolved (mg/L as N) (00608)
Jun 5, 2002	1630	21	1.6	565	7.8	63	16.0	<0.015
Sep 23	1720	2.3	1.1	—	7.7	56	10.0	<.015
Mar 10, 2003	1740	1.9	<1.0	558	7.6	56	1.0	<.015
Jun 4	1430	42	2.0	564	6.5	56	13.5	<.015

Date	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)	Coliform, fecal, 0.7 UM-MF (cols/100 mL) (31625)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Jun 5, 2002	E0.06	0.12	E0.010	<0.007	0.013	<1	6.0	0.34
Sep 23	<.10	E.09	E.010	<.007	.008	—	4.0	.02
Mar 10, 2003	<.10	<.10	.073	E.004	.007	—	1.0	<.01
Jun 4	E.06	.15	E.015	<.007	.017	—	12	1.4

Table 14. Site 13: Discharge, field measurements, and water-quality data for Virginia Creek near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. k, Counts outside acceptable range. >, greater than]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Orthophosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 12, 2000	—	—	0.004	0.17	0.27	0.007	0.013	0.033
May 10	8.2	70	.004	.17	.38	.010	.014	.025
Jun 5	—	—	<.002	E.08	.25	.015	.006	.045
Jul 12	—	—	<.002	.16	.21	.018	.016	.032
Aug 9	—	—	<.002	E.09	.10	<.005	<.001	E.004
Sep 13	6.1	83	.004	E.10	.12	<.005	.004	.032
Oct 10	—	—	.007	.11	.22	.020	.024	.051
Nov 13	—	—	.003	.12	.20	.014	.018	.036
Dec 13	—	—	<.002	E.10	.20	<.005	<.007	.038
Jan 10, 2001	8.9	94	.007	E.08	.13	.016	.020	.030
Feb 15	—	—	.003	.14	.20	.037	.011	.039
Mar 12	—	—	<.002	.24	.17	.007	.014	.032
Apr 11	—	—	.008	.21	.20	.008	.013	.032
May 10	—	—	.002	.19	.28	.009	.010	.044
Jun 6	—	—	.008	E.08	.13	.014	.017	.037
Sep 11	—	—	.002	E.10	.11	.023	.018	.034
Dec 19	—	—	<.015	E.09	.15	.023	.009	.030
Dec 19 ¹	—	—	<.015	E.08	.13	.021	.010	.028
Mar 19, 2002	—	—	<.015	E.07	.18	.015	.011	.043
Jun 6	—	—	<.015	.12	.27	.013	.009	.044

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 12, 2000	k2	k7	—	—	—	9.0	0.48
May 10	k1	25	125	580	16.0	12	.75
Jun 5	k11	110	—	—	—	23	1.9
Jul 12	50	>100	—	—	—	7.0	.14
Aug 9	k23	68	—	—	—	6.0	.09
Sep 13	k20	62	229	400	13.3	3.0	.06
Oct 10	k10	59	—	—	—	5.0	.07
Nov 13	k8	114	—	—	—	8.0	.21
Dec 13	k2	39	—	—	—	12	.47
Jan 10, 2001	k64	k6	105	350	23.0	6.0	.14
Feb 15	k2	21	—	—	—	15	.58
Mar 12	k2	k13	—	—	—	7.0	.22
Apr 11	k1	k5	—	—	—	9.0	.42
May 10	k4	28	—	—	—	14	1.1
Jun 6	k7	67	—	—	—	7.0	.23
Sep 11	—	—	—	—	—	4.0	.06
Dec 19	—	—	—	—	—	6.0	.20
Dec 19 ¹	—	—	—	—	—	—	—
Mar 19, 2002	—	—	—	—	—	20	.70
Jun 6	—	—	—	—	—	20	1.4

¹Replicate sample.

