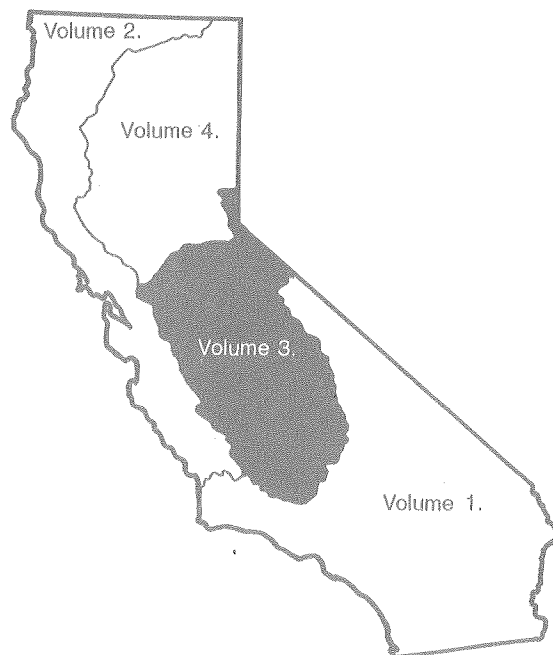




# Water Resources Data California Water Year 1994

Volume 3. Southern Central Valley Basins and  
The Great Basin from Walker River  
to Truckee River



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-94-3  
Prepared in cooperation with the California Department of  
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## CALENDAR FOR WATER YEAR 1994

1993

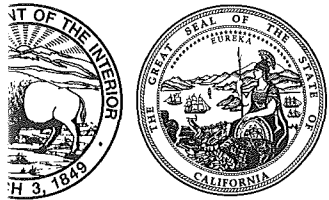
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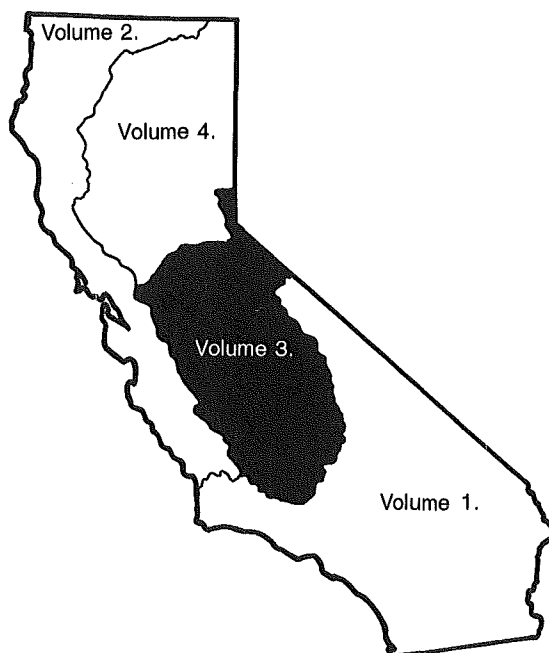
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# Water Resources Data California Water Year 1994

Volume 3. Southern Central Valley Basins and  
The Great Basin from Walker River  
to Truckee River

by S.W. Anderson, P.D. Hayes, and G.L. Rockwell



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-94-3  
Prepared in cooperation with the California Department of  
Water Resources and with other agencies

**U.S. DEPARTMENT OF THE INTERIOR**

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**U.S. GEOLOGICAL SURVEY**

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Sacramento, CA 95825



## PREFACE

This volume of the annual hydrologic data report of California is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by Federal, State, and local agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for California are contained in four volumes:

- Volume 1. Southern Great Basin from Mexican Border to Mono Lake Basin and Pacific Slope Basins from the Tijuana River to Santa Maria River
- Volume 2. Pacific Slope Basins from Arroyo Grande to Oregon State Line except Central Valley
- Volume 3. Southern Central Valley Basins and The Great Basin from Walker River to Truckee River
- Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, the individuals contributing significantly to the collection, processing, and tabulation of the data are given on page V.

This report was prepared in cooperation with the California Department of Water Resources and with other agencies, under the general supervision of Michael V. Shulters, District Chief, California.

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SURFACE-WATER AND WATER-QUALITY STATIONS  
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

IX

[Letters after station name designate type of data: (d), discharge;  
(l), elevation, gage heights, or contents; (c), chemical; (b), biological; (p), precipitation;  
(t), water temperature; and (s), sediment]

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## DISCONTINUED GAGING STATIONS

The following continuous record streamflow stations in California have been discontinued or converted to partial record stations. Daily records were collected and are stored in WATSTORE for the period of record shown for each station.

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Period of record
10295200	West Walker River at Leavitt Meadows, near Coleville	73.4	1945-64
10303000	Silver King Creek near Coleville	31.8	1947-51
10303500	East Fork Carson River at Silver King Valley, near Markleeville	--	1947-51
10336600	Upper Truckee River near Meyers	33.1	1961-86
10336625	Fallen Leaf Lake near Camp Richardson	16.7	1968-92
10336626	Taylor Creek near Camp Richardson	16.7	1968-92
10336759	Edgewood Creek near Stateline, NV	3.20	1983-87
10342000	Little Truckee River near Hobart Mills	37.1	1947-72
10343200	Little Truckee River at Highway 89 near Truckee	59.0	1993-94
11185000	Grayson Creek near Hookston	1.96	1955-60
11185100	Grayson Creek near Pacheco	4.35	1954-58
11185300	Golden Trout Creek near Cartago	23.6	1957-67, 1969
11185350	Kern River near Quaking Aspen Camp	530	1961-71, 1973-74
11185400	Little Kern River near Quaking Aspen Camp	132	1957-69
11185600	Packsaddle Canyon Creek near Fairview	4.05	1960-66
11186340	Salmon Creek Tributary B near Fairview	.46	1963-69
11186360	Salmon Creek Tributary C near Fairview	.30	1963-69
11186380	Salmon Creek Tributary E near Fairview	.23	1963-69
11186500	Salmon Creek near Kernville	25.8	1922-23
11187000	Kern River at Kernville	1,009	1905-12, 1953-93
11188000	Kern River at Isabella	1,068	1911, 1926-35
11188200	South Fork Kern River near Olancho	146	1956-67, 1969
11189700	Kelso Creek near Weldon	101	1958-66
11190000	South Fork Kern River at Isabella	982	1929-52
11191000	Kern River below Isabella Dam	2,074	1945-90
11193000	Kern River below Kern Canyon Powerhouse, near Bakersfield	2,307	1954-64
11194000	Kern River near Bakersfield	2,407	1894-1976
11194200	Wagon Wheel Creek near Reward	1.38	1966-71
11195500	San Emigdio Creek at San Emigdio Ranchhouse	48.8	1959-81
11195600	Pastoria Creek near Lebec	27.5	1965-71
11196000	Tejon Creek at Tejon Ranchhouse	48.7	1895-96
11196400	Caliente Creek above Tehachapi Creek, near Caliente	165	1962-83
11196420	Tehachapi Creek near Tehachapi	53.2	1963-85
11197250	Avenal Creek near Avenal	57.1	1962-86
11197800	Poso Creek near Oildale	230	1959-85
11199000	White River near Ornia Hot Springs	14.0	1911-13
11200000	Deer Creek at California Hot Springs	16.8	1911-15, 1917-34
11201200	Deer Creek Diversion near Terra Bella	--	1971-87
11201500	Pacific Gas & Electric Co. Conduit near Springville	--	1940-54, 1966-67, 1969-71, 1976-83
11201800	North Fork of Middle Fork Tule River below Hossack Creek, near Springville	33.8	1909-13
11202750	Middle Fork Tule River above Springville	92.4	1979-88
11203000	Bear Creek near Springville	13.5	1911-16
11203100	North Fork Tule River at Springville	97.6	1957-67
11203190	Tule River Diversion Ditch near Springville	--	1968-88
11203200	Tule River near Springville	247	1958-68
11203220	Tule River at Highway 190, near Springville	247	1968-90
11203500	Tule River near Porterville	253	1902-60
11204000	South Fork Tule River near Porterville	80.3	1911-23, 1925, 1928-32
11204500	South Fork Tule River near Success	109	1930-54, 1956-90
11204680	Pioneer Ditch below Success Dam	--	1959-90
11204900	Tule River below Success Dam	393	1953-90
11205000	Tule River at Worth Bridge, near Porterville	395	1954-60
11208500	Middle Fork Kaweah River Tributary near Hammond	1.90	1967-70, 1972-73
11208610	Monarch Creek near Hammond	1.89	1968-73
11208620	East Fork Kaweah River below Mosquito Creek, near Hammond	16.0	1968-73
11208625	East Fork Kaweah River at Sequoia National Park boundary, near Hammond	23.7	1968-71
11209500	North Fork Kaweah River near Three Rivers	129	1911-60, 1980-81
11209900	Kaweah River at Three Rivers	418	1959-90
11210000	South Fork Kaweah River near Three Rivers	66.5	1912-24
11210100	South Fork Kaweah River at Three Rivers	86.7	1959-90
11210500	Kaweah River near Three Rivers	519	1904-18, 1921-61
11210850	Lemoncove Ditch below Terminus Dam	--	1962-90
11210930	Foothill Ditch below Terminus Dam	--	1962-90
11210950	Kaweah River below Terminus Dam	561	1962-90
11211300	Dry Creek near Lemoncove	75.6	1960-94
11211500	Kaweah River at McKay Point, near Lemoncove	647	1919-21
11211785	Cottonwood Creek above Collier Creek, near Elderwood	52.3	1985-1994

## DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Period of record
11211790	Cottonwood Creek near Elderwood	60.4	1971-85
11212500	South Fork Kings River near Cedar Grove	408	1951-57
11213000	Kings River near Hume	835	1922-36, 1952-58
11213500	Kings River above North Fork, near Trimmer	952	1927-28, 1932-82
11214000	North Fork Kings River below Meadowbrook	37.7	1922-35, 1957-81
11214200	Fleming Creek near Blackcap Mountain	15.0	1957-65
11214400	Post Corral Creek near Blackcap Mountain	27.9	1957-65
11214500	Helms Creek at Sand Meadows	34.7	1923-31, 1956-58
11215500	Rancheria Creek near Smith Meadows	21.3	1925-31
11215800	Teakettle Creek Tributary No. 3 near Dinkey Creek	.86	1958-69, 1977-83
11215810	Teakettle Creek Tributary No. 7 near Patterson Mountain	.11	1958-63
11215820	Teakettle Creek Tributary No. 2 near Dinkey Creek	.85	1958-69, 1977-83
11215830	Teakettle Creek Tributary No. 2a near Dinkey Creek	.27	1958-69, 1977-83
11215840	Teakettle Creek Tributary No. 1 near Dinkey Creek	.77	1958-69, 1977-83
11216000	North Fork Kings River below Rancheria Creek	229	1927-50
11216800	Rock Creek at Dinkey Creek	7.60	1961-70
11217000	Dinkey Creek at Dinkey Meadow, near Shaver Lake	50.7	1922-35, 1977-87
11217500	Deer Creek below east Fork, near Shaver Lake	19.0	1924-31
11218000	Dinkey Creek at mouth, near Trimmer	132	1920-37
11218500	Kings River below North Fork, near Trimmer	1,342	1951-93
11219000	Big Creek near Tollhouse	19.8	1911-13
11220000	Big Creek above Pine Flat Lake, near Trimmer	70.0	1954-73
11220500	Sycamore Creek above Pine Flat Lake, near Trimmer	56.1	1953-73
11221500	Kings River below Pine Flat Dam	1,545	1954-90
11221700	Mill Creek near Piedra	127	1958-94
11222000	Kings River at Piedra	1,693	1896-1959
11225000	Los Gatos Creek near Coalinga	105	1932-41
11226000	North Fork San Joaquin River below Iron Creek	35.5	1922-28, 1959-69
11226500	San Joaquin River at Miller Crossing	249	1921-28, 1951-91
11227000	West Fork Granite Creek near Timber Knob	26.4	1922-25
11227500	Middle Fork Granite Creek near Cattle Mountain	2.25	1922-23
11228000	East Fork Granite Creek near Cattle Mountain	14.6	1922-25
11228500	Granite Creek near Cattle Mountain	47.8	1922-28, 1966-86
11230000	South Fork San Joaquin River near Florence Lake	171	1922-81, 1984
11230650	Bolsillo Creek above diversion dam, near Big Creek	1.3	1986
11232000	South Fork San Joaquin River near Hoffman Meadow	424	1922-28
11232500	Jackass Creek near Bass Lake	12.1	1922-28, 1961-68
11234500	Chiquito Creek near Bass Lake	60.1	1922-28, 1956-70
11235000	San Joaquin River above Big Creek	1,050	1913-15, 1922-62
11236080	Huntington-Shaver Conduit at Huntington Lake	--	1975-83
11238000	Pitman Creek at Big Creek	23.7	1910-16, 1922-27
11239000	Huntington-Shaver Conduit near Shaver Lake	--	1929-85
11242350	Soquel diversion near Sugar Pine	--	1970-77
11245000	South Fork Willow Creek near North Fork	39.8	1910-17
11245500	Whiskey Creek near North Fork	11.6	1911-16
11246000	Cascadel Creek near North Fork	3.31	1910-12
11247000	San Joaquin River below Kerckhoff Powerhouse, near Prather	1,480	1910-14, 1937, 1943-82, 1988-89
11247200	Big Sandy Creek Tributary near Tollhouse	.46	1969-71
11247500	Big Sandy Creek near Auberry	27.3	1947-51
11248000	Fine Gold Creek near Friant	92.7	1937-58
11250500	Cottonwood Creek near Friant	35.6	1942-51
11251500	Little Dry Creek near Friant	57.9	1942-56
11251600	Little Dry Creek at mouth, near Friant	77.4	1957-61
11252500	San Joaquin River at Herndon	1,802	1895-1901
11253000	San Joaquin River near Biola	1,811	1953-61
11254000	San Joaquin River near Mendota	3,940	1940-54
11255500	Panoche Creek below Silver Creek, near Panoche	293	1950-53, 1959-70
11255550	Little Panoche Creek Tributary No. 1, near Panoche	.33	1959-64
11256000	San Joaquin River near Dos Palos	4,669	1941-54
11257100	Miami Creek near Oakhurst	10.6	1961-80
11257500	Fresno River near Knowles	133	1911-13, 1915-90
11257700	Picayune Creek near Coarsegold	8.17	1965-68
11258000	Fresno River below Hidden Dam, near Daulton	237	1942-90
11258800	East Fork Chowchilla River near Ahwahnee	57.8	1958-67
11258900	West Fork Chowchilla River near Mariposa	33.6	1958-80
11258920	North Fork Chowchilla River near Nippinawassee	13.6	1959-67
11258960	Chowchilla River above Willow Creek, near Raymond	173	1980-90
11258980	Chowchilla River near Raymond	201	1972-80
11259000	Chowchilla River below Buchanan Dam, near Raymond	236	1922-23, 1931-72, 1976-90
11259300	Chowchilla River below Raynor Creek, near Raymond	254	1973-75
11259900	Chamerlain Slough near El Nido	--	1940-49
11260000	San Joaquin River above Sand Slough, near El Nido	6,447	1940-49
11260000	San Joaquin River near El Nido	6,443	1940-49

## DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Period of record
11260001	San Joaquin River plus Chamberlain Slough, near El Nido	6,450	1940-49
11260200	Bear Creek near Catheys Valley	24.9	1958-69
11260225	Burns Creek at Hornitos	26.7	1965-69
11260480	Mariposa Creek near Catheys Valley	65.7	1959-80
11261000	Salt Slough near Los Banos	--	1941-68
11261100	Salt Slough at Highway 165, near Stevinson	--	1986-94
11261500	San Joaquin River at Fremont Ford Bridge	7,615	1937-70, 1986-89
11262800	Los Banos Creek near Los Banos	159	1959-66
11263000	San Luis Creek near Los Banos	84.6	1950-63
11265000	Tenaya Creek near Yosemite	46.9	1912-58
11265500	Merced River at Yosemite	236	1912-17
11266000	Yosemite Creek at Yosemite	42.7	1912-16, 1918
11267300	South Fork Merced River at Wawona	100	1959-68
11267500	South Fork Merced River near Wawona	132	1912, 1914-15, 1918-21
11268000	South Fork Merced River near El Portal	241	1951-75
11268200	Merced River near Briceburg	691	1966-74
11268500	Merced River at Bagby	911	1923-30, 1932-66
11269300	Maxwell Creek at Coulterville	17	1960-74, 1976-80
11270000	Merced River at Exchequer	1,037	1901-14, 1916-64
11270800	Northside Canal at Merced Falls	--	1987-94
11271320	Dry Creek near Snelling	67.6	1966-92
11271500	Merced River near Livingston	1,259	1922-24, 1926-44
11273000	Merced River Slough near Newman	1,276	1942-72
11274600	Del Puerto Creek Tributary No. 1 near Patterson	.71	1964-69
11274610	Del Puerto Creek Tributary No. 2 near Patterson	.024	1959-63
11274710	Maclure Creek below Maclure Glacier, near Tuolumne Meadows	.37	1967-72
11274800	Tuolumne River at Hetch Hetchy Cabin, near Sequoia	404	1911-16
11275000	Falls Creek near Hetch Hetchy	46	1916-83
11277000	Cherry Creek near Hetch Hetchy	111	1910-55
11278500	Jawbone Creek near Tuolumne	19.1	1911
11279500	South Fork Tuolumne River at Italian Flat, near Sequoia	64.9	1925-30, 1932-33
11280000	South Fork Tuolumne River near Sequoia	68.3	1914-17
11281500	Middle Tuolumne River near Mather	52.4	1925-29, 1932-33
11282500	South Fork Tuolumne River near Buck Meadows	164	1912, 1914, 1917-21
11283000	Tuolumne River near Buck Meadows	924	1908, 1911-36
11283100	Lily Creek near Pinecrest	11.9	1964-74
11283200	Bell Creek near Pinecrest	9.11	1964-79
11283250	Clavey River near Long Barn	48.9	1987-94
11283350	Reed Creek near Long Barn	27.2	1987-94
11283500	Clavey River near Buck Meadows	144	1960-84, 1987-94
11284500	Big Creek near Groveland	25	1932-33, 1960-74
11284700	North Fork Tuolumne River near Long Barn	23.1	1962-86
11285000	North Fork Tuolumne River above Dyer Creek, near Tuolumne	69.2	1959-66
11286500	Woods Creek near Jacksonville	97.2	1926-68
11288000	Tuolumne River above La Grange Dam, near La Grange	1,532	1896-1970
11288500	Tuolumne River at La Grange	1,539	1896-1911
11291500	Relief Creek near Baker Station	24.4	1911-18
11292500	Clark Fork Stanislaus River near Dardanelle	67.5	1951-94
11292680	Cascade Creek near Pinecrest	4.97	1963-65
11293000	Middle Fork Stanislaus River at Sand Bar Flat, near Avery	325	1906-66
11293500	North Fork Stanislaus River below Silver Creek	27.8	1953-88
11293700	Hobart Creek at North Fork Stanislaus River Diversion Tunnel Outlet, near New Spicer Meadow Dam	1.13	1989-94
11294300	North Fork Stanislaus River below Ganns Dam Site, near Big Meadow	111	1961-67
11295000	Utica Canal near Avery	--	1970, 1976-89
11295400	Stanislaus River near Hathaway Pines	629	1967-94
11299500	Stanislaus River below Melones Powerhouse, near Sonora	905	1931-67
11300000	Stanislaus River near Knights Ferry	980	1916-33
11300600	South San Joaquin Main Canal below diversion point, near Knights Ferry	--	1983-89
11300700	South San Joaquin Main Canal below Woodward Reservoir, near Oakdale	--	1982-89
11300800	North Main Canal below diversion point, near Knights Ferry	--	1983-89
11304000	Corral Hollow Creek near Tracy	61.6	1959-66
11305000	San Domingo Creek near San Andreas	26.2	1950-62
11305500	San Antonio Creek near San Andreas	48.0	1950-59
11306000	South Fork Calaveras River near San Andreas	118	1950-79
11306500	Calaveritas Creek near San Andreas	53	1950-66
11307000	Esperanza Creek near Mokelumne Hill	16.6	1951-59
11307500	Jesus Maria Creek near Mokelumne Hill	34.6	1950-59
11308000	North Fork Calaveras River near San Andreas	85.2	1950-79
11308500	Murray Creek near San Andreas	23.6	1950-59
11308900	Calaveras River below New Hogan Dam, near Valley Springs	363	1961-90
11309000	Cosgrove Creek near Valley Springs	21.6	1930-69
11309500	Calaveras River at Jenny Lind	393	1907-66

## DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Period of record
11310500	Calaveras River near Stockton	--	1926, 1944-50
11311000	Stockton Diverting Canal at Stockton	--	1944-53
11311500	Bear Creek near Clements	42.2	1927
11312000	Bear Creek near Lockeford	47.4	1931-85
11312500	Bear Creek at Harmony School, near Lockeford	51.1	1927-31
11315500	Bear River at Pardoe Camp	33	1928-51
11316000	Bear River near Salt Springs Dam	48	1952-87
11316500	North Fork Mokelumne River near West Point	273	1924-32
11317500	South Fork Mokelumne River near Railroad Flat	38.7	1912-34
11318000	Licking Fork Mokelumne River near Railroad Flat	6.32	1912-13, 1915-16
11321000	Mokelumne River at Lancha Plana	587	1926-63
11321500	Camanche Creek near Camanche	5.19	1933-34
11322000	Rabbit Creek near Camanche	8.55	1932-34
11325500	Mokelumne River at Woodbridge	661	1924-94
11326300	Dry Creek above Sutter Creek, near Ione	70.9	1960-70
11326500	Sutter Creek near Volcano	29.8	1924-27
11327000	Sutter Creek near Sutter Creek	48.1	1936-41, 1961-80
11327500	Sutter Creek at Sutter Creek	50.7	1922-36
11328000	Dry Creek near Ione	266	1912, 1926-32
11329000	Goose Creek near Elliott	8.26	1928-33
11329500	Dry Creek near Galt	324	1927-33, 1945-87
11330000	North Fork Cosumnes River at Cosumnes Mine	38.7	1949-53
11331000	Camp Creek near Sly Park	8.59	1924
11331500	Camp Creek near Camino	32.4	1949-56
11332500	Sly Park Creek near Pollock Pines	18.2	1947-55
11333500	North Fork Cosumnes River near El Dorado	205	1884, 1912-41, 1949-83, 1985-87
11334200	Middle Fork Cosumnes River near Somerset	107	1958-71
11334300	South Fork Cosumnes River near River Pines	64.3	1958-80
11334500	Cosumnes River near Plymouth	436	1952-60
11335700	Deer Creek near Sloughhouse	46	1961-66, 1968-77
11336000	Cosumnes River at Mcconnell	724	1942-82
11336500	Hadselville Creek at Clay	18.1	1931
11336580	Morrison Creek near Sacramento	53.4	1959-87
11337500	Marsh Creek near Byron	42.6	1953-83

## DISCONTINUED LAKES AND RESERVOIRS

The following continuous-record lake stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Period of record
10336625	Fallen Leaf Lake near Camp Richardson	16.7	1968-92
10339380	Martis Creek Lake near Truckee	39.6	1972-80
11190500	Isabella Lake near Lake Isabella	2,074	1954-90
11197000	Tulare Lake in Kings County	--	1969-82
11204700	Success Lake near Success	391	1962-90
11210900	Lake Kaweah near Lemoncove	560	1962-90
11221000	Pine Flat Lake near Piedra	1,545	1952-90
11257950	Hensley Lake near Daulton	236	1976-90
11258990	H.V. Eastman Lake near Raymond	235	1976-90
11308700	New Hogan Lake near Valley Springs	362	1964-90
11320000	Pardee Reservoir near Valley Springs	578	1962-93
11322300	Camanche Reservoir near Clements	621	1964-93

## DISCONTINUED WATER-QUALITY STATIONS

The following continuous water-quality stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
10336593	Grass Lake Creek near Meyers	6.99	T,S	1972-74
10336610	Upper Truckee River at South Lake Tahoe	54.9	C,T,S	1972-74, 1978, 1980-92
10336630	Eagle Creek near Camp Richardson	6.38	T,S	1972-74
10336640	Meeks Creek at Meeks Bay	8.08	T,S	1971-74
10336645	General Creek near Meeks Bay	7.44	C,T,S	1981-92
10336650	Quail Lake Creek at Homewood	.95	T,S	1972-74
10336655	Madden Creek near Homewood	1.40	T,S	1972-74
10336658	Madden Creek at Homewood	2.06	T,S	1972-73
10336670	Ward Creek near Tahoe Pines	2.03	T,S	1973-76
10336672	Ward Creek Tributary near Tahoe Pines	.91	T,S	1973-76
10336684	Dollar Creek near Tahoe City	1.07	T,S	1972-74
10336689	Snow Creek at Tahoe Vista	4.43	C,T,S	1981-85
10336740	Logan House Creek near Glenbrook, NV	2.08	S	1984-87
10336759	Edgewood Creek near Stateline, NV	3.20	S	1983-87
10336780	Trout Creek near Tahoe Valley	36.7	C,T,S	1971-74, 1978, 1980-85, 1987-92
10337000	Lake Tahoe at Tahoe City	506	WQ	1969, 1978-79
10337500	Truckee River at Tahoe City	507	WQ,T	1978-81, 1993-94
10338000	Truckee River near Truckee	553	WQ,C,T	1951-66, 1977-84
10338700	Donner Creek at Highway 89, near Truckee	29.1	T	1993-94
10339250	Martis Creek at State Highway 267, near Truckee	25.8	T	1975-88
10341950	Little Truckee River below Diversion Dam, near Sierraville	36.1	T	1993-94
10343200	Little Truckee River at Highway 89, near Truckee	59.0	T	1993-94
10343500	Sagehen Creek near Truckee	10.5	T	1970-74
10345700	Bronco Creek at Floristan	15.4	T	1993-94
10345900	Truckee River at Floriston	932	T	1968-71
10346000	Truckee River at Farad	932	WQ,B,S	1951-61, 1964-81
11185350	Kern River near Quaking Aspen Camp	530	T	1966-74
11187000	Kern River at Kernville	1,009	WQ,B,T,S	1962-93
11191000	Kern River below Isabella Dam	2,074	WQ,T	1956-66, 1971-94
11204900	Tule River below Success Dam	393	WQ,T	1962-69, 1971-94
11206500	Middle Fork Kaweah River near Potwisha Camp	102	C	1958-63, 1972, 1979-81
11208000	Marble Fork Kaweah River at Potwisha Camp	51.4	C	1962-72, 1980-81
11208610	Monarch Creek near Hammond	1.89	T	1969-73
11208620	East Fork Kaweah River below Mosquito Creek, near Hammond	16.0	T	1968-73
11208625	East Fork Kaweah River at Sequoia National Park boundary, near Hammond	23.7	T	1968-71
11208730	East Fork Kaweah River near Three Rivers	85.8	T	1968-76
11209500	North Fork Kaweah River near Three Rivers	129	T	1980-81
11209900	Kaweah River at Three Rivers	418	T	1966, 1968-88
11210950	Kaweah River below Terminus Dam	561	WQ,T	1962-94
11213500	Kings River above North Fork, near Trimmer	952	T	1966-79
11216500	North Fork Kings River above Dinkey Creek, at Balch Camp	250	T	1968-79
11218500	Kings River below North Fork, near Trimmer	1,342	WQ,B,T,S	1956-93
11221500	Kings River below Pine Flat Dam	1,545	WQ,T	1956-66, 1970-94
11230000	South Fork San Joaquin River near Florence Lake	171	T	1961
11235000	San Joaquin River above Big Creek	1050	T	1961-62
11237000	Big Creek below Huntington Lake	81.1	T	1961-70
11245000	South Fork Willow Creek near North Fork	39.8	T	1961
11246500	Willow Creek at mouth, near Auberry	130	T	1961-72
11247000	San Joaquin River below Kerckhoff Powerhouse, near Prather	1,480	T	1961-68, 1970-74
11204900	Tule River below Success Dam	393	WQ,T	1962-69, 1971-94
11253500	James Bypass near San Joaquin	--	T	1969-71
11257500	Fresno River near Knowles	133	T	1971-88
11258000	Fresno River below Hidden Dam, near Daulton	237	T	1976-90
11258960	Chowchilla River above Willow Creek, near Raymond	173	T	1980-88
11258980	Chowchilla River near Raymond	201	T	1971-80
11259000	Chowchilla River below Buchanan Dam, near Raymond	236	WQ,T	1958-65, 1976-94
11261100	Salt Slough at Highway 165, near Stevinson	--	WQ,C,T,S	1989-94
11262900	Mud Slough near Gustine	--	WQ,S	1993-94
11264500	Merced River at Happy Isles Bridge, near Yosemite	181	B,T	1966-93
11268000	South Fork Merced River near El Portal	241	T	1975-78
11268200	Merced River near Briceburg	691	T	1976-77
11272500	Merced River near Stevinson	1,273	WQ,S	1993-94
11274570	San Joaquin River at Patterson Bridge	9,760	WQ,S	1993-94
11283100	Lily Creek near Pinecrest	11.9	T	1965-74
11292700	Middle Fork Stanislaus River at Hells Half Acre Bridge, near Pinecrest	287	T	1966-71, 1973-78

## DISCONTINUED WATER-QUALITY STATIONS--Continued

Station No.	Station name	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
11295400	Stanislaus River near Hathaway Pines	629	T	1970-83
11303000	Stanislaus River at Ripon	1,075	WQ,S,C,T	1989, 1993-94
11303500	San Joaquin River near Vernalis	13,536	B	1974-81
11306000	South Fork Calaveras River near San Andreas	118	T	1974-79
11308000	North Fork Calaveras River near San Andreas	85.2	T	1974-79
11308600	Calaveras River above New Hogan Reservoir, near San Andreas	307	T	1970-82, 1984-88
11308900	Calaveras River below New Hogan Dam, near Valley Springs	363	WQ,T	1964-66, 1971-94
11312000	Bear Creek near Lockeford	47.4	C	1976
11313010	Delta-Mendota Canal below Tracy Pump Plant, near Tracy	--	T	1960-66
11319500	Mokelumne River near Mokelumne Hill	544	WQ,T	1961-79
11323500	Mokelumne River below Camanche Dam	627	WQ,T,S	1906-07, 1956-76
11325500	Mokelumne River at Woodbridge	661	B,C,T, S,WQ	1951-94
11335000	Cosumnes River at Michigan Bar	536	WQ,T,S	1953-80

Type of record: WQ (Water-quality); B (Biological); C (Conductivity); T (Temperature); S (Sediment).



WATER RESOURCES DATA--CALIFORNIA, WATER YEAR 1994

VOLUME 3--SOUTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN

FROM WALKER RIVER TO TRUCKEE RIVER

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By S.W. Anderson, P.D. Hayes, and G.L. Rockwell

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INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, obtains a large amount of data pertaining to the water resources of California each water year. These data, accumulated during many water years, constitute a valuable database for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the U.S. Geological Survey, the data are published annually in this report series entitled "Water Resources Data--California."

This volume of the report includes records on surface water in the State. Specifically, it contains (1) discharge records for 178 streamflow-gaging stations, 3 crest-stage partial-record streamflow stations, and 13 miscellaneous measurement stations; (2) stage and contents records for 43 lakes and reservoirs; (3) water-quality records for 49 streamflow-gaging stations and 18 partial-record stations; and (4) precipitation records for one gaging station. Records included for stream stages are only a small fraction of those obtained during the water year.

The series of annual reports for California began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format changed to include data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1985 water year, a separate volume for ground-water levels and quality was published for California.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for California were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10 and 11." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in public libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Map Distribution, Box 25286, MS 306, Denver Federal Center, Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. Each report has an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report CA-94-3." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports also are available on Compact Disc--Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, are reproduced on a single CD-ROM disc.

Additional information, including current prices, for ordering specific reports may be obtained from the District Office at the address given on the back of the title page or by telephone (916) 979-2605. A limited number of CD-ROM discs will be available for purchase from U.S. Geological Survey, Earth Science Information Center, Open-File Reports Section, Box 25286, MS 517, Denver Federal Center, Denver, CO 80225.

