Water-Data Report 2013

11270900 Merced River below Merced Falls Dam, near Snelling, CA

San Joaquin River Basin

LOCATION.--Lat 37°31′18″, long 120°19′53″ referenced to North American Datum of 1927, in SE ¼ SW ¼ sec.4, T.5 S., R.15 E., Merced County, CA, Hydrologic Unit 18040002, on right bank, 0.1 mi south of Merced Falls, 0.2 mi downstream from Merced Falls Dam, 0.6 mi downstream from unnamed tributary, and 5.8 mi east of Snelling.

DRAINAGE AREA.--1,061 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1901 to current year. Records for water years 1914-16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901-13; as "at Exchequer" 1916-64.

REVISED RECORDS.--WSP 1315-A: 1901-09, 1911 (instantaneous maximum discharge). WSP 1515: 1918-20, 1942-43 (published as station 11270000). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 310.55 ft above NGVD of 1929. See WSP 1930 for history of changes prior to Oct. 1, 1964.

COOPERATION.--Records, including end of month contents for McSwain Reservoir (station 11270600), were provided by Merced Irrigation District, and total monthly diversion for McSwain Powerplant (station 11270610), were provided by Pacific Gas and Electric Co., under general supervision of the U.S. Geological Survey, in connection with Federal Energy Regulatory Commission project no. 2179.

REMARKS.--Merced Falls Dam diverts water to Northside Canal for irrigation downstream from station. Flow regulated by Exchequer (station 11269700), McSwain Powerplant, and Merced Falls Powerplant, Lake McClure (station 11269500) since 1926, enlarged 1967, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--(Water years 1901-13 and since 1916) Maximum discharge observed, 47,700 ft^3/s, Jan. 31, 1911, gage height, 23.3 ft, site and datum then in use; no flow for part of Nov. 21, 1901.

Since construction of Exchequer Dam in 1926: Maximum discharge, 46,200 ft^3/s, Dec. 4, 1950, gage height, 22.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 16,000 ft^3/s, on basis of computation of peak flow over dam; minimum daily, 3.4 ft^3/s, Mar. 5, 1966.

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 11270900, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/11270900.2013.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	796	290	347	307	326	263	751	1,050	1,140	1,480	1,370	841
2	860	290	349	307	327	263	694	1,090	1,180	1,490	1,370	840
3	868	288	353	308	326	263	641	1,110	1,160	1,490	1,370	841
4	819	280	348	315	327	261	614	1,140	1,120	1,520	1,340	840
5	756	275	345	320	327	260	558	1,160	1,110	1,540	1,310	800
6	708	276	342	355	326	259	533	1,120	1,110	1,540	1,260	782
7	686	277	331	328	328	449	531	1,090	1,170	1,530	1,240	782
8	668	277	323	318	328	557	530	992	1,210	1,530	1,240	779
9	660	332	323	319	328	554	529	970	1,210	1,530	1,250	742
10	658	365	318	317	329	623	528	980	1,180	1,530	1,250	718
11	658	407	309	317	329	659	541	984	1,170	1,570	1,140	729
12	705	429	309	318	330	657	566	1,030	1,170	1,590	1,040	742
13	716	415	307	318	337	693	583	1,110	1,150	1,650	1,010	741
14	686	391	308	317	356	760	603	1,130	1,150	1,670	1,010	741
15	773	378	309	316	357	816	647	1,200	1,100	1,580	1,010	738
16	831	365	309	315	357	867	660	1,250	1,080	1,540	1,030	737
17	933	355	310	315	300	871	1,450	1,260	1,160	1,540	1,040	960
18	1,640	356	306	315	267	869	1,610	1,280	1,190	1,540	1,040	1,400
19	2,030	356	307	319	271	869	1,180	1,220	1,180	1,540	1,010	1,690
20	1,660	356	306	323	271	821	1,130	1,170	1,180	1,540	963	1,910
21	1,230	355	306	323	267	791	970	1,180	1,180	1,480	944	1,940
22	1,140	355	316	322	265	824	907	1,180	1,240	1,460	962	1,910
23	1,150	355	392	320	265	846	890	1,180	1,310	1,400	962	1,810
24	1,030	354	383	321	264	853	920	1,170	1,320	1,360	963	1,800
25	810	354	309	320	264	865	951	1,180	1,250	1,450	910	1,750
26	724	353	363	325	264	763	964	1,180	1,230	1,490	834	1,200
27	670	353	334	328	264	676	972	1,180	1,280	1,500	817	467
28	559	354	308	327	263	662	974	1,180	1,360	1,500	799	443
29	498	352	307	327	---	669	973	1,110	1,390	1,420	791	444
30	420	348	308	327	---	688	973	1,070	1,430	1,390	824	405
31	315	---	308	327	---	721	---	1,060	---	1,380	839	---
Total	26,657	10,291	10,093	9,934	8,563	19,992	24,373	35,006	36,110	46,770	32,938	30,522
Mean	860	343	326	320	306	645	812	1,129	1,204	1,509	1,063	1,017
Max	2,030	429	392	355	357	871	1,610	1,280	1,430	1,670	1,370	1,940
Min	315	275	306	307	263	259	528	970	1,080	1,360	791	405
Ac-ft	52,870	20,410	20,020	19,700	16,980	39,650	48,340	69,430	71,620	92,770	65,330	60,540
End of month contents, in acre-feet, McSwain Reservoir												
	8,930	8,770	e9,070	8,700	9,090	8,910	9,000	9,080	8,900	9,230	9,120	8,410
Total diversion, in acre-feet, McSwain Powerplant												
	55,000	0.00	0.00	0.00	44	22,280	50,700	66,890	72,970	93,640	68,070	60,210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1925, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	224	222	396	1,095	1,290	2,102	2,644	4,362	3,719	1,261	306	144
Max	1,522	531	1,676	4,409	3,232	6,995	5,749	6,768	8,225	5,867	958	302
(WY)	(1905)	(1910)	(1910)	(1911)	(1909)	(1907)	(1907)	(1922)	(1906)	(1906)	(1906)	(1904)
Min	49.4	58.5	83.7	100	208	314	774	1,478	212	61.3	29.9	20.5
(WY)	(1914)	(1922)	(1906)	(1918)	(1913)	(1924)	(1912)	(1924)	(1924)	(1924)	(1924)	(1924)

