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Water-Data Report 2009

## 11447650 Sacramento River at Freeport, CA

Sacramento River Basin

LOCATION.--Lat 38°27'22", long 121°30'01" referenced to North American Datum of 1927, in NE ¼ SE ¼ sec.14, T.7 N., R.4 E., Sacramento County, CA, Hydrologic Unit 18020109, 220 ft west of intersection of Highway 160 and county road E9, on eastern Freeport Bridge fender, upstream side, 11 mi south of Sacramento.

DRAINAGE AREA.--Indeterminate.

### **SURFACE-WATER RECORDS**

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Prior to October 1979, published as "Sacramento River at Sacramento" (station 11447500).

REVISED RECORDS.--WDR CA-96-4: 1994-1995 (peaks above base).

GAGE.--Short-range acoustic doppler velocity meter with upward-looking stage sensor. Datum of gage is 100 ft below NGVD of 1929. Prior to Nov. 16, 1956, nonrecording gage and water-stage recorder at various sites in vicinity of I Street Bridge in Sacramento, 13 mi upstream at datum of low-water mark of Oct. 23, 1856, 0.12 ft above NGVD of 1929. Nov. 17, 1956, to Sept. 20, 1979, at site 1,000 ft upstream from I Street Bridge. Sept. 21, 1979, to Oct. 1, 2001, datum was NGVD of 1929.

REMARKS.--Records fair. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Floodflows bypass station through Sacramento Weir Spill to Yolo Bypass (stations 11426000 and 11453000). See schematic diagrams of lower Sacramento River Basin and Sacramento-San Joaquin Delta available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--(Since 1949) Maximum discharge, 117,000 ft<sup>3</sup>/s, Feb. 19, 1986, elevation, 125.00 ft, at present datum; minimum daily, 3,970 ft<sup>3</sup>/s, Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known prior to Nov. 21, 1950, 103,000 ft<sup>3</sup>/s, Jan. 17, 1909, elevation, 129.6 ft, site then in use at present datum, from reports of California Department of Water Resources.

## 11447650 Sacramento River at Freeport, CA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8,410	9,660	7,350	10,500	10,200	31,300	11,600	13,300	12,700	16,300	18,900	14,600
2	7,650	12,500	7,890	9,470	9,770	29,100	11,000	14,300	12,800	17,400	18,600	13,700
3	7,780	12,300	7,990	9,930	9,100	35,000	11,100	14,800	12,600	17,900	18,400	13,800
4	7,730	14,100	7,800	9,590	9,070	44,700	11,300	17,000	12,300	18,000	18,100	14,100
5	8,580	14,000	8,240	9,490	8,910	47,200	12,900	21,400	13,000	18,400	16,400	13,900
6	8,660	13,400	8,130	9,170	9,130	48,000	14,100	29,400	13,100	19,200	15,700	13,500
7	8,760	12,700	7,800	8,660	8,950	44,000	14,300	31,200	13,500	19,300	15,600	13,100
8	8,510	11,300	7,690	8,140	8,230	36,900	15,000	28,400	14,000	19,200	15,100	12,200
9	8,700	11,000	7,580	8,440	8,780	31,100	14,800	25,300	14,000	19,100	15,000	11,500
10	8,520	10,800	7,400	8,390	9,130	27,400	15,400	22,100	13,900	19,200	15,000	12,200
11	8,290	10,400	7,200	8,090	9,470	24,100	15,400	19,400	12,800	19,600	14,800	11,800
12	7,990	9,960	6,880	8,290	10,300	21,300	15,700	18,000	12,100	19,600	15,000	11,600
13	7,800	9,730	7,230	8,290	10,300	19,400	14,700	16,400	11,300	19,900	14,500	12,200
14	7,810	9,420	7,530	8,010	11,400	17,400	16,000	14,900	11,000	19,900	14,600	12,800
15	7,600	9,370	7,630	7,990	12,200	16,800	15,600	14,100	10,300	20,100	14,600	12,400
16	7,090	9,320	8,920	8,250	13,500	15,700	15,300	13,700	10,300	19,700	14,500	11,900
17	6,950	9,270	8,130	8,020	20,300	15,300	14,900	13,800	9,650	19,000	13,900	11,500
18	6,600	8,900	8,450	8,000	32,700	15,300	14,600	13,600	9,630	18,900	13,700	11,100
19	7,090	8,430	8,610	7,630	35,800	17,300	13,700	13,800	9,120	18,700	13,400	10,500
20	7,700	8,800	8,800	7,170	36,600	17,000	13,400	13,800	10,100	18,700	13,800	10,500
21	8,090	8,410	8,610	6,800	33,600	15,300	13,200	13,200	10,600	18,900	14,400	10,100
22	7,860	7,970	8,320	8,000	28,400	14,800	12,300	12,400	10,300	18,000	13,900	10,000
23	7,540	7,760	9,090	8,440	28,200	14,900	11,600	12,200	10,100	18,000	14,200	9,840
24	7,420	7,160	9,100	8,420	36,500	14,000	11,700	12,600	10,800	15,700	14,500	9,530
25	7,250	7,570	9,200	9,040	42,700	13,400	12,200	12,900	11,800	17,500	14,100	9,670
26	7,010	7,320	11,800	10,400	43,300	13,200	13,200	12,900	12,500	18,300	14,200	9,490
27	6,810	7,490	13,700	13,300	41,000	12,900	12,900	13,400	12,300	18,100	14,500	9,160
28	7,430	7,910	14,100	13,500	35,600	12,200	13,400	12,500	12,900	18,200	14,700	8,320
29	7,480	7,640	12,100	12,500	---	12,500	13,400	12,100	14,100	18,400	14,700	9,010
30	7,600	7,600	11,100	11,100	---	12,000	13,400	12,000	15,000	18,900	14,500	9,480
31	8,080	---	10,700	10,400	---	11,700	---	12,700	---	19,200	14,600	---
<b>Total</b>	240,790	292,190	275,070	283,420	573,140	701,200	408,100	507,600	358,600	577,300	467,900	343,500
<b>Mean</b>	7,767	9,740	8,873	9,143	20,470	22,620	13,600	16,370	11,950	18,620	15,090	11,450
<b>Max</b>	8,760	14,100	14,100	13,500	43,300	48,000	16,000	31,200	15,000	20,100	18,900	14,600
<b>Min</b>	6,600	7,160	6,880	6,800	8,230	11,700	11,000	12,000	9,120	15,700	13,400	8,320
<b>Ac-ft</b>	477,600	579,600	545,600	562,200	1,137,000	1,391,000	809,500	1,007,000	711,300	1,145,000	928,100	681,300

