

11323500 Mokelumne River below Camanche Dam, CA

San Joaquin River Basin

LOCATION.--Lat 38°13'34", long 121°01'24" referenced to North American Datum of 1983, in NE ¼ SE ¼ sec.6, T.4 N., R.9 E., San Joaquin County, CA, Hydrologic Unit 18040005, at foot of Camanche Dam, 0.35 mi upstream from Murphy Creek, and 4.3 mi northeast of Clements.

DRAINAGE AREA.--621 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A and 1735. Prior to October 1961, published as "near Clements."

CHEMICAL DATA: Water years 1906-07, 1965-66. Published as "at Clements" in 1906-07.

WATER TEMPERATURE: Water years 1962-68, 1970-76.

SEDIMENT DATA: Water years 1956-70. Prior to 1962 water year, published as "near Clements".

REVISED RECORDS.--WSP 751: Drainage area. WSP 881: 1905-09 (yearly summaries only). WSP 1445: 1911, 1917 (instantaneous maximum discharge), 1925 (instantaneous maximum discharge). WDR CA-94-3: 1993 (instantaneous maximum discharge).

GAGE.--A series of ultrasonic flowmeters located within Camanche Reservoir at three outlet pipes becomes primary record for releases beginning October 2008. The summation of discharge from these flowmeters plus the record of spill (when it occurs) make up the total release below Camanche Reservoir. Elevation of ultrasonic flowmeters is 115.50 ft above NGVD of 1929 (provided by East Bay Municipal Utility District). Elevation of spillway gage is 235.50 ft above NGVD of 1929 (levels by East Bay Municipal Utility District). If necessary, the gage, previously published as Mokelumne River below Camanche Dam (located 1.0 mi downstream) becomes auxiliary gage for discharge determination. Auxiliary gage is water-stage recorder. Elevation of auxiliary gage is 82.71 ft above NGVD of 1929 (levels by East Bay Municipal Utility District). October 1999 to September 2001, and October 2002 to September 2003, published data from ultrasonic flowmeters on outlet pipes at Camanche Dam and water-stage recorder on spillway. See WSP 1930 for history of changes prior to Oct. 1, 1961.

COOPERATION.--Records were collected by East Bay Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with Federal Energy Regulatory Commission project no. 2916.

REMARKS.--Flow regulated by Camanche Reservoir (station 11322300) beginning December 1963, Salt Springs Reservoir (station 11313500) beginning March 1931, Pardee Reservoir (station 11320000) beginning March 1929, and several small reservoirs. East Bay Municipal Utility District aqueducts, maximum capacity, 511 ft³/s with Pardee Reservoir full, are the largest of several diversions upstream from the station. Beginning October 2008, specific ultrasonic flow meters, which make up total releases, are located on North Conduit, South Conduit and High Level Outlet. See schematic diagram of Mokelumne River Basin available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft³/s, Nov. 21, 1950, gage height, 24.40 ft, site and datum then in use; no flow on several days in 1924.