## COOPERATION

The U.S. Geological Survey and organizations of the State of California have had cooperative agreements for the systematic collection of records since 1903. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

California Department of Water Resources, David N. Kennedy, Director.  
 California State Water Resources Control Board, James Baetge, Executive Director.  
 East Bay Municipal Utility District, Thomas Linville, Manager, Water Operations.  
 Madera Irrigation District, Robert L. Stanfield, General Manager-Chief Engineer.  
 Merced, City of, Stevan M. Stroud, City Engineer.  
 Merced Irrigation District, Ross Rogers, Manager.  
 San Francisco, City and County, Hetch-Hetchy Water and Power, Andrew B. Moran, General Manager of Public Utilities.  
 Tahoe Regional Planning Agency, Dave Ziegler, Executive Director.  
 Tulare County Flood Control District, Douglas C. Wilson, Public Works Director.  
 Turlock Irrigation District, Russell Deluca, Irrigation System Administrator.  
 Woodbridge Irrigation District, Andy Christensen, Manager-Secretary.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; Bureau of Reclamation, and National Park Service, U.S. Department of Interior.

The following organizations aided in collecting records: Calaveras County Water District; Olcese Water District; Pacific Gas & Electric Co.; Southern California Edison Co.; Tuolumne County; Turlock Irrigation District; and Merced and Oakdale-South San Joaquin Irrigation Districts.

## SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Runoff during the 1994 water year in the area covered by this volume was 42 percent of the median for the 1961-90 water years based on five representative streamflow records. Total runoff in percent of median, at selected stations in California is shown in figure 1. Runoff ranged from 0 percent of median at Orestimba Creek near Newman (11274500) to 64 percent of median at Bear Creek near Lake T.A. Edison (11230500). All sites in the area covered by this volume had below normal runoff.

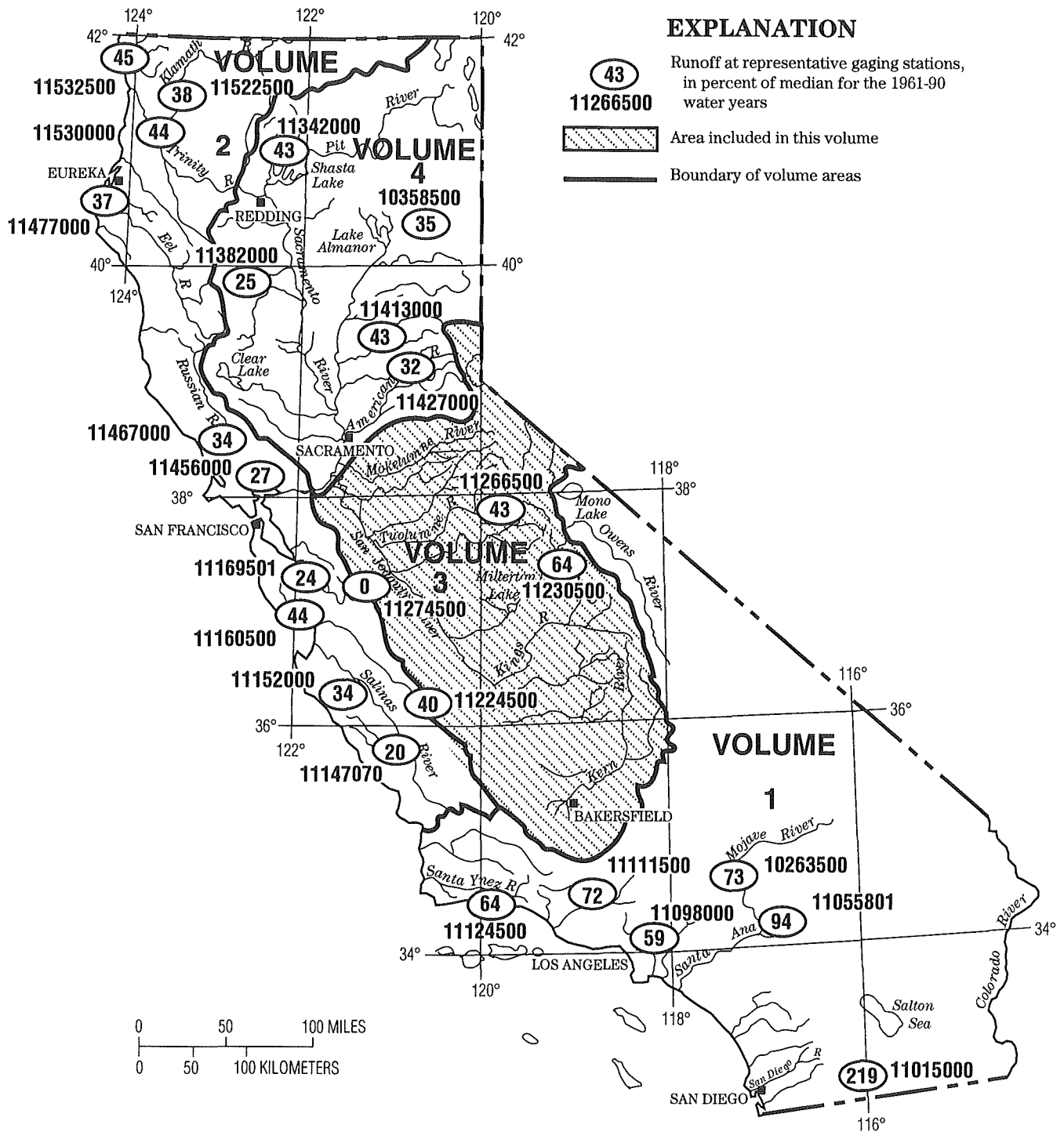
In figure 2, monthly mean discharge in the 1994 water year is compared with the 1961-90 median, maximum, and minimum monthly mean discharge at four representative gaging stations. Figure 2 also compares monthly precipitation in the 1994 water year with the long-term average. A comparison of peak discharge for the 1994 water year with peaks for period of record for selected stations is given in table 1. A comparison of low-flow data for various years is given in table 2. No peak discharges for streams in the area covered by this volume exceeded the peaks of record. Few exceeded peak bases. Annual departure from 1961-90 mean discharge for four selected gaging stations is shown in figure 3.

Table 1. Comparison of peak discharge for 1994 water year with those for period of record for selected stations

Station No.	Station name	1994 water year		Period of record	
		Date	Peak discharge (ft <sup>3</sup> /s)	Water year	Peak discharge (ft <sup>3</sup> /s)
11186001	Kern River near Kernville	May 15	1,920	1966	60,000
11224500	Los Gatos Creek above Nunez Canyon, near Coalinga	Feb. 20	62	1969	4,360
11230500	Bear Creek near Lake Thomas A. Edison	May 14	519	1982	3,660
11266500	Merced River at Pohono Bridge, near Yosemite	May 31	2,640	1955	23,400

Table 2. Comparison of 7-day and 1-day low flow for 1994 water year with 7-day, 1-day, and minimum daily flow for 30-year base period 1961-90 for selected stations

Station No.	Station name	7-day low flow (ft <sup>3</sup> /s)		1-day low flow (ft <sup>3</sup> /s)		Period of record	
		1994 water year	Base period 1961-90	1994 water year	Base period 1961-90	Water year	Minimum daily (ft <sup>3</sup> /s)
11186001	Kern River near Kernville	109	84	107	76	1990,91	76
11224500	Los Gatos Creek above Nunez Canyon, near Coalinga	0	0	0	0	many	0
11230500	Bear Creek near Lake Thomas A. Edison	4.7	2.06	4.6	1.8	1924	1.2
11266500	Merced River at Pohono Bridge, near Yosemite	10	5.6	10	5.4	1977	5.4



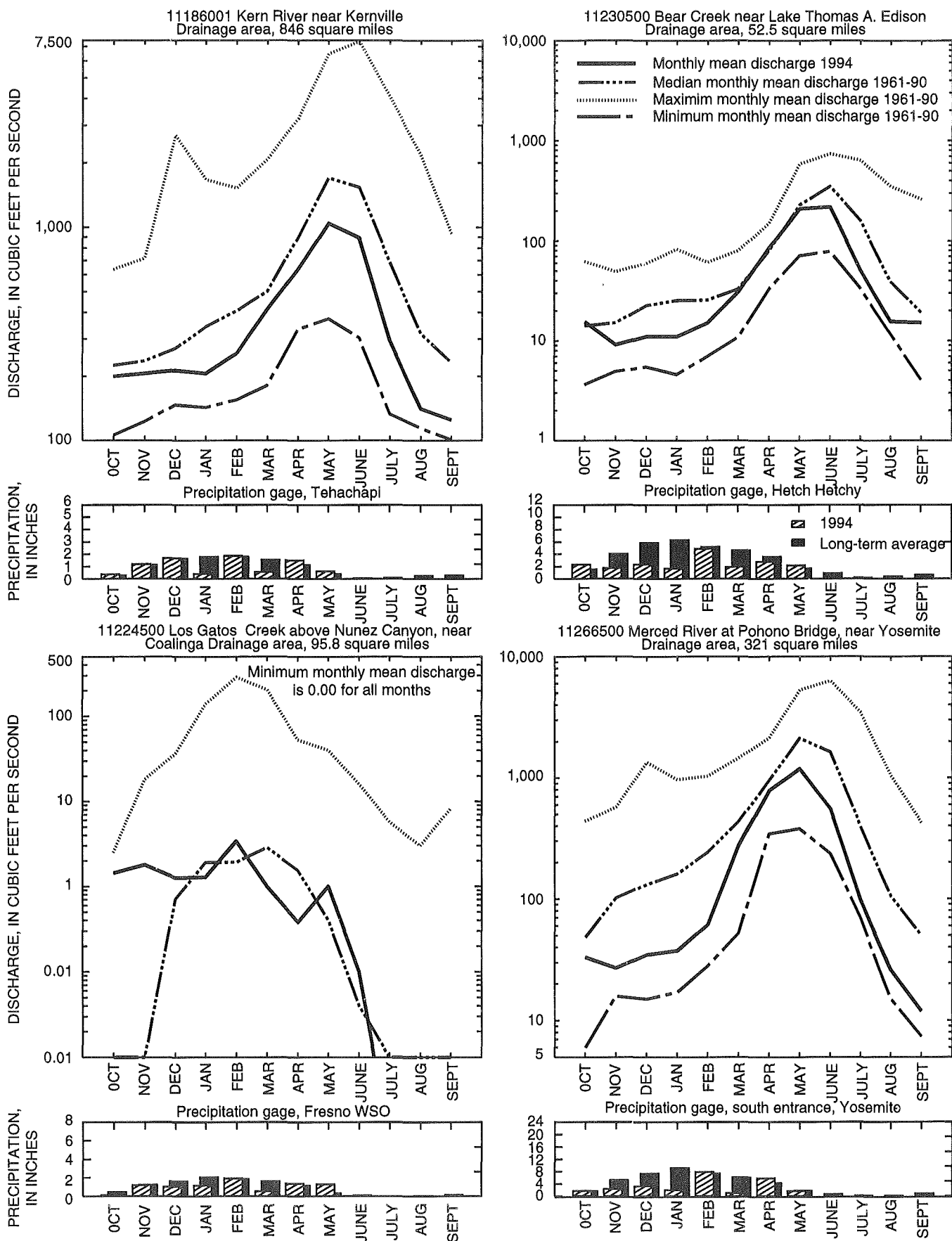


Figure 2. Discharge and precipitation during water year 1994 and long-term average at four representative gaging stations. Precipitation data from National Oceanic and Atmospheric Administration, 1994, Climatological Data, annual summary: v. 98.

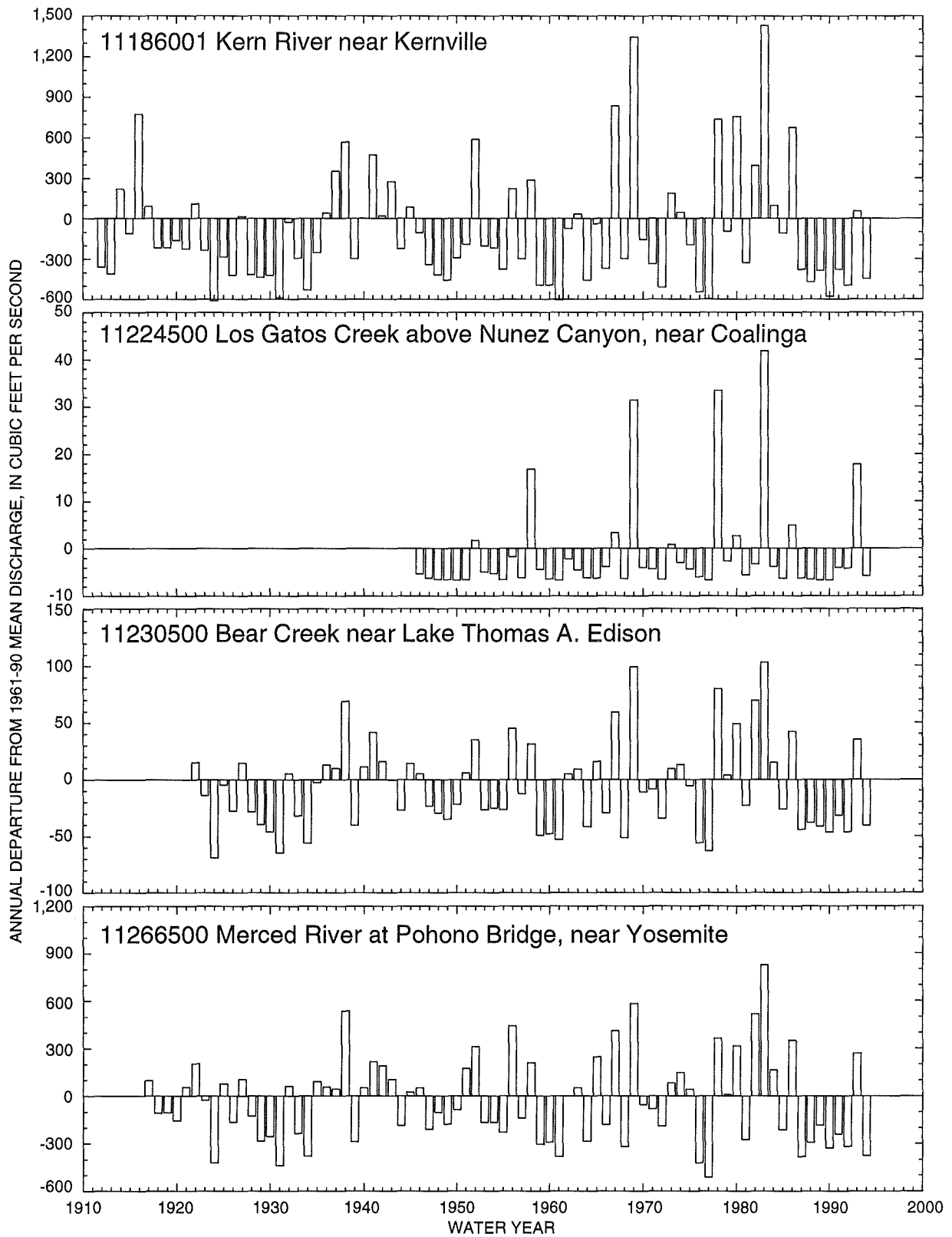


Figure 3. Annual departure from 1961-90 mean discharge for period of record at selected gaging stations.

Precipitation in most of the area covered by this volume was below normal during the 1994 water year. Precipitation, based on 10 representative raingages, was 67 percent of the long-term average. There were a few significant storms in February, with about average precipitation occurring throughout most of the region.

Most demands for water were met in 1994. Reservoir storage accumulated during 1993 provided a buffer to the State's water supply, lessening the adverse impacts of another dry year. While the entire eight-year period 1987-94 may not be considered one "drought" because of a wet 1993, it is the driest eight-year period in the 123 years of record for the Sacramento River basin.

In the Sierra foothills, population has increased about 73 percent since 1977, and water use has increased 40 percent. In the valley areas, population has increased about 40 percent. There have not been concomitant increases in reservoir storage capacity. Many reservoirs had 100 percent of average in storage. In anticipation of a less-than-normal water year, many water agencies limited reservoir releases to maximize storage.

#### Water Quality

Water samples collected at two NASQAN and two Hydrologic Benchmark stations reported in this volume were analyzed for water-quality constituents. Median dissolved-solids concentrations of the samples varied slightly from the previous year. Figure 4 shows the monthly mean dissolved-solids concentrations during water year 1994 compared with long-term dissolved-solids concentration at two selected stations. The largest densities of fecal-coliform (5,100 colonies per 100 milliliters) and fecal-streptococcus bacteria (>1,600 colonies per 100 milliliters) were in water samples collected from San Joaquin River near Vernalis (station 11303500).

Chemical-constituent concentrations in excess of U.S. Environmental Protection Agency (EPA) water-quality criteria were detected in water samples collected from several stations and are listed below:

Station No.	Station name	Water-quality constituent exceeding EPA water-quality criteria
11261100	Salt Slough at Highway 165, near Stevinson	Sulfate, chloride, total-dissolved solids
11262900	Mud Slough near Gustine	Sulfate, chloride, total-dissolved solids, manganese
11272500	Merced River near Stevinson	Manganese
11274538	Orestimba Creek at River Road, near Crows Landing	Total-dissolved solids, nitrate, nitrite + nitrate
11274554	Spanish Grant Combined Drain near Patterson	Sulfate, chloride, total-dissolved solids, nitrite + nitrate, manganese
11274560	Turlock Irrigation District Lateral No. 5, near Patterson	Sulfate, chloride, total-dissolved solids, nitrite + nitrate, manganese
11274570	San Joaquin River at Patterson	Sulfate, chloride, total-dissolved solids, manganese
11303500	San Joaquin River near Vernalis	Total-dissolved solids

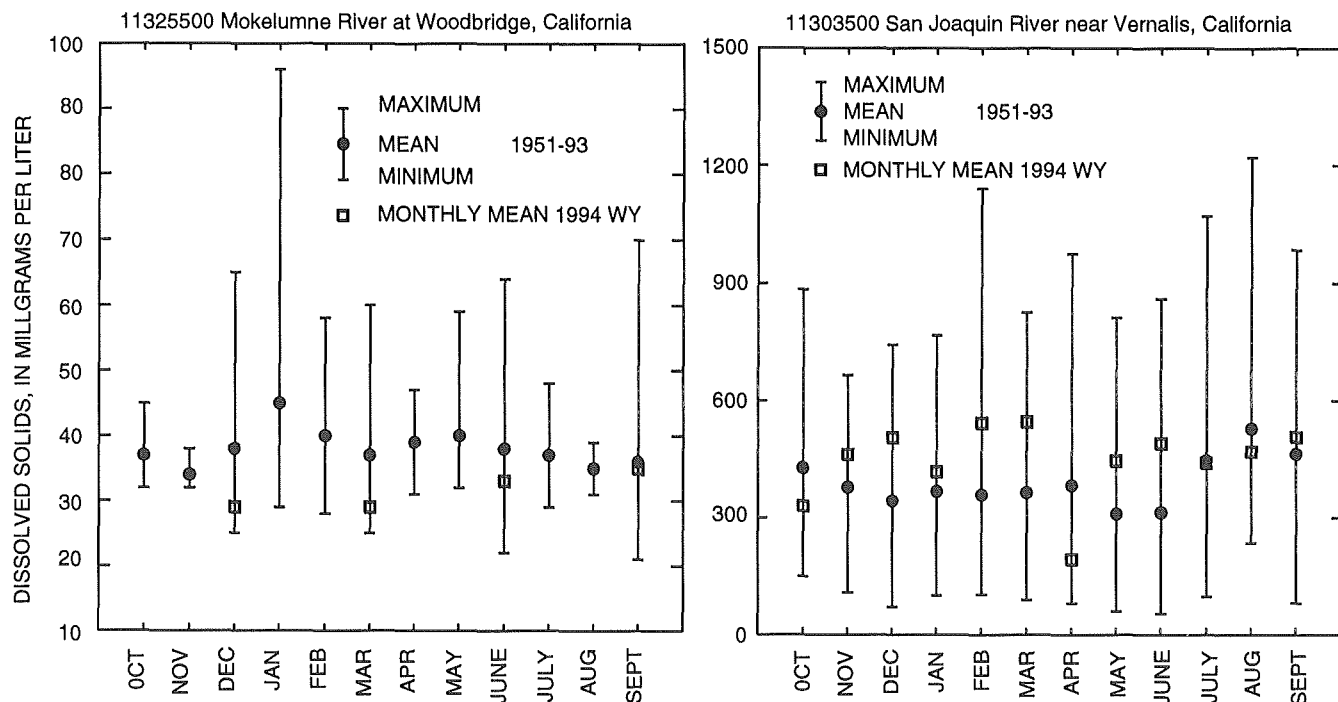


Figure 4. Comparison of monthly mean dissolved-solids concentrations during water year 1994 with long-term dissolved-solids concentrations at two selected stations.

### Sediment

This year, suspended-sediment discharge and concentration were monitored daily at one station in the area covered by this volume. The remaining sediment stations were monitored periodically and are in an area extending from as far north as Truckee to as far south as the town of Kernville.

During the 1994 water year, suspended-sediment discharge for the San Joaquin River near Vernalis (station 11303500) was 40 percent of the long-term mean (1957-93).

Suspended-sediment discharge for the San Joaquin River near Vernalis site was 133,000 tons for the year. This equates to an annual sediment yield of 9.81 tons per square mile of drainage area.

### SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 53 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream-Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 284 sites in NASQAN are located generally at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting that the data may be used for; (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs; (3) to detect changes or trends with time in the pattern of occurrence of water-quality characteristics; and (4) to provide a nationally consistent database useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in about two-thirds of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Radiochemical Programs is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

### EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1994 water year that began October 1, 1993, and ended September 30, 1994. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

### Station-Identification Numbers

Each streamsite data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream-order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations in California where only miscellaneous measurements are made.

### Downstream-Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports has been in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station such as 11218500, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "218500." The part number designates the major river basin; for example, part "11" is the Pacific Slope Basins in California.

### Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the other sites within a 1-second grid (fig. 5). This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

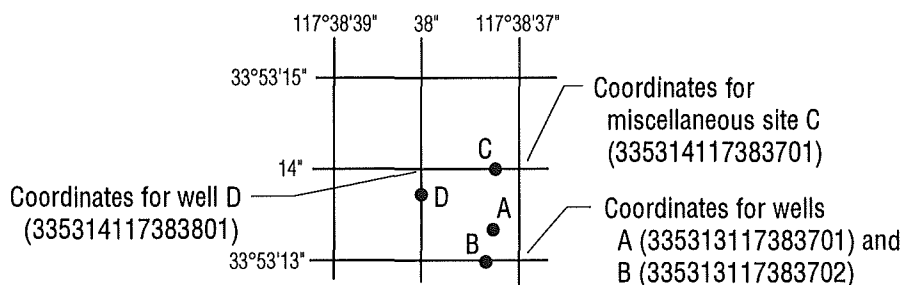


Figure 5. System for numbering miscellaneous sites (latitude and longitude).

### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake and reservoir contents, similarly, are those for which stage or contents may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown, by county, in figures 6 through 25.

### Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake contents. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.



Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in U.S. Geological Survey Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge are prepared for any stage within the range of the measurements. If it is necessary to define extremes of discharge outside the range of current-meter measurements, the curves are extended using (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dam or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes or observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some gaging stations, acoustic velocity meter (AVM) systems are used to compute discharge. The AVM system measures the stream's velocity at one or more paths in the cross section. Coefficients are developed to relate this path velocity to the mean velocity in the cross section. Because the AVM sensors are fixed in position, the adjustment coefficients generally vary with stage. Cross-sectional area curves are developed to relate stage, recorded as noted above, to cross-section area. Discharge is computed by multiplying path velocity by the appropriate stage related coefficient and area.

In computing records of lake or reservoir contents, it is necessary to have available surveys, curves, or tables defining the relation of stage and contents. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. When this is done, the contents computed may become increasingly in error as time increases since the last survey. Discharges over lake or reservoir spillways are computed from stage-discharge relations in the same manner as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following records, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following records, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

#### Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

#### Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gaging station is given with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

**DRAINAGE AREA.**--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time when the present station was not, and whose location was such that records from it reasonably can be considered equivalent with records from the present station.

**REVISED RECORDS.**--Published records, because of new information, occasionally are incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report is given in which the most recently revised figure was published.

**GAGE.**--The type of gage in current use, the datum of the current gage referred to sea level (see Definition of Terms), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

**REMARKS.**--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph also is used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station, and possibly to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

**COOPERATION.**--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified.

**EXTREMES FOR PERIOD OF RECORD.**--Extremes may include maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Included is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

**EXTREMES FOR CURRENT YEAR.**--Extremes given are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year that are greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

**REVISIONS.**--If a critical error is discovered in published records, a revision is included in the first report published following discovery of the error.

Occasionally the records of a discontinued gaging station may need revision. Because for these stations there would be no current or, possible, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office to determine if the published records were revised after the station was discontinued. If the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

#### Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also usually is expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN."); or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS \_\_\_\_\_ - \_\_\_\_\_, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS \_\_\_\_\_ - \_\_\_\_\_," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data also are given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all the runoff for a given period were distributed on it uniformly.

10 PERCENT EXCEEDS.--The discharge that is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements generally are made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

#### Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing the table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

#### Accuracy of the Records

The accuracy of streamflow records depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage and discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second ( $\text{ft}^3/\text{s}$ ) for values less than  $1 \text{ ft}^3/\text{s}$ , to the nearest tenth between  $1.0$  and  $10 \text{ ft}^3/\text{s}$ , to whole numbers between  $10$  and  $1,000 \text{ ft}^3/\text{s}$ , and to three significant figures for more than  $1,000 \text{ ft}^3/\text{s}$ . The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the measured discharge.

#### Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of sites as well as an index of records of discharge collected by other agencies but not published by the U.S. Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge measurement notes, gage-height records, temperature measurements, and rating tables are on file in the District Office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District Office.

#### Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve various types of data and measurement frequencies.

#### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 6 through 25.

#### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

#### Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is the assurance that the data obtained represent the in-situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, are made onsite when samples are taken. To assure that measurements made in the laboratory also represent the in-situ water, carefully prescribed procedures are followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in Techniques of Water-Resources Investigations, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. All these references are listed in the section "Publications on Techniques of Water-Resources Investigations." Also, detailed information on collecting, treating, and shipping samples may be obtained from the District Office.

One sample can adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative value available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based on hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the District Office.

Historical and current (1993) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter (ng/L). If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter ( $\mu\text{g/L}$ ) and could reflect contamination introduced during some phase of the procedure.

#### Water Temperature

Water temperatures are measured at the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District Office.

#### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations measured immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are described in the Techniques of Water-Resources Investigations (TWRI's) Book 3, Chapters C1 and C3. These methods are consistent with American Society for Testing and Materials (ASTM) standards and generally follow International Organization for Standards (ISO) standards.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

#### Cross-Sectional Data

Cross-sectional surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are done at all NASQAN and Hydrologic benchmark stations during various seasons and surface-water discharges. Documentation of cross-sectional variations of water quality is essential in order to determine how many samples in a cross section are necessary to ensure a representative composite sample.

#### Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey's National Water-Quality Laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in Techniques of Water-Resources Investigations, Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

#### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and other data obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the individual parameters.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature recorder, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to ensure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

#### ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products ranging from data tables to complex statistical analyses, such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

- \* Station Header File - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
- \* Daily Values File - Contains more than 220 million daily values of streamflows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- \* Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- \* Water Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.
- \* Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey  
National Water Data Exchange  
421 USGS National Center  
Reston, VA 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5 1/4-inch floppy disk and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports also are available on Compact Disc--Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, are reproduced on a single CD-ROM disc. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District Offices. (See address on the back of the title page.) A limited number of CD-ROM discs are available for purchase from U.S. Geological Survey, Earth Science Information Center, Open-File Reports Section, Box 25286, MS 517, Denver Federal Center, Denver, CO 80225.

#### DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See the table for converting inch-pound units to International System (SI) Units on the inside of the back cover.

Acres-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by a well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease; others perform an essential role in nature in the recycling of materials, for example, decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. For the membrane filter method, these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C  $\pm$  0.5°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

Fecal-coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. For the membrane filter method, they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C  $\pm$  0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

Fecal-streptococcal bacteria are bacteria found in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. For the membrane filter method, they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C  $\pm$  0.5°C on KF streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Benthic organisms (invertebrates) are the group of animals living in or on the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m<sup>3</sup>) and periphyton and benthic organisms are expressed in grams per square meter (g/m<sup>2</sup>).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash, and sediment in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cell-volume determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell numbers of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume ( $\mu\text{m}^3$ ) is determined by obtaining critical cell measurements on cell dimensions (that is, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (that is, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere} \quad \frac{4}{3} \pi r^3 \qquad \text{cone} \quad \frac{1}{3} \pi r^2 h \qquad \text{cylinder} \quad \pi r^2 h.$$

From cell volume, total algal biomass expressed as biovolume ( $\mu\text{m}^3/\text{mL}$ ) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

Cells per volume (cells/volume) refers to the number of cells of any organism that are counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually in milliliters (mL) or liters (L).



Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic foot per second-day (cfs.d) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons or 2,445 cubic meters.

Discharge is the volume of water (or more broadly, total fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Dissolved refers to that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate. It is recognized that certain kinds of samples cannot be filtered; to provide for this, procedures that are considered equivalent to filtering through a 0.45-micrometer membrane filter will be identified and announced at a later date.

Dissolved-solids concentration of water is determined either analytically or by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = \sum_{i=1}^s \frac{n_i}{n} \log^2 \frac{n_i}{n},$$

where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the samples are the same; to some positive number, when some or all the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the Earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water, together with all tributary surface streams and bodies of impounded surface water.

Gage datum is the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level. This elevation is established by a system of levels from known benchmarks or by approximation from topographic maps.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap that is required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ( $\text{CaCO}_3$ ).

Hydrologic Benchmark Network is a network of 56 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation

$$I = I_0 e^{-\lambda L},$$

where  $I_0$  is the source light intensity,  $I$  is the light intensity at length  $L$  (in meters) from the source,  $\lambda$  is the light-attenuation coefficient, and  $e$  is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_0}.$$

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that are usually arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This development process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-pupa-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G,  $\mu\text{g/g}$ ) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

Milligrams per liter (MG/L,  $\text{mg/L}$ ) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of sediment per liter of water-sediment mixture.

Nanograms per liter (NG/L,  $\text{ng/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called Sea Level Datum of 1929 or mean sea level in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 408 sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting that the data may be used for, (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) to detect changes in trends with time in the pattern occurrence of water-quality characteristics, and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area of the habitat, usually square meter ( $\text{m}^2$ ), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter code is a five-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024-0.004	Sedimentation
Silt.....	0.004-0.062	Sedimentation
Sand.....	0.062-2.0	Sedimentation or sieve
Gravel.....	2.0-64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition or percent of total is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, or volume.

Periphyton is the assemblage of micro-organisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, the periphyton also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants, respectively, are the two categories reported.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

Picocurie (PC, pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton are suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton compose the plant part of the plankton. They are usually microscopic, and their movement is subject to water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials into the surrounding water, the phytoplankton have a profound effect on the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are phytoplankton organisms with a blue pigment in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms, chiefly green plants. The rate of primary production is estimated by measuring the amount of carbon assimilated by plants (carbon method) or the amount of oxygen released (oxygen method).

Milligrams of carbon per area or volume per unit time [ $\text{mg C}/(\text{m}^2 \cdot \text{time})$  for periphyton and macrophytes and  $\text{mg C}/(\text{m}^3 \cdot \text{time})$  for phytoplankton] are the units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [ $\text{mg O}_2/(\text{m}^2 \cdot \text{time})$  for periphyton and macrophytes and  $\text{mg O}_2/(\text{m}^3 \cdot \text{time})$  for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical Program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment; thus, the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Sea level refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bedload is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bedload is considered to consist of particles in transit within 0.25 ft of the streambed.

Bedload discharge (tons per day) is the quantity of sediment, as measured by dry weight, that moves past a section as bedload in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture ( $\text{mg/L}$ ).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour period.

Suspended-sediment discharge (tons per day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load (tons per day) is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total-sediment discharge or total-sediment load (tons per day) is the sum of suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry mass, that passes a section in a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating dissolved-solids concentration in water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic-organism collection and plexiglass strips for periphyton collection.

