

11051500 Santa Ana River near Mentone, CA

Santa Ana River Basin

LOCATION.--Lat 34°06'30", long 117°05'59" referenced to North American Datum of 1927, in SW ¼ SW ¼ sec.4, T.1 S., R.2 W., San Bernardino County, CA, Hydrologic Unit 18070203, on right bank, near mouth of canyon, 0.35 mi downstream from Seven Oaks Dam, 1.6 mi upstream from Mill Creek, 3.2 mi northeast of Mentone, and 16 mi downstream from Big Bear Lake.

DRAINAGE AREA.--210 mi², including area tributary to Baldwin Lake at head of Bear Valley.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1896 to current year. Prior to October 1914, records for river only not equivalent owing to Greenspot pipeline diversion between sites and exclusion of discharge from Warm Springs Canyon. Monthly discharge only for January 1910, January and February 1916 published in WSP 1315-B.

CHEMICAL DATA: Water years 1999-2001.

SPECIFIC CONDUCTANCE: Water year 1999.

WATER TEMPERATURE: Water years 1983-89, 1999.

SEDIMENT DATA: Water years 1999-2001.

REVISED RECORDS.--WSP 931: 1940. WSP 1635: 1918, 1920 (instantaneous maximum discharge), 1922, 1937, 1943 (instantaneous maximum discharge). WSP 1928: Drainage area. WSP 2128: 1910. WDR CA-2010: 2005 (M).

GAGE.--Four water-stage recorders. Main gage on right bank of river (station 11051499), canal gage on powerplant diversion (station 11049500), supplementary gage on left bank of river (station 11051502) since 1970, and since October 2006, sharp-crested weir and recorder reporting spill from canal, downstream from station 11049500 (station 11049590). Elevation of the main and supplementary gages is 1,950 ft above NGVD of 1929, from topographic map. Prior to Sept. 2, 1917, nonrecording gages at several sites within 1.5 mi upstream at various datums. Sept. 3, 1917, to May 27, 1969, water-stage recorder at site 0.2 mi upstream at different datum. Canal and spill gages at different datums.

COOPERATION.--Records for Southern California Edison Co.'s Santa Ana River Canal above Powerplant No. 3 (station 11049500) were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with Federal Energy Regulatory Commission project no. 1933. Records for Santa Ana River Canal Greenspot Spill (station 11049590) were provided by San Bernardino Valley Municipal Water District.

REMARKS.--Records good below 700 ft³/s and poor above. Flow partly regulated by Big Bear Lake (station 11049000) and, since November 1999, by Seven Oaks Flood-Control Reservoir, capacity, 145,600 acre-ft. The supplementary gage (station 11051502) measures water that is occasionally diverted out of the main channel 250 ft upstream for water distribution. Flow measured by the supplementary gage is included with the river record to maintain equivalence with records prior to 1970. For records of combined discharge of Santa Ana River and Southern California Edison Co.'s Santa Ana River Canal above Powerplant No. 3 (station 11049500), which diverts upstream from station, see station 11051501. Records of spill from the Santa Ana River Canal Greenspot Spill (station 11049590), furnished by the San Bernardino Valley Municipal Water District, are subtracted from the combined flow of the river and canal gages, to compensate for the recording of these flows upstream and downstream of the point of spill. Prior to water year 2000, station 11049500 was named "Southern California Edison Co.'s Santa Ana River Canal below Powerplant No. 2". Prior to Oct. 1, 1952, and since Apr. 26, 1976, Bear Valley Mutual Water Co. pumps water into channel above canal gage. See schematic diagram of Santa Ana River Basin available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 52,300 ft³/s, Mar. 2, 1938, gage height, 14.3 ft, site and datum then in use, on basis of slope-area measurement of peak flow; no flow at times in some years.

Combined river and canal: Maximum discharge, 52,300 ft³/s, Mar. 2, 1938; no flow on Feb. 17, 2000, and many days in 2013.

EXTREMES OUTSIDE PERIOD OF RECORD.--Combined river and canal: Flood of Feb. 23, 1891, 53,700 ft³/s, from notes provided by F.C. Finkle, consulting engineer, Los Angeles.