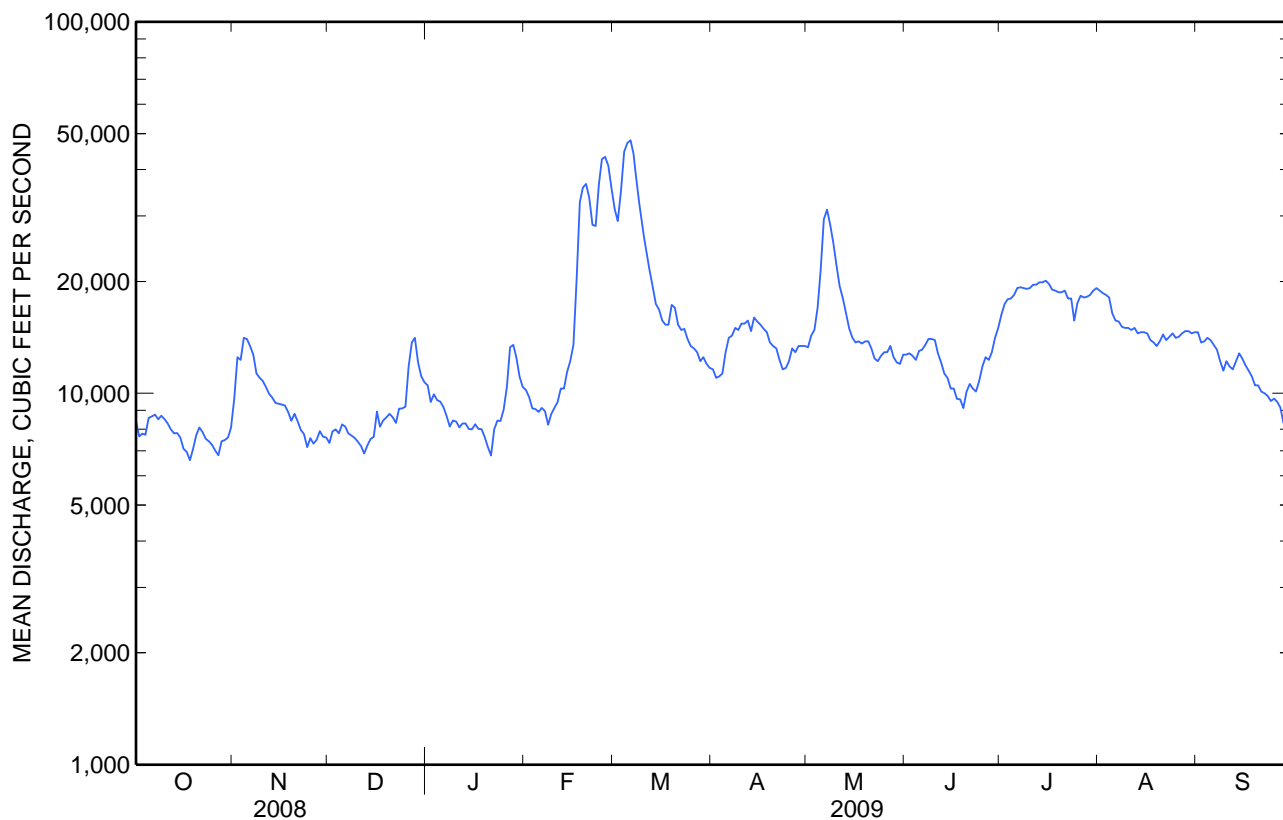
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	12,240	15,740	25,800	34,730	40,000	37,260	29,090	24,550	18,230	15,570	14,830	14,840
<b>Max</b>	28,690	48,820	74,510	87,110	81,370	78,290	77,650	69,820	55,690	31,000	25,180	25,320
<b>(WY)</b>	(1963)	(1984)	(1984)	(1997)	(1998)	(1983)	(2006)	(1952)	(1998)	(1983)	(1998)	(1998)
<b>Min</b>	4,494	6,380	7,208	8,984	8,003	6,573	5,961	6,414	6,865	6,345	7,061	6,838
<b>(WY)</b>	(1978)	(1993)	(1960)	(1991)	(1977)	(1977)	(1977)	(1992)	(1977)	(1949)	(1949)	(1977)

11447650 Sacramento River at Freeport, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1949 - 2009	
<b>Annual total</b>	4,643,550		5,028,810			
<b>Annual mean</b>	12,690		13,780		23,490	
<b>Highest annual mean</b>					46,900	1983
<b>Lowest annual mean</b>					7,608	1977
<b>Highest daily mean</b>	41,000	Jan 30	48,000	Mar 6	115,000	Feb 19, 1986
<b>Lowest daily mean</b>	6,600	Oct 18	6,600	Oct 18	3,970	Oct 15, 1977
<b>Annual seven-day minimum</b>	7,260	Oct 14	7,260	Oct 14	4,060	Oct 13, 1977
<b>Maximum peak flow</b>			48,600	Mar 5	117,000	Feb 19, 1986
<b>Maximum peak stage</b>			110.69	Mar 5	125.00	Feb 19, 1986
<b>Annual runoff (ac-ft)</b>	9,210,000		9,975,000		17,020,000	
<b>10 percent exceeds</b>	20,500		19,500		54,200	
<b>50 percent exceeds</b>	10,800		12,500		16,100	
<b>90 percent exceeds</b>	7,650		7,790		9,130	



**11447650 Sacramento River at Freeport, CA—Continued****WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1957 to current year.

CHEMICAL DATA: Water years 1959 to current year.

BIOLOGICAL DATA: Water years 1974-81.

SEDIMENT DATA: Water years 1957 to current year (prior to water year 1980, published as 11447500 "Sacramento River at Sacramento").

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: February 1974 to July 1975, November 1988 to September 1994, October 1995 to September 1998.

WATER TEMPERATURE: June 1960 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1956 to current year.

INSTRUMENTATION.--Water-temperature recorder June 1960 to November 1988. Water-quality monitor since November 1988.

REMARKS.--Records of sediment discharge from 1957 to 1979 were obtained at "Sacramento River at Sacramento" (station 11447500) and are considered equivalent. Additional specific-conductance, monthly chemical, and trace-element data are available in files of the U.S. Geological Survey. Water-quality data collected as part of the National Stream Quality Accounting Network (NASQAN).

Water-temperature records rated excellent except for Mar. 13 to May 7, and July 28 to Aug. 14, which are rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 318 microsiemens, Nov. 22, 1974; minimum recorded, 32 microsiemens, Apr. 6, 1974.

WATER TEMPERATURE: Maximum recorded, 27.0°C, Sept. 8, 1977; minimum recorded, 3.0°C, Dec. 25-27, 1990.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L, Dec. 24, 1964; minimum daily, 1 mg/L, Sept. 22, 2003.

SEDIMENT LOAD: Maximum daily, 525,000 tons, Dec. 24, 1964; minimum daily, 35 tons, Jan. 31, 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.7°C, June 29; minimum recorded, 6.9°C, Dec. 20.

SEDIMENT CONCENTRATION: Maximum daily mean, 274 mg/L, Mar. 4; minimum daily mean, 4 mg/L, Oct. 23, 24.

SEDIMENT LOAD: Maximum daily, 32,200 tons, Mar. 4; minimum daily, 70 tons, Oct. 23.

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 1 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Time	UV absorb- ance, 254 nm, wat flt units /cm (50624)	UV absorb- ance, 280 nm, wat flt units /cm (61726)	Instan- taneous dis- charge, ft <sup>3</sup> /s (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm @ 25 degC (00095)	Temper- ature, deg C (00010)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis- solved solids dried @ 180degC wat flt mg/L (70300)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)
<b>Oct</b>													
29...	1300	.036	.027	11,700	9.6	98	--	148	16.5	4.8	100	12.2	7.06
<b>Dec</b>													
09...	1210	.058	.043	594	11.0	96	--	203	9.8	E3.7	134	15.5	8.89
22...	1150	.061	.047	972	12.6	105	--	192	7.2	E8.5	116	15.2	8.53
<b>Jan</b>													
06...	1150	.063	.048	324	12.3	101	--	197	7.3	E8.9	142	15.8	8.89
26...	1200	.066	.051	12,200	10.9	98	--	200	10.5	E12	132	15.1	8.57
<b>Feb</b>													
05...	1140	.076	.058	83	11.4	103	--	219	10.5	E9.5	140	16.7	9.71
25...	1200	.270	.215	43,200	9.7	88	--	121	11.6	110	86	9.98	5.32
<b>Mar</b>													
24...	1230	.064	.049	16,400	9.6	91	--	168	13.4	E18	101	14.4	7.89
<b>Apr</b>													
21...	1020	.044	.034	16,100	9.5	99	7.5	123	17.7	E12	95	10.7	5.33
<b>May</b>													
21...	1230	.065	.052	17,300	9.4	102	7.6	123	19.3	E15	86	9.51	5.00
<b>Jun</b>													
24...	1150	.047	.036	16,800	9.4	102	7.2	122	19.4	E10	84	10.3	5.23
<b>Aug</b>													
26...	1130	.045	.034	12,400	8.8	98	7.7	163	20.9	E9.0	101	12.7	6.55