Surface area of a lake is the area, in square miles or acres, outlined on the latest U.S. Geological Survey topographic map as the boundary of the lake and measured by a planimeter. In localities not covered by topographic maps, the areas are computed from the best maps available. Areas shown are for the lake stage at the time the map was made.

Surficial bed material is the part (upper 0.1 to 0.2 ft or 0.03 to 0.06 m) of the bed material that is sampled by using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment; thus, the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<u>Hexagenia</u>
Species.....	<u>Hexagenia limbata</u>

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that records water temperature in a digital format on punched paper tape.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total load (tons) is the total amount of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the milligrams per liter of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment; thus, the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in the dissolved and suspended phases of the sample. A knowledge of the expected form is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all the constituent in the sample.)

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed in Nephelometric turbidity units (NTU), obtained from the Nephelometric method for turbidity determination which measures the intensity of light scattered by suspended particles at 90° from the path of incident light source.

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1994, is called the "1994 water year."

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports.

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, CO 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. Water temperature--influential factors, field measurement, and data presentation, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. Application of surface geophysics to ground-water investigations, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. Application of seismic-refraction techniques to hydrologic studies, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2 1988. 86 pages.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W.S. Keys, and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. Borehole geophysics applied to ground-water investigations, by W. Scott Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.
- 2-F1. Application of drilling, coring, and sampling techniques to test holes and wells, by Eugene Shuter and W.E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. General field and office procedures for indirect discharge measurements, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. Measurement of peak discharge by slope-area method, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. Measurement of peak discharge at culverts by indirect methods, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. Measurement of peak discharge at width contractions by indirect methods, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. General procedure for gaging streams, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. Stage measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. Discharge measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. Measurement of time of travel in streams by dye tracing, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. Discharge ratings at gaging stations, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. Measurement of discharge by moving-boat method, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. Fluorometric procedures for dye tracing, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. Computation of continuous records of streamflow, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. Use of flumes in measuring discharge, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. Measurement of discharge using tracers, by F.A. Kilpatrick and E.D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

- 3-A17. Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. Determination of stream reaeration coefficients by use of tracers, by F.A. Kilpatrick, R.E. Rathburn, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. Levels of streamflow gaging stations, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. Simulation of soluble waste transport and buildup in surface waters using tracers, by F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-B1. Aquifer-test design, observation, and data analysis, by R.W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. Introduction to ground-water hydraulics, a programmed text for self-instruction, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. Type curves for selected problems of flow to wells in confined aquifers, by J.E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. Regression modeling of ground-water flow, by R.L. Cooley and R.L. Naff: USGS--TWRI: Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems, by R.L. Cooley. USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. The principle of superposition and its application in ground-water hydraulics, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow, by E.J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.
- 3-C1. Fluvial sediment concepts, by H.P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. Field methods for measurement of fluvial sediment, by H.P. Guy and V.W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. Some statistical tools in hydrology, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H.C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. Low-flow investigations, by H.C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. Storage analyses for water supply, by H.C. Riggs and C.H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H.C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C.T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M.J. Fishman and L.C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P.R. Barnett and E.C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for the determination of organic substances in water and fluvial sediments, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, by L.J. Britton and P.E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L.C. Friedman and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. Laboratory theory and methods for sediment analysis, by H.P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 6-A1. A modular three-dimensional finite-difference ground-water flow model, by M.G. McDonald and A.W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.



- 6-A2. Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model, by S.A. Leake and D.E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual, by L.J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions, by R.L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, part 3: Design philosophy and programming details, by L.J. Torak. USGS--TWRI Book 6, Chapter A5. 1993. 243 pages.
- 7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L.F. Konikow and J.D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. A model for simulation of flow in singular and interconnected channels by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. Methods of measuring water levels in deep wells, by M.S. Garber and F.C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. Installation and service manual for U.S. Geological Survey manometers, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. Calibration and maintenance of vertical-axis type current meters, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

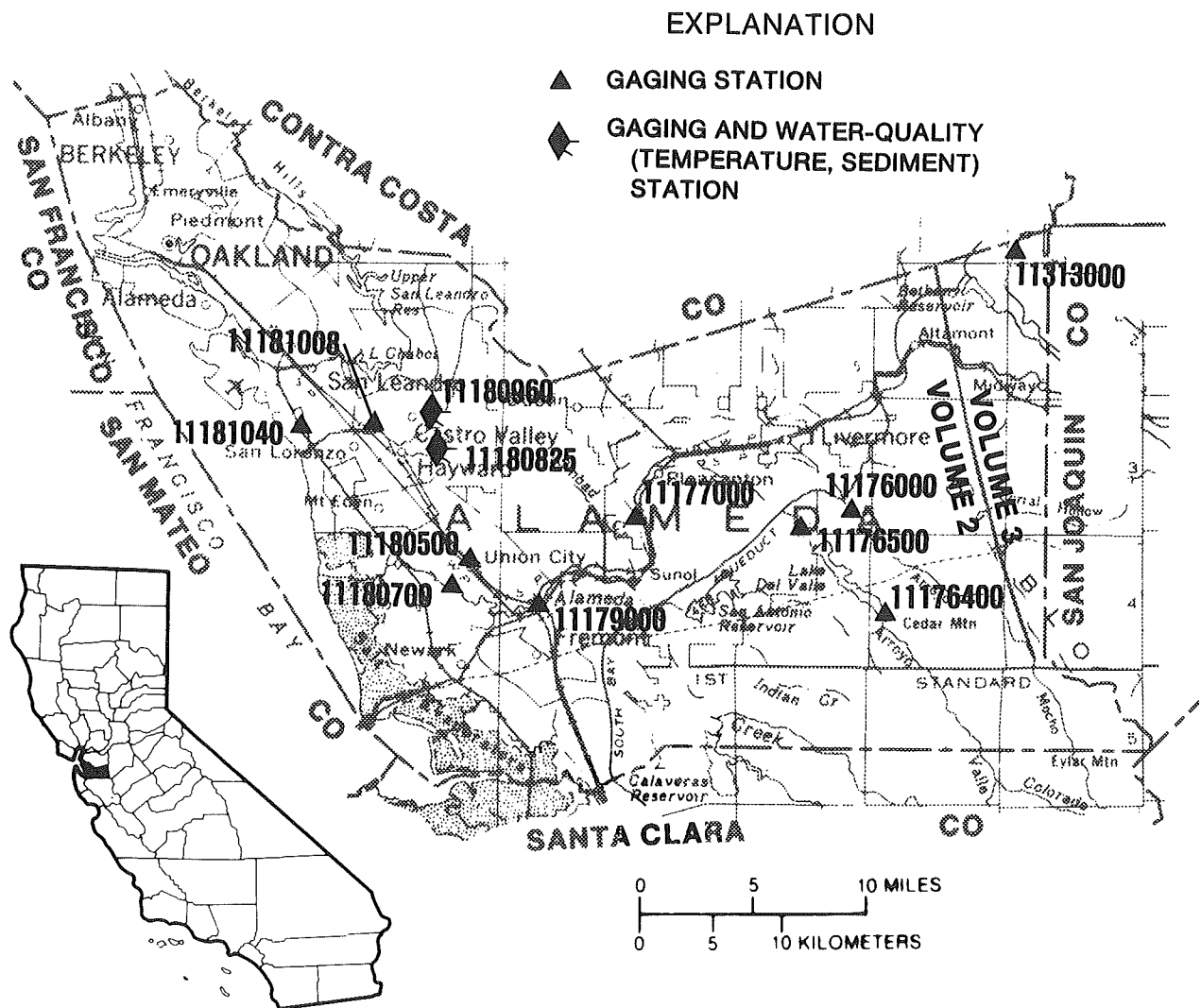


Figure 6. Location of discharge and water-quality stations in Alameda County.  
(NOTE: Records for stations 11176000 through 11181040 published in volume 2.)

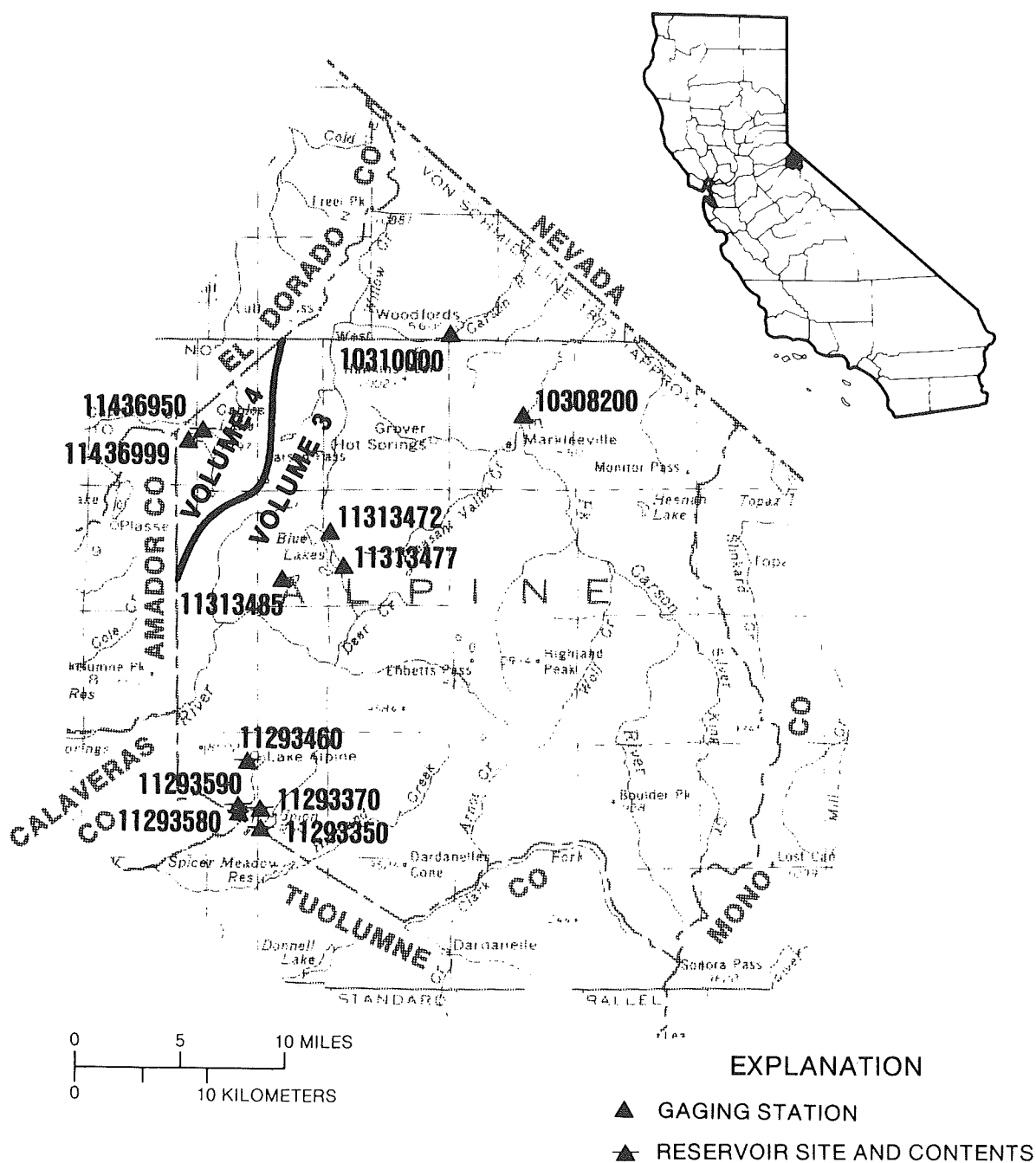


Figure 7. Location of discharge stations in Alpine County.  
 (NOTE: Station 10297000 in Douglas County, Nevada, not shown on this map. Record for stations 11436950 and 11436999 published in volume 4.)

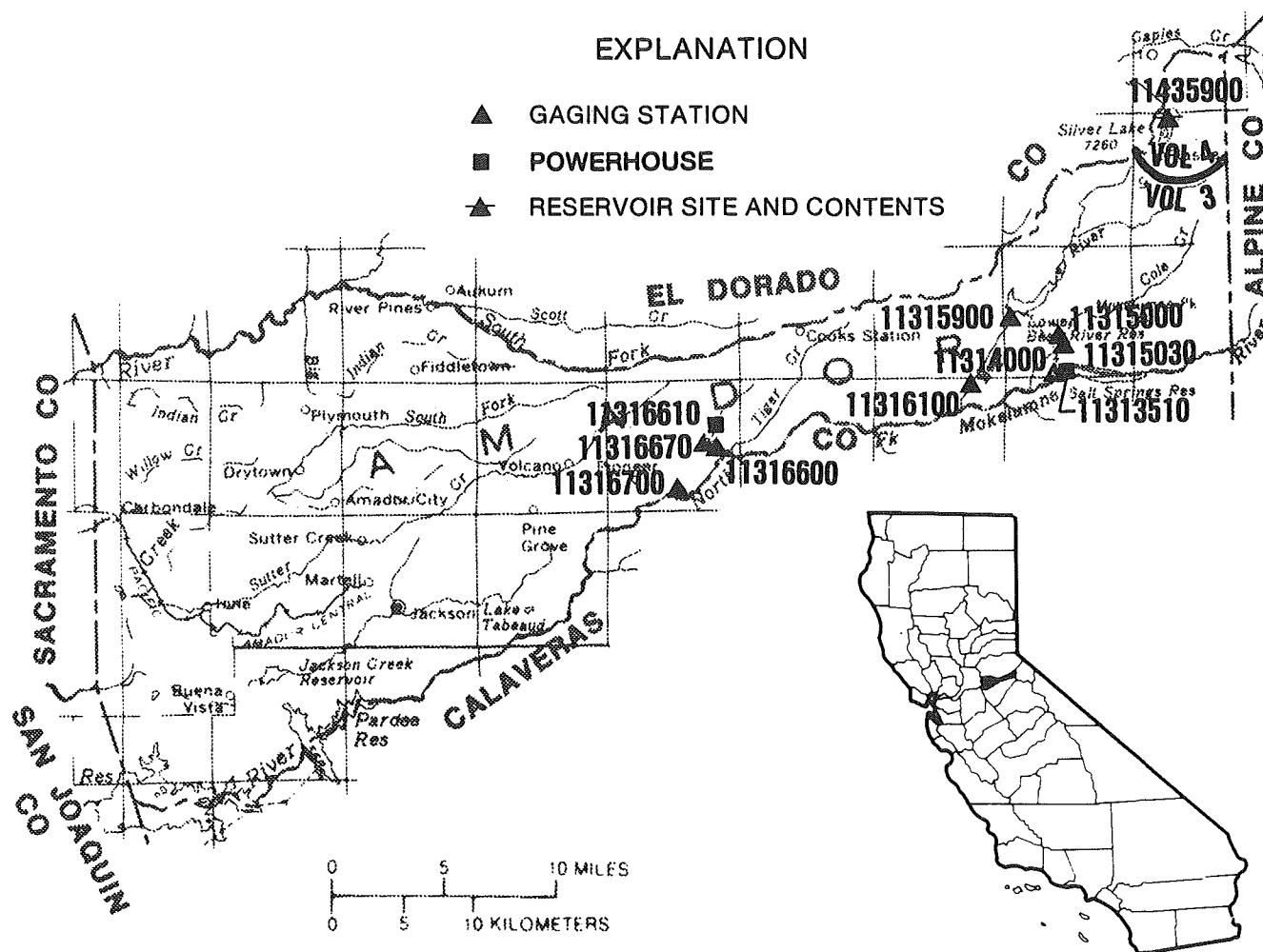


Figure 8. Location of discharge stations in Amador County.  
(NOTE: Record for station 11435900 published in volume 4.)

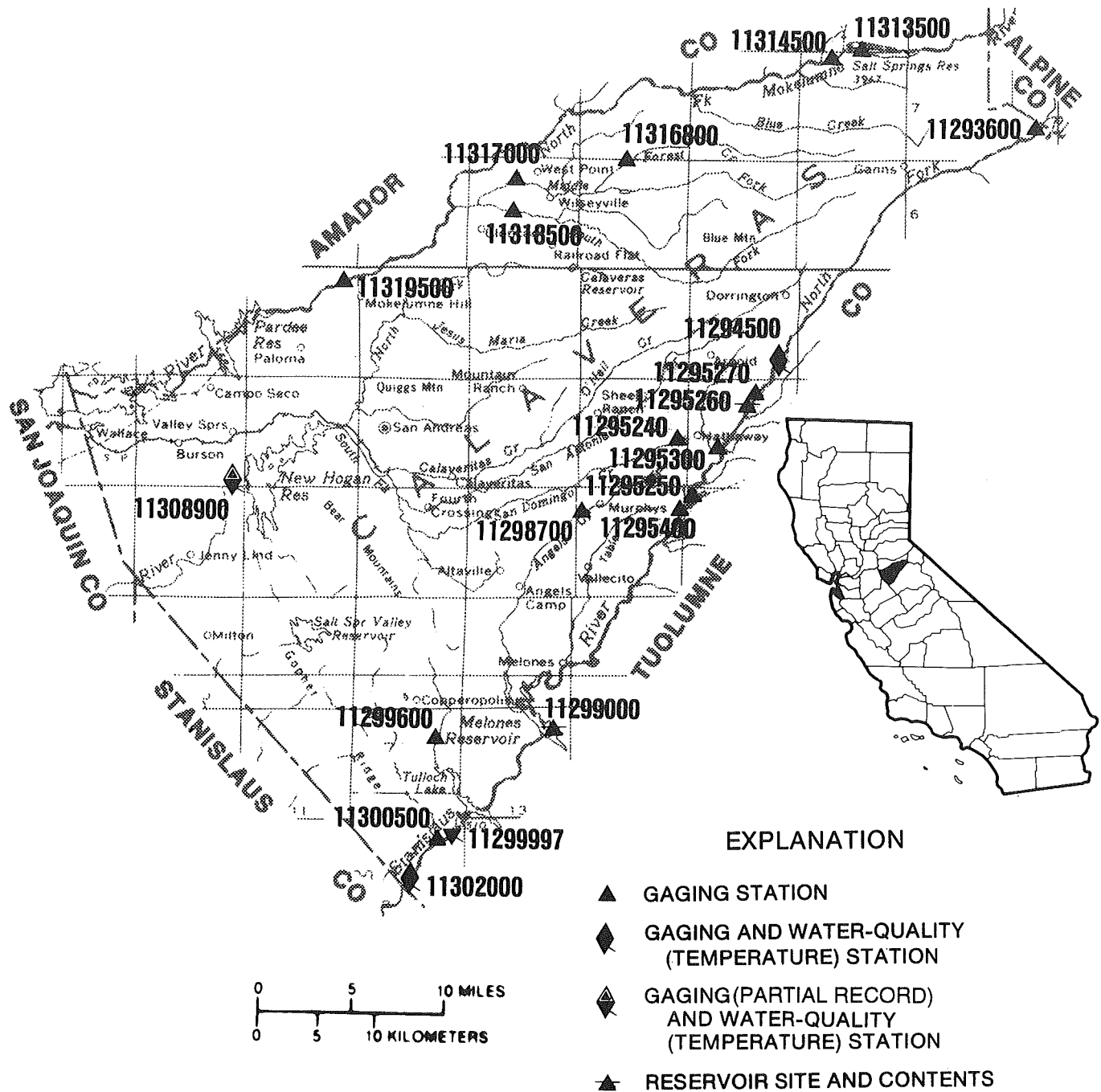


Figure 9. Location of discharge and water-quality stations in Calaveras County.

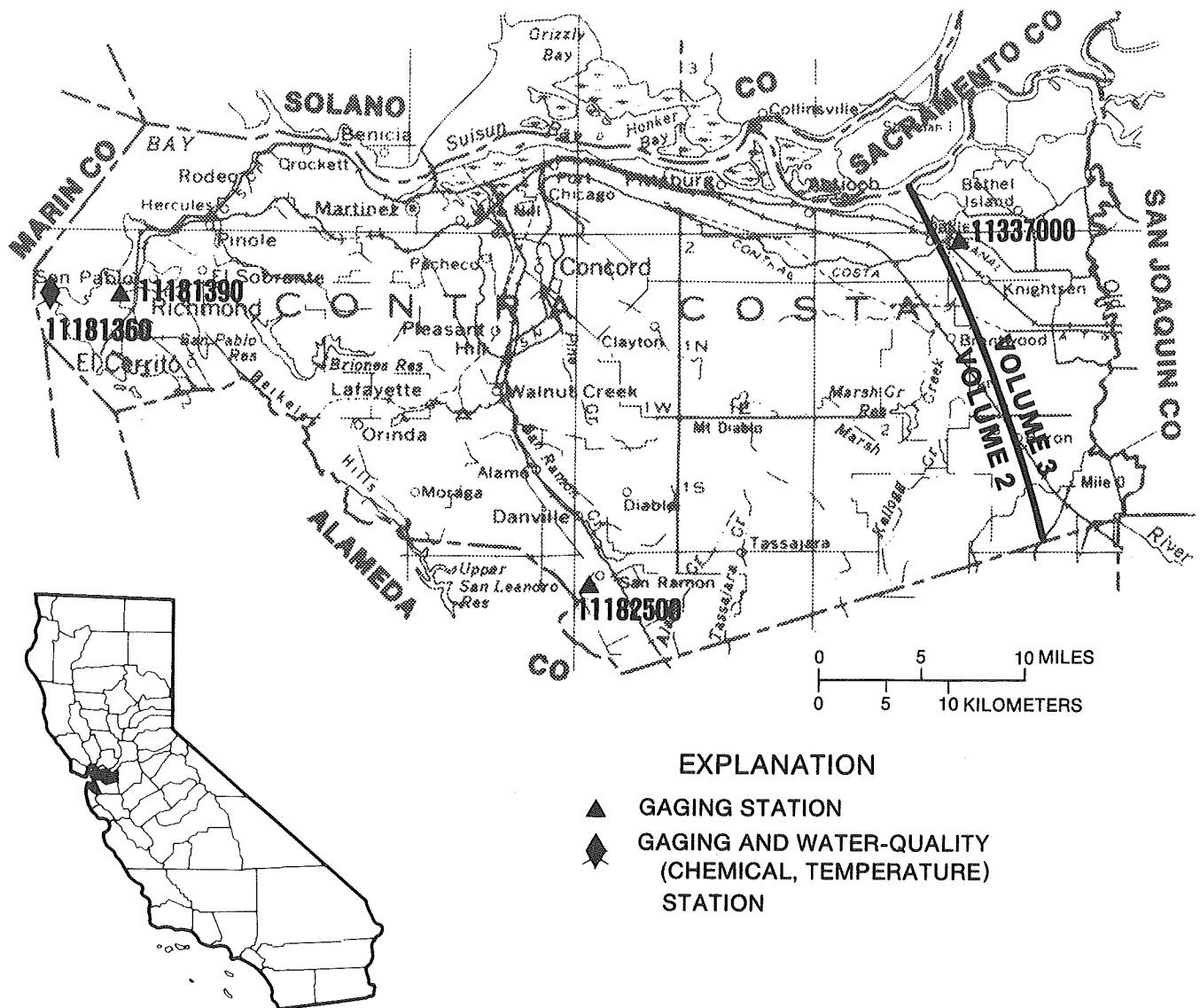
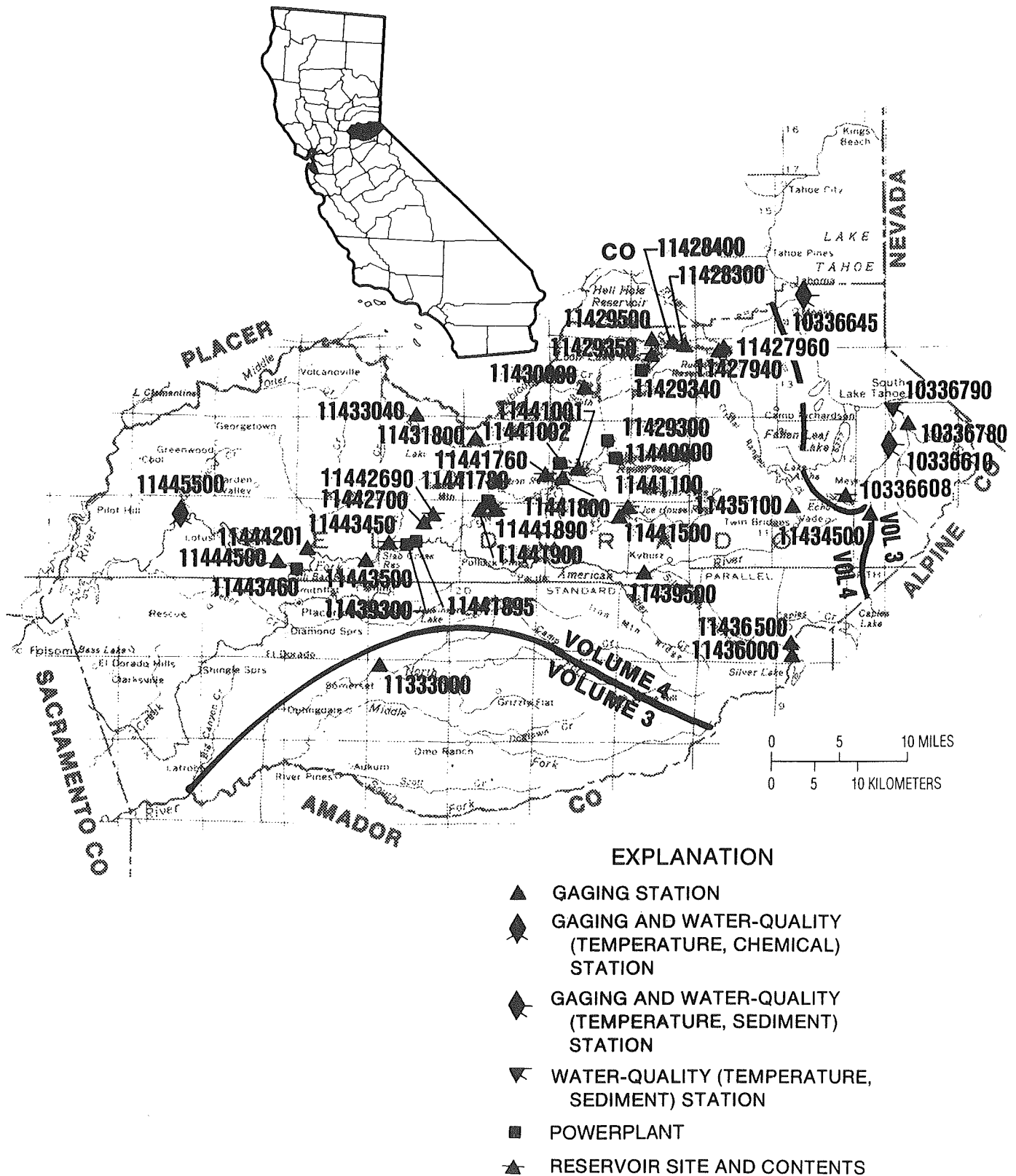


Figure 10. Location of discharge and water-quality stations in Contra Costa County.  
 (NOTE: Records for stations 11181360 through 11182500 published in volume 2.)



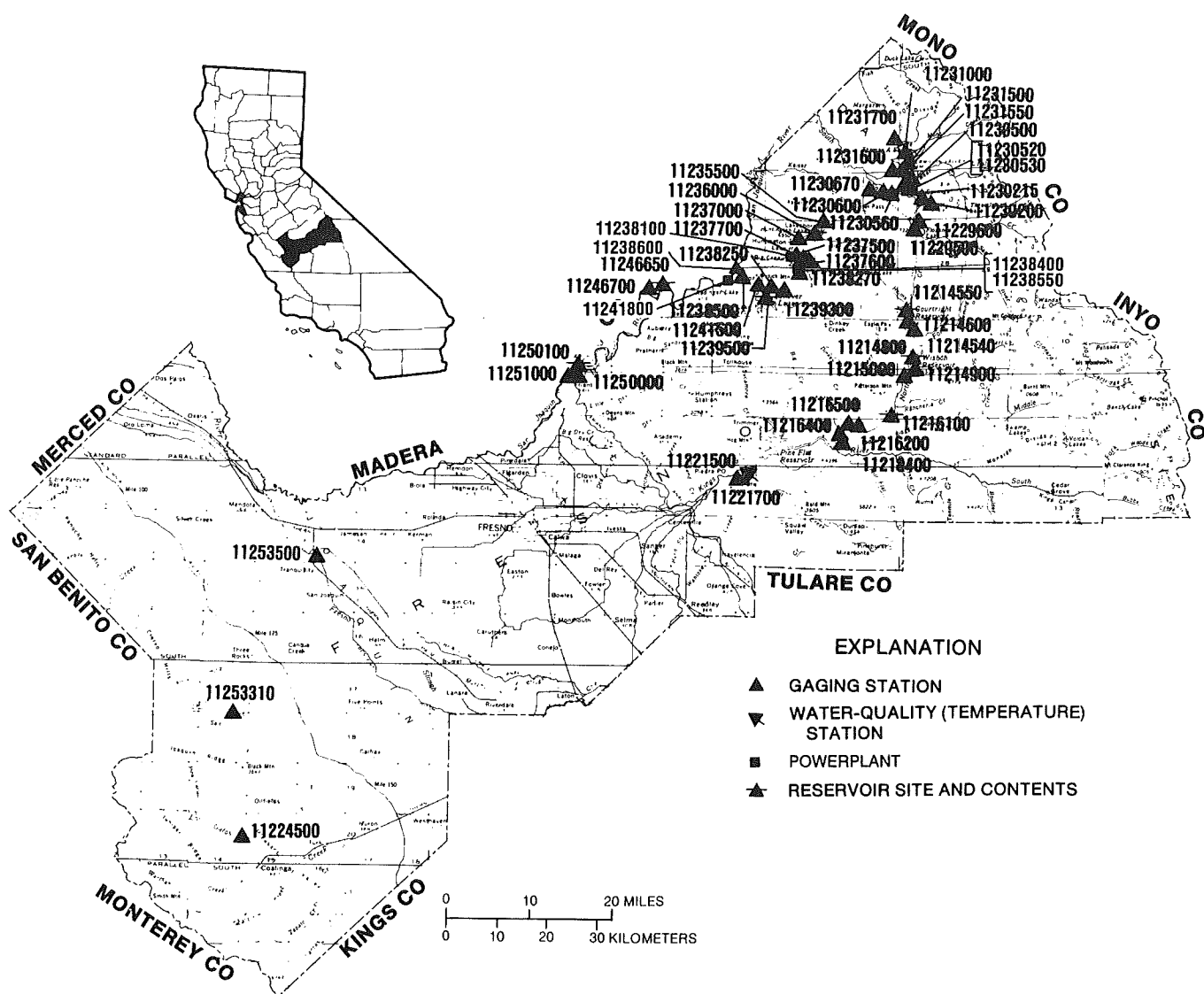


Figure 12. Location of discharge and water-quality stations in Fresno County.



