

Water-Data Report 2013

## 11290000 Tuolumne River at Modesto, CA

San Joaquin River Basin

LOCATION.--Lat 37°37'38", long 120°59'00" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.33, T.3 S., R.9 E., Stanislaus County, CA, Hydrologic Unit 18040002, on left bank, 150 ft downstream from Dry Creek, 0.2 mi upstream from 9th Street Bridge.

DRAINAGE AREA.--1,884 mi<sup>2</sup>.

### SURFACE-WATER RECORDS

PERIOD OF RECORD.--1878-84, 1891-94, 1897 (gage heights only), January 1895 to December 1896, April 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Water-quality data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Water-quality data for the period April 1987 to September 1988 are available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 2,600 ft downstream at same datum; July 11, 1947, to Nov. 16, 1953, at site 1,900 ft downstream at same datum. Nov. 17, 1953 to Apr. 28, 2004, at site 900 ft downstream, at same datum. Gage was reestablished on May 28, 2010, 1,000 ft upstream at same datum.

REMARKS.--Records good. Flow regulated by reservoirs and powerplants upstream from station. Several major diversions for power, irrigation, and municipal supply upstream of station, including Modesto and Turlock Canals (stations 11289000 and 11289500). See REMARKS for Tuolumne River below La Grange Dam (station 11289650) and schematic diagram of Tuolumne River Basin available from the California Water Science Center.

EXTREMES FOR PERIOD OF RECORD.--(Water years 1896, and since water year 1941) Maximum discharge observed, 57,000 ft<sup>3</sup>/s, Dec. 9, 1950, elevation, 69.19 ft, maximum gage height, 71.21 ft, Jan. 4, 1997 (backwater caused by debris on railroad trestle 2,500 ft downstream of gage); minimum daily, 56 ft<sup>3</sup>/s, Aug. 6, 1977.

## 11290000 Tuolumne River at Modesto, CA—Continued

**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	179	218	252	271	196	189	323	878	207	158	176	158
2	214	214	339	250	193	190	264	950	216	146	175	185
3	226	212	294	239	191	196	253	1,140	205	152	157	171
4	233	211	244	233	192	197	275	1,050	171	157	163	168
5	244	213	276	232	191	202	253	899	152	163	171	167
6	239	210	242	348	191	213	254	748	147	180	166	183
7	254	207	227	510	195	213	231	556	132	177	207	242
8	251	208	223	493	196	224	223	410	129	168	195	270
9	255	207	219	346	198	236	221	375	212	149	182	247
10	253	206	216	299	197	228	221	322	199	141	192	191
11	246	205	215	269	196	220	220	246	196	172	195	189
12	252	208	221	253	189	225	226	258	196	175	210	186
13	250	210	216	242	187	224	219	236	202	175	198	166
14	241	210	211	235	186	225	267	210	152	175	183	159
15	229	207	213	229	184	238	307	207	145	189	179	178
16	236	211	213	223	181	239	593	245	154	177	171	167
17	206	223	222	219	194	253	573	241	156	146	240	157
18	214	236	229	216	200	248	493	232	150	133	279	141
19	211	224	217	213	220	251	480	248	137	150	251	158
20	249	214	212	210	210	261	470	256	132	142	192	146
21	541	213	212	210	195	269	538	235	134	180	177	183
22	621	215	269	204	194	258	804	224	112	186	167	186
23	636	215	324	201	192	247	763	211	119	178	159	185
24	629	214	907	204	192	245	687	209	164	171	193	165
25	569	212	1,360	204	194	250	668	214	182	167	242	153
26	468	213	586	200	191	245	688	249	155	171	222	150
27	376	214	847	198	190	246	744	245	159	176	192	158
28	285	229	797	196	190	260	992	241	149	183	176	163
29	230	230	462	196	---	261	961	247	150	186	171	179
30	220	285	355	197	---	266	878	219	164	198	160	166
31	214	---	306	194	---	336	---	222	---	182	166	---
<b>Total</b>	9,471	6,494	11,126	7,734	5,425	7,355	14,089	12,223	4,878	5,203	5,907	5,317
<b>Mean</b>	306	216	359	249	194	237	470	394	163	168	191	177
<b>Max</b>	636	285	1,360	510	220	336	992	1,140	216	198	279	270
<b>Min</b>	179	205	211	194	181	189	219	207	112	133	157	141
<b>Ac-ft</b>	18,790	12,880	22,070	15,340	10,760	14,590	27,950	24,240	9,680	10,320	11,720	10,550