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 2 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka- linity, wat flt Gran, field, mg/L as CaCO3 (29802)	Alka- linity, wat flt inf tit field, mg/L as CaCO3 (39086)	Total carbon, suspnd sedimnt total, mg/L (00694)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)
<b>Oct</b>													
29...	1.50	9.32	--	64	.4	5.31	<.08	<.04	18.0	5.85	E.08	.19	E.011
<b>Dec</b>													
09...	1.78	12.7	--	87	.6	7.85	E.09	.2	21.9	7.63	.23	.21	.040
22...	1.82	12.1	--	86	.4	8.08	E.07	<.04	22.1	7.19	.29	.36	.117
<b>Jan</b>													
06...	1.82	12.7	--	80	.5	8.78	E.07	<.04	22.9	8.63	.35	.40	.188
26...	1.76	11.7	79.6	--	.7	8.45	E.07	<.04	21.8	6.64	.18	.26	.022
<b>Feb</b>													
05...	1.89	15.1	88.9	--	1.5	10.3	E.09	<.04	23.4	10.7	.76	.80	.548
25...	1.53	7.94	38.1	--	3.2	5.42	E.04	E.1	17.7	6.05	.33	.70	E.020
<b>Mar</b>													
24...	1.30	9.22	66.7	--	.8	7.09	E.06	<.04	20.1	7.63	.12	.20	E.015
<b>Apr</b>													
21...	1.12	6.84	--	47	.5	4.13	<.08	<.04	15.3	5.12	.13	.17	E.019
<b>May</b>													
21...	.91	7.01	--	47	.2	4.77	<.08	<.04	14.4	5.77	.13	.23	<.020
<b>Jun</b>													
24...	1.03	6.97	45.3	47	.6	4.59	E.05	<.04	15.6	4.93	.11	.17	<.020
<b>Aug</b>													
26...	.94	10.0	--	67	.9	6.82	E.06	<.04	16.2	5.80	.16	.26	<.020

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 3 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Phos- phorus, water, fltrd, mg/L as P (00666)	Phos- phorus, water, unfltrd mg/L as P (00665)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	Iron, water, fltrd, µg/L (01046)	Lithium water, fltrd, µg/L (01130)	Stront- ium, water, fltrd, µg/L (01080)	Vana- dium, water, fltrd, µg/L (01085)	Arsenic water, fltrd, µg/L (01000)
<b>Oct</b>													
29...	.087	.003	.040	.08	.042	.059	--	--	19	1.8	81.9	3.2	1.7
<b>Dec</b>													
09...	.193	.003	.050	.10	.055	.066	--	--	68	2.3	40.2	3.3	2.2
22...	.179	.003	.052	.06	.058	.080	--	--	41	2.0	102	3.4	2.2
<b>Jan</b>													
06...	.245	.004	.063	.11	.064	.080	--	--	46	2.1	106	3.2	2.1
26...	.190	.005	.050	.12	.051	.073	--	--	47	2.5	115	3.7	2.2
<b>Feb</b>													
05...	.131	.002	.096	.20	.101	.123	--	--	45	2.6	120	3.6	2.1
25...	.241	.004	.040	.46	.048	.273	--	--	140	1.3	67.8	3.6	1.3
<b>Mar</b>													
24...	.208	.002	.039	.09	.040	.074	--	--	43	1.8	111	3.2	1.9
<b>Apr</b>													
21...	.074	E.002	.022	.02	.023	.044	--	--	31	1.1	71.9	3.0	1.3
<b>May</b>													
21...	.041	E.001	.029	.03	.028	.055	--	--	29	1.4	75.2	3.2	1.7
<b>Jun</b>													
24...	.056	E.002	.031	.03	.030	.052	.17	.19	24	1.5	71.4	3.1	1.5
<b>Aug</b>													
26...	<.016	<.002	.023	.13	.036	.065	.10	.24	28	1.5	90.1	3.3	1.7

Water-Data Report 2009

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 4 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Boron, water, fltrd, µg/L (01020)	Selen- ium, water, fltrd, µg/L (01145)	1-Naph- thol, water, fltrd 0.7µ GF µg/L (49295)	2,6-Di- ethyl- aniline water, fltrd 0.7µ GF µg/L (82660)	2Chloro -2',6'- diethyl acet- anilide wat flt µg/L (61618)	CIAT, water, fltrd, µg/L (04040)	2- Ethyl- 6- methyl- aniline wat flt µg/L (61620)	3,4-Di- chloro- aniline water, fltrd, µg/L (61625)	3,5-Di- chloro- aniline water, fltrd, µg/L (61627)	4- Chloro- 2- methyl- phenol, wat flt µg/L (61633)	Aceto- chlor, water, fltrd, µg/L (49260)	Ala- chlor, water, fltrd, µg/L (46342)	alpha- Endo- sulfan, water, fltrd, µg/L (34362)
<b>Oct</b>													
29...	46	.09	<.04	<.006	<.010	<.014	<.010	E.009	<.004	<.005	<.010	<.008	<.006
<b>Dec</b>													
09...	18	.08	<.04	<.006	<.010	<.014	<.010	E.019	<.004	<.005	<.010	<.008	<.006
22...	58	.07	E.003	<.006	<.010	<.014	<.010	E.021	<.004	<.005	<.010	<.008	<.006
<b>Jan</b>													
06...	63	.08	<.04	<.006	<.010	<.014	<.010	E.014	<.004	<.005	<.010	<.008	<.006
26...	64	.08	E.001	<.006	<.010	<.014	<.010	E.017	<.004	<.005	<.010	<.008	<.006
<b>Feb</b>													
05...	80	.07	<.04	<.006	<.010	<.014	<.010	E.024	<.004	<.005	<.010	<.008	<.006
25...	39	.11	<.04	<.006	<.010	<.014	<.010	E.012	<.004	<.005	<.010	<.008	<.006
<b>Mar</b>													
24...	47	.12	<.04	<.006	<.010	<.014	<.010	E.005	<.004	<.005	<.010	<.008	<.006
<b>Apr</b>													
21...	32	E.04	<.04	<.006	<.010	<.014	<.010	<.004	<.004	<.005	<.010	<.008	<.006
<b>May</b>													
21...	34	.09	<.04	<.006	<.010	<.014	<.010	E.014	<.004	<.005	<.010	<.008	<.006
<b>Jun</b>													
24...	45	.09	<.04	<.006	<.010	<.014	<.010	E.200	<.004	<.005	<.010	<.008	<.006
<b>Aug</b>													
26...	52	.10	<.04	<.006	<.010	<.014	<.010	E.036	<.004	<.005	<.010	<.008	<.006



## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 5 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Atra- zine, water, fltrd, µg/L (39632)	Azin- phos- methyl oxon, water, fltrd, µg/L (61635)	Azin- phos- methyl, water, fltrd 0.7µ GF (82686)	Ben- flur- alin, water, fltrd 0.7µ GF (82673)	Car- baryl, water, fltrd 0.7µ GF (82680)	Carbo- furan, water, fltrd 0.7µ GF (82674)	Chlor- pyrifos oxon, water, fltrd, µg/L (61636)	Chlor- pyrifos water, fltrd, µg/L (38933)	cis- Per- methrin water fltrd 0.7µ GF (82687)	cis- Propi- cona- zole, water, fltrd, µg/L (79846)	Cyana- zine, water, fltrd, µg/L (04041)	Cyflu- thrin, water, fltrd, µg/L (61585)	Cyper- methrin water, fltrd, µg/L (61586)
<b>Oct</b>													
29...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>Dec</b>													
09...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
22...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>Jan</b>													
06...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
26...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	E.003	<.014	<.006	<.040	<.016	<.020
<b>Feb</b>													
05...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
25...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	E.004	<.040	<.016	<.020
<b>Mar</b>													
24...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>Apr</b>													
21...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>May</b>													
21...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>Jun</b>													
24...	<.007	<.04	<.120	<.014	E.003	<.060	<.05	<.010	<.014	<.006	<.040	<.016	<.020
<b>Aug</b>													
26...	<.007	<.04	<.120	<.014	<.200	<.060	<.05	E.009	<.014	<.006	<.040	<.016	<.020

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 6 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	DCPA, water, fltrd 0.7µ GF µg/L (82682)	Desulf- inyl- fipro- nil amide, wat flt µg/L (62169)	Desulf- inyl- fipro- nil, water, fltrd, µg/L (62170)	Diazi- non, water, fltrd, µg/L (39572)	Diaz- oxon, water, fltrd, µg/L (61638)	Di- chlor- vos, water, fltrd, µg/L (38775)	Dicro- tophos, water, fltrd, µg/L (38454)	Diel- drin, water, fltrd, µg/L (39381)	Dimeth- oate, water, fltrd 0.7µ GF µg/L (82662)	Disulf- oton sulfone water, fltrd, µg/L (61640)	Disul- foton, water, fltrd 0.7µ GF µg/L (82677)	Endo- sulfan sulfate water, fltrd, µg/L (61590)	EPTC, water, fltrd 0.7µ GF µg/L (82668)
<b>Oct</b>													
29...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Dec</b>													
09...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
22...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Jan</b>													
06...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
26...	E.001	<.029	E.002	<.000	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Feb</b>													
05...	<.006	<.029	<.012	E.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
25...	<.006	<.029	E.005	E.006	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Mar</b>													
24...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Apr</b>													
21...	E.002	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>May</b>													
21...	E.002	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Jun</b>													
24...	<.006	<.029	<.012	<.005	--	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002
<b>Aug</b>													
26...	<.006	<.029	<.012	<.005	<.01	<.02	<.08	<.009	<.006	<.01	<.04	<.022	<.002

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 7 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Ethion	Ethion,	Etho-	Fenami-	Fenami-	Fipro-	Fipro-	Fipro-	Fonofos	Hexa-	Ipro-	Isofen-	
	monoxon	water,	prop,	phos	phos	nil	nil	nil,	water,	zinone,	dione,	phos,	
	water,	water,	water,	sulfone	sulf-	sulfide	sulfone	water,	water,	water,	water,	water,	
	fltrd,	fltrd,	fltrd	water,	oxide,	water,	water,	fltrd,	fltrd,	fltrd,	fltrd,	fltrd,	
	μg/L	μg/L	0.7μ GF	fltrd,	water,	water,	water,	μg/L	μg/L	μg/L	μg/L	μg/L	
	(61644)	(82346)	(82672)	μg/L	fltrd,	fltrd,	fltrd,	(61591)	(62167)	(62166)	(04095)	(04025)	
				(61645)	μg/L	μg/L	μg/L					(61593)	
				(61646)	(61591)	(62167)	(62168)					(61594)	
<b>Oct</b>													
<b>29...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.010	<.014	<.006
<b>Dec</b>													
<b>09...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.013	<.014	<.006
<b>22...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.009	<.014	<.006
<b>Jan</b>													
<b>06...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	E.010	<.014	<.006
<b>26...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	<.008	<.014	<.006
<b>Feb</b>													
<b>05...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.012	<.014	<.006
<b>25...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.014	E.019	<.006
<b>Mar</b>													
<b>24...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.014	<.014	<.006
<b>Apr</b>													
<b>21...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.033	<.014	<.006
<b>May</b>													
<b>21...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.031	<.014	<.006
<b>Jun</b>													
<b>24...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.032	<.014	<.006
<b>Aug</b>													
<b>26...</b>	<.02	<.012	<.016	<.053	<.08	<.03	<.013	<.024	<.040	<.010	.022	<.014	<.006

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 8 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	lambda-Cyhalothrin, water, fltrd, µg/L (61595)	Malathion, water, fltrd, µg/L (61652)	Malathion, water, fltrd, µg/L (39532)	Metolaxyl, water, fltrd, µg/L (61596)	Methodathion, water, fltrd, µg/L (61598)	Methyl parathion, water, fltrd, µg/L (61664)	Methyl parathion, water, fltrd, 0.7µ GF (82667)	Metolachlor, water, fltrd, µg/L (39415)	Metribuzin, water, fltrd, µg/L (82630)	Molinate, water, fltrd, 0.7µ GF (82671)	Myclobutanil, water, fltrd, µg/L (61599)	Oxyfluorfen, water, fltrd, µg/L (61600)	Pendimethalin, water, fltrd, 0.7µ GF (82683)
<b>Oct</b>													
29...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	<.014	<.016	<.002	<.010	<.006	<.012
<b>Dec</b>													
09...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	<.014	<.016	<.002	<.010	<.006	<.012
22...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.005	<.016	<.002	<.010	<.006	<.012
<b>Jan</b>													
06...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	<.014	<.016	<.002	<.010	<.006	<.012
26...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.005	<.016	<.002	<.010	<.006	<.012
<b>Feb</b>													
05...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	<.014	<.016	<.002	<.010	<.006	<.012
25...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.009	E.012	<.002	<.010	E.004	.020
<b>Mar</b>													
24...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.007	<.016	<.002	<.010	<.006	<.012
<b>Apr</b>													
21...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.006	<.016	<.002	<.010	<.006	<.012
<b>May</b>													
21...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.010	<.016	<.002	<.010	<.006	.015
<b>Jun</b>													
24...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.013	<.016	<.002	<.010	<.006	<.012
<b>Aug</b>													
26...	<.010	<.080	<.020	<.007	<.006	<.01	<.008	E.008	<.016	<.002	<.010	<.006	<.012

## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 9 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Phorate oxon, water, fltrd, µg/L (61666)	Phorate water, fltrd 0.7µ GF µg/L (82664)	Phosmet oxon, water, fltrd, µg/L (61668)	Phosmet water, fltrd, µg/L (61601)	Prome- ton, water, fltrd, µg/L (04037)	Prome- tryn, water, fltrd, µg/L (04036)	Pro- panil, water, fltrd 0.7µ GF µg/L (82679)	Propar- gite, water, fltrd 0.7µ GF µg/L (82685)	Propy- zamide, water, fltrd 0.7µ GF µg/L (82676)	Sima- zine, water, fltrd, µg/L (04035)	Tebu- con- azole, water, fltrd, µg/L (62852)	Tebu- thiuron water, fltrd 0.7µ GF µg/L (82670)	Teflu- thrin, water, fltrd, µg/L (61606)
<b>Oct</b> 29...	<.03	<.020	--	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010
<b>Dec</b> 09...	<.03	<.020	<.05	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010
22...	<.03	<.020	--	<.200	<.01	<.006	<.014	<.02	<.004	<.010	--	<.02	<.010
<b>Jan</b> 06...	<.03	<.020	<.05	<.200	<.01	<.006	<.014	<.02	<.004	E.008	--	<.02	<.010
26...	<.03	<.020	--	<.200	<.01	<.006	<.014	<.02	<.004	E.007	--	<.02	<.010
<b>Feb</b> 05...	<.03	<.020	--	<.200	<.01	<.006	<.014	<.02	<.004	E.009	--	<.02	<.010
25...	<.03	<.020	<.05	<.200	E.01	<.006	<.014	<.02	<.004	.089	--	<.02	<.010
<b>Mar</b> 24...	<.03	<.020	<.05	<.200	<.01	<.006	<.014	<.02	<.004	E.007	--	<.02	<.010
<b>Apr</b> 21...	<.03	<.020	--	<.200	<.01	<.006	<.014	<.02	<.004	E.005	--	<.02	<.010
<b>May</b> 21...	<.03	<.020	--	--	<.01	<.006	E.012	<.02	<.004	<.010	--	<.02	<.010
<b>Jun</b> 24...	<.03	<.020	--	<.200	<.01	<.006	.090	<.02	<.004	<.010	--	<.02	<.010
<b>Aug</b> 26...	<.03	<.020	<.05	<.200	<.01	<.006	<.014	<.02	<.004	<.010	<.02	<.02	<.010