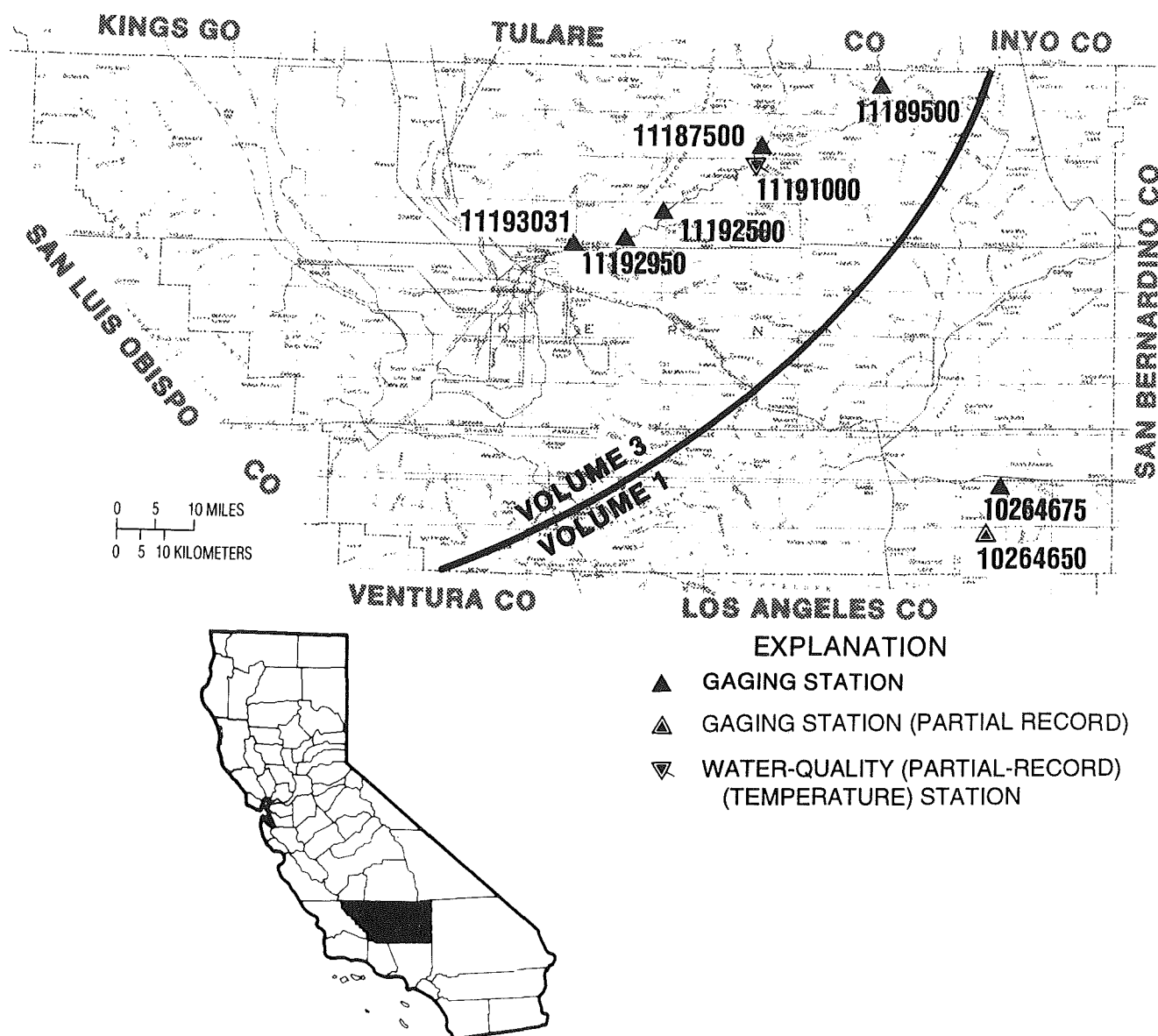


Figure 13. Location of discharge and water-quality stations in Kern County.  
 (NOTE: Records for stations 10264650 and 10264675 published in volume 1.)

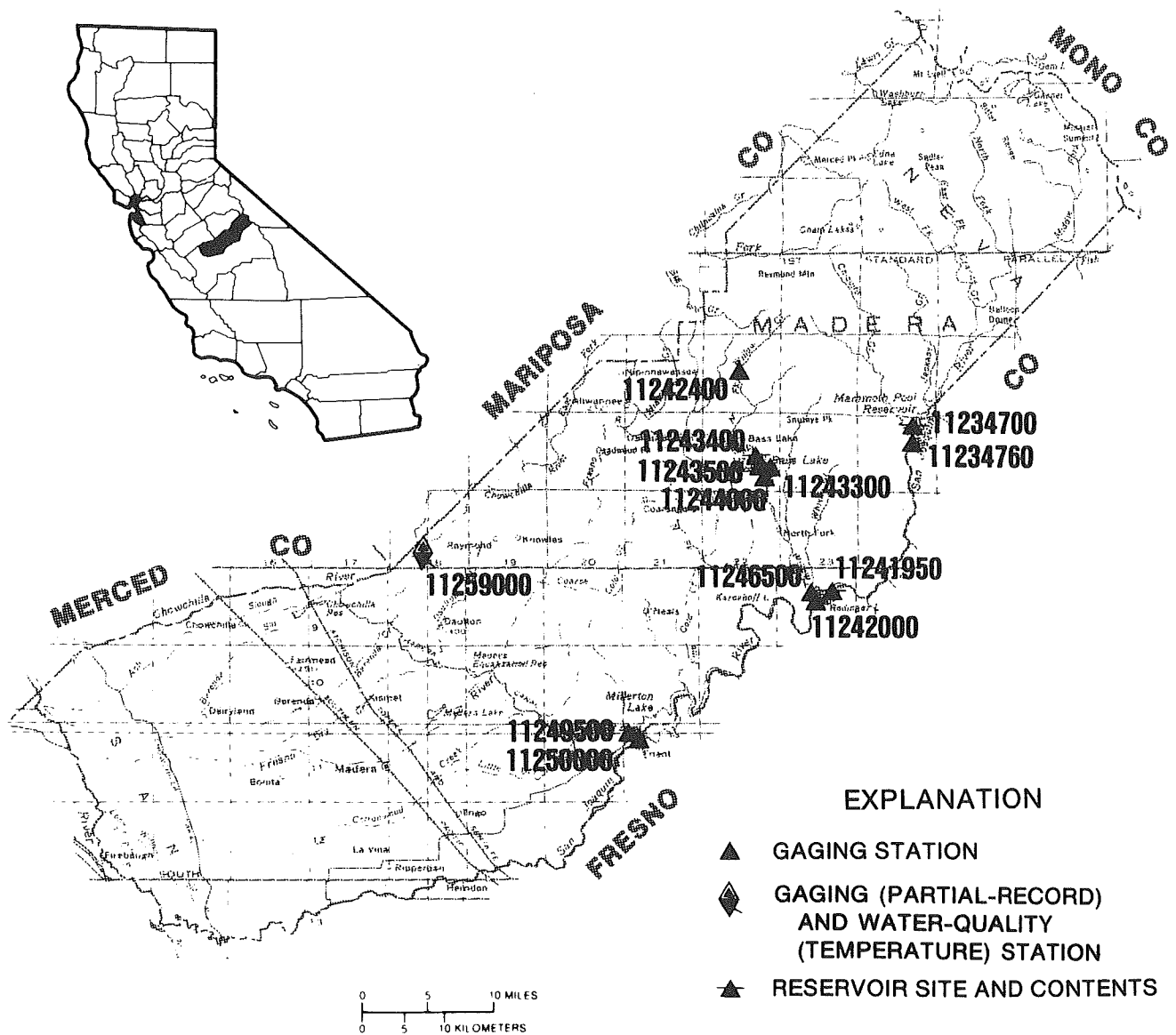


Figure 14. Location of discharge and water-quality stations in Madera County.

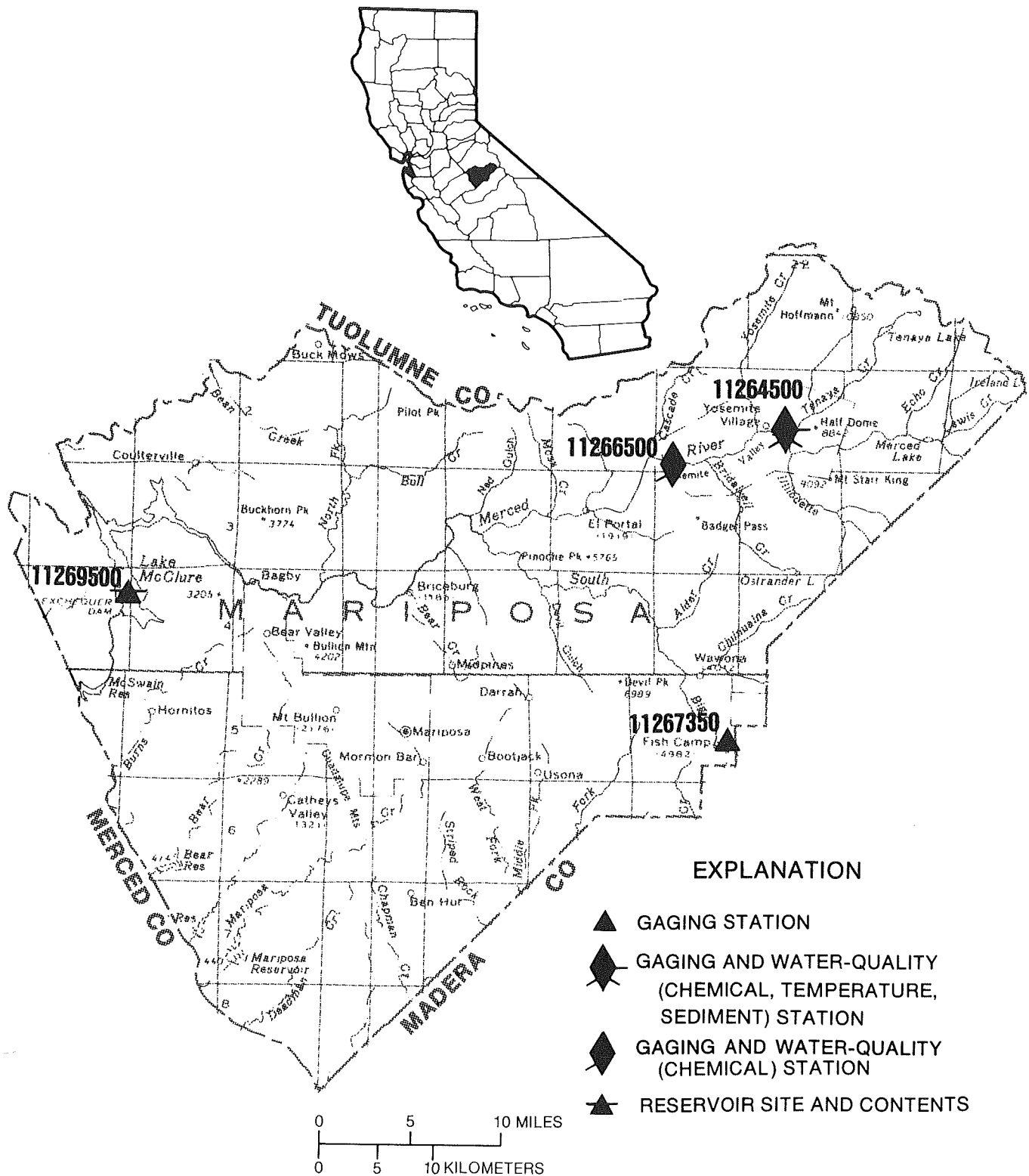


Figure 15. Location of discharge and water-quality stations in Mariposa County.

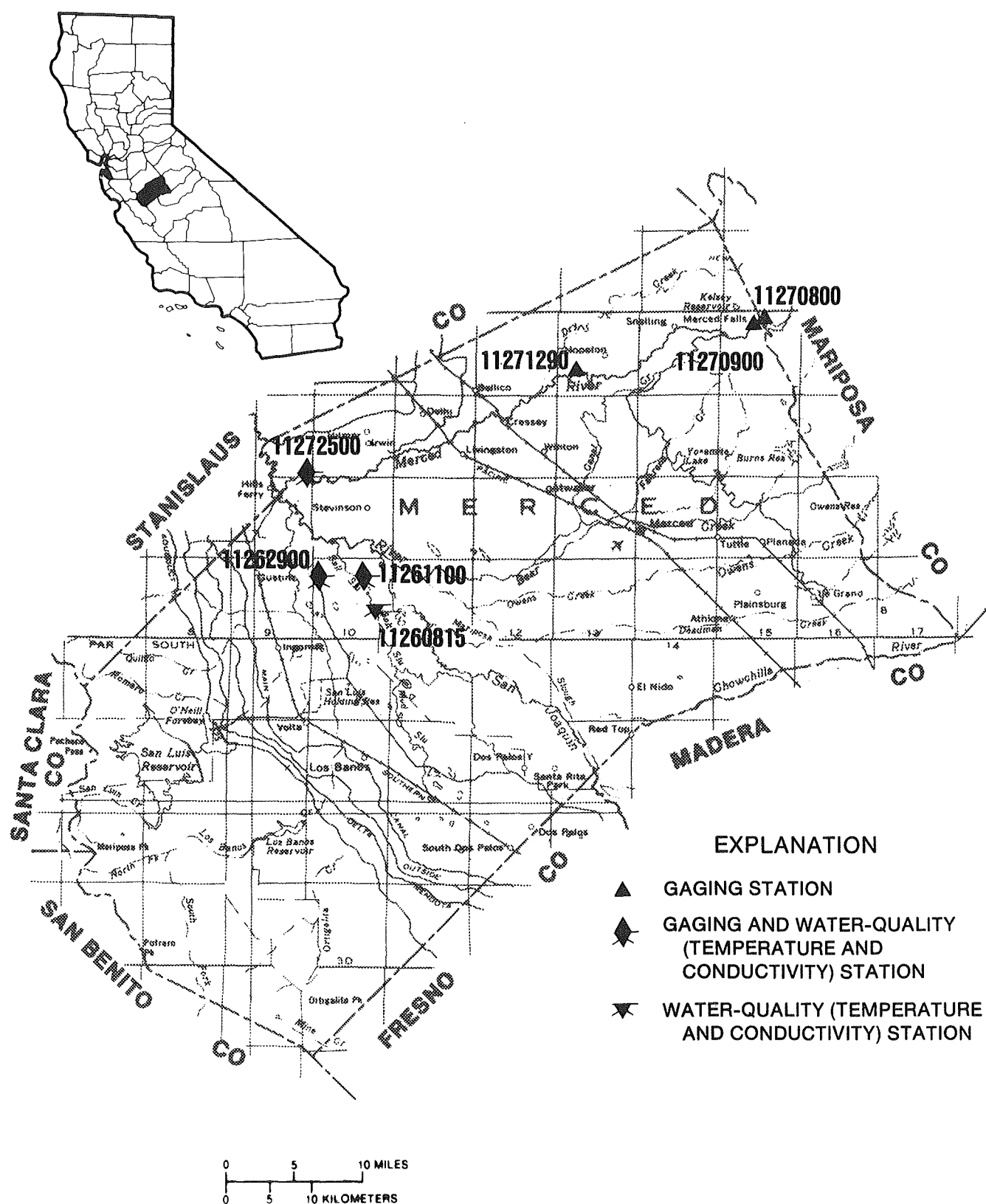
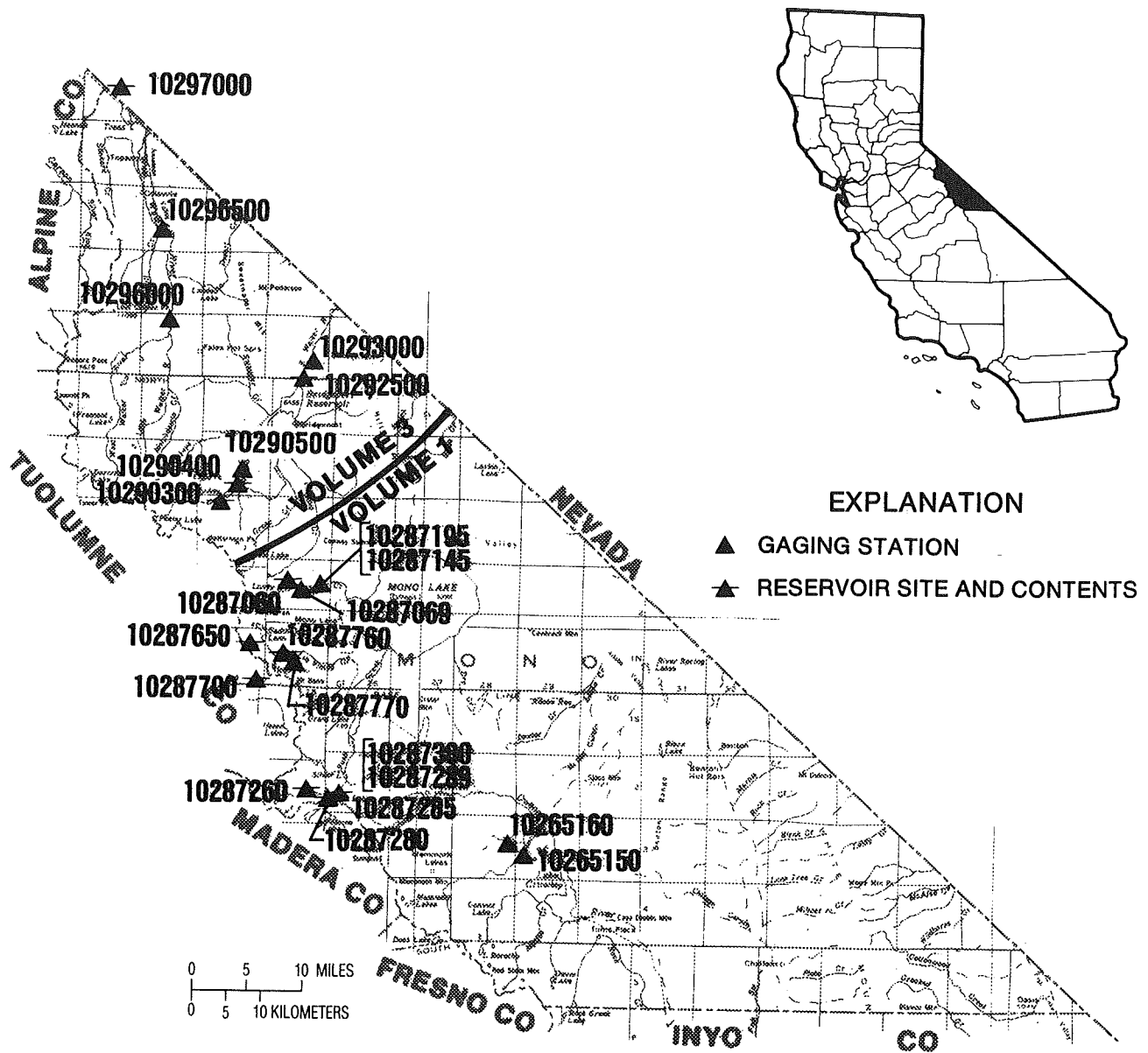


Figure 16. Location of discharge and water-quality stations in Merced County.



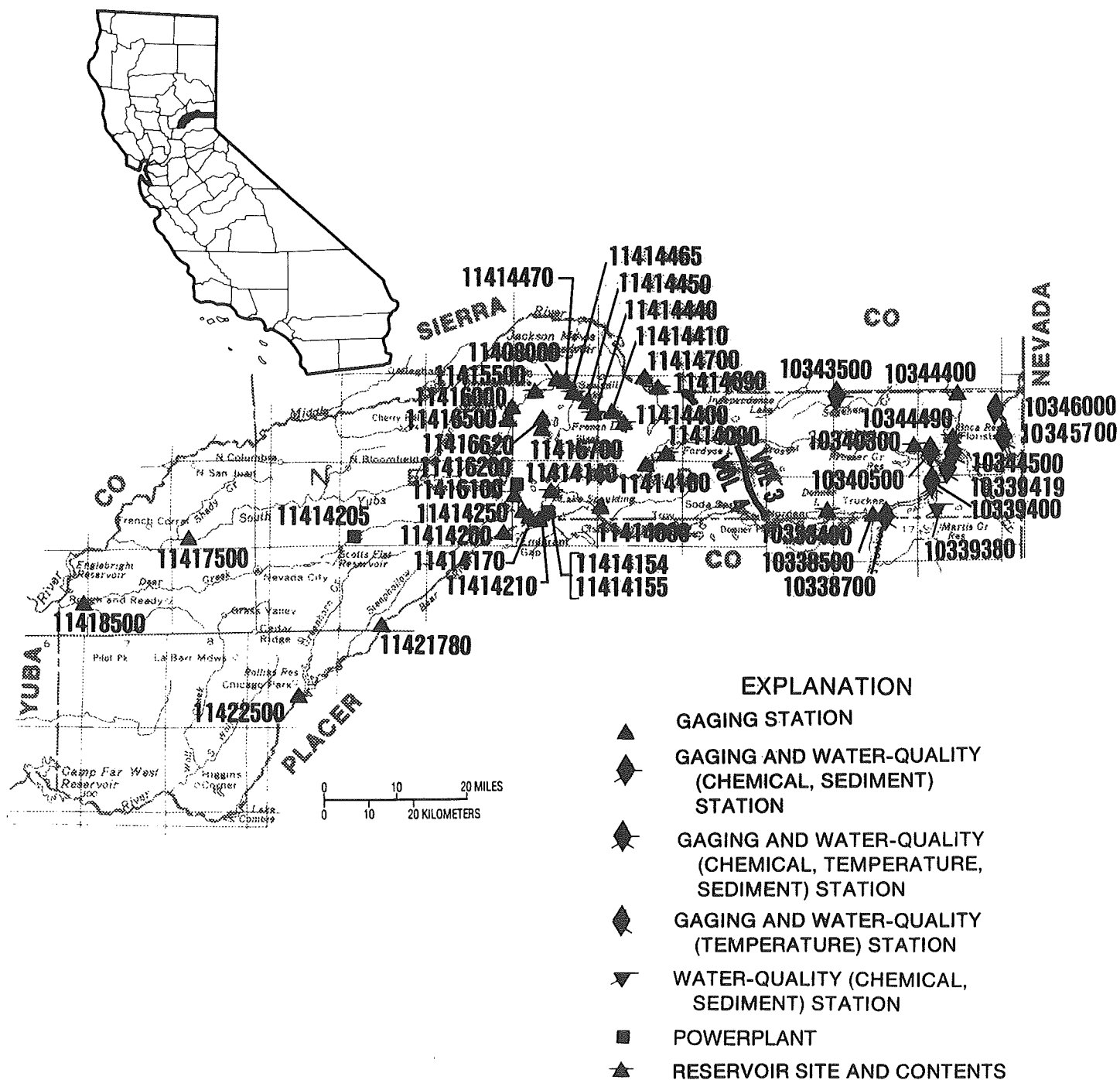


Figure 18. Location of discharge and water-quality stations in Nevada County.  
(NOTE: Records for stations 11408000 through 11422500 published in volume 4.)

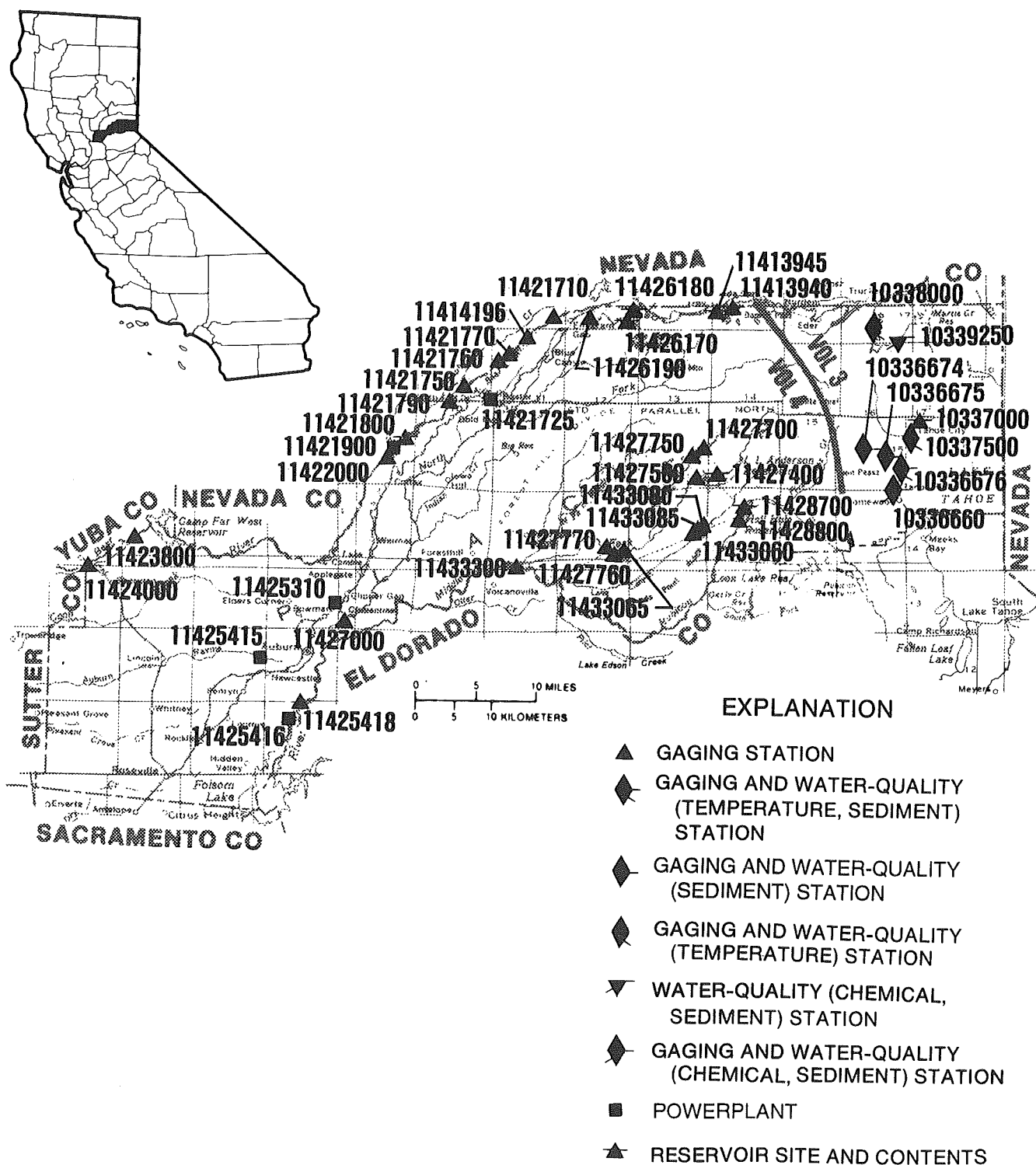


Figure 19. Location of discharge and water-quality stations in Placer County.  
 (NOTE: Records for stations 11413940 through 11433300 published in volume 4.)

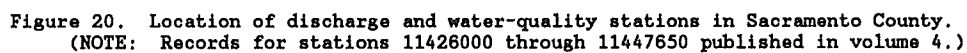


Figure 20. Location of discharge and water-quality stations in Sacramento County.  
(NOTE: Records for stations 11426000 through 11447650 published in volume 4.)



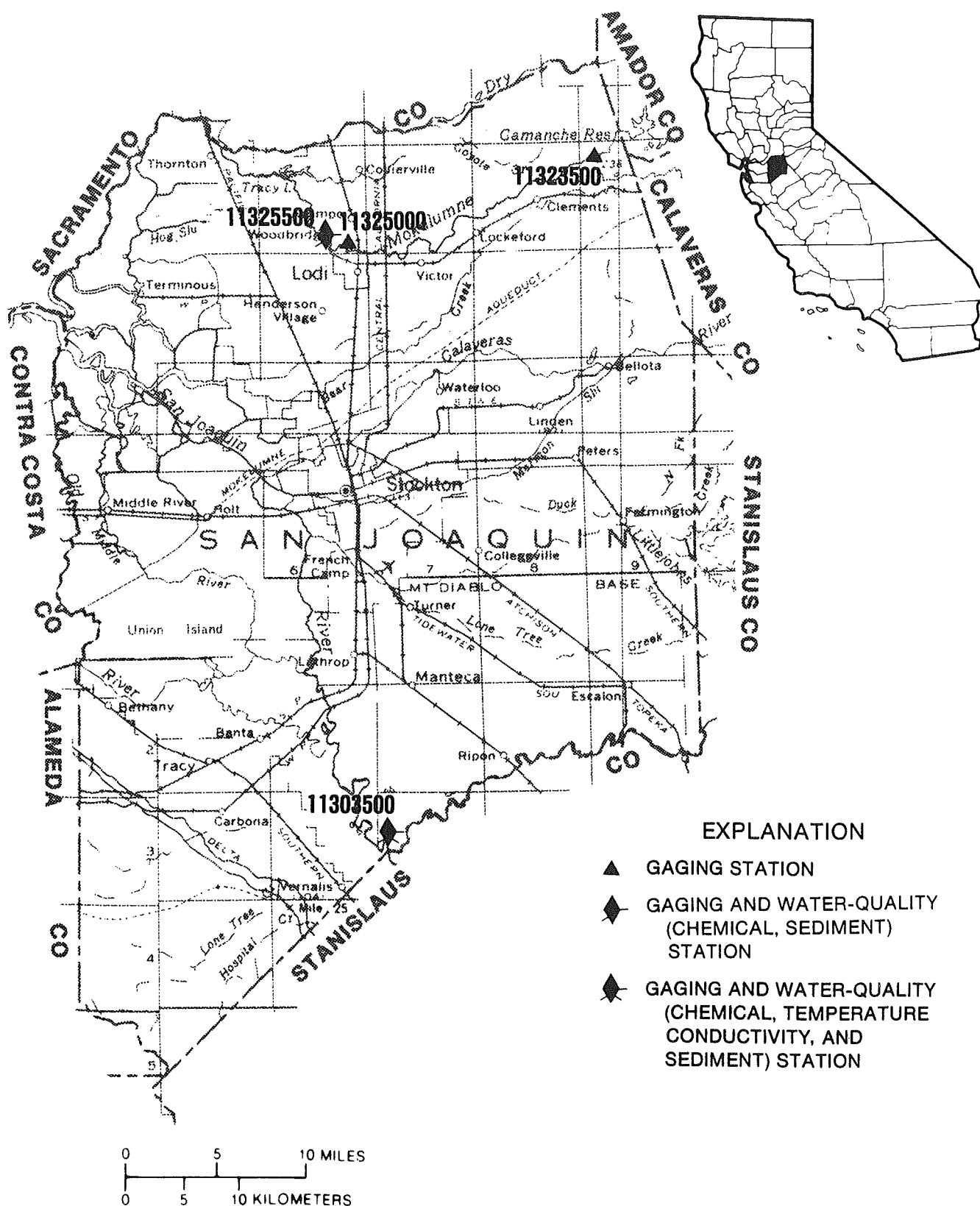


Figure 21. Location of discharge and water-quality stations in San Joaquin County.

## EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE) STATION
- ▲ RESERVOIR SITE AND CONTENTS

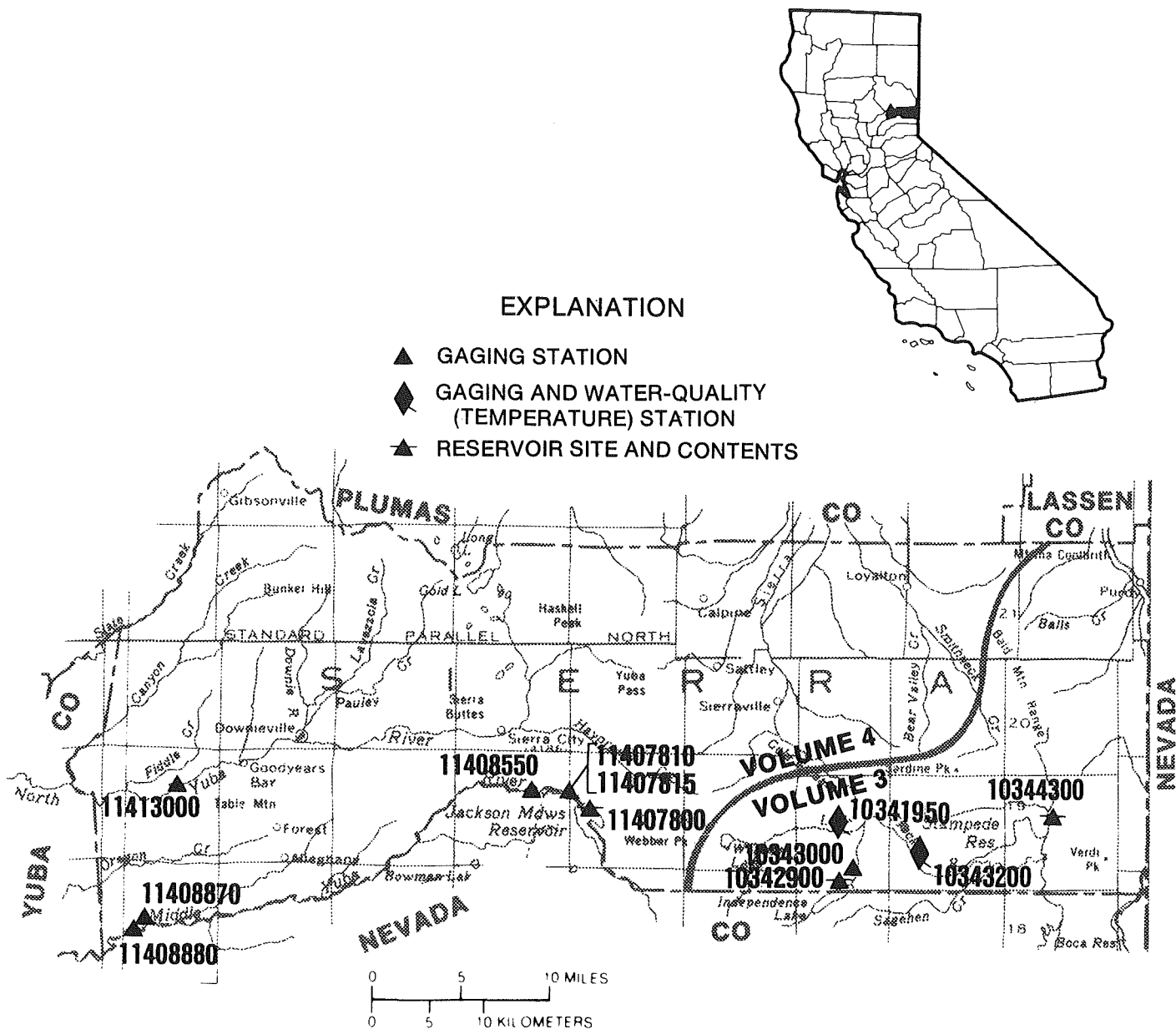


Figure 22. Location of discharge and water-quality stations in Sierra County.  
 (NOTE: Records for stations 11407800 through 11413000 published in volume 4.)