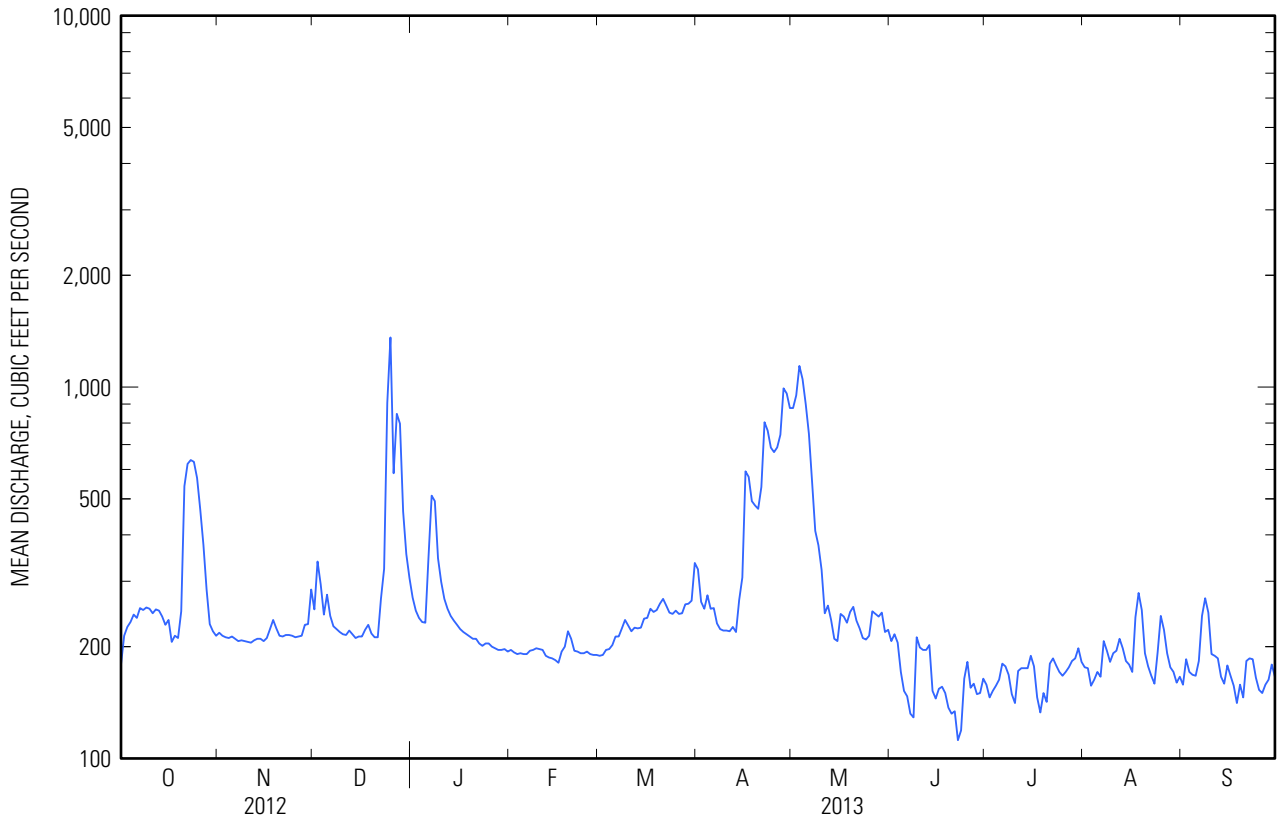
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2013, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	796	879	1,418	1,806	1,998	2,028	1,983	1,946	1,565	659	405	540
<b>Max</b>	4,760	4,124	8,677	15,500	8,782	7,658	9,268	10,420	7,665	4,244	2,415	4,041
<b>(WY)</b>	(1984)	(1951)	(1951)	(1997)	(1997)	(1983)	(1983)	(1983)	(1942)	(1983)	(2011)	(1983)
<b>Min</b>	78.2	93.1	110	154	166	199	169	138	94.5	78.8	67.5	72.6
<b>(WY)</b>	(1978)	(1978)	(1978)	(1991)	(1991)	(1961)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)

11290000 Tuolumne River at Modesto, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1940 - 2013	
<b>Annual total</b>	131,779		95,222			
<b>Annual mean</b>	360		261		1,326	
<b>Highest annual mean</b>					5,518	1983
<b>Lowest annual mean</b>					185	1989
<b>Highest daily mean</b>	1,950	May 13	1,360	Dec 25	52,900	Jan 4, 1997
<b>Lowest daily mean</b>	139	Sep 7	112	Jun 22	56	Aug 6, 1977
<b>Annual seven-day minimum</b>	166	Sep 4	134	Jun 17	62	Aug 2, 1977
<b>Maximum peak flow</b>			1,860	Dec 25	57,000	Dec 9, 1950
<b>Maximum peak stage</b>			42.19	Dec 25	71.21	Jan 4, 1997
<b>Annual runoff (ac-ft)</b>	261,400		188,900		960,600	
<b>10 percent exceeds</b>	573		431		3,650	
<b>50 percent exceeds</b>	252		213		521	
<b>90 percent exceeds</b>	177		159		187	



**11290000 Tuolumne River at Modesto, CA—Continued**

**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1965-79, 1985-95, 2001 to current year.

CHEMICAL DATA: Water years 1985-88, 1993-95.

SEDIMENT: Water years 1985-88, 1993-95.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1985 to September 1988, December 1988 to March 1995, December 2000 to current year.

WATER TEMPERATURE: July 1965 to April 1979, October 1985 to March 1995, December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor since December 2000.

REMARKS.--Data for the period October 1985 to March 1987 are available in U.S. Geological Survey Open-File Report 88-479. Data for the period April 1987 to September 1988 are available in the files of the U.S. Geological Survey.

Specific conductance records rated excellent except for Oct. 3, 4, Dec. 14 to Jan. 5, Jan. 18 to Feb. 22, June 2-21, which are rated good; Jan. 6-9, June 22-24, which are rated fair; and Oct. 1, 2, which are rated poor.