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	15	2.6	2.3	2.8	3.5	3.5	5.1	0.00	90	12	8.9	5.9
2	10	2.6	2.5	2.8	3.4	3.9	5.0	0.00	95	12	8.6	5.3
3	10	2.5	1.3	2.8	3.4	3.9	5.1	0.00	96	11	8.6	5.2
4	16	2.5	0.30	2.7	3.4	3.8	5.1	0.00	97	11	8.4	4.7
5	12	2.5	1.8	2.8	3.4	3.7	5.2	0.00	94	10	8.2	4.9
6	8.2	2.5	2.4	2.8	3.7	3.5	5.2	0.00	91	10	8.6	5.8
7	8.2	2.5	2.2	2.8	3.4	4.2	5.1	0.00	88	9.6	8.5	5.3
8	8.0	2.4	2.3	2.7	3.7	5.7	5.2	0.00	33	8.5	8.4	6.3
9	7.2	3.3	2.2	3.3	3.5	5.4	5.1	0.03	20	7.9	8.0	6.5
10	5.7	2.1	2.6	3.2	3.4	5.3	5.2	0.01	20	7.7	7.9	3.7
11	5.5	2.0	2.8	3.1	3.5	5.4	4.6	0.01	22	8.2	7.9	3.1
12	5.4	2.1	2.8	3.1	3.5	5.3	4.6	0.00	21	8.9	7.7	3.3
13	5.2	2.2	3.6	3.2	3.4	6.4	4.5	0.00	21	7.8	6.9	3.4
14	5.1	2.2	3.1	3.2	3.4	5.9	4.5	0.00	20	7.0	6.7	3.4
15	5.2	2.4	2.9	3.2	3.6	5.3	58	0.00	20	6.5	6.3	3.4
16	4.0	2.2	2.9	3.2	3.7	5.2	94	0.00	20	6.3	6.1	3.2
17	e2.3	2.4	2.9	4.2	3.8	5.2	93	0.00	19	6.0	6.4	3.0
18	e5.7	2.3	2.9	3.5	3.9	5.2	92	0.00	19	5.8	5.2	3.1
19	5.7	2.3	2.9	3.5	3.8	5.2	91	0.00	18	5.8	5.3	3.1
20	5.6	2.3	2.8	3.5	3.6	5.2	89	0.00	18	5.8	5.0	3.2
21	5.6	2.3	2.7	3.5	3.3	5.2	88	0.00	18	7.3	4.3	3.2
22	4.2	2.3	2.8	3.5	3.3	5.8	86	0.00	18	7.6	4.2	3.3
23	2.9	2.3	2.7	3.6	3.3	7.5	86	0.00	17	5.5	4.3	3.3
24	2.9	2.3	2.7	3.5	3.2	7.6	56	0.49	16	5.5	4.3	3.4
25	2.9	2.3	2.7	3.3	3.5	6.2	16	0.29	16	8.7	4.4	3.4
26	2.7	2.3	2.9	3.2	3.3	5.3	8.8	0.54	15	11	5.1	3.4
27	2.6	2.3	2.8	3.3	3.3	5.2	0.22	0.22	14	11	6.2	9.2
28	2.5	2.3	2.8	3.5	3.4	5.2	0.02	0.08	13	10	4.8	15
29	2.6	2.3	2.9	3.5	---	5.2	0.00	0.00	12	10	4.3	12
30	2.5	2.5	2.8	3.4	---	5.2	0.00	36	12	9.8	5.8	11
31	2.5	---	2.7	3.5	---	5.2	---	90	---	9.4	6.7	---
Total	183.9	71.1	80.00	100.2	97.6	160.8	927.54	127.67	1,073	263.6	202.0	153.0
Mean	5.93	2.37	2.58	3.23	3.49	5.19	30.9	4.12	35.8	8.50	6.52	5.10
Max	16	3.3	3.6	4.2	3.9	7.6	94	90	97	12	8.9	15
Min	2.3	2.0	0.30	2.7	3.2	3.5	0.00	0.00	12	5.5	4.2	3.0
Ac-ft	365	141	159	199	194	319	1,840	253	2,130	523	401	303

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1999, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	5.07	9.24	25.8	42.4	83.2	95.9	64.4	49.6	22.2	11.8	6.49	6.60
Max	77.8	206	536	646	1,052	1,405	413	446	278	174	124	134
(WY)	(1970)	(1966)	(1967)	(1993)	(1980)	(1938)	(1969)	(1998)	(1969)	(1969)	(1969)	(1969)
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1934)	(1934)	(1949)	(1936)	(1961)	(1951)	(1959)	(1959)	(1959)	(1934)	(1934)	(1933)

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SUMMARY STATISTICS

Water Years 1915 - 1999		
Annual mean	33.8	
Highest annual mean	283	1969
Lowest annual mean	.01	1961
Highest daily mean	15,500	Mar 2, 1938
Lowest daily mean	.00	Nov 21, 1932
Annual seven-day minimum	.00	Nov 21, 1932
Maximum peak flow	52,300	Mar 2, 1938
Maximum peak stage	14.30	Mar 2, 1938
Annual runoff (ac-ft)	24,500	
10 percent exceeds	75	
50 percent exceeds	1.9	
90 percent exceeds	.00	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	9.72	8.78	5.71	9.52	22.2	83.4	96.4	43.0	19.2	29.0	19.2	7.76
Max	42.4	39.8	17.6	86.1	117	541	431	199	106	204	126	17.1
(WY)	(2005)	(2005)	(2008)	(2005)	(2011)	(2005)	(2005)	(2005)	(2005)	(2010)	(2010)	(2012)
Min	0.25	0.14	0.97	1.50	1.35	1.22	0.97	0.77	0.42	0.14	0.14	0.23
(WY)	(2003)	(2000)	(2001)	(2000)	(2002)	(2002)	(2002)	(2002)	(2002)	(2000)	(2000)	(2002)

SUMMARY STATISTICS

	Calendar Year 2012	Water Year 2013	Water Years 2000 - 2013	
Annual total	5,213.10	3,440.41		
Annual mean	14.2	9.43	29.5	
Highest annual mean			143	2005
Lowest annual mean			0.86	2002
Highest daily mean	156	Apr 18	97	Jun 4
Lowest daily mean	0.30	Dec 4	0.00	Apr 29
Annual seven-day minimum	1.8	Dec 3	0.00	Apr 29
Maximum peak flow			104	Jun 2
Annual runoff (ac-ft)	10,340	6,820	5,000	Mar 1, 2011
10 percent exceeds	25	16	62	
50 percent exceeds	9.4	3.9	4.6	
90 percent exceeds	2.5	1.9	0.48	

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