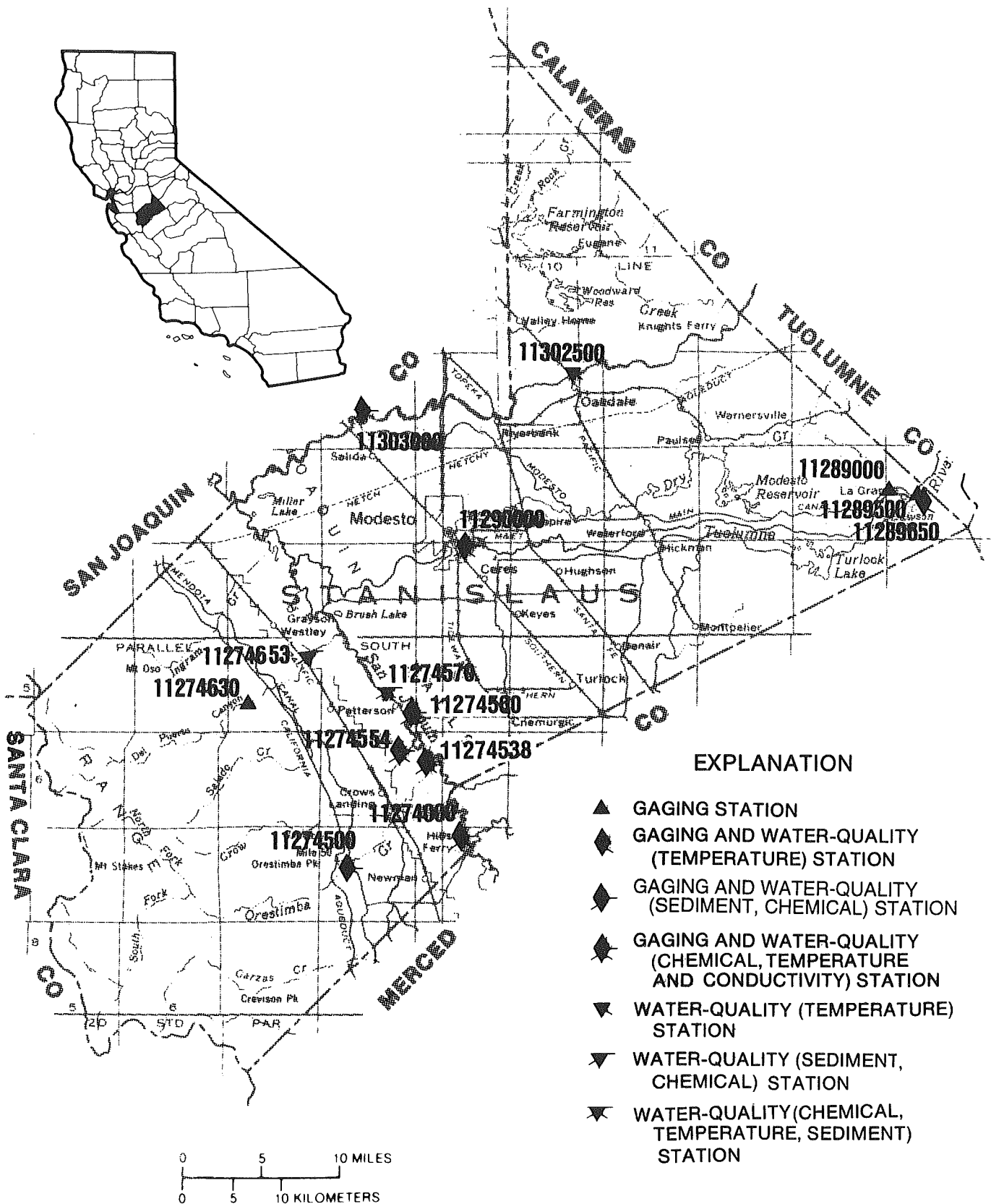


Figure 23. Location of discharge and water-quality stations in Stanislaus County.

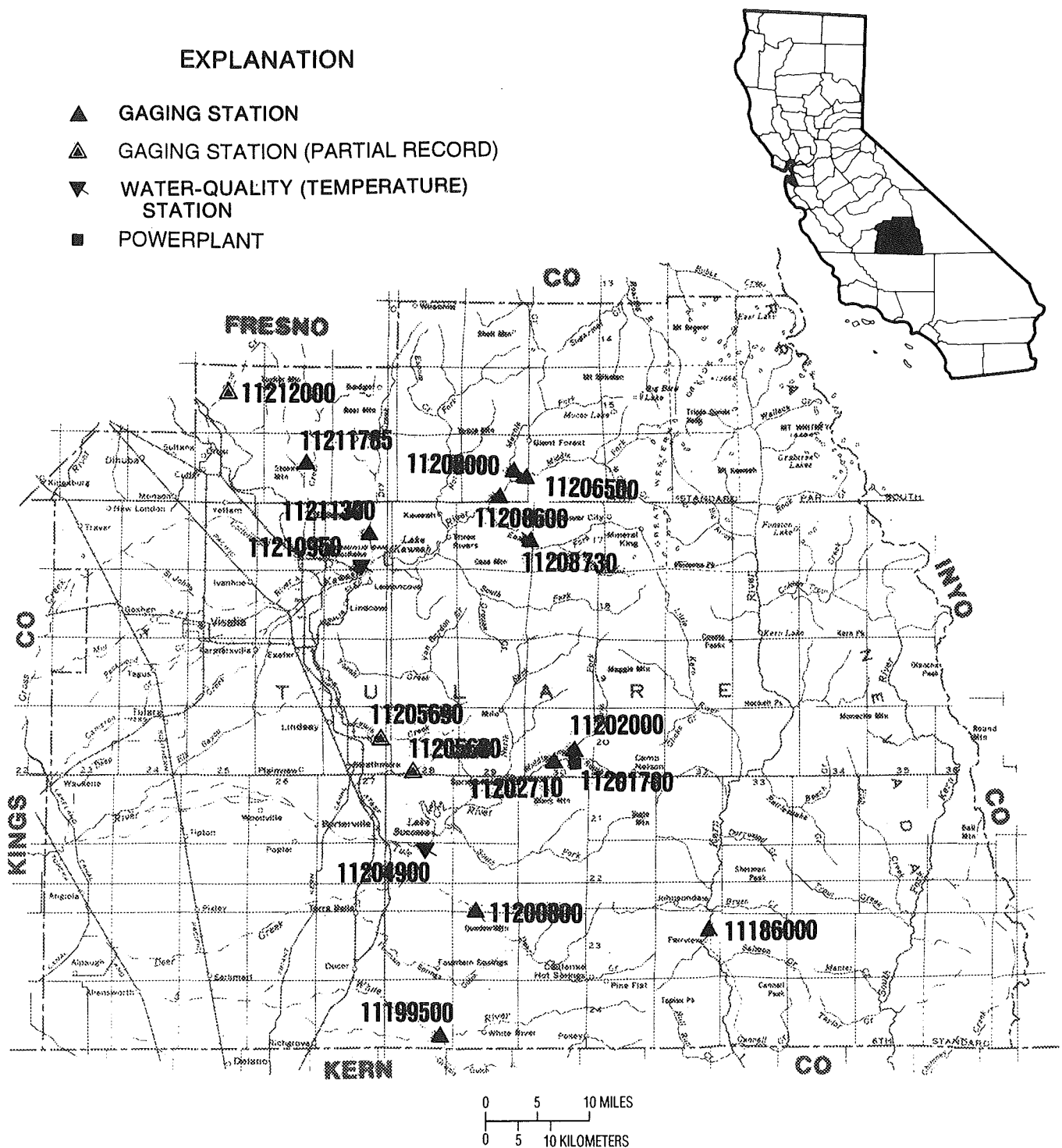


Figure 24. Location of discharge and water-quality stations in Tulare County.

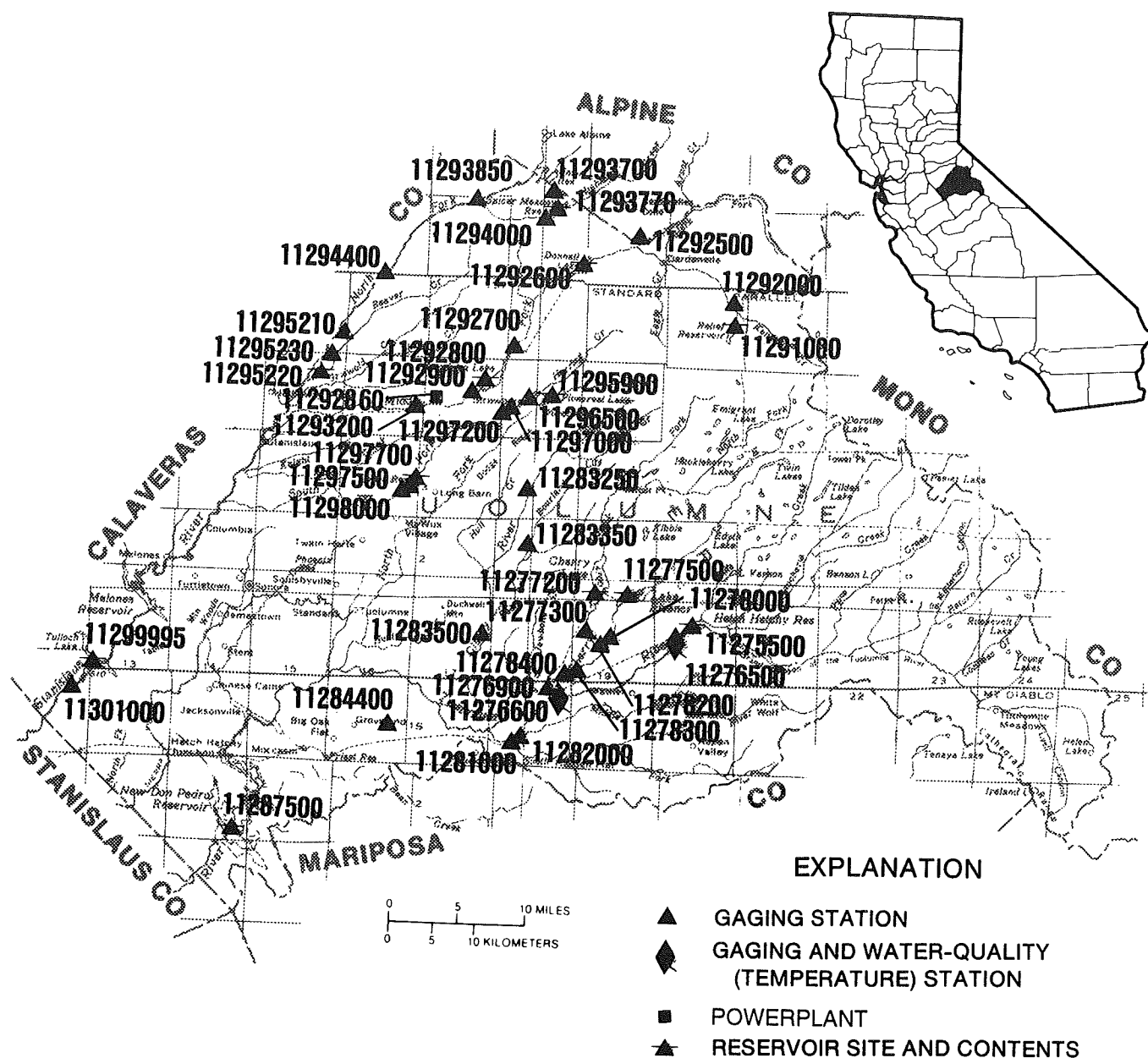


Figure 25. Location of discharge and water-quality stations in Tuolumne County.

## GAGING STATION AND WATER-QUALITY RECORDS

Remark Codes

The following remark codes may appear with the water-quality data in this report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
e	Estimated value
>	Actual value is greater than value shown
<	Actual value is less than value shown
K	Results based on colony count outside the acceptable range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
ND	Not detected
&	Biological organism estimated as dominant
*	Instantaneous streamflow at the time of cross-sectional measurement
1	Laboratory value
2	Laboratory fixed-end point titration
A	Samples collected by another agency
N	Suspended-sediment concentration value determined from a sample collected and processed according to National Water-Quality Assessment (NAWQA) protocol.

## Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ( $\mu\text{g/L}$ ) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter ( $\text{ng/L}$ ). Data above the  $\mu\text{g/L}$  level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994. Full implementation of the protocols is intended during the 1995 water year.

## Change in National Trends Network procedures

NOTE: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

## WALKER LAKE BASIN

10290300 UPPER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°09'15", long 119°20'58", in NW 1/4 NE 1/4 sec.5, T.3 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at outlet of upper lake dam on Robinson Creek, and 10 mi southwest of Bridgeport.

DRAINAGE AREA.--29.5 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1961 to February 1964, September 1964 to current year.

GAGE.--Non-recording gage. Datum of gage is 7,212.86 ft above sea level (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet. Figures given herein represent usable contents. Usable contents, 2,070 acre-ft between elevations 7,200 ft, natural rim, and 7,207 ft, spillway crest.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 2,990 acre-ft, July 7, 1983, elevation, 7,209.85 ft; minimum observed, 30 acre-ft, November 1, 1990, elevation, 7,200.11 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--No contents observed October 17, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 2,460 acre-ft, June 29, elevation, 7,208.21 ft; minimum observed, 280 acre-ft, August 29, elevation, 7,201.00 ft.

## MONTHEND ELEVATION AND CONTENTS, IN FEET ABOVE SEA LEVEL, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30. . . . .	7,207.08	2,100	--
Oct. 31. . . . .	7,207.15	2,120	+20
Nov. 30. . . . .	7,206.80	2,010	-110
Dec. 31. . . . .	7,206.08	1,780	-230
CAL YR 1993. . . . .	--	--	+1,021
Jan. 31. . . . .	7,206.95	2,050	+270
Feb. 28. . . . .	7,206.05	1,770	-280
Mar. 31. . . . .	7,207.19	2,130	+360
Apr. 30. . . . .	7,207.62	2,270	+140
May 31. . . . .	7,208.16	2,440	+170
June 30. . . . .	7,208.18	2,450	+10
July 31. . . . .	7,206.72	1,980	-470
Aug. 31. . . . .	7,201.02	285	-1,695
Sept. 30. . . . .	7,201.35	378	+93
WTR YR 1994. . . . .	--	--	-1722

NOTE: Monthend elevations and contents are interpolated from readings made during the year.

## 10290400 LOWER TWIN LAKE NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°10'05", long 119°19'33", in NE 1/4 NE 1/4 sec.33, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at outlet of lower lake dam on Robinson Creek, and 8 mi southwest of Bridgeport.

DRAINAGE AREA.--38.9 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1961 to current year.

GAGE.--Non-recording gage. Datum of gage is 7,205.45 ft above sea level (project datum of U.S. Indian Irrigation Service).

REMARKS.--Contents regulated by dam at outlet and by Upper Twin Lake. Figures given herein represent usable contents. Usable contents, 4,010 acre-ft between elevations 7,190 ft, natural rim, and 7,200 ft, spillway crest. One transarea diversion out of Tamarack Creek into Summers Creek.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,560 acre-ft, June 19, 1983, elevation, 7,203.58 ft; no contents, November 17, 1966.

EXTREMES FOR CURRENT YEAR--Maximum contents observed, 4,430 acre-ft, May 26, elevation, 7,201.00 ft; minimum observed, 1,140 acre-ft, September 27, elevation 7,192.86 ft.

## MONTHEND ELEVATION AND CONTENTS, IN FEET ABOVE SEA LEVEL, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30. . . . .	7,196.70	2,680	--
Oct. 31. . . . .	7,198.06	3,220	+540
Nov. 30. . . . .	7,199.57	3,830	+610
Dec. 31. . . . .	7,200.44	4,200	+370
CAL YR 1993. . . . .	--	--	+2,410
Jan. 31. . . . .	7,200.41	4,180	-20
Feb. 28. . . . .	7,200.46	4,200	+20
Mar. 31. . . . .	7,200.47	4,210	+10
Apr. 30. . . . .	7,200.85	4,370	+160
May 31. . . . .	7,200.99	4,430	+60
June 30. . . . .	7,200.67	4,290	-140
July 31. . . . .	7,196.55	2,620	-1,670
Aug. 31. . . . .	7,194.03	1,610	-1,010
Sept. 30. . . . .	7,193.00	1,200	-410
WTR YR 1994. . . . .	--	--	-1,480

NOTE: Monthend elevations and contents are interpolated from readings made during the year.



LOCATION.--Lat 38°10'20", long 119°19'25", in SE 1/4 SE 1/4 sec.28, T.4 N., R.24 E., Mono County, Hydrologic Unit 16050301, on left bank, 0.2 mi downstream from Lower Twin Lake, and 8 mi southwest of Bridgeport.

PERIOD OF RECORD.--October 1953 to September 1975, May 1992 to current year (irrigation season only).

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,050 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges during period of operation. Records good. Flow regulated by Upper and Lower Twin Lakes. No flow for many days in some years. Annual mean listed below is average discharge for water years 1954-75.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known, 660 ft<sup>3</sup>/s, June 21, 1911, gage height, 5.2 ft, at site 2.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period April to September, 172 ft<sup>3</sup>/s, June 2, gage height, 3.08 ft; minimum daily, 13 ft<sup>3</sup>/s, September 18-28.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	17	46	152	87	75	37
2	---	---	---	---	---	---	17	44	162	90	75	36
3	---	---	---	---	---	---	18	50	160	87	75	36
4	---	---	---	---	---	---	19	60	150	87	75	35
5	---	---	---	---	---	---	19	59	141	91	77	35
6	---	---	---	---	---	---	20	62	136	87	77	34
7	---	---	---	---	---	---	20	62	126	86	76	34
8	---	---	---	---	---	---	20	62	116	86	75	33
9	---	---	---	---	---	---	21	61	110	86	74	31
10	---	---	---	---	---	---	20	62	109	86	74	30
11	---	---	---	---	---	---	20	66	113	87	72	28
12	---	---	---	---	---	---	20	73	120	87	72	28
13	---	---	---	---	---	---	20	85	125	86	71	27
14	---	---	---	---	---	---	19	94	126	87	71	26
15	---	---	---	---	---	---	20	102	124	86	70	22
16	---	---	---	---	---	---	21	103	119	87	68	17
17	---	---	---	---	---	---	22	99	110	88	67	14
18	---	---	---	---	---	---	26	100	100	86	66	13
19	---	---	---	---	---	---	33	95	95	86	65	13
20	---	---	---	---	---	---	45	89	92	85	64	13
21	---	---	---	---	---	---	58	84	90	84	63	13
22	---	---	---	---	---	---	65	78	90	83	62	13
23	---	---	---	---	---	---	68	75	89	81	59	13
24	---	---	---	---	---	---	69	73	89	80	51	13
25	---	---	---	---	---	---	67	75	87	79	46	13
26	---	---	---	---	---	---	64	83	86	78	46	13
27	---	---	---	---	---	---	61	92	83	77	46	13
28	---	---	---	---	---	---	57	97	82	77	41	13
29	---	---	---	---	---	---	53	103	83	76	37	14
30	---	---	---	---	---	---	50	111	84	76	37	14
31	---	---	---	---	---	---	---	134	---	76	37	---
TOTAL	---	---	---	---	---	---	1049	2479	3349	2605	1964	674
MEAN	---	---	---	---	---	---	35.0	80.0	112	84.0	63.4	22.5
MAX	---	---	---	---	---	---	69	134	162	91	77	37
MIN	---	---	---	---	---	---	17	44	82	76	37	13
AC-FT	---	---	---	---	---	---	2080	4920	6640	5170	3900	1340

MEAN	20.8	7.61	4.93	9.51	13.1	14.3	46.5	101	181	152	94.8	50.0
MAX	37.5	25.0	21.9	39.0	63.4	25.5	79.4	187	349	337	144	89.0
(WY)	1970	1968	1968	1970	1963	1970	1959	1969	1969	1967	1969	1974
MIN	9.80	.67	.000	.000	.000	.000	22.3	59.1	68.2	62.0	35.1	15.9
(WY)	1956	1958	1954	1954	1954	1955	1975	1955	1992	1992	1992	1992

ANNUAL MEAN	60.0			
HIGHEST ANNUAL MEAN	99.5			1969
LOWEST ANNUAL MEAN	33.8			1961
HIGHEST DAILY MEAN	478		Jun 20	1963
LOWEST DAILY MEAN	.00		Nov 3	1953
ANNUAL SEVEN-DAY MINIMUM	.00		Nov 3	1953
INSTANTANEOUS PEAK FLOW	492		Jun 20	1963
INSTANTANEOUS PEAK STAGE	4.62		Jun 6	1969
ANNUAL RUNOFF (AC-FT)	43460			
10 PERCENT EXCEEDS	151			
50 PERCENT EXCEEDS	28			
90 PERCENT EXCEEDS	.20			

## 10292500 BRIDGEPORT RESERVOIR NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°19'30", long 119°12'40", in SE 1/4 NE 1/4 sec.34, T.6 N., R.25 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, at Bridgeport Dam on East Walker River, and 4.5 mi north of Bridgeport.

DRAINAGE AREA.--358 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1926 to current year. Monthend contents only for some periods, published in WSP 1314.

REVISED RECORDS.--WSP 1180: 1949. WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,466.44 ft above sea level (project datum).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began December 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft between elevations 6,415 ft, approximate elevation of bottom of reservoir, and 6,461 ft, crest of spillway is at elevation 6,460.75 ft; however, there are four siphons that become operative prior to reaching this spillway. Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,880 acre-ft, June 16, 1974, elevation 6,460.78 ft; no contents at times in water years 1929, 1930, 1960, 1977, 1988, and 1989.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,950 acre-ft, April 3, elevation, 6,449.52 ft; minimum 2,670 acre-feet, September 18, 19, elevation, 6,434.46 ft.

## Capacity table, (elevation, in feet, and contents, in acre-feet)

6,425	334	6,440	6,240
6,430	1,130	6,445	11,380
6,435	2,920	6,450	18,780

RESERVOIR STORAGE (AC-FT) WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13300	6260	8590	11080	13640	e15900	17780	16010	16470	12370	8880	4170
2	13170	6350	8680	11170	13700	e16000	17780	15920	16500	12180	8780	4010
3	13090	6440	8780	11290	13790	e16050	17820	15870	16380	11950	8710	3890
4	12970	6500	8860	11390	13840	e16080	17770	15790	16300	11740	8620	3770
5	12750	6570	8930	11480	13920	e16100	17750	15740	16170	11540	8540	3660
6	12680	6670	9000	11530	14050	e16140	17700	15760	15920	11370	8450	3550
7	12500	6750	9110	11600	14200	e16200	17680	15770	15770	11180	8380	3440
8	12370	6830	9180	11690	14320	e16300	17680	15770	15660	11000	8280	3350
9	12230	6930	9250	11750	14400	e16600	17660	15710	15570	10830	8190	3240
10	12090	7000	9390	11830	e14500	e16800	17630	15710	15550	10640	8080	3160
11	12070	7050	9500	11900	e14650	e16900	17580	15720	15570	10450	7960	3060
12	12030	7170	9550	11990	e14750	e17000	17520	15770	15570	10260	7780	2980
13	12020	7100	9670	12050	e14820	e17000	17440	15820	15580	10070	7590	2900
14	12090	7320	9720	12150	e14850	e17020	17390	15950	15490	9900	7390	2840
15	12120	7350	9790	12240	e14900	e17040	17370	15930	15340	9750	7200	2800
16	12150	7450	9870	12320	e15000	e17050	17320	15880	15170	9590	7000	2740
17	12200	7540	9920	12400	e15080	e17050	17270	15880	15030	9440	6820	2710
18	12290	7620	9980	12500	e15100	e17060	17200	16060	14860	9290	6640	2690
19	12300	7670	10060	12590	e15150	e17080	17150	16220	14690	9140	6500	2690
20	11820	7740	10110	12700	e15200	e17100	17110	16380	14490	9010	6340	2710
21	10070	7850	10170	12780	e15250	e17200	17000	16380	14290	8910	6180	2710
22	8370	7960	10240	12890	e15300	e17400	16890	16360	14110	8900	6020	2720
23	7300	7960	10290	13000	e15400	17660	16760	16280	13940	8910	5840	2730
24	6660	7980	10370	13070	e15550	17710	16660	16190	13800	8930	5660	2720
25	6310	8030	10460	13130	15790	17750	16500	16170	13650	8970	5460	2730
26	6110	8100	10570	13210	15630	17820	16340	16120	13470	9010	5260	2730
27	6040	8200	10650	13300	15740	17830	16250	16090	13240	e9000	5070	e2740
28	6060	8300	10740	13410	e15850	17820	16190	16030	13050	e9000	4860	e2760
29	6050	8410	10830	13460	---	17820	16140	15990	12790	e8980	4660	e2780
30	6120	8510	10930	13530	---	17800	16070	16110	12560	8960	4490	e2800
31	6200	---	10990	13570	---	17780	---	16310	---	8920	4330	---
MAX	13300	8510	10990	13570	15850	17830	17820	16380	16500	12370	8880	4170
MIN	6040	6260	8590	11080	13640	15900	16070	15710	12560	8900	4330	2690
a	6439.95	6442.42	6444.67	6444.75	6448.24	6449.42	6448.38	6448.53	6445.94	6442.82	6437.43	6434.75
b	-7190	+2310	+2480	+2580	+2280	+1930	-1710	+240	-3750	-3640	-4590	-1530

CAL YR 1993 MAX 33580 MIN 2870 b +8170  
WTR YR 1994 MAX 17830 MIN 2690 b -10590

e Estimated

a Elevation, in feet above sea level, at end of month.

b Change in contents, in acre-feet.

## 10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA

LOCATION.--Lat 38°19'40", long 119°12'50", in SW 1/4 NE 1/4 sec.34, T.6 N., R.25 E., Mono County, Hydrologic Unit 16050301, in Toiyabe National Forest, on right bank, 1,500 ft downstream from Bridgeport Reservoir, 5 mi north of Bridgeport, and 10 mi upstream from Sweetwater Creek.

DRAINAGE AREA.--359 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1911 to September 1914 (gage height only), October and November 1921, May 1922 to September 1924, March to July 1925, October 1925 to current year.

REVISED RECORDS.--WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,400 ft above sea level, from topographic map. Prior to October 1, 1921, nonrecording gage at site 0.5 mi upstream at different datum. October 1, 1921 to February 21, 1924, water-stage recorder at site 1 mi downstream at different datum. February 22, 1924 to September 30, 1931, water-stage recorder, and October 1, 1931 to May 25, 1939, nonrecording gage at present site at datum 2.34 ft lower. May 26, 1939 to November 27, 1988, water-stage recorder at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Diversions for irrigation of meadow pasturelands near Bridgeport. Flow regulated by Bridgeport Reservoir (station 10292500).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	26	30	33	34	24	55	65	125	127	85	105
2	105	26	30	33	34	29	55	68	162	132	93	101
3	105	26	30	33	34	45	55	71	231	144	93	92
4	112	25	30	33	27	63	55	72	206	144	93	86
5	127	22	30	28	22	72	55	75	206	130	92	86
6	133	22	30	28	22	72	55	83	197	118	91	84
7	129	22	30	24	23	72	55	83	180	123	91	78
8	124	22	29	32	23	71	55	83	134	113	91	73
9	121	22	28	25	34	68	59	79	127	113	91	72
10	104	22	23	22	34	60	67	75	127	113	95	72
11	101	22	20	23	34	60	67	76	117	110	112	72
12	79	22	23	23	34	60	67	114	118	113	133	72
13	62	22	29	23	34	82	67	139	128	115	140	72
14	39	25	29	23	34	79	63	150	142	107	139	66
15	39	32	29	23	34	80	55	170	151	103	138	55
16	39	30	29	23	27	93	59	170	168	102	134	53
17	39	29	28	23	23	92	72	160	160	101	127	44
18	39	30	28	23	23	84	79	135	156	97	120	40
19	64	30	29	23	33	85	96	125	147	94	106	36
20	318	30	28	23	33	85	100	104	145	93	105	29
21	921	29	28	23	34	72	111	104	141	94	104	30
22	889	29	28	23	34	54	118	103	116	85	108	30
23	596	30	28	23	34	55	113	100	117	78	121	30
24	399	30	28	23	34	55	103	108	102	68	132	30
25	254	30	27	23	28	55	106	108	117	51	131	31
26	176	31	28	23	24	55	109	109	129	52	129	31
27	110	31	28	23	24	55	92	118	137	63	128	31
28	86	31	28	23	24	55	72	118	148	63	127	30
29	62	30	30	24	---	55	65	118	148	63	126	30
30	38	31	33	34	---	55	65	123	144	69	119	30
31	26	---	33	34	---	55	---	125	---	80	109	---
TOTAL	5541	809	881	797	832	1997	2245	3331	4426	3058	3503	1691
MEAN	179	27.0	28.4	25.7	29.7	64.4	74.8	107	148	98.6	113	56.4
MAX	921	32	33	34	34	93	118	170	231	144	140	105
MIN	26	22	20	22	22	24	55	65	102	51	85	29
AC-FT	10990	1600	1750	1580	1650	3960	4450	6610	8780	6070	6950	3350

## WALKER LAKE BASIN

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1994, BY WATER YEAR (WY)

MEAN	60.0	28.2	34.6	35.0	43.9	84.9	172	248	304	293	236	150
MAX	301	325	398	260	200	417	721	880	1001	797	638	406
(WY)	1984	1983	1984	1942	1963	1983	1952	1938	1938	1967	1983	1983
MIN	7.35	1.10	2.50	.50	.62	5.39	27.5	57.5	36.0	20.4	13.3	17.1
(WY)	1931	1956	1960	1950	1950	1927	1961	1991	1924	1924	1924	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1922 - 1994	
ANNUAL TOTAL	50932		29111			
ANNUAL MEAN	140		79.8		141	
HIGHEST ANNUAL MEAN					443	
LOWEST ANNUAL MEAN					37.5	
HIGHEST DAILY MEAN	921	Oct 21	921	Oct 21	1360	Jun 20 1963
LOWEST DAILY MEAN	20	Dec 11	20	Dec 11	.20	Nov 2 1955
ANNUAL SEVEN-DAY MINIMUM	22	Nov 5	22	Nov 5	.20	Nov 2 1955
INSTANTANEOUS PEAK FLOW			1000	Oct 21	1390	Jun 19 1963
INSTANTANEOUS PEAK STAGE			5.92	Oct 21	4.95	Jan 22 1943
ANNUAL RUNOFF (AC-FT)	101000		57740		102100	
10 PERCENT EXCEEDS	292		134		337	
50 PERCENT EXCEEDS	127		65		91	
90 PERCENT EXCEEDS	29		23		6.8	

## 10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CA

LOCATION.--Lat 38°22'47", long 119°26'57", in NE 1/4 SE 1/4 sec.9, T.6 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 50 ft downstream from Little Walker River, 160 ft upstream from bridge on U.S. Highway 395, and 13 mi southeast of Coleville.