Water-temperature records rated excellent except for May 16-23, which are rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 587 microsiemens, Mar. 12, 1993; minimum recorded, 22 microsiemens, Feb. 26, 27, 2001.

WATER TEMPERATURE: Maximum recorded, 34.5°C, July 3-5, 1991; minimum recorded, 3.5°C, several days during December 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 239 microsiemens, Dec. 24; minimum recorded, 48 microsiemens, May 3.

WATER TEMPERATURE: Maximum recorded, 34.1°C, July 4; minimum recorded, 6.6°C, Jan. 16, 17.

## 11290000 Tuolumne River at Modesto, CA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

<b>Day</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>
	<b>October</b>			<b>November</b>			<b>December</b>			<b>January</b>		
<b>1</b>	143	141	142	128	126	127	135	130	133	155	153	155
<b>2</b>	142	132	139	128	126	127	137	113	128	156	154	155
<b>3</b>	132	123	128	128	127	127	132	123	126	154	152	154
<b>4</b>	125	119	122	127	125	126	142	128	139	152	152	152
<b>5</b>	119	114	115	127	124	125	142	127	138	152	151	151
<b>6</b>	115	105	110	128	125	126	144	138	140	151	138	139
<b>7</b>	111	99	105	128	128	128	147	144	146	154	138	139
<b>8</b>	107	100	106	128	127	127	149	147	148	159	154	158
<b>9</b>	108	101	105	130	128	129	149	148	149	156	153	154
<b>10</b>	107	97	103	130	128	128	149	148	148	159	154	156
<b>11</b>	111	106	109	131	130	131	148	146	147	164	159	162
<b>12</b>	113	109	110	132	131	131	148	144	146	165	161	163
<b>13</b>	113	111	112	133	132	132	145	143	144	164	161	164
<b>14</b>	115	108	113	133	132	132	145	144	144	164	160	161
<b>15</b>	117	113	115	134	133	133	144	142	143	162	159	160
<b>16</b>	119	114	116	135	133	134	143	140	142	160	158	159
<b>17</b>	123	118	121	134	131	132	141	137	140	158	156	157
<b>18</b>	122	116	119	132	128	130	141	138	139	157	155	156
<b>19</b>	122	119	121	132	130	131	141	138	139	155	154	155
<b>20</b>	121	115	119	135	132	135	142	141	142	156	155	155
<b>21</b>	115	70	89	136	135	136	143	141	142	155	154	154
<b>22</b>	70	52	58	136	134	136	143	122	139	154	153	153
<b>23</b>	53	52	52	138	136	137	131	110	126	154	152	153
<b>24</b>	53	52	53	139	137	138	239	110	127	153	149	151
<b>25</b>	56	52	54	139	138	139	127	106	120	152	149	151
<b>26</b>	63	55	59	139	138	139	141	107	128	153	151	152
<b>27</b>	76	63	69	139	138	139	146	139	142	153	152	152
<b>28</b>	96	76	85	140	135	139	142	137	140	154	152	153
<b>29</b>	112	96	106	140	134	135	150	137	148	154	152	153
<b>30</b>	122	112	118	138	116	135	150	150	150	153	151	152
<b>31</b>	129	122	125	---	---	---	153	150	150	151	150	150
<b>Max</b>	143	141	142	140	138	139	239	150	150	165	161	164
<b>Min</b>	53	52	52	127	116	125	127	106	120	151	138	139