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## 11447650 Sacramento River at Freeport, CA—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 10 of 10

[Remark codes: &lt;, less than; E, estimated.]

Date	Ter- bufos oxon sulfone water, fltrd, µg/L (61674)	Terbu- fos, water, fltrd 0.7µ GF µg/L (82675)	Ter- butyl- azine, water, fltrd, µg/L (04022)	Thio- bencarb water, fltrd 0.7µ GF µg/L (82681)	trans- Propi- cona- zole, water, fltrd, µg/L (79847)	Tribu- phos, water, fltrd, µg/L (61610)	Tri- flur- alin, water, fltrd 0.7µ GF µg/L (82661)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
<b>Oct</b>									
29...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.43	1.6
<b>Dec</b>									
09...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.41	2.5
22...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.40	2.6
<b>Jan</b>									
06...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.55	2.4
26...	<.04	<.02	<.01	<.016	<.02	<.035	E.001	.68	2.0
<b>Feb</b>									
05...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	1.45	2.7
25...	<.04	<.02	<.01	<.016	E.01	<.035	<.012	3.12	5.2
<b>Mar</b>									
24...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.81	2.0
<b>Apr</b>									
21...	<.04	<.02	<.01	<.016	<.02	<.035	<.012	.51	1.4
<b>May</b>									
21...	<.04	<.02	<.01	.088	<.02	<.035	<.012	.21	1.7
<b>Jun</b>									
24...	<.04	<.02	<.01	E.022	<.02	<.035	<.012	.59	1.6
<b>Aug</b>									
26...	<.04	<.02	<.01	E.008	<.02	<.035	<.012	.90	2.4

## 11447650 Sacramento River at Freeport, CA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	October		November		December		January		February		March	
<b>1</b>	22.2	20.4	17.1	16.3	13.4	12.5	8.7	8.3	10.3	9.4	12.8	12.2
<b>2</b>	22.0	20.6	16.9	16.0	12.9	12.6	8.7	8.4	10.7	9.7	13.0	12.5
<b>3</b>	21.8	20.4	16.1	15.6	13.1	12.5	8.9	8.0	11.1	9.9	12.8	11.9
<b>4</b>	21.2	19.9	15.8	15.0	12.8	12.1	8.6	7.7	11.5	10.2	11.9	11.3
<b>5</b>	20.5	19.1	15.4	14.6	12.4	11.5	8.2	7.6	11.4	10.7	11.7	10.9
<b>6</b>	20.4	19.1	15.2	14.3	11.9	11.1	8.3	7.5	11.9	11.0	11.6	10.8
<b>7</b>	20.8	19.0	15.0	14.1	11.5	10.8	8.3	7.4	12.1	11.0	11.8	10.8
<b>8</b>	20.6	19.1	15.0	14.2	11.2	10.4	8.2	7.5	11.7	10.7	11.8	11.0
<b>9</b>	20.2	18.7	15.1	14.2	10.9	10.0	8.6	7.3	11.8	10.6	12.2	11.4
<b>10</b>	19.2	17.2	15.0	14.2	11.0	9.6	8.6	7.4	11.2	10.3	12.7	11.7
<b>11</b>	17.8	15.7	15.2	14.2	10.4	9.4	8.6	7.5	10.7	9.9	12.6	11.8
<b>12</b>	15.9	14.8	15.1	14.2	10.7	9.3	9.3	7.6	10.3	9.7	12.8	11.8
<b>13</b>	15.7	14.3	15.3	14.4	10.7	9.5	9.6	7.9	9.9	9.3	13.2	12.2
<b>14</b>	15.9	14.4	15.8	14.6	10.2	9.2	10.2	8.5	9.6	9.0	13.4	12.4
<b>15</b>	16.4	14.8	16.2	14.7	9.6	8.8	10.1	9.1	9.4	8.8	13.6	12.6
<b>16</b>	16.9	15.2	16.1	14.9	8.9	8.1	10.3	9.3	9.1	8.7	13.5	12.6
<b>17</b>	17.6	16.0	16.0	14.8	8.4	7.6	10.8	9.6	8.8	8.6	14.1	12.7
<b>18</b>	18.0	16.5	16.2	14.9	7.9	7.3	11.2	9.6	8.8	8.1	14.6	13.4
<b>19</b>	18.2	16.9	15.7	14.9	7.6	7.0	11.0	9.7	8.9	8.0	15.4	13.9
<b>20</b>	18.1	17.0	15.6	14.7	7.8	6.9	11.1	9.7	9.4	8.4	15.4	14.2
<b>21</b>	18.1	17.1	15.2	14.3	7.9	7.3	11.1	9.8	10.0	9.0	15.2	14.3
<b>22</b>	18.6	17.0	14.8	14.0	8.0	7.1	10.8	9.9	10.7	9.6	15.1	14.1
<b>23</b>	18.4	16.9	14.5	13.6	8.1	7.4	10.7	10.1	11.8	10.4	14.7	13.8
<b>24</b>	18.3	16.7	14.4	13.1	8.8	7.8	11.3	10.2	12.6	11.5	14.4	13.5
<b>25</b>	18.0	16.8	13.6	12.8	8.8	8.0	11.5	10.4	12.4	11.5	14.7	13.6
<b>26</b>	18.1	16.5	13.6	12.8	8.8	8.0	11.4	10.3	12.8	12.0	15.0	13.7
<b>27</b>	17.9	16.7	13.8	12.6	8.5	8.0	10.7	9.7	12.8	12.0	15.4	14.0
<b>28</b>	17.8	16.5	13.5	12.6	8.8	8.0	10.2	9.4	12.8	12.0	16.1	14.6
<b>29</b>	17.7	16.4	13.7	12.4	8.9	8.1	10.0	9.3	---	---	16.2	15.3
<b>30</b>	17.4	16.5	13.6	12.4	8.7	8.3	9.9	9.2	---	---	15.5	14.5
<b>31</b>	17.4	16.2	---	---	8.7	8.2	10.0	9.1	---	---	15.2	14.2
<b>Month</b>	22.2	14.3	17.1	12.4	13.4	6.9	11.5	7.3	12.8	8.0	16.2	10.8