DRAINAGE AREA.--181 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1938 to current year. Prior to October 1958, published as "below East Fork."

REVISED RECORDS.--WDR NV-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,591.39 ft above sea level. Prior to October 1, 1939, at site, 125 ft downstream at datum 1.00 ft higher. October 1, 1939, to September 30, 1969, at present site and datum. October 1, 1969, to July 10, 1987, at site 100 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 7 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge observed prior to 1938, 5,800 ft<sup>3</sup>/s, December 11, 1937, on basis of slope-area measurement of peak flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	44	e39	e35	e32	45	124	197	774	180	60	22
2	55	41	e38	e36	e34	46	141	219	723	160	58	22
3	54	42	e38	e37	35	49	161	262	716	143	56	22
4	53	43	e39	e38	e34	53	139	343	623	134	54	22
5	55	42	e40	e39	e32	59	130	398	606	126	53	21
6	55	41	e41	e39	e31	53	132	422	573	118	51	21
7	54	41	e43	e39	27	54	120	305	458	110	49	21
8	52	39	e42	e39	e29	59	117	265	457	105	46	20
9	52	e39	e41	e39	e28	61	113	332	511	101	47	19
10	50	e38	e39	e39	e28	66	108	533	546	97	47	19
11	54	e38	e38	e40	e28	62	103	745	576	93	46	20
12	54	e37	e40	e41	e28	57	114	880	535	88	45	23
13	50	e36	e41	e41	e29	60	132	817	461	85	43	27
14	50	33	e40	e41	e30	70	170	857	459	82	43	27
15	59	e35	e39	41	e30	82	217	810	408	81	42	26
16	63	e39	e38	e40	e31	81	273	573	309	81	40	25
17	60	e40	e38	e40	29	75	328	444	273	81	38	24
18	56	e41	e38	e39	e31	77	419	407	267	80	37	23
19	52	e39	e37	e37	e31	78	511	377	275	79	36	24
20	51	e36	e36	e36	e32	74	540	351	274	75	35	25
21	51	e37	e36	e35	e33	77	535	364	273	72	31	23
22	49	e38	e36	e34	e34	79	443	386	258	84	29	22
23	48	39	e36	34	e36	69	344	437	236	79	28	21
24	48	e37	e36	32	36	70	269	592	227	70	27	22
25	47	e36	e36	e32	45	70	233	689	210	72	26	24
26	46	e39	e36	e31	41	68	212	711	196	70	25	23
27	44	e42	e35	e30	40	66	194	746	184	67	24	22
28	45	e41	e35	e30	42	75	180	746	192	65	24	29
29	46	e43	e34	e30	---	82	179	728	197	64	24	48
30	45	e41	e34	e30	---	95	190	765	189	64	23	45
31	45	---	e35	e31	---	113	---	1000	---	65	22	---
TOTAL	1598	1177	1174	1125	916	2125	6871	16701	11986	2871	1209	732
MEAN	51.5	39.2	37.9	36.3	32.7	68.5	229	539	400	92.6	39.0	24.4
MAX	63	44	43	41	45	113	540	1000	774	180	60	48
MIN	44	33	34	30	27	45	103	197	184	64	22	19
AC-FT	3170	2330	2330	2230	1820	4210	13630	33130	23770	5690	2400	1450

e Estimated.

## 10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

MEAN	55.0	68.8	72.1	66.8	73.3	102	292	750	918	464	143	71.8
MAX	219	539	448	204	246	369	600	1655	2066	1383	663	246
(WY)	1983	1951	1951	1956	1963	1986	1938	1969	1983	1983	1983	1983
MIN	16.6	22.2	20.0	18.1	26.0	32.1	108	139	188	41.1	18.5	12.3
(WY)	1978	1978	1991	1977	1991	1977	1975	1977	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1938 - 1994	
ANNUAL TOTAL	125266		48485		254	
ANNUAL MEAN	343		133		537	
HIGHEST ANNUAL MEAN					1983	
LOWEST ANNUAL MEAN					65.3	
HIGHEST DAILY MEAN	1790	May 24	1000	May 31	3800	Nov 21 1950
LOWEST DAILY MEAN	27	Feb 20	19	Sep 9	9.7	Sep 11 1977
ANNUAL SEVEN-DAY MINIMUM	34	Feb 15	20	Sep 5	10	Sep 5 1977
INSTANTANEOUS PEAK FLOW			1120	May 31	6220	Nov 20 1950
INSTANTANEOUS PEAK STAGE			3.51	May 31	8.10	Nov 20 1950
INSTANTANEOUS LOW FLOW			10	Jan 24	1.8	Nov 30 1992
ANNUAL RUNOFF (AC-FT)	248500		96170		183700	
10 PERCENT EXCEEDS	1160		420		784	
50 PERCENT EXCEEDS	92		48		86	
90 PERCENT EXCEEDS	36		28		33	

## 10296500 WEST WALKER RIVER NEAR COLEVILLE, CA

LOCATION.--Lat 38°30'55", long 119°27'15", in NW 1/4 NE 1/4 sec.28, T.8 N., R.23 E., Mono County, Hydrologic Unit 16050302, in Toiyabe National Forest, on left bank, 0.2 mi downstream from Rock Creek, and 5 mi southeast of Coleville.

DRAINAGE AREA.--250 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1902 to July 1908 (published as West Fork of Walker River near Coleville, 1903, 1905-8 and as Walker River (West Fork) near Coleville, 1904), March 1909 to September 1910, June 1915 to March 1938, May 1957 to current year. Monthly discharge only for some periods published in WSP 1314.

REVISED RECORDS.--WSP 880: 1917 (runoff in acre-ft). WSP 1514: 1918, 1923. WDR NV-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,520 ft above sea level, from topographic map. Prior to July 31, 1908, nonrecording gage at site 0.5 mi upstream at different datum. Mar. 1, 1909, to Aug. 31, 1910, nonrecording gage, and June 18, 1915, to Aug. 15, 1919, water-stage recorder near present site at different datums. Aug. 16, 1919, to Mar. 31, 1938, water-stage recorder at site 1,000 ft upstream at different datum. May 26, 1957, to Sep. 10, 1963, water-stage recorder at site 10 ft downstream at datum 0.38 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are poor. Station is above diversions except for a few small ranch ditches. Flow slightly regulated by Poore Lake, capacity, 1,200 acre-ft, 17 mi upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	54	42	e46	37	51	135	234	769	193	64	27
2	64	52	47	e47	42	53	151	259	673	178	61	27
3	64	52	43	48	45	55	175	313	688	161	60	27
4	62	52	46	49	43	57	160	384	588	151	59	27
5	63	50	41	50	42	63	149	444	560	140	57	27
6	65	49	43	42	e40	64	153	478	546	131	56	27
7	64	49	41	43	e38	58	140	391	439	124	53	26
8	62	48	46	47	e37	62	136	357	425	118	51	26
9	62	49	45	48	e37	64	130	390	470	114	50	25
10	62	49	46	44	e36	68	127	564	505	107	49	25
11	61	48	44	47	e34	72	120	711	551	101	49	25
12	62	48	39	44	28	64	128	862	517	96	49	27
13	60	47	e40	45	e34	65	142	806	438	93	47	31
14	59	46	e41	44	e36	72	177	790	431	89	45	32
15	62	45	44	45	e36	79	216	774	398	88	44	31
16	68	51	e43	44	e37	82	282	555	316	86	43	30
17	66	53	e41	43	e37	78	352	434	289	86	41	29
18	63	47	e39	43	e36	80	439	406	279	85	40	29
19	60	44	e39	44	35	83	536	381	280	84	40	29
20	60	47	e40	44	e36	80	569	366	280	82	38	30
21	60	47	e40	44	e37	81	570	371	278	77	36	29
22	60	48	e40	41	e38	83	493	386	269	83	34	27
23	59	41	e41	e40	e39	73	394	423	254	86	33	26
24	59	40	e42	38	e40	80	324	561	245	80	32	27
25	57	40	e43	e38	e41	78	286	653	229	80	31	28
26	56	49	e44	e37	e43	75	261	675	215	77	31	28
27	55	49	e45	e36	e45	77	238	703	206	74	29	27
28	56	51	e46	e35	49	81	217	712	209	71	28	29
29	57	48	e46	e35	---	88	211	683	216	69	28	40
30	55	49	e46	e36	---	104	225	739	205	68	28	45
31	54	---	e45	e37	---	125	---	1060	---	68	28	---
TOTAL	1883	1442	1328	1324	1078	2295	7636	16865	11768	3140	1334	863
MEAN	60.7	48.1	42.8	42.7	38.5	74.0	255	544	392	101	43.0	28.8
MAX	68	54	47	50	49	125	570	1060	769	193	64	45
MIN	54	40	39	35	28	51	120	234	205	68	28	25
AC-FT	3730	2860	2630	2630	2140	4550	15150	33450	23340	6230	2650	1710

e Estimated.

## WALKER LAKE BASIN

10296500 WEST WALKER RIVER NEAR COLEVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1994, BY WATER YEAR (WY)

MEAN	70.9	71.4	66.7	67.5	79.2	120	298	768	961	503	160	82.3
MAX	299	214	270	189	280	403	636	1756	2055	2492	685	269
(WY)	1905	1974	1965	1980	1963	1986	1910	1969	1983	1907	1907	1907
MIN	21.5	25.4	28.7	26.9	32.0	42.1	118	149	106	26.9	17.4	16.1
(WY)	1978	1930	1960	1930	1929	1933	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1903 - 1994	
ANNUAL TOTAL	129049		50956			
ANNUAL MEAN	354		140		270	
HIGHEST ANNUAL MEAN					669	
LOWEST ANNUAL MEAN					74.5	
HIGHEST DAILY MEAN	1820	May 19	1060	May 31	4170	Jul 3 1907
LOWEST DAILY MEAN	34	Jan 1	25	Sep 9	14	Jul 24 1924
ANNUAL SEVEN-DAY MINIMUM	40	Jan 1	26	Sep 5	14	Aug 28 1924
INSTANTANEOUS PEAK FLOW			1250	May 31	6500	Dec 11 1937
INSTANTANEOUS PEAK STAGE			3.06	May 31	.00	Dec 11 1937
ANNUAL RUNOFF (AC-FT)	256000		101100		195600	
10 PERCENT EXCEEDS	1180		427		814	
50 PERCENT EXCEEDS	96		56		95	
90 PERCENT EXCEEDS	45		32		36	



## 10297000 TOPAZ LAKE NEAR TOPAZ, CA

LOCATION.--Lat 38°41'35", long 119°31'10", in NW 1/4 NE 1/4 sec.33, T.10 N., R.22 E., Douglas County, Hydrologic Unit 16050301, at outlet works of Topaz Lake on West Walker River, and 5.5 mi north of Topaz.

PERIOD OF RECORD.--December 1921 to September 1931 (monthly contents only published in WSP 1734), October 1931 to current year.

GAGE.--Water-stage recorder read once daily. Datum of gage is above sea level. Prior to October 1, 1978, at datum 4.62 ft higher.

REMARKS.--Topaz Lake, formerly known as Alkali Lake and Topaz Reservoir, was formed by the diversion of water from West Walker River through a feeder canal and the construction of an outlet tunnel through a low saddle in rim of lake. Storage began about December 1921. Usable capacity, 59,440 acre-ft, between elevations 4,967.68 ft (lowest practical elevation for diversion through tunnel) and 5,000.38 ft (3 ft below top of levee). Useable capacity of reservoir was increased from about 45,000 acre-ft to 59,440 acre-ft in October 1937 by an earthfill, rock-faced levee at south end. Figures given herein represent usable contents. There is 65,000 acre-ft of lake volume below the point of controllable storage. Water is used for irrigation in Walker River Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,680 acre-ft, July 3, 1980, elevation 5,000.92 ft, present datum; no usable contents at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum contents 27,630 acre-ft, March 21, elevation, 4,984.61 ft; minimum contents, 2880 acre-ft, September 27, 29, elevation 4,969.55 ft.

## Capacity table (elevation, in feet, and contents, in acre-feet)

4,968	490	4,980	19,760	4,995	47,540
4,970	3,580	4,985	28,310	5,000	58,570
4,975	11,520	4,990	37,360		

RESERVOIR STORAGE (AC-FT) WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
INSTANTANEOUS OBSERVATIONS AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16340	13040	16210	19600	22930	26830	27350	25600	26350	20140	11220	4790
2	16040	13120	16310	19720	23030	26970	27350	25350	26410	19790	10980	4750
3	15740	13250	16440	19860	23140	27040	27380	25110	26540	19470	10740	4660
4	15430	13350	16540	19990	23220	27070	27380	25000	26520	19180	10500	4600
5	15270	13460	16670	20070	23320	27120	27350	24980	26430	18920	10240	4530
6	15000	13560	16750	20190	23440	27210	27260	25120	26210	18670	10050	4490
7	14790	13680	16870	20280	23650	27250	27190	25110	25930	18350	9810	4360
8	14590	13760	16980	20390	23790	27260	27110	25020	25910	18030	9500	4240
9	14380	13870	17070	20510	23890	27300	27000	24900	25970	17730	9220	4050
10	14180	13970	17150	20610	24030	27310	26900	25020	26090	17400	8900	4040
11	14000	14070	17400	20710	24160	27370	26800	25310	26350	17050	8670	3990
12	13820	14180	17520	20810	24250	27370	26710	25720	26540	16670	8420	3930
13	13680	14310	17630	20930	24370	27380	26570	26070	26550	16340	8200	3880
14	13560	14400	17760	21030	24490	27400	26480	26330	26430	15960	7960	3830
15	13500	14480	17880	21150	24590	27450	26430	26590	26260	15600	7730	3790
16	13420	14590	18000	21250	24730	27420	26450	26520	25910	15250	7530	3770
17	13330	14740	18100	21360	24980	27450	26480	26330	25520	14890	7350	3720
18	13270	14820	18180	21470	25160	27510	26690	26190	25000	14610	7190	3650
19	13190	14940	18300	21570	25310	27520	26900	26100	24610	14310	7050	3600
20	13140	15040	18380	21680	25480	27580	27050	25950	24250	14040	6910	3510
21	13150	15150	18470	21790	25570	27590	27180	25740	23840	13740	6690	3410
22	13200	15170	18570	21900	25720	27540	27210	25590	23510	13510	6480	3300
23	13220	15330	18650	22050	25900	27520	27140	25430	23140	13300	6280	3210
24	13270	15410	18730	22130	26030	27520	27020	25290	22830	13060	6060	3120
25	13270	15500	18850	22240	26210	27520	26880	25280	22490	12810	5820	3070
26	13220	15580	18970	22340	26350	27510	26730	25310	22120	12570	5600	3020
27	13150	15740	19070	22460	26540	27470	26590	25350	21690	12290	5400	2960
28	13090	15860	19170	22560	26690	27470	26400	25450	21320	12020	5290	2950
29	13040	15940	19280	22660	---	27440	26190	25480	20970	11810	5130	2910
30	13010	16070	19380	22750	---	27400	25910	25590	20560	11610	5010	2910
31	12980	---	19520	22850	---	27370	---	26090	---	11420	4900	---
MAX	16340	16070	19520	22850	26690	27590	27380	26590	26550	20140	11220	4790
MIN	12980	13040	16210	19600	22930	26830	25910	24900	20560	11420	4900	2910
a	4975.90	4977.79	4979.86	4981.83	4984.07	4984.47	4983.62	4983.72	4980.48	4974.94	4970.84	4969.57
b	-3720	+3090	+3450	+3330	+3840	+680	-1460	+180	-5530	-9140	-6520	-1990

CAL YR 1993 MAX 53910 MIN 2220 b +17270  
WTR YR 1994 MAX 27590 MIN 2910 b -13790

e Estimated.

a Elevation, in feet above sea level, at end of month.

b Change in contents, in acre-feet.

## CARSON RIVER BASIN

10308200 EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°42'50", long 119°45'50", in SW 1/4 NE 1/4 sec.15, T.10 N., R.20 E., Alpine County, Hydrologic Unit 16050201, on right bank, 0.5 mi downstream from Markleeville Creek, and 1.5 mi northeast of Markleeville.

DRAINAGE AREA.--276 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,400 ft above sea level, from topographic map. Prior to October 1, 1967, at present site at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs, total capacity, about 5,000 acre-ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	63	e68	e70	e58	100	e250	e310	623	120	58	e34
2	65	62	e64	e70	e62	106	e258	e330	577	117	66	e33
3	62	63	e62	e70	e66	112	e295	e400	560	113	68	e26
4	61	64	e64	e70	e70	118	e270	e535	501	116	66	e26
5	73	62	e62	e70	e60	136	e235	580	477	111	50	e26
6	78	62	e60	e68	e58	131	e240	593	453	96	49	e26
7	69	63	e58	e68	e56	113	e220	492	391	95	48	e25
8	66	62	e58	e66	e56	113	e205	461	372	102	46	e23
9	67	62	e64	e62	e56	121	e200	649	377	110	45	e21
10	67	62	e66	e60	e56	132	e190	751	386	107	45	e20
11	67	61	e66	e60	e56	131	e170	844	391	107	46	e22
12	72	61	e66	e62	e54	117	e185	932	369	122	46	e29
13	67	59	e62	e62	e54	117	e217	845	338	122	46	e40
14	67	61	e60	e60	e62	142	e295	794	323	122	45	e41
15	97	61	e60	e60	e60	184	e380	743	289	110	44	e39
16	95	70	e58	e60	e62	192	e485	588	251	93	43	e37
17	83	67	e58	e58	e60	159	e615	494	234	93	43	e36
18	77	63	e56	e58	e58	162	e710	486	222	85	43	e36
19	76	60	e54	e58	e56	160	e830	457	211	74	42	e36
20	75	65	e54	e60	e56	150	e840	449	201	71	42	e35
21	74	71	e54	e60	e58	e152	e795	461	188	76	43	e36
22	73	66	e60	e60	e60	e162	e675	464	178	81	46	e35
23	71	59	e64	e62	e62	e138	e560	495	165	74	46	31
24	68	58	e66	e60	e64	e137	e430	548	157	69	45	32
25	67	59	e70	e60	87	e130	e375	566	151	65	e40	37
26	66	59	e72	e60	99	e125	e345	595	147	55	e37	36
27	64	62	e72	e58	102	e124	e318	625	140	48	e36	34
28	65	e62	e72	e62	98	e138	e285	614	136	46	e39	33
29	65	e66	e72	e58	---	e163	e300	597	133	47	e36	38
30	64	e72	e70	e58	---	e195	e305	621	125	50	e36	43
31	64	---	e70	e56	---	e243	---	705	---	60	e35	---
TOTAL	2213	1887	1962	1926	1806	4403	11478	18024	9066	2757	1420	966
MEAN	71.4	62.9	63.3	62.1	64.5	142	383	581	302	88.9	45.8	32.2
MAX	97	72	72	70	102	243	840	932	623	122	68	43
MIN	61	58	54	56	54	100	170	310	125	46	35	20
AC-FT	4390	3740	3890	3820	3580	8730	22770	35750	17980	5470	2820	1920

e Estimated.

## CARSON RIVER BASIN

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10308200 EAST FORK CARSON RIVER BELOW MARKLEEVILLE CREEK, NEAR MARKLEEVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1994, BY WATER YEAR (WY)

MEAN	81.7	114	136	164	201	266	528	1086	938	359	138	86.9
MAX	346	476	718	545	917	983	1121	2447	2996	1428	477	239
(WY)	1983	1984	1985	1980	1986	1986	1982	1969	1983	1983	1983	1983
MIN	24.0	32.6	41.4	44.2	43.9	58.7	183	197	135	58.0	33.0	18.0
(WY)	1978	1977	1991	1977	1991	1977	1977	1977	1992	1977	1977	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1960 - 1994		
ANNUAL TOTAL	160259			57908					
ANNUAL MEAN	439			159					
HIGHEST ANNUAL MEAN							342		
LOWEST ANNUAL MEAN							809		
HIGHEST DAILY MEAN	2490			932			83.7		
LOWEST DAILY MEAN	32			20			7360		
ANNUAL SEVEN-DAY MINIMUM	34			23			12		
INSTANTANEOUS PEAK FLOW				1110			12		
INSTANTANEOUS PEAK STAGE				4.01			15100		
INSTANTANEOUS LOW FLOW							10.21		
ANNUAL RUNOFF (AC-FT)	317900			114900			9.5		
10 PERCENT EXCEEDS	1290			469			247700		
50 PERCENT EXCEEDS	123			68			908		
90 PERCENT EXCEEDS	60			42			140		
							48		

## 10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA

LOCATION.--Lat 38°46'10", long 119°49'55", in NW 1/4 SE 1/4 sec.34, T.11 N., R.19 E., Alpine County, Hydrologic Unit 16050201, in Toiyabe National Forest, on left bank, 0.3 mi downstream from bridge on State Highway 88-89, 0.6 mi southwest of Woodfords, and 3.8 mi downstream from Willow Creek.

DRAINAGE AREA.--65.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to current year. January 1890 to March 1892, June 1907 to September 1920 (except parts of 1910-11), at site 0.7 mi downstream; records not equivalent owing to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WDR NV-79-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,754.5 ft above sea level. Prior to October 1, 1938, nonrecording gage at about the same site at different datum. October 1, 1938, to November 11, 1958, water-stage recorder at same site at datum 1.02 ft lower. November 13, 1958, to January 30, 1963, water-stage recorder at site 150 ft downstream at datum 3.06 ft lower.

REMARKS.--Records fair, except for estimated daily discharges, which are poor. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs, total capacity, about 1,500 acre-ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 11, 1937, reached a stage of 8.0 ft, present datum, from floodmarks, discharge, 3,500 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	21	20	27	e21	26	81	90	92	23	11	15
2	33	21	21	28	e20	28	84	97	83	22	11	15
3	31	21	21	29	20	29	92	108	79	21	23	14
4	25	21	22	30	20	29	78	120	72	20	32	13
5	28	21	20	28	21	31	73	129	67	21	32	12
6	28	21	21	27	20	30	75	144	64	27	26	10
7	26	21	20	27	20	29	66	130	58	40	17	9.5
8	24	21	21	25	20	30	65	117	56	46	13	9.4
9	24	21	23	26	20	31	63	131	56	33	11	9.0
10	24	21	22	26	20	32	59	151	56	27	11	9.0
11	24	21	21	24	19	32	62	163	55	19	11	9.3
12	24	22	19	24	e19	30	73	179	54	17	11	10
13	24	21	23	24	e20	32	87	157	51	17	11	11
14	23	20	21	24	e21	38	107	144	48	16	10	11
15	29	20	21	24	21	42	122	135	44	16	10	11
16	30	21	21	24	21	44	140	111	41	15	9.9	11
17	26	22	e21	23	21	41	164	98	38	15	9.8	11
18	25	21	22	23	20	45	181	97	36	15	14	11
19	25	20	23	24	e20	47	197	93	35	24	15	11
20	24	20	e21	25	21	47	191	87	33	34	14	11
21	24	21	e21	23	20	52	173	80	33	38	11	11
22	24	22	e21	23	20	49	147	80	35	39	10	11
23	24	21	e23	22	22	43	128	87	46	35	10	11
24	23	19	24	21	22	40	107	94	47	21	10	12
25	23	23	26	21	24	39	97	101	41	15	10	18
26	22	26	29	21	24	36	94	101	36	13	9.7	15
27	22	22	30	21	24	41	91	108	28	13	9.9	14
28	22	23	29	21	24	52	83	101	26	12	9.9	14
29	22	22	28	21	---	62	83	93	25	12	9.6	16
30	21	22	28	23	---	73	88	96	24	12	9.5	16
31	21	---	28	e22	---	83	---	94	---	12	11	---
TOTAL	779	639	711	751	585	1263	3151	3516	1459	690	413.3	361.2
MEAN	25.1	21.3	22.9	24.2	20.9	40.7	105	113	48.6	22.3	13.3	12.0
MAX	34	26	30	30	24	83	197	179	92	46	32	18
MIN	21	19	19	21	19	26	59	80	24	12	9.5	9.0
AC-FT	1550	1270	1410	1490	1160	2510	6250	6970	2890	1370	820	716

e Estimated.

## 10310000 WEST FORK CARSON RIVER AT WOODFORDS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1994, BY WATER YEAR (WY)

MEAN	25.5	39.2	46.5	44.1	51.2	71.3	202	358	240	98.2	46.4	29.8
MAX	79.1	321	347	140	258	283	502	841	996	525	223	120
(WY)	1983	1951	1951	1970	1963	1986	1907	1907	1983	1907	1907	1983
MIN	8.27	13.1	12.8	13.7	16.3	18.2	46.6	56.4	37.4	18.1	11.1	7.00
(WY)	1989	1991	1991	1961	1977	1977	1975	1977	1992	1977	1977	1977

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1901 - 1994

ANNUAL TOTAL	48123		14318.5									
ANNUAL MEAN	132		39.2							108		
HIGHEST ANNUAL MEAN										244		1983
LOWEST ANNUAL MEAN										26.1		1977
HIGHEST DAILY MEAN	758	May 18	197	Apr 19						3000	Feb 1	1963
LOWEST DAILY MEAN	16	Jan 9	9.0	Sep 9						5.3	Sep 2	1977
ANNUAL SEVEN-DAY MINIMUM	17	Jan 3	9.5	Sep 6						5.4	Sep 5	1977
INSTANTANEOUS PEAK FLOW			251	Apr 19						4890	Feb 1	1963
INSTANTANEOUS PEAK STAGE			2.47	Apr 19						9.00	Feb 1	1963
ANNUAL RUNOFF (AC-FT)	95450		28400							78250		
10 PERCENT EXCEEDS	372		94							279		
50 PERCENT EXCEEDS	35		24							43		
90 PERCENT EXCEEDS	21		11							17		

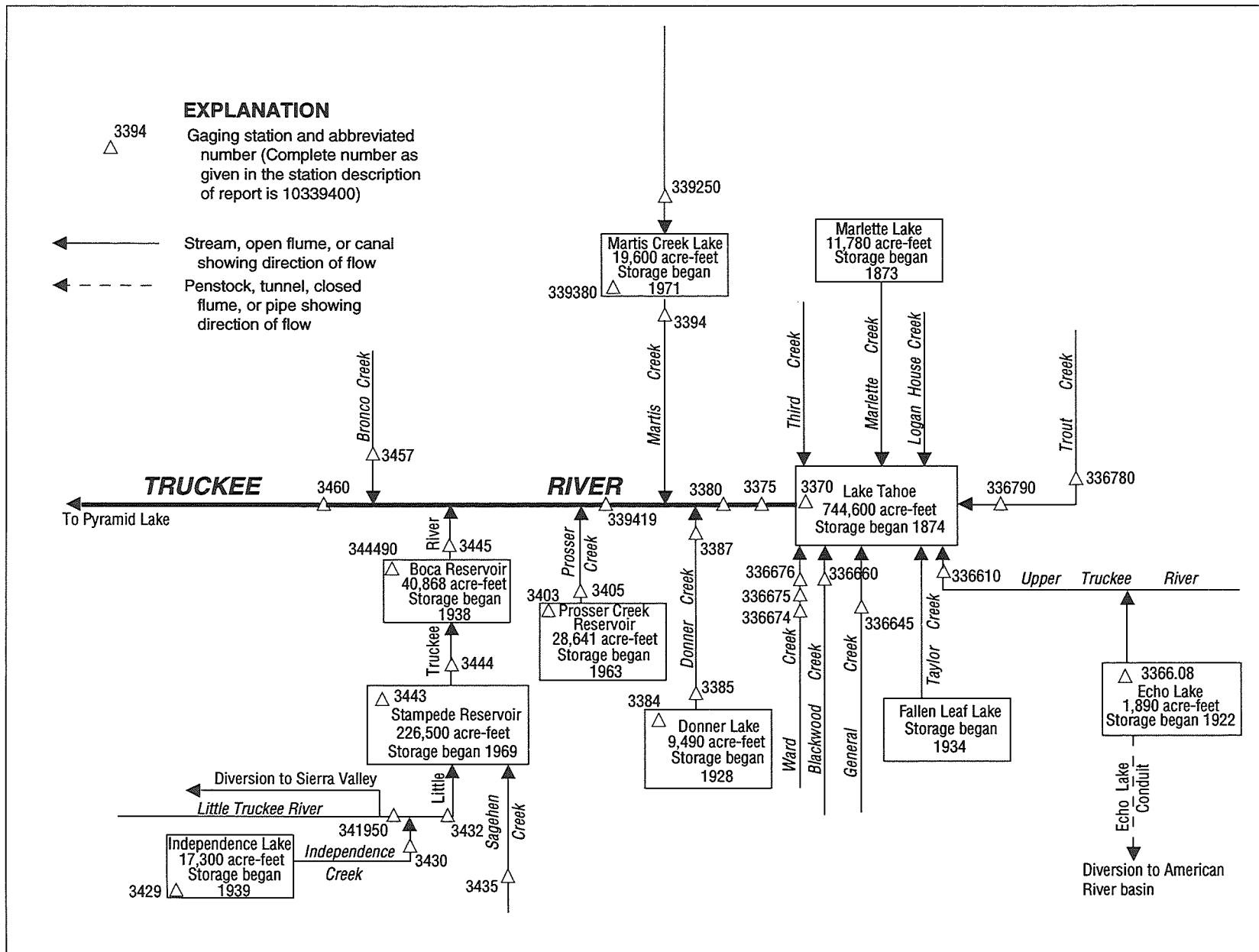


Figure 26. Diversions and storage in Truckee River basin.

## 10336608 ECHO LAKE NEAR PHILLIPS, CA

LOCATION.--Lat 38°50'05", long 120°02'36", in NE 1/4 NE 1/4 sec.1, T.11 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, Eldorado National Forest, at right end of dam on Lower Echo Lake near valve outlet to Echo Lake Conduit and 2.0 mi northeast of Phillips.

DRAINAGE AREA.--4.84 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1991 to current year. Unpublished records for 1981-91 water years are available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Prior to Dec. 3, 1991, nonrecording gage read periodically. Elevation of gage is 7,414 ft above sea level, from topographic map.