Maximum discharge since construction of Camanche Dam in 1963, 6,060 ft³/s, Feb. 19, 1986, gage height, 11.21 ft; minimum daily, 23 ft³/s, Oct. 6, 1977.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	324	328	329	329	331	424	405	1,430	1,030	886	602	398
2	327	328	328	329	331	444	406	1,410	1,340	1,230	603	400
3	326	329	329	330	331	401	406	1,410	1,400	1,400	602	398
4	375	328	329	330	331	350	405	1,400	1,390	1,410	547	401
5	628	330	328	330	332	332	405	1,400	1,390	1,410	444	404
6	1,030	489	329	331	333	331	406	1,400	1,390	1,410	401	404
7	1,430	601	329	330	332	331	407	1,410	1,330	1,310	401	404
8	1,830	442	329	331	333	333	408	1,410	1,230	977	401	403
9	1,780	330	329	332	332	334	408	1,410	1,130	804	403	401
10	1,370	330	329	331	332	333	407	1,370	1,040	803	400	400
11	965	330	329	328	332	331	407	1,420	932	803	401	400
12	567	329	329	331	331	331	415	1,420	829	802	405	400
13	395	329	329	333	331	332	426	1,420	800	803	401	400
14	620	329	329	332	331	332	426	1,420	802	804	404	400
15	1,030	330	329	332	331	332	418	1,420	801	804	400	400
16	1,200	329	330	331	331	332	406	1,420	800	801	401	400
17	1,190	330	332	330	331	334	406	1,370	805	799	402	400
18	1,190	330	335	331	331	332	406	1,310	801	809	401	399
19	967	331	333	330	332	331	407	1,260	801	803	401	398
20	566	332	332	331	331	331	407	1,210	802	802	401	400
21	346	331	331	332	332	332	406	1,170	801	802	401	399
22	326	330	335	330	332	331	406	1,120	802	805	400	398
23	330	330	333	331	332	331	406	1,100	802	803	352	398
24	330	330	332	331	331	332	406	1,030	800	801	330	398
25	329	329	332	330	333	331	406	928	800	804	330	399
26	328	329	334	331	332	330	407	830	802	802	330	399
27	328	329	333	331	332	331	629	799	803	801	360	403
28	330	329	330	331	331	331	1,030	799	805	731	399	401
29	330	329	330	331	---	332	1,360	799	801	632	399	628
30	329	332	334	331	---	332	1,450	804	804	572	399	803
31	330	---	330	331	---	364	---	801	---	603	399	---
Total	21,746	10,432	10,249	10,252	9,285	10,608	15,093	37,900	28,863	27,826	12,920	12,636
Mean	701	348	331	331	332	342	503	1,223	962	898	417	421
Max	1,830	601	335	333	333	444	1,450	1,430	1,400	1,410	603	803
Min	324	328	328	328	331	330	405	799	800	572	330	398
Ac-ft	43,130	20,690	20,330	20,330	18,420	21,040	29,940	75,170	57,250	55,190	25,630	25,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1963, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	450	543	710	745	883	913	1,193	1,608	1,458	557	478	467
Max	670	3,188	4,568	3,529	2,473	3,155	3,451	4,217	3,164	1,194	691	678
(WY)	(1939)	(1951)	(1951)	(1956)	(1938)	(1938)	(1938)	(1952)	(1952)	(1952)	(1962)	(1958)
Min	58.0	63.1	95.6	112	77.6	132	136	179	241	296	267	108
(WY)	(1932)	(1932)	(1960)	(1962)	(1948)	(1931)	(1961)	(1961)	(1931)	(1961)	(1961)	(1931)

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SUMMARY STATISTICS

Water Years 1931 - 1963		
Annual mean	832	
Highest annual mean	1,669	1938
Lowest annual mean	221	1961
Highest daily mean	26,900	Nov 21, 1950
Lowest daily mean	35	Apr 24, 1955
Annual seven-day minimum	49	Feb 12, 1948
Maximum peak flow	28,800	Nov 21, 1950
Maximum peak stage	24.40	Nov 21, 1950
Annual runoff (ac-ft)	603,000	
10 percent exceeds	1,890	
50 percent exceeds	551	
90 percent exceeds	213	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	511	441	471	785	924	958	963	1,066	1,008	794	619	516
Max (WY)	2,061 (1966)	2,157 (1984)	2,938 (1984)	4,978 (1997)	4,315 (1997)	5,117 (1986)	4,572 (2006)	3,935 (2006)	3,847 (1995)	2,932 (1998)	1,770 (1998)	1,447 (1995)
Min (WY)	33.3 (1978)	83.6 (1989)	78.7 (1967)	83.6 (1967)	60.8 (1967)	77.9 (1989)	125 (1991)	170 (1988)	253 (2008)	249 (1991)	235 (1991)	123 (1992)

SUMMARY STATISTICS

	Calendar Year 2009	Water Year 2010	Water Years 1965 - 2010
Annual total	129,282	207,810	
Annual mean	354	569	754
Highest annual mean			2,400
Lowest annual mean			172
Highest daily mean	1,830	Oct 8	5,750
Lowest daily mean	223	Jan 1	23
Annual seven-day minimum	224	Jan 14	28
Maximum peak flow		2,010	6,060
Maximum peak stage			11.21
Annual runoff (ac-ft)	256,400	412,200	545,900
10 percent exceeds	410	1,240	1,810
50 percent exceeds	330	400	396
90 percent exceeds	225	329	130

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