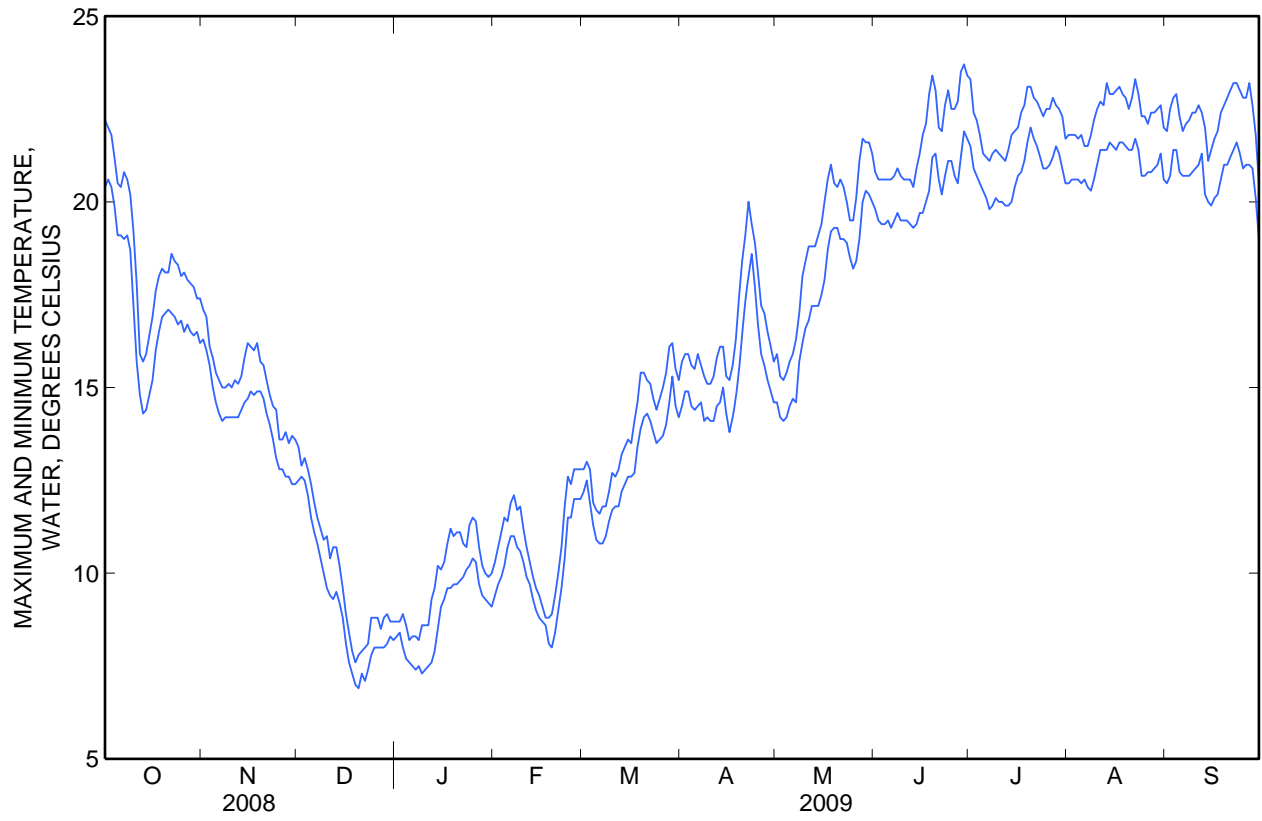
## 11447650 Sacramento River at Freeport, CA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
	April		May		June		July		August		September	
<b>1</b>	15.7	14.5	15.9	14.6	20.8	19.8	23.3	21.5	21.8	20.5	21.9	20.5
<b>2</b>	15.9	14.9	15.3	14.2	20.6	19.5	22.4	20.9	21.8	20.6	22.5	20.7
<b>3</b>	15.9	14.9	15.2	14.1	20.6	19.4	22.2	20.7	21.8	20.6	22.8	21.4
<b>4</b>	15.6	14.5	15.4	14.2	20.6	19.4	21.8	20.5	21.7	20.6	22.9	21.4
<b>5</b>	15.5	14.4	15.7	14.5	20.6	19.5	21.3	20.3	21.8	20.5	22.3	20.8
<b>6</b>	15.9	14.5	15.9	14.7	20.6	19.3	21.2	20.1	21.5	20.6	21.9	20.7
<b>7</b>	15.6	14.6	16.3	14.6	20.7	19.5	21.1	19.8	21.5	20.4	22.1	20.7
<b>8</b>	15.3	14.1	17.0	15.7	20.9	19.7	21.3	19.9	21.8	20.3	22.2	20.7
<b>9</b>	15.1	14.2	18.0	16.2	20.7	19.5	21.4	20.1	22.2	20.6	22.4	20.8
<b>10</b>	15.1	14.1	18.4	16.6	20.6	19.5	21.3	20.0	22.5	21.0	22.4	20.9
<b>11</b>	15.3	14.1	18.8	16.8	20.6	19.5	21.2	20.0	22.7	21.4	22.6	21.0
<b>12</b>	15.8	14.5	18.8	17.2	20.6	19.4	21.1	19.9	22.6	21.4	22.4	21.3
<b>13</b>	16.1	14.6	18.8	17.2	20.4	19.3	21.4	19.9	23.2	21.4	22.0	20.2
<b>14</b>	16.1	15.0	19.1	17.2	20.9	19.4	21.8	20.0	22.9	21.6	21.1	20.0
<b>15</b>	15.3	14.3	19.4	17.5	21.3	19.7	21.9	20.4	22.9	21.5	21.4	19.9
<b>16</b>	15.2	13.8	20.0	17.9	21.8	19.7	22.0	20.7	23.0	21.4	21.7	20.1
<b>17</b>	15.6	14.2	20.6	18.7	22.1	20.0	22.4	20.8	23.1	21.6	21.9	20.2
<b>18</b>	16.3	14.7	21.0	19.2	22.9	20.3	22.6	21.1	22.9	21.6	22.4	20.6
<b>19</b>	17.4	15.5	20.5	19.3	23.4	21.2	23.1	21.6	22.8	21.5	22.6	21.0
<b>20</b>	18.4	16.4	20.4	19.3	23.0	21.3	23.1	22.0	22.5	21.4	22.8	21.0
<b>21</b>	19.1	17.3	20.6	19.0	22.0	20.6	22.8	21.7	22.8	21.4	23.0	21.2
<b>22</b>	20.0	18.0	20.4	19.0	21.9	20.2	22.7	21.5	23.3	21.7	23.2	21.4
<b>23</b>	19.4	18.6	20.0	18.9	22.6	20.7	22.5	21.2	22.9	21.4	23.2	21.6
<b>24</b>	18.9	17.7	19.5	18.5	23.0	21.1	22.3	20.9	22.3	20.7	23.0	21.3
<b>25</b>	18.1	16.7	19.5	18.2	22.5	21.1	22.5	20.9	22.3	20.7	22.8	20.9
<b>26</b>	17.2	15.9	20.1	18.4	22.5	20.7	22.5	21.0	22.1	20.8	22.8	21.0
<b>27</b>	17.0	15.6	21.1	19.0	22.7	20.5	22.8	21.2	22.4	20.8	23.2	21.0
<b>28</b>	16.5	15.2	21.7	20.0	23.5	21.2	22.6	21.5	22.4	20.9	22.6	20.9
<b>29</b>	16.1	14.9	21.6	20.3	23.7	21.9	22.5	21.3	22.5	21.0	21.8	20.1
<b>30</b>	15.7	14.6	21.6	20.2	23.4	21.7	22.3	20.9	22.6	21.3	20.5	19.0
<b>31</b>	---	---	21.3	20.0	---	---	21.7	20.5	22.0	20.6	---	---
<b>Month</b>	20.0	13.8	21.7	14.1	23.7	19.3	23.3	19.8	23.3	20.3	23.2	19.0