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SUMMARY STATISTICS

	Water Years 1901 - 1925	
Annual mean	1,443	
Highest annual mean	2,937	1907
Lowest annual mean	348	1924
Highest daily mean	37,200	Jan 30, 1911
Lowest daily mean	1.0	Nov 21, 1901
Annual seven-day minimum	20	Sep 4, 1924
Maximum peak flow	47,700	Jan 31, 1911
Maximum peak stage	23.30	Jan 31, 1911
Annual runoff (ac-ft)	1,045,000	
10 percent exceeds	4,340	
50 percent exceeds	488	
90 percent exceeds	80	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1964, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	223	57.8	267	402	694	1,059	1,892	3,143	2,737	1,739	1,400	884
Max	638	385	4,698	3,869	3,155	5,375	3,876	7,249	7,426	2,384	1,713	1,313
(WY)	(1945)	(1951)	(1951)	(1956)	(1938)	(1938)	(1958)	(1952)	(1938)	(1938)	(1963)	(1952)
Min	20.8	25.2	26.0	20.7	35.1	33.3	275	1,049	1,090	210	171	17.2
(WY)	(1932)	(1932)	(1934)	(1940)	(1960)	(1948)	(1948)	(1955)	(1934)	(1931)	(1961)	(1931)

SUMMARY STATISTICS

	Water Years 1927 - 1964	
Annual mean	1,210	
Highest annual mean	2,738	1938
Lowest annual mean	360	1931
Highest daily mean	24,000	Dec 4, 1950
Lowest daily mean	4.5	Feb 11, 1960
Annual seven-day minimum	8.7	Jan 12, 1940
Maximum peak flow	46,200	Dec 4, 1950
Maximum peak stage	22.60	Dec 4, 1950
Annual runoff (ac-ft)	876,500	
10 percent exceeds	2,510	
50 percent exceeds	1,150	
90 percent exceeds	38	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	908	381	523	719	999	1,277	1,838	2,286	2,247	2,091	1,705	1,309
Max	3,143	1,396	2,451	7,368	6,686	4,680	5,278	5,701	6,975	5,177	2,761	3,049
(WY)	(1984)	(1970)	(1983)	(1997)	(1997)	(1983)	(1983)	(1982)	(1983)	(1983)	(1983)	(1983)
Min	76.4	118	120	133	113	139	394	528	813	922	636	83.1
(WY)	(1978)	(1969)	(1969)	(1977)	(1977)	(1977)	(1991)	(1977)	(1977)	(1977)	(1977)	(1977)