REMARKS.--Reservoir is formed by concrete dam completed in 1922 and rebuilt in 1992; storage began in 1922. Usable capacity, 1,890 acre-ft between gage heights 0.0 ft, spillway crest, and 6.0 ft, top of flashboards. Water is released via Echo Lake Conduit (station 11434500) to the South Fork American River for power and domestic use. Records from Dec. 3, 1991, including extremes, represent usable contents at 2400 hours. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,968 acre-ft, June 10, 1994, gage height, 6.24 ft; minimum, 0 acre-ft, Nov. 18-20, 1993, gage height, 0.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,968 acre-ft, June 10, gage height, 6.24 ft; minimum, 0 acre-ft, Nov. 18-20, gage height, 0.0 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Pacific Gas & Electric Co. in 1934)

0	0	4	1,255
1	310	5	1,570
2	625	6	1,890
3	940	6.7	2,118

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1511	229	---	---	---	---	167	170	1880	1887	1724	1481
2	1469	213	---	---	---	---	185	173	1922	1883	1715	1469
3	1421	195	---	---	---	---	216	216	1919	1883	1712	1469
4	1363	176	---	---	---	---	216	289	1919	1883	1706	1463
5	1326	161	---	---	---	---	209	379	1900	1874	1693	1460
6	1273	148	---	---	---	---	202	461	1887	1874	1684	1442
7	1218	137	---	---	---	---	192	473	1922	1874	1661	1402
8	1163	127	---	---	---	---	195	470	1932	1861	1651	1276
9	1121	96	---	---	---	---	195	482	1955	1851	1648	1273
10	1062	69	---	---	---	---	176	569	1968	1851	1641	1200
11	1016	60	---	---	---	---	170	713	1961	1844	1635	1148
12	982	51	---	---	---	---	167	845	1952	1838	1628	1103
13	916	48	---	---	---	---	173	973	1942	e1835	1622	1042
14	892	27	---	---	---	---	185	1103	1919	e1835	1619	997
15	859	24	---	---	---	123	213	1065	1913	e1835	1602	943
16	824	15	---	---	---	134	241	1075	1916	e1835	1593	895
17	771	9	---	---	---	134	280	1103	1906	e1828	1567	848
18	729	0	---	---	---	134	307	1127	1916	e1818	1580	801
19	682	0	---	---	---	134	331	1157	1922	e1812	1567	753
20	628	0	---	---	---	127	334	1193	1929	e1805	1560	702
21	581	---	---	---	---	117	313	1231	1929	e1796	1554	640
22	539	---	---	---	---	114	283	1264	1932	e1789	1550	604
23	500	---	---	---	---	134	265	1316	1932	e1783	1544	569
24	464	---	---	---	---	134	247	1392	1913	e1776	1541	545
25	415	---	---	---	---	130	241	1451	1909	e1766	1524	509
26	385	---	---	---	---	120	206	1508	1919	1760	1528	473
27	350	---	---	---	---	120	192	1593	1913	1751	1531	440
28	316	---	---	---	---	123	173	1664	1913	1751	1508	426
29	295	---	---	---	---	127	170	1709	1906	1751	1508	395
30	271	---	---	---	---	141	170	1766	1900	1748	1496	369
31	250	---	---	---	---	158	---	1835	---	1730	1493	---
MAX	1511	---	---	---	---	---	334	1835	1968	1887	1724	1481
MIN	250	---	---	---	---	---	167	170	1880	1730	1493	369
a	.80	---	---	---	---	.51	.55	5.83	6.03	5.50	4.76	1.19
b	-1326	---	---	---	---	---	+12	+1665	+65	-170	-237	-1124

WTR YR 1993 b -1207

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°55'21", long 119°59'26", in NW 1/4 SE 1/4 sec.4, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank 200 ft downstream from U.S. Highway 50 Bridge, 1.0 mi northeast of South Lake Tahoe Post Office, and 1.4 mi upstream from Lake Tahoe.

DRAINAGE AREA.--54.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to September 1974, October 1976 to June 1977, October 1977 to June 1978, March 1980 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 6,229.04 ft above sea level. Prior to Apr. 26, 1984, at datum 2.00 ft higher. Prior to Oct. 19, 1993, at site 200 ft upstream at same datum.

REMARKS.--Records fair including estimated periods. Two small dams may cause slight regulation at times. Some small diversions for domestic use upstream from station. Echo Lake conduit (station 11434500) diverts from Echo Lake (station 10336608), to South Fork American River basin. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,740 ft<sup>3</sup>/s, Mar. 8, 1986, gage height, 9.08 ft; maximum gage height, 10.12 ft, present datum, Feb. 16, 1982; minimum daily, 0.94 ft<sup>3</sup>/s, Oct. 5, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 20	0215	*240	*3.87				

Minimum daily, 0.70 ft<sup>3</sup>/s, Aug. 22 to Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	10	13	e12	e15	27	71	79	80	9.6	e1.9	e.70
2	7.8	9.2	12	e12	e15	27	76	84	73	8.8	e1.8	e.70
3	8.0	9.9	11	e12	e15	28	90	91	77	8.1	e1.8	e.70
4	7.9	10	11	e21	e15	30	85	97	75	7.1	e1.7	e.70
5	11	10	11	e35	e15	36	77	107	71	5.8	e1.7	e.70
6	12	10	e11	e18	e15	38	77	137	65	5.5	e1.6	e1.0
7	11	10	e11	e16	e15	36	70	140	52	5.5	e1.6	e1.0
8	10	10	12	e14	e15	37	66	125	54	5.2	e1.5	e1.0
9	9.7	9.2	23	e13	e15	39	64	137	41	e5.0	e1.5	e1.0
10	10	e9.0	17	e14	e15	42	59	162	46	e5.0	e1.4	e1.4
11	9.4	e9.0	e12	e14	e15	44	56	156	53	e5.0	e1.4	e2.0
12	10	e9.0	e12	e14	e15	42	61	177	50	e5.0	e1.3	e2.5
13	10	e9.0	e12	e14	e15	42	71	190	48	e4.5	e1.3	e3.0
14	10	e9.0	e12	e14	e15	46	86	143	47	e4.5	e1.2	e3.0
15	15	e9.0	e12	e14	e15	54	102	153	33	e4.5	e1.2	e3.0
16	18	e10	e12	e14	e15	60	121	111	26	e5.5	e1.1	e3.0
17	14	11	e12	e14	e18	54	140	80	24	e5.0	e1.1	e3.0
18	13	11	e12	e14	e24	53	158	78	24	e4.5	e1.0	e3.1
19	13	e11	e12	e14	e23	55	183	78	23	e4.0	e1.0	e3.1
20	12	e11	e12	e14	e22	54	196	76	21	e3.5	e.90	e3.1
21	12	e11	e12	e14	e22	56	191	75	20	e4.0	e.80	e3.1
22	12	11	e12	e14	e23	56	163	73	20	e5.0	e.70	e3.1
23	11	e11	e12	e14	e24	50	137	77	20	e4.0	e.70	e3.1
24	11	e12	e12	e15	e25	47	113	84	17	e3.5	e.70	e3.2
25	11	e12	e12	e15	e25	46	102	87	16	e3.0	e.70	e3.2
26	10	e12	e12	e15	e26	44	99	83	15	e2.5	e.70	e3.2
27	10	e11	e12	e15	27	44	94	89	13	e2.5	e.70	e3.2
28	9.8	11	e12	e15	26	48	82	86	12	e2.0	e.70	e3.4
29	9.7	12	e12	e15	---	56	79	78	11	e2.0	e.70	e3.3
30	9.7	e12	e12	e15	---	63	81	81	11	e2.0	e.70	e3.2
31	10	---	e12	e15	---	71	---	79	---	e1.9	e.70	---
TOTAL	335.9	311.3	384	469	525	1425	3050	3293	1138	144.0	35.80	69.70
MEAN	10.8	10.4	12.4	15.1	18.7	46.0	102	106	37.9	4.65	1.15	2.32
MAX	18	12	23	35	27	71	196	190	80	9.6	1.9	3.4
MIN	7.8	9.0	11	12	15	27	56	73	11	1.9	.70	.70
AC-FT	666	617	762	930	1040	2830	6050	6530	2260	286	71	138

e Estimated.



## 10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.3	44.0	50.1	49.1	65.8	100	158	282	225	70.3	17.9	11.9
MAX	72.1	225	218	165	307	305	300	567	795	365	102	55.3
(WY)	1983	1984	1982	1974	1986	1986	1982	1982	1983	1983	1983	1983
MIN	2.60	7.36	8.07	8.00	10.5	21.2	64.0	55.3	23.5	4.65	1.15	1.39
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1994	1994	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1972 - 1994			
ANNUAL TOTAL	44383.4				11180.70							
ANNUAL MEAN	122				30.6				92.5			
HIGHEST ANNUAL MEAN									203			
LOWEST ANNUAL MEAN									29.2			
HIGHEST DAILY MEAN	663				196				2010			
LOWEST DAILY MEAN	7.7				.70				.70			
ANNUAL SEVEN-DAY MINIMUM	7.9				.70				.70			
INSTANTANEOUS PEAK FLOW					240				2740			
INSTANTANEOUS PEAK STAGE					3.87				10.12			
ANNUAL RUNOFF (AC-FT)	88030				22180				67040			
10 PERCENT EXCEEDS	361				82				256			
50 PERCENT EXCEEDS	43				13				34			
90 PERCENT EXCEEDS	9.9				1.7				6.7			

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-74, 1978, 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1992.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. In 1994 station was incorporated into the National Water-Quality Assessment Program (NAWQA) to monitor water-quality conditions in the Truckee River Basin. These data are reviewed and provided by the U.S. Geological Survey, Nevada District Office.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3
OCT										
26...	1040	10	95	7.4	8.0	5.0	612	9.5	93	--
NOV										
16...	1120	10	88	--	5.5	0.5	--	--	--	--
DEC										
29...	1115	12	94	--	3.0	0.5	--	--	--	--
MAR										
21...	1350	56	65	--	9.0	7.5	--	--	--	--
APR										
05...	1150	78	53	8.0	9.0	4.0	604	11.0	106	--
20...	1150	190	25	--	12.5	5.5	--	--	--	--
26...	1230	97	52	8.1	7.5	3.5	599	10.7	103	--
MAY										
03...	1245	97	34	--	14.0	9.0	--	--	--	--
06...	1200	137	32	--	9.5	6.0	--	--	--	--
10...	1000	162	25	7.0	--	6.0	610	9.7	98	--
12...	1415	177	25	--	16.0	10.5	--	--	--	--
13...	0610	190	26	--	1.0	7.0	--	--	--	--
18...	1050	78	42	7.8	6.5	5.0	590	10.3	104	--
23...	1420	77	39	--	17.0	14.0	--	--	--	--
JUN										
02...	1200	77	37	7.7	18.0	13.0	605	10.5	126	--
13...	1100	45	44	7.5	18.0	13.0	605	8.8	106	16
JUL										
01...	1345	5.0	81	--	25.0	22.0	--	--	--	--
12...	1110	5.0	97	7.8	24.0	18.5	610	8.1	109	--
AUG										
03...	1050	1.8	118	--	21.5	18.0	--	--	--	--
22...	1200	0.70	124	8.2	24.0	15.5	606	8.8	111	--
SEP										
19...	1215	3.1	125	8.0	20.0	13.0	608	8.9	106	--

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT									
26...	0.004	<0.001	0.11	0.032	0.003	246	7	0.19	--
NOV									
16...	0.015	<0.001	0.09	0.019	0.006	278	4	0.11	--
DEC									
29...	0.014	<0.001	0.08	0.009	0.004	199	--	--	--
MAR									
21...	0.015	0.003	0.15	0.023	0.007	368	6	0.91	--
APR									
05...	0.012	0.003	0.17	0.019	0.003	275	7	1.5	--
20...	0.012	<0.001	0.29	0.046	0.005	644	28	14	--
26...	0.015	0.001	0.12	0.020	0.003	274	6	1.6	--
MAY									
03...	0.008	<0.001	0.13	0.021	0.004	80	8	2.1	--
06...	0.008	<0.001	0.16	0.033	0.004	313	24	8.9	--
10...	0.003	<0.001	0.19	0.032	0.002	453	22	9.6	69
12...	0.008	<0.001	0.16	0.032	0.004	310	20	9.6	--
13...	0.008	<0.001	0.12	0.032	0.004	259	18	9.2	--
18...	0.012	<0.001	0.11	0.025	0.005	203	6	1.3	--
23...	0.008	<0.001	0.15	0.019	0.005	186	6	1.2	--
JUN									
02...	0.009	<0.001	0.09	0.022	0.004	186	3	0.62	--
13...	0.005	0.002	0.09	0.019	0.005	183	6	0.73	67
JUL									
01...	0.008	<0.001	0.18	0.045	0.007	209	8	0.20	--
12...	0.012	<0.001	0.12	0.031	0.007	333	4	0.05	83
AUG									
03...	0.009	<0.001	0.18	0.028	0.004	268	4	0.02	--
22...	0.010	<0.001	0.21	0.023	0.004	264	3	0.01	--
SEP									
19...	0.005	0.001	0.15	0.038	0.003	391	6	0.05	--

DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
MAY												
10...	0950	6229	162	25	7.0	--	6.0	610	9.7	98	7	0
JUN												
13...	1040	6229	45	44	7.5	18.0	13.0	605	8.8	106	13	0
JUL												
12...	1120	6229	5.0	97	7.8	24.0	18.5	610	8.1	109	27	0
AUG												
08...	0940	6229	1.5	120	7.9	20.0	15.0	603	7.2	91	33	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CaCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
MAY											
10...	2.1	0.50	1.9	0.3	0.60	12	10	0.30	1.7	<0.10	8.6
JUN											
13...	3.7	0.93	3.1	0.4	0.90	19	16	0.50	3.5	<0.10	13
JUL											
12...	7.7	2.0	7.2	0.6	1.7	37	31	1.1	10	<0.10	16
AUG											
08...	9.2	2.4	9.5	0.7	2.0	44	36	1.4	13	0.10	12

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
MAY 10...	22	22	6.06	0.03	<0.010	<0.050	0.010	<0.20	<0.20	0.030	<0.010
JUN 13...	46	35	5.59	0.06	<0.010	<0.050	<0.010	<0.20	0.20	0.020	0.020
JUL 12...	66	64	0.89	0.09	<0.010	<0.050	<0.010	<0.20	<0.20	0.020	<0.010
AUG 08...	71	71	0.29	0.10	<0.010	<0.050	0.010	0.30	<0.20	0.020	<0.010
DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ANTI- MONY, DIS- SOLVED (UG/L AS SB)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
MAY 10...	<0.010	30	<1	<1	5	<1	5.0	7	<1	3	75
JUN 13...	<0.010	10	<1	<1	8	<1	<1.0	<1	<1	<1	120
JUL 12...	<0.010	10	<1	1	16	<1	<1.0	<1	<1	<1	240
AUG 08...	<0.010	10	<1	2	14	<1	<1.0	1	<1	<1	180
DATE	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
MAY 10...	--	<1	5	<1	<1	<1	<1.0	1	<1.0	2.8	0.7
JUN 13...	183	<1	6	<1	<1	<1	<1.0	<1	<1.0	1.4	--
JUL 12...	--	<1	11	2	<1	<1	<1.0	<1	<1.0	1.6	0.3
AUG 08...	284	<1	17	2	<1	<1	<1.0	<1	1.0	4.4	0.2
DATE	ALA- CHLOR, WATER, DISS, REC, (UG/L)	METO- LACHLOR WATER DISSOLV (UG/L)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROP- CHLOR, WATER, DISS, REC (UG/L)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	ALDI- CARB SULFONE WAT,FLT GF 0.7U REC (UG/L)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7U REC (UG/L)	BUTYL- ATE, WATER, DISS, REC (UG/L)	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L)
MAY 10...	<0.009	<0.009	<0.010	<0.009	<0.015	<0.016	<0.05	<0.05	<0.05	<0.008	<0.05
JUN 13...	<0.009	<0.009	<0.010	<0.009	<0.015	<0.016	<0.05	<0.05	<0.05	<0.008	<0.05
JUL 12...	<0.009	<0.009	<0.010	<0.009	<0.015	<0.016	<0.05	<0.05	<0.05	<0.008	<0.05
AUG 08...	<0.009	<0.009	<0.010	<0.009	<0.015	<0.016	<0.05	<0.05	<0.05	<0.008	<0.05

## PYRAMID AND WINNEMUCCA LAKES BASIN

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10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO- FURAN, WATER, FLTRD, GF 0.7U REC (UG/L)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (UG/L)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L)	METHIO- CARB, WATER, FLTRD, GF 0.7U REC (UG/L)	METH- OMYL, WATER, FLTRD, GF 0.7U REC (UG/L)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L)	PEB- ULATE WATER FILTRED 0.7 U GF, REC (UG/L)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L)
MAY 10...	<0.046	<0.05	<0.013	<0.05	<0.005	<0.05	<0.05	<0.007	<0.05	<0.009	<0.05
JUN 13...	<0.046	<0.05	<0.013	<0.05	<0.005	<0.05	<0.05	<0.007	<0.05	<0.009	<0.05
JUL 12...	<0.046	<0.05	<0.013	<0.05	<0.005	<0.05	<0.05	<0.007	<0.05	<0.009	<0.05
AUG 08...	<0.046	<0.05	<0.013	<0.05	<0.005	<0.05	<0.05	<0.007	<0.05	<0.009	<0.05
DATE	PRO- POXUR, WATER, FLTRD, GF 0.7U REC (UG/L)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	AMIBEN, WATER, FLTRD, GF 0.7U REC (UG/L)	2,4-D, DIS- SOLVED (UG/L)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L)	SILVEX, DIS- SOLVED (UG/L)	2,4,5-T DIS- SOLVED (UG/L)	TRI- CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L)
MAY 10...	<0.05	<0.008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
JUN 13...	<0.05	<0.008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
JUL 12...	<0.05	<0.008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
AUG 08...	<0.05	<0.008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DATE	BEN- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	ORY- ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	ALPHA BHC DIS- SOLVED (UG/L)	CHLORO- THALO- NIL, WAT,FLT GF 0.7U REC (UG/L)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L)
MAY 10...	<0.013	<0.013	<0.05	<0.018	<0.012	<0.007	<0.05	<0.004	<0.05	<0.01	<0.05
JUN 13...	<0.013	<0.013	<0.05	<0.018	<0.012	<0.007	<0.05	<0.004	<0.05	<0.01	<0.05
JUL 12...	<0.013	<0.013	<0.05	<0.018	<0.012	<0.007	<0.05	<0.004	<0.05	<0.01	<0.05
AUG 08...	<0.013	<0.013	<0.05	<0.018	<0.012	<0.007	<0.05	<0.004	<0.05	<0.01	<0.05
DATE	DICHLOR- BENIL, WATER, FLTRD, GF 0.7U REC (UG/L)	DI- ELDRIN DIS- SOLVED (UG/L)	LINDANE DIS- SOLVED (UG/L)	PIC- LORAM, WATER, FLTRD, GF 0.7U REC (UG/L)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L)	CHLOR- PYRIFOS DIS- SOLVED (UG/L)	DI- AZINON, DIS- SOLVED (UG/L)	DIMETH- OATE WATER FLTRD 0.7 U GG, REC (UG/L)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L)	
MAY 10...	<0.05	<0.008	<0.011	<0.05	<0.05	<0.008	<0.008	<0.024	<0.060	<0.012	
JUN 13...	<0.05	<0.008	<0.011	<0.05	<0.05	<0.008	<0.008	<0.024	<0.060	<0.012	
JUL 12...	<0.05	<0.008	<0.011	<0.05	<0.03	<0.005	<0.008	<0.024	<0.008	<0.012	
AUG 08...	<0.05	<0.008	<0.011	<0.05	<0.03	<0.005	<0.008	<0.024	<0.008	<0.012	

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336610 UPPER TRUCKEE RIVER AT SOUTH LAKE TAHOE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	FONOFOS WATER DISS REC (UG/L)	MALA- THION, DIS- SOLVED (UG/L)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L)	PARA- THION, DIS- SOLVED (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	ATRA- ZINE, WATER, DISS, REC (UG/L)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L)	CYANA- ZINE, WATER, DISS, REC (UG/L)
MAY 10...	<0.008	<0.014	<0.035	<0.022	<0.011	<0.012	<0.05	<0.016	<0.017	<0.005	<0.013
JUN 13...	<0.008	<0.014	<0.035	<0.022	<0.011	<0.012	<0.05	<0.016	<0.017	<0.005	<0.013
JUL 12...	<0.008	<0.010	<0.035	<0.022	<0.011	<0.012	<0.05	<0.016	<0.017	<0.007	<0.013
AUG 08...	<0.008	<0.010	<0.035	<0.022	<0.011	<0.012	<0.05	<0.016	<0.017	<0.007	<0.013

DATE	METRI- BUZIN SENCOR WATER DISSOLV (UG/L)	PRO- METON, WATER, DISS, REC (UG/L)	SI- MAZINE, WATER, DISS, REC (UG/L)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L)	FEN- URON, WATER, FLTRD, GF 0.7U REC (UG/L)	FLUO- METURON WATER, FLTRD, GF 0.7U REC (UG/L)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L)	NEB- URON, WATER, FLTRD, GF 0.7U REC (UG/L)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L)
MAY 10...	<0.012	<0.008	<0.008	<0.03	<0.05	<0.05	<0.05	<0.05	<0.039	<0.05	<0.015
JUN 13...	<0.012	<0.008	<0.008	<0.03	<0.05	<0.05	<0.05	<0.05	<0.039	<0.05	<0.015
JUL 12...	<0.012	<0.008	<0.008	<0.03	<0.05	<0.05	<0.05	<0.05	<0.039	<0.05	<0.015
AUG 08...	<0.012	<0.008	<0.008	<0.03	<0.05	<0.05	<0.05	<0.05	<0.039	<0.05	<0.015

DATE	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L)	ACIFL- UORFEN WATER, FLTRD, GF 0.7U REC (UG/L)	BENTA- ZON, WATER, FLTRD, GF 0.7U REC (UG/L)	BRO- MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L)	CLOPYR- ALID, WATER, FLTRD, GF 0.7U REC (UG/L)	OCRESOL 4,6- DINITRO WAT,FLT GF 0.7U REC (UG/L)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L)	ESFEN- VAL- ERATE, WAT,FLT GF 0.7U REC (UG/L)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)
MAY 10...	<0.006	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.008
JUN 13...	<0.006	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.008
JUL 12...	<0.006	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.006
AUG 08...	<0.006	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.006

DATE	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	DRAIN- AGE AREA (SQ. MI.)	DIAZ- INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT
MAY 10...		26	7.2	58	54.9	<sup>a</sup> 100	<sup>a</sup> 110
JUN 13...		6	0.73	67	54.9	<sup>a</sup> 100	<sup>a</sup> 150
JUL 12...		4	0.05	83	54.9	<sup>a</sup> 80	<sup>a</sup> 140
AUG 08...		12	0.05	83	54.9	<sup>a</sup> 80	<sup>a</sup> 110

<sup>a</sup> Listed values are recovery percentages for the indicated compounds. These compounds are added to the sample to determine the relative recovery of other organic compounds that are detected using the same analytical method.

## 10336645 GENERAL CREEK NEAR MEEKS BAY, CA

LOCATION.--Lat 39°03'07", long 120°07'03", in NE 1/4 NE 1/4 sec.20, T.14 N., R.17 E., El Dorado County, Hydrologic Unit 16050101, on right bank 200 ft upstream from State Highway 89, 0.4 mi upstream from Lake Tahoe, and 1.1 mi north of Meeks Bay.

DRAINAGE AREA.--7.44 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,250.38 ft above sea level.

REMARKS.--Records good except for estimated daily discharges and discharges less than 0.5 ft<sup>3</sup>/s, which are fair. No known diversion or regulation upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft<sup>3</sup>/s, Dec. 20, 1981, gage height, 5.43 ft, from rating curve extended above 180 ft<sup>3</sup>/s on basis of computation of flow through culvert; minimum daily, 0.29 ft<sup>3</sup>/s, July 28, Aug. 15, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 19	2215	*87	*1.93				

Minimum daily, 0.29 ft<sup>3</sup>/s, July 28, Aug. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	.98	1.1	e1.2	1.2	1.8	15	24	10	.70	.40	.42
2	.78	1.1	1.1	e1.2	1.2	1.9	16	29	8.5	.70	.39	.44
3	.78	1.2	1.0	e1.2	1.3	2.1	19	33	7.1	.78	.40	.48
4	.79	1.1	.98	e2.1	1.3	2.2	18	37	6.0	.74	.39	.37
5	1.5	1.1	1.0	e2.0	1.2	2.8	16	40	5.7	.71	.39	.38
6	1.5	1.1	1.1	e1.9	1.2	3.1	15	54	5.4	.65	.39	.39
7	1.4	1.0	1.1	e1.8	1.2	2.9	13	37	5.0	.67	.37	.41
8	1.2	1.0	1.3	e1.7	1.2	3.1	12	34	4.4	.54	.37	.45
9	1.1	1.1	1.9	e1.5	1.2	3.3	11	54	4.1	.52	.39	.45
10	1.2	1.1	1.1	e1.4	1.2	3.8	10	52	3.6	.52	.34	.52
11	1.2	1.1	1.1	1.4	e1.2	4.4	9.8	56	3.2	.51	.37	.52
12	1.2	1.1	1.0	1.3	e1.2	4.2	12	49	3.1	.52	.38	.60
13	1.1	1.2	.98	1.2	e1.2	4.1	19	38	2.8	.53	.39	.63
14	1.3	1.2	.98	1.2	e1.2	4.7	26	35	2.5	.50	.36	.64
15	2.7	1.2	.98	1.2	e1.2	5.9	32	30	2.2	.46	.29	.60
16	2.0	1.1	.98	1.2	e1.2	6.8	41	24	2.0	.47	.30	.61
17	1.5	1.1	1.0	1.1	e1.3	7.0	51	20	1.9	.42	.31	.60
18	1.3	1.1	.98	1.1	e1.4	7.2	55	17	1.9	.39	.30	.56
19	1.3	1.0	.98	1.1	e1.4	7.2	62	16	1.7	.39	.31	.51
20	1.2	.98	1.1	1.2	1.4	7.4	57	17	1.5	.41	.32	.44
21	1.2	.98	e1.1	1.2	1.3	8.1	47	16	1.4	.38	.34	.47
22	1.2	1.0	e1.1	1.2	1.3	8.6	39	16	1.2	.41	.33	.45
23	1.1	1.0	e1.1	1.2	1.4	8.3	32	17	1.1	.40	.35	.49
24	1.1	.96	e1.1	1.2	1.4	7.0	24	18	.98	.39	.36	.54
25	1.1	.97	e1.1	1.2	1.5	6.6	21	17	.95	.36	.35	.61
26	.98	.98	e1.2	1.2	1.5	6.2	20	16	.98	.32	.34	.64
27	.98	.93	e1.2	1.2	1.8	6.4	20	15	.92	.31	.30	.66
28	.98	.89	e1.2	1.2	1.9	7.7	19	13	.90	.29	.31	.80
29	.98	1.1	e1.2	1.2	---	9.8	19	11	.83	.31	.34	.93
30	.96	1.3	e1.2	1.2	---	12	21	10	.77	.38	.39	.87
31	.95	---	e1.2	1.2	---	15	---	11	---	.40	.39	---
TOTAL	37.36	31.97	34.46	41.2	37.0	181.6	771.8	856	92.63	15.08	10.96	16.48
MEAN	1.21	1.07	1.11	1.33	1.32	5.86	25.7	27.6	3.09	.49	.35	.55
MAX	2.7	1.3	1.9	2.1	1.9	15	62	56	10	.78	.40	.93
MIN	.78	.89	.98	1.1	1.2	1.8	9.8	10	.77	.29	.29	.37
AC-FT	74	63	68	82	73	360	1530	1700	184	30	22	33

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.44	8.69	9.21	6.07	12.0	16.9	37.3	55.2	28.0	5.51	1.21	1.25
MAX	15.5	45.4	58.7	19.4	64.2	60.1	70.4	114	158	49.6	4.72	4.36
(WY)	1983	1982	1982	1984	1986	1986	1989	1993	1983	1983	1983	1983
MIN	.73	.84	.89	.90	.99	5.86	15.9	7.18	2.23	.49	.35	.39
(WY)	1993	1993	1991	1991	1991	1994	1991	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1980 - 1994			
ANNUAL TOTAL	7638.65				2126.54							
ANNUAL MEAN	20.9				5.83				15.3			
HIGHEST ANNUAL MEAN									34.7			
LOWEST ANNUAL MEAN									4.96			
HIGHEST DAILY MEAN	165				62				588			
LOWEST DAILY MEAN	.78				.29				.29			
ANNUAL SEVEN-DAY MINIMUM	.78				.31				.31			
INSTANTANEOUS PEAK FLOW					87				765			
INSTANTANEOUS PEAK STAGE					1.93				5.43			
ANNUAL RUNOFF (AC-FT)	15150				4220				11080			
10 PERCENT EXCEEDS	71				18				43			
50 PERCENT EXCEEDS	3.3				1.2				2.7			
90 PERCENT EXCEEDS	.93				.39				.72			



10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1981 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1992.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
05...	1950	2.4	66	7.0	0.005	0.002	0.15
NOV							
09...	1615	1.1	70	3.5	0.005	0.001	0.07
DEC							
21...	1600	1.1	65	0.0	0.006	0.003	0.14
JAN							
19...	1445	1.2	60	0.0	0.009	0.004	0.07
FEB							
15...	1550	1.2	55	0.0	0.008	0.004	0.05
MAR							
14...	1540	4.8	39	3.0	0.011	0.002	0.07
28...	1605	7.6	35	4.5	0.011	0.002	0.12
APR							
11...	1815	9.7	27	6.0	0.008	0.001	0.12
14...	2110	29	18	4.0	0.007	0.002	0.12
15...	1045	30	16	2.5	0.008	0.002	0.13
18...	2045	70	13	5.0	0.005	0.003	0.29
19...	1430	43	13	5.0	0.005	<0.001	0.12
29...	1130	20	19	4.0	0.005	0.002	0.07
MAY							
05...	1545	32	13	6.0	0.003	<0.001	0.12
06...	0850	61	12	3.5	0.004	<0.001	0.15
12...	1505	39	12	7.5	0.003	<0.001	0.08
12...	2210	45	13	8.0	0.003	<0.001	0.13
20...	1120	17	17	5.5	0.003	0.001	0.14
27...	1535	14	18	13.0	0.004	0.001	0.10
JUN							
06...	1215	5.5	30	11.0	0.006	0.003	0.08
13...	1800	2.9	38	16.0	0.005	0.003	0.09
20...	1530	1.5	45	15.5	0.005	0.003	0.07
JUL							
11...	1730	0.54	52	18.5	0.011	<0.001	0.10
29...	1425	0.41	63	19.0	0.010	0.005	0.11
SEP							
01...	1410	0.47	63	14.0	0.008	0.007	0.11
30...	1545	0.87	64	10.0	0.004	0.001	0.11

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336645 GENERAL CREEK NEAR MEEKS BAY, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT						
05...	0.043	--	0.021	154	18	0.12
NOV						
09...	0.038	--	0.017	105	8	0.02
DEC						
21...	0.025	--	0.013	99	12	0.04
JAN						
19...	0.019	--	0.012	97	9	0.03
FEB						
15...	0.016	--	0.011	69	4	0.01
MAR						
14...	0.015	--	0.007	69	6	0.08
28...	0.011	--	0.005	58	8	0.16
APR						
11...	0.012	--	0.005	46	8	0.21
14...	0.017	--	0.002	130	12	0.94
15...	0.012	--	0.003	83	10	0.81
18...	0.028	--	0.003	418	30	5.7
19...	0.014	--	0.003	61	8	0.93
29...	0.009	--	0.002	35	3	0.16
MAY						
05...	0.011	--	0.002	41	2	0.17
06...	0.014	--	0.002	90	10	1.6
12...	0.014	--	0.002	41	1	0.11
12...	0.013	--	0.002	45	4	0.49
20...	0.015	--	0.004	41	4	0.18
27...	0.010	--	0.005	39	2	0.08
JUN						
06...	0.013	--	0.006	59	2	0.03
13...	0.022	--	0.009	76	2	0.02
20...	0.027	--	0.013	78	2	0.01
JUL						
11...	0.046	--	0.024	121	2	0.00
29...	0.048	--	0.030	159	4	0.00
SEP						
01...	0.053	--	0.026	171	2	<0.01
30...	0.036	0.034	0.021	189	<1	<0.01

## 10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA

LOCATION.--Lat 39°06'27", long 120°09'40", in NW 1/4 NE 1/4 sec.36, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, on right bank 300 ft upstream from bridge on State Highway 89, 1,000 ft upstream from Lake Tahoe, and 4.6 mi south of Tahoe City.

DRAINAGE AREA.--11.2 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 6,234.59 ft above sea level. Oct. 1, 1960, to Sept. 30, 1964, at datum 10.25 ft lower and Oct. 1, 1964, to Aug. 27, 1970, at datum 12 ft lower, at site 400 ft downstream.