## 11290000 Tuolumne River at Modesto, CA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

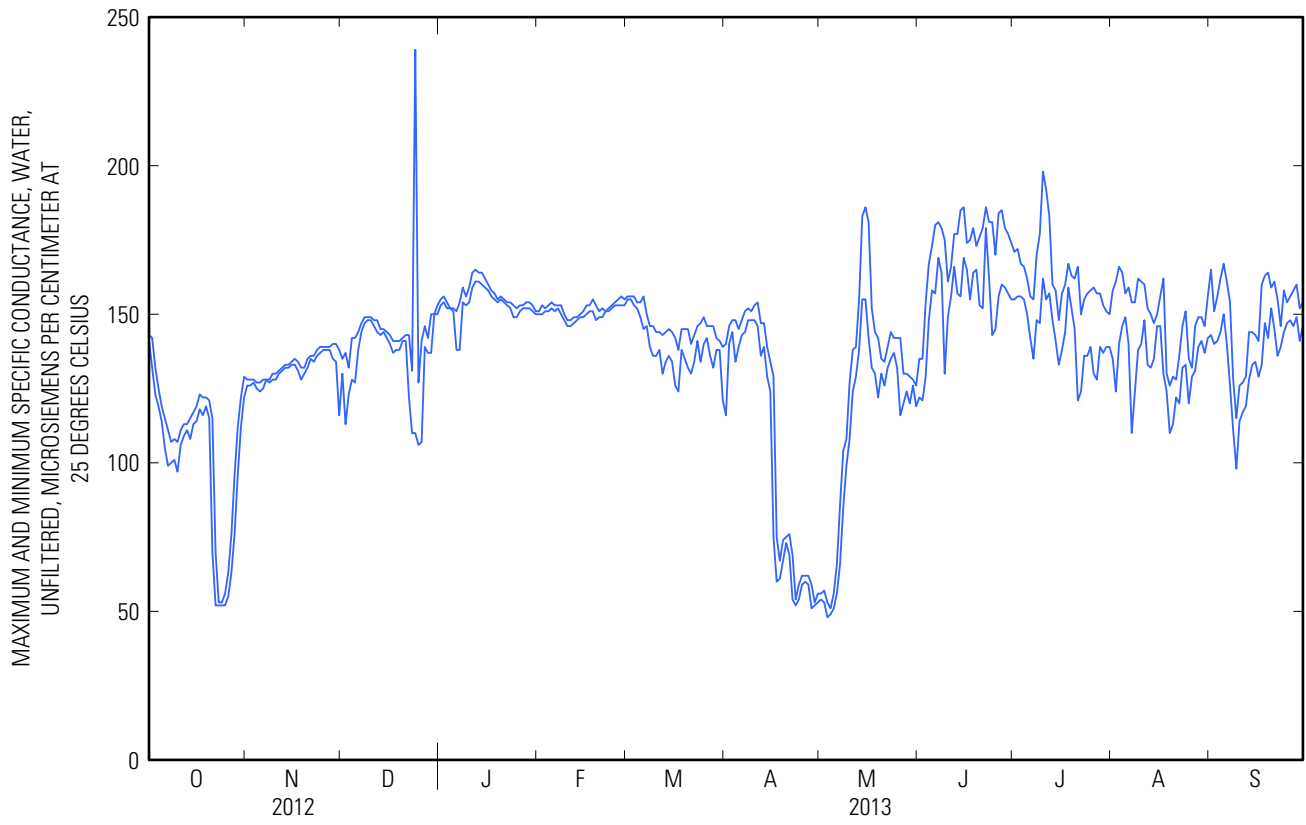
Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
<b>1</b>	151	150	150	156	155	156	140	116	123	56	54	55
<b>2</b>	153	150	151	156	155	156	146	140	144	57	53	56
<b>3</b>	152	151	152	156	153	155	148	144	145	53	48	49
<b>4</b>	153	151	152	154	152	153	148	134	142	51	49	49
<b>5</b>	154	152	152	154	149	154	145	139	141	56	51	52
<b>6</b>	153	151	152	156	145	150	148	143	145	66	56	63
<b>7</b>	153	152	153	150	146	148	151	144	147	86	66	73
<b>8</b>	153	150	152	146	139	144	152	148	150	104	85	95
<b>9</b>	150	148	149	146	136	142	151	148	148	108	99	104
<b>10</b>	148	146	147	144	136	141	153	148	150	127	108	120
<b>11</b>	148	146	147	144	138	140	154	146	150	138	124	132
<b>12</b>	149	147	148	143	130	139	147	136	143	139	129	133
<b>13</b>	149	148	149	144	134	140	147	139	145	155	138	143
<b>14</b>	150	149	149	145	136	142	139	129	132	183	155	158
<b>15</b>	151	149	150	144	134	137	134	124	127	186	155	166
<b>16</b>	153	150	152	142	126	137	129	75	95	181	142	167
<b>17</b>	153	151	153	138	124	130	75	60	62	152	132	141
<b>18</b>	155	151	152	145	138	141	67	61	64	144	130	138
<b>19</b>	153	148	152	145	135	141	74	67	70	142	122	131
<b>20</b>	151	149	150	145	132	138	75	73	74	135	130	134
<b>21</b>	152	149	151	140	130	138	76	69	75	134	126	131
<b>22</b>	151	151	151	143	134	138	69	54	61	139	132	135
<b>23</b>	152	151	151	146	141	143	54	52	53	144	135	138
<b>24</b>	153	152	152	147	134	142	59	54	56	142	137	140
<b>25</b>	154	153	153	149	140	145	62	59	61	142	132	138
<b>26</b>	155	153	154	146	142	143	62	60	61	142	116	127
<b>27</b>	156	153	155	146	136	142	62	59	61	130	120	127
<b>28</b>	155	153	154	146	132	137	59	51	53	130	124	127
<b>29</b>	---	---	---	142	138	140	53	52	52	129	120	124
<b>30</b>	---	---	---	141	138	140	56	53	54	128	126	127
<b>31</b>	---	---	---	139	121	127	---	---	---	126	119	123
<b>Max</b>	156	153	155	156	155	156	154	148	150	186	155	167
<b>Min</b>	148	146	147	138	121	127	53	51	52	51	48	49