11447650 Sacramento River at Freeport, CA—Continued



## 11447650 Sacramento River at Freeport, CA—Continued

**PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT  
 WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Date	Time	Instan- taneous dis- charge, ft <sup>3</sup> /s (00061)	Temper- ature, water, deg C (00010)	Suspd. sedimnt sieve diametr percent <0.0625 mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
<b>Oct</b>						
29...SS	1300	11,700	16.5	99	12	379
<b>Nov</b>						
04...	1128	10,800	15.0	94	16	467
<b>Dec</b>						
09...SS	1210	594	9.8	96	5	8.0
22...SS	1150	972	7.2	97	10	26
<b>Jan</b>						
06...SS	1150	324	7.3	98	10	8.8
08...	1220	-269	7.5	94	12	-8.7
26...SS	1200	12,200	10.5	98	21	694
<b>Feb</b>						
05...SS	1140	83	10.5	98	12	2.7
25...SS	1200	43,200	11.6	75	247	28,800
<b>Mar</b>						
12...	1442	22,700	12.6	95	39	2,390
24...SS	1230	16,400	13.4	97	30	1,330
<b>Apr</b>						
21...SS	1020	16,100	17.7	88	20	871
<b>May</b>						
07...	1154	32,500	15.2	62	91	7,990
21...SS	1230	17,300	19.3	91	25	1,170
<b>Jun</b>						
24...SS	1150	16,800	19.4	96	16	724
24...	1205	16,900	21.8	84	20	913
<b>Aug</b>						
14...	1127	16,300	22.3	98	16	704
26...SS	1130	12,400	20.9	89	16	536
<b>Sep</b>						
11...	1139	10,700	22.1	91	15	433

SS Suspended-sediment data determined from a sample collected and processed according to National Stream Quality Accounting Network (NASQAN) protocol.

## 11447650 Sacramento River at Freeport, CA—Continued

**PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL  
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Date	Time	Number of sam- pling points, count (00063)	Instan- taneous dis- charge, ft <sup>3</sup> /s (00061)	Temper- ature, water, deg C (00010)	Bed sediment, dry svd sve dia <0.0625 mm (80164)	Bed sedi- ment, dry svd sve dia <.125mm percent (80165)	Bed sedi- ment, dry svd sve dia <.25mm percent (80166)	Bed sedi- ment, dry svd sve dia <.5 mm percent (80167)	Bed sedi- ment, dry svd sve dia <1 mm percent (80168)	Bed sedi- ment, dry svd sve dia <2 mm percent (80169)	Bed sedi- ment, dry svd sve dia <4 mm percent (80170)	Bed sedi- ment, dry svd sve dia <8 mm percent (80171)
<b>Nov</b>												
04...	1155	1	10,900	15.0	26	44	55	72	97	100	--	--
04...	1200	1	11,000	15.0	12	25	38	50	62	75	88	100
04...	1202	1	11,000	15.0	7	11	36	79	93	96	100	--
04...	1204	1	11,100	15.0	17	33	50	67	83	100	--	--
04...	1207	1	11,100	15.0	4	8	60	92	96	100	--	--
<b>Aug</b>												
14...	1205	1	15,200	22.3	1	5	11	40	83	98	100	--
14...	1210	1	15,100	22.3	1	6	17	58	85	95	99	100
14...	1215	1	15,000	22.3	2	8	33	78	94	99	100	--
14...	1220	1	14,800	22.3	2	11	53	93	97	100	--	--
14...	1222	1	14,800	22.3	--	--	30	80	100	--	--	--

## 11447650 Sacramento River at Freeport, CA—Continued

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)  
 WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Mean discharge	Mean concen-	Sediment	Mean discharge	Mean concen-	Sediment	Mean discharge	Mean concen-	Sediment
	(ft <sup>3</sup> /s)	tration	discharge	(ft <sup>3</sup> /s)	tration	discharge	(ft <sup>3</sup> /s)	tration	discharge
		(mg/L)	(tons/ day)		(mg/L)	(tons/ day)		(mg/L)	(tons/ day)
	October			November			December		
1	8,410	6	126	9,660	18	472	7,350	14	258
2	7,650	7	150	12,500	13	435	7,890	13	269
3	7,780	11	237	12,300	17	519	7,990	10	204
4	7,730	9	204	14,100	32	1,240	7,800	13	269
5	8,580	11	220	14,000	50	1,820	8,240	13	287
6	8,660	21	479	13,400	53	1,840	8,130	13	276
7	8,760	20	480	12,700	51	1,680	7,800	13	256
8	8,510	19	430	11,300	37	1,100	7,690	12	227
9	8,700	17	409	11,000	23	644	7,580	9	182
10	8,520	16	364	10,800	12	331	7,400	11	203
11	8,290	15	329	10,400	10	269	7,200	11	199
12	7,990	13	276	9,960	9	235	6,880	12	221
13	7,800	9	175	9,730	10	245	7,230	13	239
14	7,810	15	301	9,420	17	412	7,530	13	253
15	7,600	15	295	9,370	25	615	7,630	16	312
16	7,090	14	258	9,320	28	689	8,920	23	540
17	6,950	12	221	9,270	27	654	8,130	14	313
18	6,600	10	174	8,900	24	572	8,450	14	336
19	7,090	8	153	8,430	20	463	8,610	16	374
20	7,700	6	130	8,800	16	380	8,800	18	416
21	8,090	6	131	8,410	12	260	8,610	18	396
22	7,860	5	101	7,970	7	149	8,320	13	283
23	7,540	4	70	7,760	8	156	9,090	14	357
24	7,420	4	74	7,160	9	161	9,100	17	409
25	7,250	8	160	7,570	9	173	9,200	19	483
26	7,010	10	187	7,320	7	139	11,800	21	668
27	6,810	17	311	7,490	8	160	13,700	22	779
28	7,430	41	771	7,910	10	198	14,100	18	665
29	7,480	36	726	7,640	11	220	12,100	10	312
30	7,600	30	610	7,600	12	245	11,100	10	288
31	8,080	24	528	---	---	---	10,700	11	307
<b>Total</b>	240,790	---	9,080	292,190	---	16,476	275,070	---	10,581

## 11447650 Sacramento River at Freeport, CA—Continued

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)  
 WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/ day)
1	10,500	12	333	10,200	8	216	31,300	164	13,300
2	9,470	13	332	9,770	11	271	29,100	192	14,600
3	9,930	14	370	9,100	14	341	35,000	221	20,400
4	9,590	15	385	9,070	19	443	44,700	274	32,200
5	9,490	16	409	8,910	19	463	47,200	173	22,000
6	9,170	16	391	9,130	21	500	48,000	123	15,500
7	8,660	15	337	8,950	21	468	44,000	96	10,900
8	8,140	14	304	8,230	14	309	36,900	72	6,970
9	8,440	18	400	8,780	14	324	31,100	56	4,620
10	8,390	19	429	9,130	16	374	27,400	33	2,380
11	8,090	20	432	9,470	15	373	24,100	22	1,430
12	8,290	21	458	10,300	15	394	21,300	27	1,500
13	8,290	21	465	10,300	15	412	19,400	23	1,190
14	8,010	22	455	11,400	19	570	17,400	21	976
15	7,990	23	465	12,200	23	733	16,800	20	895
16	8,250	21	443	13,500	43	1,580	15,700	20	813
17	8,020	16	341	20,300	114	6,490	15,300	11	468
18	8,000	20	403	32,700	199	17,400	15,300	18	737
19	7,630	18	344	35,800	273	26,200	17,300	26	1,190
20	7,170	19	357	36,600	224	21,800	17,000	32	1,450
21	6,800	21	366	33,600	184	16,700	15,300	33	1,340
22	8,000	20	383	28,400	209	16,400	14,800	32	1,250
23	8,440	14	323	28,200	211	16,300	14,900	22	885
24	8,420	20	448	36,500	181	18,200	14,000	14	514
25	9,040	18	426	42,700	243	27,700	13,400	14	505
26	10,400	24	667	43,300	104	12,000	13,200	15	534
27	13,300	43	1,490	41,000	138	14,900	12,900	16	543
28	13,500	30	1,080	35,600	140	12,800	12,200	17	540
29	12,500	5	190	---	---	---	12,500	21	690
30	11,100	6	174	---	---	---	12,000	20	655
31	10,400	6	158	---	---	---	11,700	20	611
<b>Total</b>	283,420	---	13,558	573,140	---	214,661	701,200	---	161,586