Table 15. Site 14: Discharge, field measurements, and water-quality data for East Walker River at Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; µs/cm, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; µg/L, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. k, Counts outside acceptable range]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO2+NO3 dissolved (mg/L as N) (00631)	Ortho- phosphate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 12, 2000	—	—	<0.002	0.42	0.52	<0.005	0.023	0.051
May 10	11.1	137	.012	.62	.60	<.005	.019	.042
Jun 7	—	—	.005	.49	.47	.008	.006	.041
Jun 7	—	—	.007	.49	.52	.009	.007	.041
Jun 7	—	—	.011	.54	.50	.010	.008	.046
Jul 11	—	—	.003	.41	.37	<.005	.016	.042
Aug 8	—	—	<.002	.45	.52	<.005	.016	.042
Sep 12	10.6	132	.011	.24	.27	<.005	.013	.030
Oct 11	—	—	.008	E.07	.19	.116	.033	.069
Nov 13	—	—	.017	E.09	.13	.005	.008	.016
Dec 11	—	—	<.002	.15	.11	.005	E.004	.013
Jan 11, 2001	11.8	109	<.002	E.08	.30	.011	.012	.048
Feb 13	—	—	.005	.12	.20	.022	.009	.032
Mar 12	—	—	.003	.51	.57	<.005	.036	.088
Apr 10	—	—	.012	.32	.49	.006	.024	.055
May 9	—	—	.003	.42	.48	<.005	.018	.054
Jun 5	—	—	.007	.35	.37	<.005	E.005	.034
Sep 10	—	—	.005	.12	.13	.008	.016	.025
Sep 10 ¹	—	—	—	—	.17	—	—	.027
Nov 22	—	—	<.015	.15	.23	<.013	.010	.032
Dec 21	—	—	<.015	.14	.16	.036	.008	.021
Mar 20, 2002	—	—	<.015	E.10	.15	<.013	.009	.021
Jun 6	—	—	E.014	.80	.83	<.013	.022	.075

Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep. KF strp MF, water (col/100 mL) (31673)	Iron, dissolved (µg/L as FE) (01046)	Iron, total recoverable (µg/L as FE) (01045)	Manganese, dissolved (µg/L as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)
Apr 12, 2000	k3	34	—	—	—	7.0	0.65
May 10	82	196	116	400	44.5	12	2.3
Jun 7	k355	300	—	—	—	9.0	3.5
Jun 7	k268	250	—	—	—	9.0	3.5
Jun 7	270	293	—	—	—	12	4.9
Jul 11	167	76	—	—	—	5.0	.59
Aug 8	132	54	—	—	—	3.0	.22
Sep 12	93	k22	75	240	25.4	3.0	.14
Oct 11	210	58	—	—	—	7.0	.56
Nov 13	k10	k32	—	—	—	5.0	.48
Dec 11	k4	k2	—	—	—	4.0	.35
Jan 11, 2001	k3	k15	50	900	62.3	25	2.7
Feb 13	k2	k12	—	—	—	15	1.3
Mar 12	k2	60	—	—	—	18	2.4
Apr 10	k8	51	—	—	—	9.0	1.3
May 9	63	62	—	—	—	9.0	.87
Jun 5	170	287	—	—	—	5.0	.94
Sep 10	—	—	—	—	—	3.0	.13
Sep 10 ¹	—	—	—	—	—	—	—
Nov 22	—	—	—	—	—	6.0	.46
Dec 21	—	—	—	—	—	6.0	.51
Mar 20, 2002	—	—	—	—	—	4.0	.32
Jun 6	—	—	—	—	—	12	2.4

¹Replicate sample.