## 11290000 Tuolumne River at Modesto, CA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

<b>Day</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>
	<b>June</b>			<b>July</b>			<b>August</b>			<b>September</b>		
<b>1</b>	135	122	126	171	155	161	158	135	149	165	143	152
<b>2</b>	135	121	127	172	156	166	161	124	138	151	140	149
<b>3</b>	154	129	139	167	156	161	166	140	153	156	141	150
<b>4</b>	167	148	153	166	155	159	164	146	158	162	144	152
<b>5</b>	173	158	168	162	150	157	157	149	152	167	150	163
<b>6</b>	180	157	164	156	142	147	159	140	151	161	140	147
<b>7</b>	181	169	177	155	135	147	154	110	146	154	126	137
<b>8</b>	179	164	169	170	148	164	154	124	144	128	111	119
<b>9</b>	175	130	146	177	147	163	162	138	145	115	98	111
<b>10</b>	161	149	157	198	162	172	161	140	154	126	114	123
<b>11</b>	166	156	161	192	155	168	160	148	150	127	117	123
<b>12</b>	177	166	170	183	157	162	152	133	141	129	119	126
<b>13</b>	177	157	169	160	148	156	150	132	140	144	128	133
<b>14</b>	185	156	176	158	141	146	147	135	142	144	133	139
<b>15</b>	186	169	179	148	133	140	150	146	148	143	134	138
<b>16</b>	174	165	170	157	138	146	156	146	150	141	129	135
<b>17</b>	175	155	165	160	144	150	162	130	153	160	133	145
<b>18</b>	179	164	171	167	159	163	130	124	127	163	147	159
<b>19</b>	173	165	171	163	152	158	126	110	119	164	142	149
<b>20</b>	176	153	173	162	145	154	129	113	119	159	152	154
<b>21</b>	179	152	159	166	121	150	128	122	125	161	145	153
<b>22</b>	186	179	182	150	124	143	136	120	124	155	136	148
<b>23</b>	181	162	175	155	136	148	146	132	139	146	139	145
<b>24</b>	181	143	162	157	136	143	151	133	138	158	144	150
<b>25</b>	170	145	159	158	139	147	135	120	125	154	147	151
<b>26</b>	184	156	167	159	130	147	132	129	131	156	148	153
<b>27</b>	185	160	177	157	128	148	146	131	136	158	146	151
<b>28</b>	179	159	170	157	139	145	149	139	144	160	149	155
<b>29</b>	177	157	168	153	137	145	149	141	144	152	141	148
<b>30</b>	174	155	162	151	139	141	146	137	141	154	146	149
<b>31</b>	---	---	---	150	139	145	156	142	149	---	---	---
<b>Max</b>	186	179	182	198	162	172	166	149	158	167	152	163
<b>Min</b>	135	121	126	148	121	140	126	110	119	115	98	111

11290000 Tuolumne River at Modesto, CA—Continued





## 11290000 Tuolumne River at Modesto, CA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
<b>1</b>	25.6	21.7	23.1	16.9	16.0	16.2	14.0	13.0	13.6	9.1	8.1	8.4
<b>2</b>	25.4	21.8	23.2	16.8	15.3	16.0	14.2	13.4	13.9	8.9	7.7	8.2
<b>3</b>	25.0	22.3	23.2	16.7	15.3	15.8	13.5	12.6	13.3	8.7	7.6	8.0
<b>4</b>	24.3	22.0	22.8	16.6	15.2	15.8	14.1	13.3	13.8	8.7	7.6	8.1
<b>5</b>	23.2	21.2	21.9	16.7	15.2	15.9	14.3	13.9	14.1	8.9	7.7	8.3
<b>6</b>	22.7	20.6	21.2	16.7	15.3	15.9	14.4	13.6	14.0	9.0	8.4	8.8
<b>7</b>	22.0	19.8	20.6	16.6	15.3	15.8	13.7	12.8	13.3	8.4	7.5	8.2
<b>8</b>	21.3	19.4	20.1	15.8	14.7	15.4	12.9	12.2	12.6	9.1	8.0	8.5
<b>9</b>	20.8	18.8	19.6	15.2	14.1	14.4	12.7	11.6	12.2	9.5	8.6	9.1
<b>10</b>	20.6	18.7	19.5	14.5	13.0	13.8	12.7	11.8	12.1	9.6	8.5	8.8
<b>11</b>	19.5	17.9	18.7	13.3	12.2	12.7	12.3	11.4	11.9	9.1	8.0	8.4
<b>12</b>	19.0	17.7	18.1	12.8	11.6	12.1	12.6	11.5	11.9	8.8	7.8	8.1
<b>13</b>	19.3	17.3	18.2	12.6	11.3	11.8	11.5	10.3	10.9	8.2	7.2	7.6
<b>14</b>	19.5	17.4	18.4	12.4	11.2	11.6	10.8	9.7	10.2	8.0	6.8	7.2
<b>15</b>	19.8	17.7	18.5	12.3	10.9	11.4	10.5	9.6	10.0	8.1	6.7	7.2
<b>16</b>	20.3	18.1	19.2	12.5	11.4	12.2	10.7	9.5	10.2	8.1	6.6	7.2
<b>17</b>	20.0	18.0	18.9	13.7	12.3	13.1	11.2	10.3	10.8	8.2	6.6	7.3
<b>18</b>	20.5	18.0	19.3	13.9	13.0	13.3	10.7	9.0	9.9	8.5	6.9	7.6
<b>19</b>	20.9	19.3	19.7	13.9	12.9	13.3	9.3	8.4	8.8	8.8	7.1	7.9
<b>20</b>	20.5	18.8	19.4	14.6	13.0	14.0	9.2	8.1	8.6	9.2	7.5	8.1
<b>21</b>	19.1	17.9	18.5	15.1	14.0	14.2	9.1	8.3	8.6	9.4	7.7	8.4
<b>22</b>	17.9	14.9	15.7	14.0	13.2	13.6	9.7	9.0	9.3	9.7	8.0	8.9
<b>23</b>	14.9	14.1	14.6	13.6	12.5	13.1	9.5	9.2	9.3	9.8	9.0	9.5
<b>24</b>	14.4	13.2	14.0	13.6	12.4	13.0	9.3	8.7	9.1	10.6	9.6	10.2
<b>25</b>	14.6	13.6	14.2	13.3	12.2	12.6	9.2	9.0	9.1	11.8	10.4	11.0
<b>26</b>	14.4	13.1	14.0	13.0	11.9	12.3	10.1	9.2	9.7	12.8	11.2	11.4
<b>27</b>	15.1	13.4	14.3	13.0	12.0	12.4	9.8	9.1	9.4	11.9	10.5	10.9
<b>28</b>	15.8	14.2	14.9	12.9	12.3	12.5	9.2	9.0	9.1	11.7	10.1	10.8
<b>29</b>	16.4	14.8	15.6	12.9	12.3	12.7	10.0	9.2	9.4	12.2	10.5	11.2
<b>30</b>	16.8	15.2	16.0	13.6	12.9	13.2	9.4	8.6	9.0	12.3	10.4	11.1
<b>31</b>	16.8	15.8	16.2	---	---	---	9.2	8.3	8.6	12.2	10.4	11.1
<b>Max</b>	25.6	22.3	23.2	16.9	16.0	16.2	14.4	13.9	14.1	12.8	11.2	11.4
<b>Min</b>	14.4	13.1	14.0	12.3	10.9	11.4	9.1	8.1	8.6	8.0	6.6	7.2