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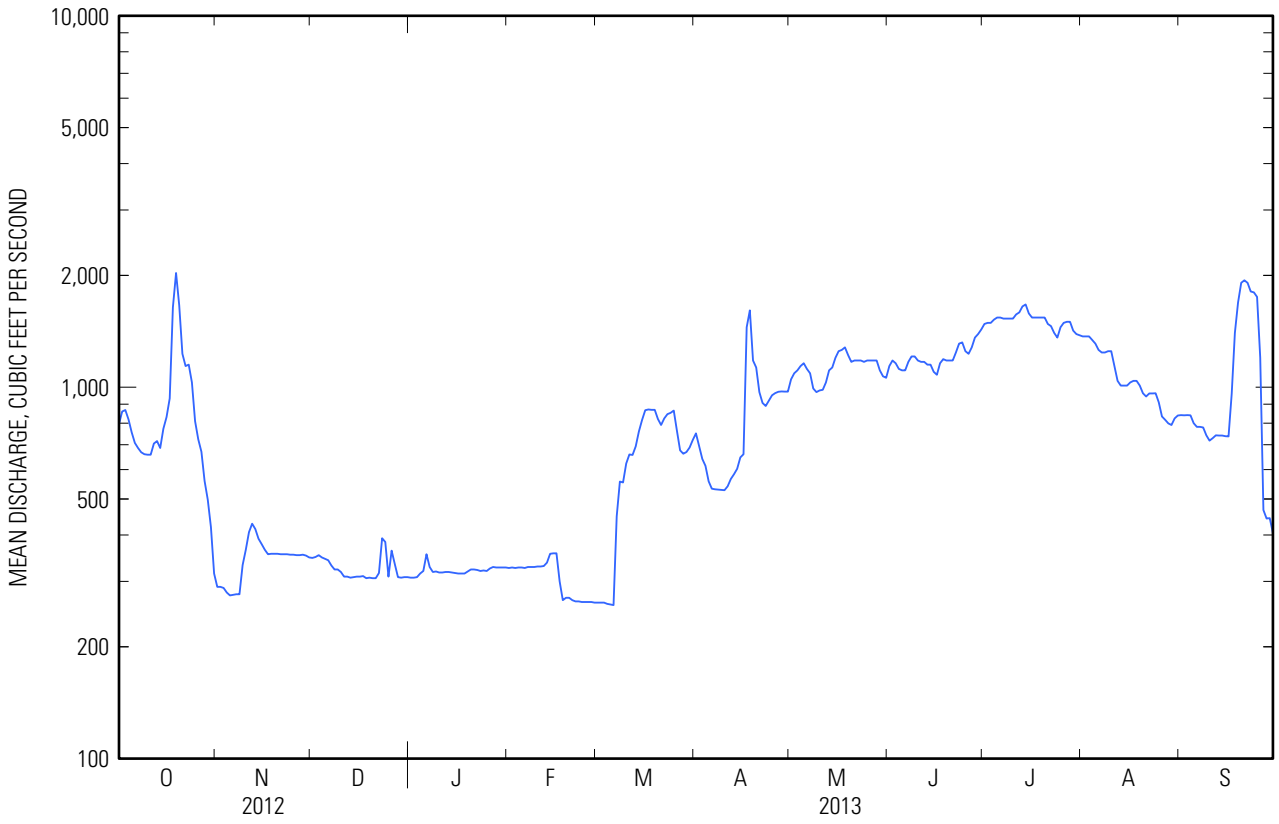
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1968 - 2013	
Annual total	336,531		291,249			
Annual mean	919		798		1,359	
Highest annual mean					3,779	1983
Lowest annual mean					363	1977
Highest daily mean	2,230	May 6	2,030	Oct 19	8,020	Jan 4, 1997
Lowest daily mean	241	Apr 15	259	Mar 6	46	Oct 3, 1968
Annual seven-day minimum	269	Feb 3	262	Feb 28	74	Oct 12, 1977
Maximum peak flow			2,860	May 6	9,360	Jun 1, 1969
Maximum peak stage			7.73	May 6	12.40	Jun 1, 1969
Annual runoff (ac-ft)	667,500		577,700		984,400	
Annual runoff (ac-ft)[a]	538,600		489,800			
10 percent exceeds	1,770		1,450		2,810	
50 percent exceeds	752		760		1,140	
90 percent exceeds	284		308		195	

[a] Total diversion, in acre-feet, McSwain Powerplant.