Table 16. Site 15: Discharge, field measurements, and water-quality data for East Walker River near Bridgeport, California.—Continued

[NTU, nephelometric turbidity unit; mm, millimeter; mg/L, milligram per liter; $\mu\text{s}/\text{cm}$, microsiemens per centimeter; deg C, degrees Celsius; mL, milliliter; $\mu\text{g}/\text{L}$, microgram per liter; t/day, ton per day. —, no data. <, less than. E, Estimated. k, Counts outside acceptable range]

Date	Sulfate, dissolved (mg/L as S04) (00945)	Solids, residue at 180 deg. C dissolved (mg/L) (70300)	Nitrogen, ammonia dissolved (mg/L as N) (00608)	Nitrogen, ammonia + organic dissolved (mg/L as N) (00623)	Nitrogen, ammonia + organic total (mg/L as N) (00625)	Nitrogen, NO ₂ +NO ₃ dissolved (mg/L as N) (00631)	Orthophos- phate, dissolved (mg/L as P) (00671)	Phosphorus total (mg/L as P) (00665)
Apr 12, 2000	—	—	0.036	0.38	0.46	0.005	0.004	0.031
May 10	15.9	151	.029	.41	.93	.017	.014	.038
Jun 7	—	—	.072	.48	.51	.028	.036	.073
Jul 11	—	—	.607	.89	.99	.019	.082	.140
Aug 8	—	—	.522	1.1	1.3	.020	.127	.180
Sep 12	7.2	119	.067	.85	.99	.036	.089	.145
Oct 11	—	—	.006	—	—	.007	E.006	.153
Nov 13	—	—	.023	.37	.62	.006	E.005	.052
Dec 12	—	—	<.002	.34	.49	.015	.010	.030
Jan 11, 2001	14.5	120	.048	.30	.50	.009	.008	.035
Feb 13	—	—	.141	.35	.51	.014	.011	.039
Mar 12	—	—	.210	.41	.47	.019	.023	.062
Apr 10	—	—	.009	.23	.36	.007	<.007	.024
May 9	—	—	.012	.34	.45	<.005	.009	.028
Jun 5	—	—	.045	.39	.46	.013	.010	.045
Sep 11	—	—	.265	.88	1.2	.037	.219	.26
Dec 21	—	—	.083	.38	.43	.075	.013	.035
Mar 20, 2002	—	—	E.008	.16	.27	<.013	<.007	.033
Jun 3	—	—	.021	.41	.45	E.009	.015	.053
Date	Coliform, fecal, 0.7 UM-MF (cols./100 mL) (31625)	Fecal strep, KF strp MF, water (col/100 mL) (31673)	Iron, dissolved ($\mu\text{g}/\text{L}$ as FE) (01046)	Iron, total recoverable ($\mu\text{g}/\text{L}$ as FE) (01045)	Manganese, dissolved ($\mu\text{g}/\text{L}$ as MN) (01056)	Sediment, suspended (mg/L) (80154)	Sediment, discharge, suspended (t/day) (80155)	
Apr 12, 2000	<1	k2	—	—	—	3.0	1.1	
May 10	k2	k3	47	260	9.0	6.0	2.5	
Jun 7	<1	k1	—	—	—	3.0	1.7	
Jul 11	k2	k13	—	—	—	4.0	3.0	
Aug 8	<1	<1	—	—	—	2.0	1.3	
Sep 12	<1	k6	31	180	6.3	19	11.7	
Oct 11	<1	<1	—	—	—	32	6.1	
Nov 13	<1	k2	—	—	—	21	1.1	
Dec 12	<1	<1	—	—	—	10	.71	
Jan 11, 2001	<1	k1	19	280	62.3	16	.66	
Feb 13	<1	k2	—	—	—	5.0	.30	
Mar 12	k1	<1	—	—	—	5.0	.21	
Apr 10	<1	k1	—	—	—	3.0	.61	
May 9	k1	k6	—	—	—	4.0	2.3	
Jun 5	k1	k2	—	—	—	7.0	2.6	
Sep 11	—	—	—	—	—	5.0	.80	
Dec 21	—	—	—	—	—	4.0	.24	
Mar 20, 2002	—	—	—	—	—	4.0	.53	
Jun 3	—	—	—	—	—	6.0	3.7	



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