## 11290000 Tuolumne River at Modesto, CA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

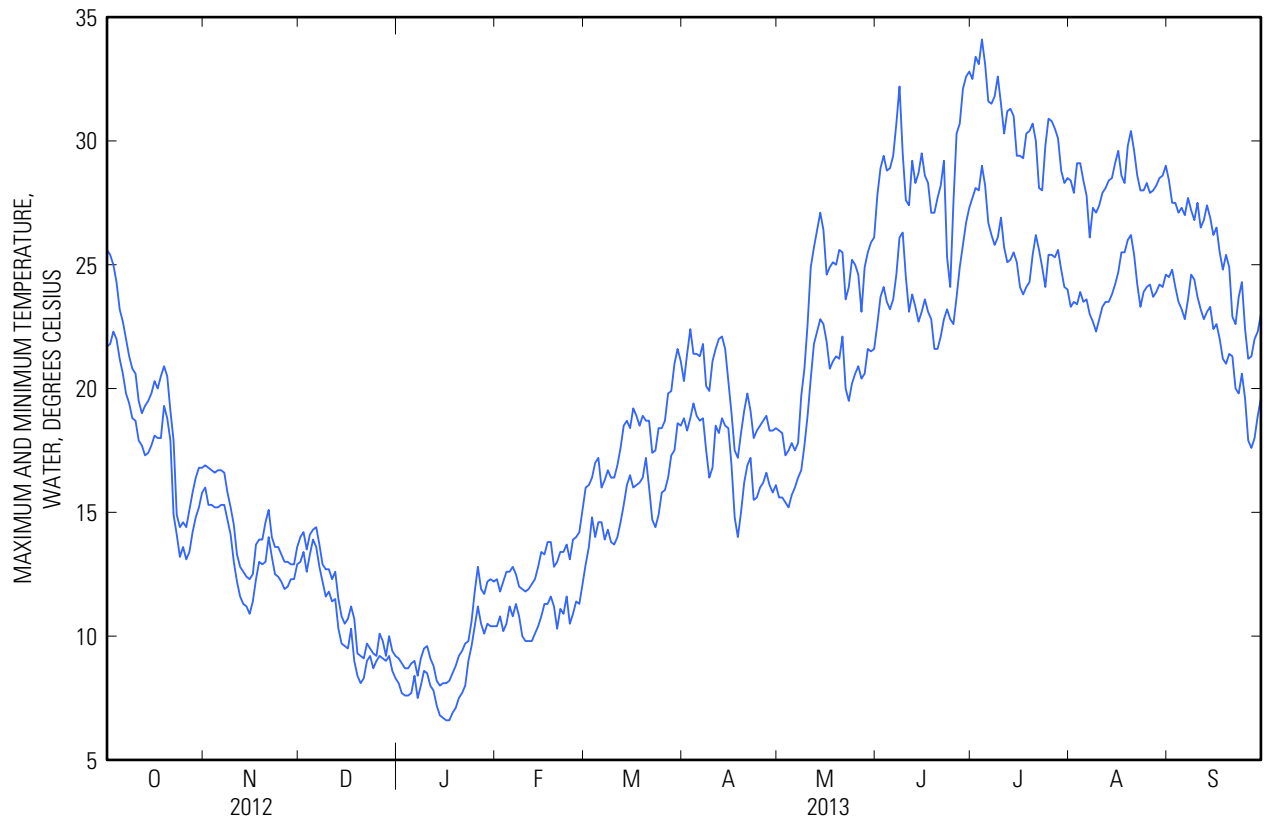
Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	12.3	10.4	11.2	16.0	12.9	14.2	20.3	18.8	19.5	18.3	15.6	17.2
2	11.8	10.8	11.1	16.1	13.6	15.0	21.4	18.3	19.5	18.2	15.6	17.2
3	12.2	10.2	11.0	16.4	14.8	15.2	22.4	18.8	20.4	17.3	15.4	16.5
4	12.6	10.5	11.5	17.0	14.0	15.3	21.4	19.4	20.3	17.5	15.2	16.3
5	12.6	11.2	11.6	17.2	14.6	15.3	21.4	18.9	19.8	17.8	15.7	16.8
6	12.8	10.8	11.7	16.0	14.6	15.1	21.3	18.7	19.7	17.5	16.0	17.1
7	12.5	11.3	11.7	16.3	13.9	15.0	21.8	18.8	19.6	17.8	16.4	17.1
8	12.0	10.8	11.2	16.7	14.3	15.0	20.1	17.5	18.6	19.7	16.7	17.5
9	11.9	10.0	10.7	16.4	13.8	14.8	19.9	16.4	17.8	20.8	17.7	19.0
10	11.8	9.8	10.5	16.4	13.7	14.9	21.1	16.8	18.9	22.6	18.9	20.4
11	11.9	9.8	10.6	16.9	14.0	15.2	21.6	18.5	19.4	24.9	20.4	22.6
12	12.1	9.8	10.8	17.6	14.6	15.9	22.0	18.2	19.9	25.7	21.8	23.6
13	12.3	10.1	11.0	18.5	15.3	16.6	22.1	18.8	20.0	26.4	22.3	24.0
14	12.8	10.4	11.4	18.7	16.1	17.3	21.6	18.5	19.6	27.1	22.8	24.3
15	13.4	10.8	11.9	18.4	16.5	17.3	20.3	18.4	19.1	26.4	22.6	23.9
16	13.3	11.3	12.1	19.2	16.0	17.4	19.0	16.9	18.1	24.6	21.9	22.8
17	13.8	11.3	12.3	18.9	16.1	17.3	17.5	14.8	16.0	24.9	20.8	22.3
18	13.8	11.6	12.6	18.5	16.2	17.3	17.2	14.0	15.6	25.1	21.1	22.6
19	12.8	11.2	12.1	18.9	16.4	17.5	18.2	15.0	16.4	25.0	21.3	22.5
20	13.0	10.3	11.7	18.7	17.2	17.4	19.1	16.2	17.7	25.6	21.2	23.3
21	13.4	11.1	11.8	18.7	16.0	17.0	19.8	16.9	18.4	25.5	22.1	23.0
22	13.4	10.9	12.0	17.4	14.7	16.0	19.1	17.2	18.3	23.6	20.0	21.4
23	13.7	11.6	12.0	17.5	14.4	15.6	18.0	15.5	17.3	24.1	19.5	21.2
24	13.1	10.5	11.6	18.4	14.9	16.5	18.3	15.6	17.2	25.2	20.2	22.0
25	13.9	10.9	12.2	18.4	15.8	16.8	18.5	16.0	17.5	25.0	20.6	22.0
26	14.0	11.4	12.2	18.7	15.9	16.7	18.7	16.2	17.7	24.6	20.9	21.9
27	14.2	11.3	12.6	19.8	16.4	17.7	18.9	16.6	18.1	23.1	20.4	21.4
28	15.1	12.1	13.6	19.9	17.3	18.4	18.3	16.1	17.5	24.9	20.6	22.4
29	---	---	---	21.0	17.5	18.9	18.3	15.8	17.2	25.5	21.6	22.8
30	---	---	---	21.6	18.6	19.6	18.4	16.1	17.4	25.9	21.5	22.9
31	---	---	---	21.1	18.5	19.5	---	---	---	26.1	21.6	23.5
<b>Max</b>	15.1	12.1	13.6	21.6	18.6	19.6	22.4	19.4	20.4	27.1	22.8	24.3
<b>Min</b>	11.8	9.8	10.5	16.0	12.9	14.2	17.2	14.0	15.6	17.3	15.2	16.3