## 11447650 Sacramento River at Freeport, CA—Continued

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)  
 WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)
1	11,600	19	586	13,300	83	2,980	12,700	14	491
2	11,000	18	531	14,300	99	3,830	12,800	15	508
3	11,100	17	509	14,800	104	4,110	12,600	12	414
4	11,300	16	467	17,000	81	3,700	12,300	11	367
5	12,900	17	607	21,400	79	4,550	13,000	12	443
6	14,100	25	926	29,400	61	4,810	13,100	24	845
7	14,300	17	624	31,200	59	4,990	13,500	22	811
8	15,000	9	360	28,400	28	2,160	14,000	20	765
9	14,800	14	570	25,300	63	4,330	14,000	19	712
10	15,400	32	1,300	22,100	46	2,720	13,900	20	734
11	15,400	30	1,210	19,400	26	1,340	12,800	22	761
12	15,700	16	678	18,000	22	1,070	12,100	22	719
13	14,700	17	703	16,400	20	890	11,300	19	568
14	16,000	19	819	14,900	20	798	11,000	15	447
15	15,600	21	888	14,100	24	903	10,300	13	358
16	15,300	23	947	13,700	20	755	10,300	15	416
17	14,900	23	928	13,800	17	618	9,650	19	504
18	14,600	19	753	13,600	13	484	9,630	24	639
19	13,700	17	613	13,800	12	443	9,120	24	579
20	13,400	19	685	13,800	12	454	10,100	14	370
21	13,200	17	609	13,200	13	449	10,600	15	434
22	12,300	14	477	12,400	13	442	10,300	17	471
23	11,600	12	366	12,200	14	478	10,100	19	511
24	11,700	10	331	12,600	17	579	10,800	22	655
25	12,200	9	310	12,900	20	683	11,800	29	899
26	13,200	9	340	12,900	22	749	12,500	16	531
27	12,900	18	623	13,400	20	717	12,300	15	503
28	13,400	34	1,240	12,500	15	507	12,900	15	522
29	13,400	50	1,820	12,100	14	453	14,100	14	535
30	13,400	66	2,420	12,000	14	448	15,000	13	534
31	---	---	---	12,700	14	476	---	---	---
<b>Total</b>	408,100	---	23,240	507,600	---	51,916	358,600	---	17,046

## 11447650 Sacramento River at Freeport, CA—Continued

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)  
 WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Day	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)	Mean discharge (ft <sup>3</sup> /s)	Mean concentration (mg/L)	Sediment discharge (tons/day)
1	16,300	12	540	18,900	13	677	14,600	18	729
2	17,400	14	655	18,600	14	724	13,700	23	864
3	17,900	39	1,930	18,400	12	569	13,800	27	997
4	18,000	45	2,170	18,100	11	518	14,100	30	1,140
5	18,400	44	2,180	16,400	13	563	13,900	32	1,210
6	19,200	38	1,960	15,700	15	640	13,500	21	768
7	19,300	25	1,310	15,600	17	732	13,100	16	545
8	19,200	22	1,140	15,100	16	649	12,200	19	635
9	19,100	19	974	15,000	13	510	11,500	19	585
10	19,200	16	841	15,000	21	869	12,200	18	594
11	19,600	14	763	14,800	22	868	11,800	14	475
12	19,600	14	756	15,000	22	884	11,600	10	298
13	19,900	13	721	14,500	22	860	12,200	12	417
14	19,900	12	646	14,600	19	753	12,800	9	327
15	20,100	13	728	14,600	23	896	12,400	10	320
16	19,700	15	793	14,500	23	905	11,900	10	327
17	19,000	16	844	13,900	20	764	11,500	11	338
18	18,900	16	833	13,700	17	640	11,100	12	348
19	18,700	12	613	13,400	14	521	10,500	12	347
20	18,700	9	466	13,800	12	463	10,500	13	368
21	18,900	11	553	14,400	14	533	10,100	13	367
22	18,000	13	608	13,900	17	649	10,000	12	333
23	18,000	14	691	14,200	19	744	9,840	8	222
24	15,700	14	594	14,500	18	704	9,530	6	154
25	17,500	12	551	14,100	16	616	9,670	6	152
26	18,300	14	713	14,200	17	638	9,490	6	148
27	18,100	18	856	14,500	19	769	9,160	6	142
28	18,200	18	867	14,700	15	589	8,320	6	138
29	18,400	13	634	14,700	12	492	9,010	8	206
30	18,900	13	638	14,500	11	437	9,480	11	281
31	19,200	12	643	14,600	14	536	---	---	---
<b>Total</b>	<b>577,300</b>	<b>---</b>	<b>28,211</b>	<b>467,900</b>	<b>---</b>	<b>20,712</b>	<b>343,500</b>	<b>---</b>	<b>13,775</b>

	Total discharge (ft <sup>3</sup> /s)	Total suspended sediment discharge (tons)
<b>Year</b>	5,028,810	580,842

## 11447650 Sacramento River at Freeport, CA—Continued

**CROSS SECTION ANALYSES**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Date	Time	Temperature, water, deg C (00010)	DepthTo bottom at sample location, feet (81903)	Sam- pling depth, feet (00003)	Stream width, feet (00004)	Loca- tion in X-sect. looking dwnstrm ft from l bank (00009)
<b>Jun</b>						
24...	1230	22.0	18.0	15.0	620	115
24...	1231	22.0	18.0	10.0	620	115
24...	1232	22.0	18.0	5.00	620	115
24...	1234	22.1	21.8	18.0	620	217
24...	1235	22.0	21.8	18.0	620	217
24...	1236	22.0	21.8	6.00	620	217
24...	1241	22.1	21.7	18.0	620	320
24...	1242	22.0	13.0	13.0	620	320
24...	1243	22.1	21.7	6.00	620	320
24...	1245	22.0	21.1	18.0	620	405
24...	1246	22.1	21.1	13.0	620	405
24...	1247	22.1	21.1	6.00	620	405
24...	1250	22.1	23.2	21.9	620	490
24...	1251	22.1	23.2	15.0	620	490
24...	1252	22.1	23.2	8.00	620	490
<b>Aug</b>						
14...	1253	22.1	17.8	14.2	605	132
14...	1254	22.1	17.8	10.6	605	132
14...	1255	22.2	17.8	2.80	605	132
14...	1257	22.1	22.2	17.9	605	234
14...	1258	22.1	22.2	13.2	605	234
14...	1259	22.2	22.2	4.40	605	234
14...	1302	22.1	24.3	19.5	605	337
14...	1304	22.1	24.3	14.8	605	337
14...	1305	22.1	24.3	4.90	605	337
14...	1307	22.1	26.8	21.5	605	422
14...	1308	22.2	26.8	16.2	605	422
14...	1309	22.2	26.8	5.40	605	422
14...	1312	22.2	26.0	20.9	605	507
14...	1313	22.2	26.0	15.6	605	507
14...	1314	22.2	26.0	5.20	605	507

Note: Instantaneous discharge at the mean time of cross-sectional measurements: June 24, 17,200 ft<sup>3</sup>/s; Aug. 14, 14,000 ft<sup>3</sup>/s.