## 11290000 Tuolumne River at Modesto, CA—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
<b>1</b>	27.8	22.6	24.9	32.5	27.7	29.5	28.4	23.3	25.1	28.4	24.5	26.0
<b>2</b>	28.9	23.7	25.8	33.4	28.1	30.3	27.9	23.5	25.1	27.5	24.8	25.7
<b>3</b>	29.4	24.1	25.8	33.1	28.0	30.2	29.1	23.4	25.5	27.5	24.1	25.1
<b>4</b>	28.8	23.5	25.5	34.1	29.0	30.7	29.1	23.9	25.8	27.1	23.5	24.5
<b>5</b>	28.9	23.2	25.3	33.1	28.2	29.8	28.4	23.5	25.5	27.3	23.2	24.4
<b>6</b>	29.4	23.6	25.7	31.6	26.7	28.6	27.8	23.6	25.2	27.0	22.8	24.4
<b>7</b>	30.7	24.6	26.9	31.5	26.2	28.2	26.1	23.0	24.6	27.7	23.6	25.3
<b>8</b>	32.2	26.1	28.5	31.8	25.8	28.1	27.3	22.7	24.4	27.2	24.6	25.6
<b>9</b>	29.5	26.3	27.6	32.6	26.1	28.2	27.1	22.3	24.3	26.8	24.4	25.3
<b>10</b>	27.6	24.5	25.6	31.5	26.9	28.6	27.4	22.8	24.6	27.5	23.7	24.9
<b>11</b>	27.4	23.1	25.2	30.3	25.7	27.6	27.9	23.3	24.9	26.5	23.2	24.4
<b>12</b>	29.2	23.8	25.4	31.2	25.1	27.2	28.1	23.5	25.4	26.8	22.8	24.1
<b>13</b>	28.3	23.3	25.1	31.3	25.2	27.2	28.4	23.5	25.4	27.4	23.1	24.5
<b>14</b>	28.7	22.7	24.8	31.0	25.5	27.5	28.5	23.8	25.7	26.9	23.3	24.6
<b>15</b>	29.5	23.1	25.3	29.4	25.1	26.8	29.1	24.2	25.9	26.2	22.4	23.9
<b>16</b>	28.6	23.6	25.1	29.4	24.1	26.0	29.6	24.7	26.5	26.5	22.6	23.7
<b>17</b>	28.3	23.1	24.6	29.3	23.8	25.6	28.6	25.5	26.5	25.5	22.0	23.3
<b>18</b>	27.1	22.8	24.0	30.3	24.1	26.2	28.3	25.5	26.7	24.8	21.2	22.7
<b>19</b>	27.1	21.6	23.3	30.4	24.3	26.4	29.8	26.0	27.1	25.4	21.0	22.7
<b>20</b>	27.7	21.6	23.7	30.7	25.4	27.1	30.4	26.2	27.5	24.9	21.4	22.8
<b>21</b>	28.2	22.1	24.3	30.0	26.2	27.5	29.6	25.4	26.8	22.9	21.3	21.9
<b>22</b>	29.2	22.8	25.0	28.1	25.6	26.8	28.6	24.2	25.8	22.6	20.0	21.0
<b>23</b>	25.3	23.2	24.1	28.0	24.9	26.2	28.0	23.3	25.2	23.7	19.8	21.4
<b>24</b>	24.1	22.8	23.2	29.8	24.1	25.9	28.0	23.9	25.3	24.3	20.6	21.5
<b>25</b>	27.5	22.6	24.0	30.9	25.4	27.3	28.3	24.1	25.7	22.4	19.6	20.5
<b>26</b>	30.3	23.7	26.4	30.8	25.4	27.4	27.9	24.2	25.6	21.2	17.9	19.2
<b>27</b>	30.7	24.9	27.3	30.5	25.3	27.5	28.0	23.7	25.2	21.3	17.6	19.0
<b>28</b>	32.1	25.8	28.2	30.1	25.6	27.6	28.2	23.9	25.2	22.0	18.0	19.6
<b>29</b>	32.6	26.7	29.1	28.8	24.8	26.8	28.5	24.2	25.6	22.3	18.9	20.0
<b>30</b>	32.8	27.3	29.5	28.3	24.1	25.9	28.6	24.1	25.7	23.0	19.6	21.0
<b>31</b>	---	---	---	28.5	24.0	25.6	29.0	24.6	26.1	---	---	---
<b>Max</b>	32.8	27.3	29.5	34.1	29.0	30.7	30.4	26.2	27.5	28.4	24.8	26.0
<b>Min</b>	24.1	21.6	23.2	28.0	23.8	25.6	26.1	22.3	24.3	21.2	17.6	19.0

11290000 Tuolumne River at Modesto, CA—Continued



## 11290000 Tuolumne River at Modesto, CA—Continued

**CROSS SECTION ANALYSES**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
 [ft, feet, °C, degrees Celsius; μS/cm, microsiemens per centimeter]

Sample date-time	Specific conduc- tance, water, unfiltered, μS/cm at 25°C (00095)	Tempera- ture, water, °C (00010)	Depth to bottom at sample location, ft (81903)	Sampling depth, ft (00003)	Stream width, ft (00004)	Location in cross section, distance from left bank looking down- stream, ft (00009)
07-24-2013 1050	147	25.7	1.08	0.65	86.0	4.30
07-24-2013 1051	145	25.6	1.42	.85	86.0	12.9
07-24-2013 1052	144	25.5	2.00	1.20	86.0	21.5
07-24-2013 1053	142	25.5	2.82	2.25	86.0	30.1
07-24-2013 1054	142	25.5	2.82	.56	86.0	30.1
07-24-2013 1056	141	25.4	2.64	2.11	86.0	38.7
07-24-2013 1057	138	25.5	2.64	.53	86.0	38.7
07-24-2013 1100	119	23.5	2.42	1.45	86.0	47.3
07-24-2013 1102	108	24.0	2.00	1.20	86.0	55.9
07-24-2013 1105	96	23.2	1.52	.91	86.0	64.5
07-24-2013 1107	87	23.3	.73	.44	86.0	73.1
07-24-2013 1110	85	23.4	.62	.37	86.0	81.7
09-24-2013 1519	155	24.3	.97	.58	80.0	4.00
09-24-2013 1520	155	24.4	1.95	1.17	80.0	12.0
09-24-2013 1521	154	24.4	2.11	1.27	80.0	20.0
09-24-2013 1522	153	24.5	2.22	1.33	80.0	28.0
09-24-2013 1523	152	24.5	2.48	1.49	80.0	36.0
09-24-2013 1524	138	23.9	2.18	1.31	80.0	44.0
09-24-2013 1525	100	21.4	2.12	1.27	80.0	52.0
09-24-2013 1526	99	20.9	1.63	.98	80.0	60.0
09-24-2013 1527	99	21.0	.95	.57	80.0	68.0
09-24-2013 1528	100	21.3	.40	.24	80.0	76.0

Note: Instantaneous discharge at the mean time of cross-sectional measurements: July 24, 186 ft<sup>3</sup>/s; Sept. 24, 161 ft<sup>3</sup>/s.