REMARKS.--Records good except for estimated daily discharges, which are fair. No known diversion or regulation upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft<sup>3</sup>/s, Dec. 22 or 24, 1964, on basis of computation of flow through culvert; maximum gage height, 9.90 ft, site and datum then in use, Dec. 22, 1964; minimum discharge, 0.30 ft<sup>3</sup>/s, Sept. 19, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	1915	*143	*2.12				

Minimum daily, 1.0 ft<sup>3</sup>/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.8	3.2	3.3	e3.7	4.9	32	37	48	5.5	1.7	1.4
2	2.8	2.7	3.1	3.1	e3.7	5.0	33	42	44	5.2	1.6	1.2
3	2.8	2.7	3.1	3.1	e4.4	5.3	36	47	40	5.0	1.6	1.3
4	2.9	2.6	3.1	4.1	3.4	5.6	32	53	36	4.8	1.7	1.4
5	3.9	2.6	3.1	4.8	3.5	7.7	30	60	34	4.7	1.5	1.4
6	3.1	2.6	2.9	e4.6	3.4	9.3	30	76	32	4.4	1.6	1.3
7	2.9	2.7	2.9	e4.5	e3.5	9.5	26	61	29	4.3	1.5	1.1
8	2.8	2.5	3.3	e4.4	3.6	9.9	25	60	27	4.0	1.5	1.2
9	2.8	2.5	4.8	e4.3	e3.6	11	23	87	26	3.9	1.7	1.2
10	2.7	2.5	3.8	e4.2	e3.6	13	21	92	25	3.7	1.7	1.0
11	2.6	2.6	e4.0	e4.0	e3.6	13	21	107	24	3.6	1.6	1.1
12	2.6	2.7	e4.0	e3.8	e3.6	12	24	102	23	3.5	1.6	1.2
13	2.7	2.7	3.8	e3.7	e3.6	12	31	92	21	3.3	1.6	1.2
14	3.1	2.4	4.3	e3.6	e3.7	16	38	87	19	3.2	1.5	1.2
15	6.5	2.5	4.0	3.5	e3.7	21	45	71	17	3.1	1.4	1.2
16	8.0	2.6	3.8	e3.5	3.8	23	57	54	16	2.9	1.4	1.2
17	5.4	2.6	e3.7	3.6	e3.9	20	70	46	14	2.9	1.4	1.2
18	4.3	2.6	3.6	3.6	e4.0	20	77	43	13	2.7	1.4	1.2
19	3.8	2.4	3.5	e3.6	e4.0	20	87	39	12	2.7	1.5	1.2
20	3.4	e2.4	e3.5	e3.6	e4.1	20	83	37	12	2.6	1.4	1.2
21	3.4	2.3	e3.5	3.6	e4.2	22	73	39	11	2.3	1.5	1.2
22	3.2	e2.5	e3.6	3.6	e4.2	22	63	42	10	2.3	1.5	1.2
23	3.3	2.5	3.6	4.0	e4.2	20	54	47	9.7	2.1	1.5	1.2
24	3.1	e2.6	e3.5	4.0	e4.2	17	43	53	9.0	2.0	1.5	1.2
25	3.1	e2.6	e3.4	3.9	e4.5	16	39	58	8.4	1.9	1.4	1.2
26	3.1	e2.6	3.4	3.8	4.7	16	35	60	7.9	1.9	1.4	1.3
27	3.0	2.6	3.3	3.8	5.1	18	34	59	7.4	1.9	1.4	1.3
28	2.6	2.6	3.3	3.7	4.9	22	32	53	7.0	1.9	1.4	1.4
29	2.7	e3.1	3.1	e3.7	---	26	33	50	6.2	1.9	1.4	1.8
30	2.8	e3.1	3.0	e3.7	---	30	35	49	5.8	1.8	1.4	1.5
31	2.9	---	e3.1	e3.7	---	33	---	54	---	1.8	1.4	---
TOTAL	105.1	78.2	108.3	118.4	109.4	500.2	1262	1857	594.4	97.8	46.7	37.7
MEAN	3.39	2.61	3.49	3.82	3.91	16.1	42.1	59.9	19.8	3.15	1.51	1.26
MAX	8.0	3.1	4.8	4.8	5.1	33	87	107	48	5.5	1.7	1.8
MIN	2.6	2.3	2.9	3.1	3.4	4.9	21	37	5.8	1.8	1.4	1.0
AC-FT	208	155	215	235	217	992	2500	3680	1180	194	93	75

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.30	13.7	20.1	21.8	20.4	29.0	59.3	125	96.0	25.7	5.30	2.89
MAX	28.1	94.8	157	166	116	122	124	312	320	149	36.1	10.3
(WY)	1963	1984	1965	1970	1986	1986	1989	1969	1983	1983	1983	1982
MIN	1.31	1.68	1.90	2.00	2.27	3.82	13.6	29.7	7.20	3.11	1.51	1.21
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1987	1994	1992

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1961 - 1994

ANNUAL TOTAL	17354.8	4915.2	
ANNUAL MEAN	47.5	13.5	35.4
HIGHEST ANNUAL MEAN			73.4
LOWEST ANNUAL MEAN			8.71
HIGHEST DAILY MEAN	315	May 31	107
LOWEST DAILY MEAN	2.3	Nov 21	1.0
ANNUAL SEVEN-DAY MINIMUM	2.5	Nov 17	1.1
INSTANTANEOUS PEAK FLOW			143
INSTANTANEOUS PEAK STAGE			2.12
ANNUAL RUNOFF (AC-FT)	34420	9750	25660
10 PERCENT EXCEEDS	160	43	102
50 PERCENT EXCEEDS	9.1	3.7	9.6
90 PERCENT EXCEEDS	2.8	1.4	2.1

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-78, 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1980 to September 1983.

WATER TEMPERATURE: October 1974 to June 1978 (1977-78 storm season only), October 1979 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1974 to June 1978 (1977-78 storm season only), October 1979 to September 1992.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
05...	1910	4.9	73	7.0	0.006	0.001	0.06
NOV							
09...	1535	2.6	82	4.5	0.005	<0.001	0.03
DEC							
22...	1325	3.6	69	0.0	0.003	0.001	0.06
JAN							
19...	1550	3.6	77	1.0	0.005	0.003	0.03
FEB							
15...	1720	3.7	70	0.0	0.005	0.003	0.04
MAR							
14...	1450	15	59	6.5	0.012	0.002	0.05
28...	1520	20	55	7.5	0.018	0.002	0.12
APR							
11...	1720	20	54	9.5	0.018	0.003	0.08
14...	1950	44	46	8.0	0.031	0.003	0.11
15...	0940	39	44	3.0	0.058	0.003	0.10
18...	1955	98	35	6.5	0.058	0.004	0.45
19...	1505	69	37	10.0	0.056	<0.001	0.10
29...	1220	32	46	6.5	0.030	0.001	0.04
MAY							
05...	1645	54	40	9.0	0.024	0.002	0.08
06...	0940	75	37	3.5	0.042	<0.001	0.17
12...	1410	82	34	9.5	0.028	0.001	0.08
12...	2015	110	32	7.5	0.026	<0.001	0.16
20...	1240	35	43	8.0	0.016	0.002	0.08
26...	1745	63	32	11.0	0.006	0.001	0.08
JUN							
06...	1310	31	39	11.5	0.006	0.002	0.07
13...	1715	20	44	16.5	0.005	0.003	0.07
20...	1620	11	50	18.0	0.005	0.003	0.06
JUL							
11...	1650	3.7	65	22.0	0.007	<0.001	0.08
29...	1535	2.1	77	22.0	0.006	0.004	0.08
SEP							
01...	1505	1.4	83	18.0	0.007	0.007	0.09
30...	1635	1.5	88	13.0	0.004	0.001	0.09

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336660 BLACKWOOD CREEK NEAR TAHOE CITY, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT						
05...	0.031	--	0.008	422	16	0.21
NOV						
09...	0.031	--	0.007	245	3	0.02
DEC						
22...	0.017	--	0.005	222	2	0.02
JAN						
19...	0.013	--	0.006	186	4	0.04
FEB						
15...	0.012	--	0.006	208	2	0.02
MAR						
14...	0.018	--	0.006	263	2	0.08
28...	0.013	--	0.006	200	3	0.16
APR						
11...	0.015	--	0.006	181	14	0.76
14...	0.037	--	0.002	554	32	3.8
15...	0.020	--	0.002	236	8	0.84
18...	0.095	--	0.004	1730	85	22
19...	0.024	--	0.004	236	12	2.2
29...	0.022	--	0.003	137	4	0.35
MAY						
05...	0.016	--	0.003	150	4	0.58
06...	0.021	--	0.003	209	10	2.0
12...	0.024	--	0.002	199	12	2.7
12...	0.044	--	0.003	371	26	7.7
20...	0.021	--	0.005	139	2	0.19
26...	0.016	--	0.004	122	8	1.4
JUN						
06...	0.015	--	0.005	166	4	0.33
13...	0.023	--	0.007	191	2	0.11
20...	0.025	--	0.009	189	4	0.12
JUL						
11...	0.037	--	0.013	276	2	0.02
29...	0.030	--	0.013	353	2	0.01
SEP						
01...	0.044	--	0.014	645	4	0.02
30...	0.027	0.023	0.010	601	2	0.01

## 10336674 WARD CREEK BELOW CONFLUENCE NEAR TAHOE CITY, CA

LOCATION.--Lat 39°08'27", long 120°12'40", in SE 1/4 SE 1/4 sec.16, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on left bank 0.1 mi downstream from confluence with unnamed tributary, 3.2 mi west of William Kent Campground, and 4.8 mi southwest of Tahoe City.

DRAINAGE AREA.--4.96 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,600 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No storage or diversion upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 316 ft<sup>3</sup>/s, May 31, 1993, gage height, 6.66 ft; no flow for some days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 19	1645	78	4.65	May 11	1645	*80	*4.69

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.65	.70	.78	.95	1.4	16	19	22	1.8	.23	.00
2	.64	.67	.73	.78	1.0	1.8	17	23	22	1.7	.22	.00
3	.63	.59	.77	.98	.86	1.8	18	25	19	1.6	.20	.00
4	1.7	.57	.74	2.0	.78	1.8	15	29	17	1.5	.18	.00
5	2.3	.55	.69	1.6	.81	2.7	15	34	16	1.4	.17	.00
6	1.5	e.53	.61	1.2	.77	2.3	13	40	15	1.3	.15	.00
7	1.2	e.51	.59	1.1	.89	2.2	11	32	13	1.2	.12	.00
8	1.1	e.51	.61	1.1	.90	2.9	10	34	12	1.2	.10	.00
9	1.1	e.51	1.2	.97	.90	3.5	8.6	49	12	1.1	.12	.00
10	1.0	e.52	.89	.95	e.90	3.8	7.9	47	11	1.0	.10	.00
11	1.0	e.52	.89	.95	e.90	3.3	8.8	57	11	.98	.09	.00
12	1.0	e.52	e.88	.97	e.90	3.2	12	51	10	.93	.08	.03
13	.99	e.52	.88	.99	e.85	4.5	17	46	9.1	.85	.06	.04
14	1.4	e.52	.93	.96	e.85	e5.0	23	42	8.4	.79	.05	.03
15	3.7	e.52	.83	1.0	e.85	e6.0	28	32	7.2	.75	.04	.02
16	2.9	e.52	.81	1.0	e.80	e6.5	35	24	6.1	.70	.03	.01
17	1.8	e.52	.84	e1.0	e.90	7.8	44	20	5.4	.63	.02	.01
18	1.5	e.52	.81	e1.0	e1.0	7.6	49	19	4.8	.59	.02	.00
19	1.3	e.53	.81	e1.0	e1.0	7.2	54	18	4.4	.55	.02	.00
20	1.1	.53	.84	e1.0	e1.0	8.3	48	17	4.1	.51	.01	.00
21	1.0	e.55	e.84	e1.0	e1.0	9.6	41	18	3.9	.48	.01	.00
22	.97	e.56	e.84	e1.0	e1.0	8.3	35	19	3.7	.47	.01	.00
23	.92	e.58	e.84	e1.0	e1.1	6.2	26	22	3.4	.45	.01	.00
24	.84	e.60	e.83	e1.0	e1.1	5.3	20	25	3.1	.39	.01	.00
25	.85	e.63	e.83	.95	e1.1	4.8	17	27	2.8	.38	.01	.01
26	.86	e.65	.83	.91	e1.1	5.1	14	29	2.5	.35	.01	.00
27	.79	e.82	.80	e.90	1.2	6.8	13	28	2.4	.32	.00	.00
28	.74	e.79	.77	.85	1.1	9.5	13	25	2.2	.29	.00	.06
29	.72	e.72	.79	e.90	---	12	15	24	2.0	.26	.00	.15
30	.70	e.70	.81	.91	---	15	17	24	1.9	.26	.00	.05
31	.65	---	.79	e.93	---	15	---	25	---	.24	.00	---
TOTAL	37.55	17.43	25.02	31.68	26.51	181.2	661.3	924	257.4	24.97	2.07	0.41
MEAN	1.21	.58	.81	1.02	.95	5.85	22.0	29.8	8.58	.81	.067	.014
MAX	3.7	.82	1.2	2.0	1.2	15	54	57	22	1.8	.23	.15
MIN	.63	.51	.59	.78	.77	1.4	7.9	17	1.9	.24	.00	.00
AC-FT	74	35	50	63	53	359	1310	1830	511	50	4.1	.8

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336674 WARD CREEK BELOW CONFLUENCE NEAR TAHOE CITY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.65	.74	.96	1.57	1.89	9.23	25.3	47.7	31.7	9.79	1.38	.29
MAX	1.21	1.04	1.16	2.87	2.36	14.8	29.0	92.8	82.7	27.6	4.04	.84
(WY)	1994	1992	1993	1993	1993	1993	1992	1993	1993	1993	1993	1993
MIN	.11	.58	.81	.82	.95	5.85	22.0	20.5	3.67	.81	.025	.008
(WY)	1993	1994	1994	1992	1994	1994	1994	1992	1992	1994	1992	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1992 - 1994		
ANNUAL TOTAL	7809.14			2189.54					
ANNUAL MEAN	21.4			6.00			11.0		
HIGHEST ANNUAL MEAN							21.3		
LOWEST ANNUAL MEAN							5.56		
HIGHEST DAILY MEAN	166			May 31			166		
LOWEST DAILY MEAN	.51			Nov 7			.00		
ANNUAL SEVEN-DAY MINIMUM	.52			Nov 7			.00		
INSTANTANEOUS PEAK FLOW				80			316		
INSTANTANEOUS PEAK STAGE				4.69			6.66		
ANNUAL RUNOFF (AC-FT)	15490			4340			7940		
10 PERCENT EXCEEDS	80			21			33		
50 PERCENT EXCEEDS	2.6			.97			1.1		
90 PERCENT EXCEEDS	.67			.02			.03		



10336674 WARD CREEK BELOW CONFLUENCE NEAR TAHOE CITY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1992 to current year.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
05...	1215	2.3	57	7.0	0.050	0.001	0.28
05...	1640	5.0	50	5.0	0.033	0.001	0.86
NOV							
09...	1310	0.50	51	2.5	0.004	<0.001	0.07
DEC							
21...	1035	0.84	48	0.0	0.025	0.002	0.08
JAN							
19...	1030	1.0	48	0.0	0.023	0.003	0.03
FEB							
15...	1130	0.85	45	0.5	0.018	0.003	0.03
MAR							
14...	1100	5.0	46	2.0	0.024	0.005	0.06
28...	1130	6.5	43	3.0	0.026	0.004	0.07
APR							
11...	1350	7.8	39	--	0.012	0.003	0.07
14...	1640	34	28	2.5	0.022	0.003	0.36
15...	0705	21	34	2.0	0.030	0.002	0.07
18...	1645	75	25	3.0	0.029	0.001	0.55
19...	1115	37	31	4.0	0.036	<0.001	0.09
29...	1405	15	32	6.5	0.019	<0.001	0.06
MAY							
05...	1800	41	28	4.0	0.026	<0.001	0.13
12...	1120	42	28	6.0	0.034	0.001	0.11
12...	1715	60	27	5.5	0.033	<0.001	0.13
20...	1445	17	32	9.0	0.013	0.001	0.08
26...	1515	34	26	7.5	0.015	<0.001	0.12
JUN							
06...	1500	14	32	11.5	0.004	0.002	0.06
13...	1415	8.8	33	15.0	0.002	0.003	0.07
20...	1200	4.1	36	13.0	0.003	0.005	0.06
JUL							
11...	1255	0.95	44	18.5	0.004	0.002	0.05
29...	1045	0.35	47	17.0	0.003	0.004	0.07
SEP							
01...	1110	0.01	51	15.0	0.003	0.006	0.02
30...	1115	0.05	54	9.0	0.002	0.003	0.06

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336674 WARD CREEK BELOW CONFLUENCE NEAR TAHOE CITY, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT						
05...	0.181	--	0.004	2260	95	0.59
05...	1.63	--	0.006	10600	1440	19
NOV						
09...	0.035	--	0.006	66	6	0.01
DEC						
21...	0.016	--	0.006	16	2	<0.01
JAN						
19...	0.012	--	0.006	31	4	0.01
FEB						
15...	0.009	--	0.006	15	<1	<0.01
MAR						
14...	0.015	--	0.004	120	6	0.08
28...	0.007	--	0.004	33	4	0.07
APR						
11...	0.013	--	0.004	39	2	0.04
14...	0.596	--	0.005	3730	572	53
15...	0.029	--	0.004	155	30	1.7
18...	0.227	--	0.003	2280	440	89
19...	0.027	--	0.005	214	32	3.2
29...	0.018	--	0.004	100	12	0.49
MAY						
05...	0.048	--	0.004	311	68	7.5
12...	0.027	--	0.004	182	28	3.2
12...	0.049	--	0.004	249	60	9.7
20...	0.018	--	0.005	56	8	0.37
26...	0.027	--	0.005	125	24	2.2
JUN						
06...	0.016	--	0.006	41	4	0.15
13...	0.024	--	0.007	32	4	0.09
20...	0.023	--	0.007	28	2	0.02
JUL						
11...	0.028	--	0.008	36	2	0.01
29...	0.024	--	0.010	21	<1	<0.01
SEP						
01...	0.031	--	0.005	18	<1	<0.01
30...	0.018	0.017	0.003	18	<1	<0.01

## 10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING NEAR TAHOE CITY, CA

LOCATION.--Lat 39°08'13", long 120°10'48", in NE 1/4 NW 1/4 sec.23, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on left bank 1.5 mi west of William Kent Campground, 1.7 mi upstream from mouth, and 3.6 mi southwest of Tahoe City.

DRAINAGE AREA.--8.97 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,450 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No storage or diversion upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 415 ft<sup>3</sup>/s, May 31, 1993, gage height, 5.87 ft; minimum daily, 0.34 ft<sup>3</sup>/s, Sept. 13, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	Unknown	*87	*Unknown				

Minimum daily, 0.30 ft<sup>3</sup>/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	e1.6	1.9	2.0	e2.2	e3.1	e20	e21	23	2.7	.59	.36
2	1.5	1.5	2.0	2.0	e2.2	e3.7	e22	e24	22	2.6	.56	.36
3	1.5	1.4	2.0	2.0	e2.0	e4.0	e24	e27	20	2.5	.51	.41
4	2.6	1.4	2.0	3.2	e2.0	e4.7	e20	e30	19	2.4	.51	.36
5	e4.5	1.4	2.0	4.0	e2.0	e5.1	e19	e34	17	2.2	.49	.38
6	e3.3	1.4	2.0	e3.0	e1.9	e6.1	e18	e47	16	2.1	.47	.36
7	e2.4	1.4	2.0	e2.6	e1.9	e6.0	e15	e38	15	2.0	.45	.34
8	e2.2	1.4	2.0	2.5	e1.9	e6.2	e15	e37	15	1.9	.43	.34
9	e2.2	1.3	2.7	2.4	e1.9	e6.6	e13	e54	14	1.8	.43	.34
10	e2.2	1.4	2.7	e2.3	e1.9	e7.3	e12	e55	14	1.7	.44	.34
11	e2.0	1.5	e2.5	2.2	e2.0	e6.7	e13	e64	13	1.6	.44	.34
12	e2.0	1.5	e2.4	e2.1	e2.0	e6.7	e15	e58	13	1.5	.44	.31
13	e2.0	1.5	2.3	2.0	e2.0	e7.1	e20	e57	12	1.4	.43	.34
14	e2.9	1.5	2.1	2.0	e2.0	e7.5	e27	e47	10	1.3	.42	.34
15	e6.2	1.5	2.1	2.0	e2.0	e9.0	e32	e36	9.1	1.2	.43	.33
16	e5.4	1.5	2.1	e2.1	e2.0	e10	e39	e33	8.4	1.3	.43	.34
17	e3.9	1.5	2.0	2.2	e2.4	e9.8	e51	25	7.7	1.2	.42	.33
18	e3.2	1.5	2.0	2.4	e2.4	e10	e55	24	7.2	1.2	.42	.32
19	e2.9	1.5	2.0	e2.4	e2.3	e10	e57	22	6.7	1.1	.43	.31
20	e2.6	1.5	e2.0	e2.4	e2.2	e11	e52	21	6.3	1.1	.43	.31
21	e2.5	1.5	e2.0	e2.4	e2.1	e12	e43	21	5.9	.95	.42	.31
22	e2.2	1.6	2.1	e2.4	e2.1	e12	e38	22	5.5	.95	.41	.30
23	e2.2	1.6	2.0	e2.5	e2.2	e11	e29	24	5.1	.91	.41	.31
24	e2.1	2.1	2.0	e2.5	e2.3	e9.0	e22	27	4.7	.90	.42	.33
25	e2.0	e2.1	2.0	e2.5	e2.4	e8.5	e20	28	4.3	.87	.43	.38
26	e1.9	e2.4	2.0	2.5	e3.0	e9.0	e19	29	3.9	.86	.42	.36
27	e1.8	e2.0	2.0	2.4	e3.0	e11	e18	29	3.7	.75	.39	.36
28	e1.6	e2.0	2.0	2.4	e3.0	e14	e18	26	3.4	.71	.38	.46
29	e1.6	e2.0	2.0	e2.4	---	e16	e19	25	3.1	.67	.39	.56
30	e1.6	e2.0	2.0	e2.4	---	e19	e20	24	2.9	.67	.39	.53
31	e1.6	---	2.0	e2.4	---	e20	---	26	---	.65	.39	---
TOTAL	78.1	48.5	64.9	74.6	61.3	282.1	785	1035	310.9	43.69	13.62	10.76
MEAN	2.52	1.62	2.09	2.41	2.19	9.10	26.2	33.4	10.4	1.41	.44	.36
MAX	6.2	2.4	2.7	4.0	3.0	20	57	64	23	2.7	.59	.56
MIN	1.5	1.3	1.9	2.0	1.9	3.1	12	21	2.9	.65	.38	.30
AC-FT	155	96	129	148	122	560	1560	2050	617	87	27	21

e Estimated.

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING NEAR TAHOE CITY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.71	2.06	2.39	3.49	4.13	15.9	39.1	69.6	40.9	11.3	2.00	.81
MAX	2.52	2.64	2.60	5.81	5.91	25.6	49.4	153	108	30.6	5.06	1.62
(WY)	1994	1992	1992	1993	1992	1993	1993	1993	1993	1993	1993	1993
MIN	1.11	1.62	2.09	2.26	2.19	9.10	26.2	22.7	4.60	1.41	.44	.36
(WY)	1993	1994	1994	1992	1994	1994	1994	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1992 - 1994			
ANNUAL TOTAL	11883.5				2808.47							
ANNUAL MEAN	32.6				7.69				16.1			
HIGHEST ANNUAL MEAN									32.5			
LOWEST ANNUAL MEAN									7.69			
HIGHEST DAILY MEAN	251				64				251			
LOWEST DAILY MEAN	1.3				.30				.30			
ANNUAL SEVEN-DAY MINIMUM	1.4				.31				.31			
INSTANTANEOUS PEAK FLOW					87				415			
INSTANTANEOUS PEAK STAGE					.00				5.87			
ANNUAL RUNOFF (AC-FT)	23570				5570				11700			
10 PERCENT EXCEEDS	117				24				44			
50 PERCENT EXCEEDS	4.8				2.2				2.6			
90 PERCENT EXCEEDS	1.6				.42				.56			

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING NEAR TAHOE CITY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1992 to current year.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
05...	1315	4.5	63	7.5	0.043	0.009	0.83
05...	1720	5.0	69	6.0	0.015	0.004	0.48
NOV							
09...	1410	1.3	72	4.0	0.007	0.001	0.05
DEC							
21...	1310	2.0	67	0.0	0.002	<0.001	0.03
JAN							
19...	1145	2.4	66	0.5	0.008	0.003	0.06
FEB							
15...	1245	2.0	63	0.5	0.009	0.006	0.02
MAR							
14...	1230	7.5	56	3.5	0.011	0.002	0.07
28...	1300	14	49	6.5	0.009	0.001	0.08
APR							
11...	1525	13	48	9.0	0.005	0.003	0.00
14...	1755	27	32	5.0	0.012	0.002	0.47
15...	0815	32	40	2.0	0.018	0.002	0.10
18...	1810	55	30	5.0	0.030	0.002	0.68
19...	1225	57	36	7.5	0.029	<0.001	0.11
29...	1515	19	41	9.5	0.007	0.001	0.08
MAY							
05...	1845	34	34	6.0	0.015	<0.001	0.13
12...	1245	58	34	9.0	0.020	0.001	0.08
12...	1830	60	31	7.0	0.023	<0.001	0.12
20...	1615	21	38	12.0	0.005	0.002	0.10
26...	1620	33	31	10.5	0.005	0.001	0.07
JUN							
06...	1620	16	37	12.0	0.006	0.003	0.08
13...	1520	10	41	17.0	0.004	0.003	0.08
20...	1300	6.3	45	15.5	0.005	0.003	0.03
JUL							
11...	1430	1.6	63	22.0	0.009	<0.001	0.08
29...	1155	0.81	88	17.0	0.010	0.004	0.10
SEP							
01...	1215	0.38	108	14.0	0.008	0.008	0.07
30...	1215	0.57	98	10.0	0.005	0.002	0.10

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336675 WARD CREEK AT STANFORD ROCK TRAIL CROSSING NEAR TAHOE CITY, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT						
05...	1.01	--	0.016	9670	452	5.5
05...	0.637	--	0.007	6210	266	3.6
NOV						
09...	0.039	--	0.011	299	2	0.01
DEC						
21...	0.021	--	0.008	216	1	0.01
JAN						
19...	0.016	--	0.008	202	6	0.04
FEB						
15...	0.014	--	0.008	198	3	0.02
MAR						
14...	0.020	--	0.007	170	6	0.12
28...	0.015	--	0.007	139	4	0.15
APR						
11...	0.017	--	0.007	123	4	0.14
14...	0.146	--	0.006	2250	131	9.5
15...	0.026	--	0.004	157	10	0.86
18...	0.197	--	0.003	2550	239	35
19...	0.027	--	0.006	158	12	1.8
29...	0.015	--	0.004	99	6	0.31
MAY						
05...	0.030	--	0.005	253	14	1.3
12...	0.023	--	0.003	131	10	1.6
12...	0.033	--	0.002	240	17	2.8
20...	0.022	--	0.005	101	2	0.11
26...	0.020	--	0.006	104	7	0.62
JUN						
06...	0.019	--	0.008	129	6	0.26
13...	0.030	--	0.009	157	6	0.16
20...	0.031	--	0.011	190	2	0.03
JUL						
11...	0.043	--	0.017	485	3	0.01
29...	0.041	--	0.021	585	<1	<0.01
SEP						
01...	0.051	--	0.015	403	2	<0.01
30...	0.036	0.030	0.014	531	<1	<0.01

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA

LOCATION.--Lat 39°07'56", long 120°09'24", in NW 1/4 SE 1/4 sec.24, T.15 N., R.16 E., Placer County, Hydrologic Unit 16050101, Tahoe National Forest, on right bank 165 ft downstream from State Highway 89 Bridge, 2.1 mi north of Tahoe Pines, and 2.6 mi southwest of Tahoe City.

DRAINAGE AREA.--9.70 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,230 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges and discharges less than 1 ft<sup>3</sup>/s, which are fair. Minor diversion for local water supply upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft<sup>3</sup>/s, Dec. 19, 1981, gage height, 8.05 ft, from rating curve extended above 800 ft<sup>3</sup>/s; no flow for many days during 1977-78, 1981, 1988, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 14	2145	Unknown	*a5.25	May 11	1830	*91	5.17

(a) Backwater from ice.

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	1.9	e2.8	2.2	e2.3	3.6	24	26	27	e3.5	.15	.00
2	.88	1.9	e2.6	2.1	2.2	4.3	25	28	26	e3.0	.17	.00
3	.84	1.8	e2.4	2.1	2.2	e4.3	27	31	24	2.6	.13	.00
4	1.6	1.8	e2.3	e5.0	2.2	e5.0	24	34	22	2.4	.11	.00
5	5.1	1.8	2.2	e4.0	2.1	e5.5	23	38	21	2.1	.09	.00
6	3.5	1.7	2.1	e3.0	2.0	e6.5	21	50	19	2.0	.08	.00
7	2.2	1.8	2.0	e2.8	2.1	e6.5	19	42	18	1.7	.06	.00
8	1.8	1.7	2.0	e2.6	2.2	e6.6	18	41	17	1.6	.03	.00
9	1.8	1.8	e2.9	e2.4	2.0	e7.0	16	56	16	1.4	.02	.00
10	1.8	1.8	e2.8	e2.3	1.8	e7.8	15	57	16	1.3	.03	.00
11	1.7	1.9	e2.5	e2.3	2.1	8.3	16	66	15	1.2	.04	.00
12	1.7	1.9	e2.4	e2.3	2.2	7.5	20	62	15	1.1	.03	.00
13	1.7	e1.9	e2.4	e2.3	2.2	8.6	24	56	14	1.0	.03	.00
14	2.9	e1.9	e2.4	e2.3	2.2	e8.5	31	52	13	.94	.02	.00
15	7.1	e2.0	e2.3	e2.3	2.2	e10	36	41	12	.85	.01	.00
16	6.3	e2.0	e2.3	e2.4	2.3	e11	42	33	11	.81	.00	.00
17	4.2	e2.0	2.4	e2.4	2.2	e11	52	29	9.4	.75	.00	.00
18	3.3	2.1	2.5	e2.4	1.8	e11	55	28	e9.0	.67	.00	.00
19	2.9	2.4	2.4	e2.4	2.4	e11	58	27	e8.5	.59	.00	.00
20	2.5	e2.2	2.2	e2.4	2.4	e12	53	25	e8.0	.53	.00	.00
21	2.3	e2.2	2.2	e2.4	2.3	e13	46	25	e7.5	.52	.00	.00
22	2.1	e2.2	2.2	e2.4	2.2	e13	40	26	e7.0	.56	.00	.00
23	2.1	e2.2	2.3	e2.5	2.3	e12	33	28	e6.5	.46	.00	.00
24	1.9	e2.2	e2.2	e2.5	2.4	11	27	31	e6.0	.44	.00	e.00
25	1.8	e2.2	e2.2	e2.5	e2.7	11	24	33	e5.5	.38	.00	e.00
26	1.8	e3.0	e2.2	2.5	e3.3	11	23	34	e5.5	.37	.00	e.00
27	1.8	e2.5	e2.2	2.4	3.5	13	22	33	e5.0	.31	.00	e.00
28	1.8	e3.0	e2.1	2.4	3.4	17	21	30	e5.0	.27	.00	e.20
29	1.8	e3.0	2.2	2.3	---	19	23	29	e4.5	.24	.00	e.30
30	1.8	e3.0	2.2	2.4	---	23	24	28	e4.0	.23	.00	e.30
31	1.8	---	2.2	2.2	---	24	---	30	---	.21	.00	---
TOTAL	75.80	63.8	72.1	78.5	65.2	323.0	882	1149	377.4	34.03	1.00	0.80
MEAN	2.45	2.13	2.33	2.53	2.33	10.4	29.4	37.1	12.6	1.10	.032	.027
MAX	7.1	3.0	2.9	5.0	3.5	24	58	66	27	3.5	.17	.30
MIN	.84	1.7	2.0	2.1	1.8	3.6	15	25	4.0	.21	.00	.00
AC-FT	150	127	143	156	129	641	1750	2280	749	67	2.0	1.6

e Estimated.

## 10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.58	12.4	12.1	12.9	13.9	19.6	40.3	84.6	68.3	19.6	3.49	1.74
MAX	22.4	73.9	92.5	74.0	77.7	80.3	89.2	156	265	123	26.9	7.93
(WY)	1983	1982	1982	1980	1982	1986	1988	1993	1983	1983	1983	1983
MIN	.15	1.06	.80	1.10	1.24	2.52	8.06	18.7	4.59	1.10	.003	.005
(WY)	1978	1978	1977	1991	1991	1977	1975	1977	1992	1994	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1973 - 1994			
ANNUAL TOTAL	12453.90				3122.63							
ANNUAL MEAN	34.1				8.56				24.4			
HIGHEST ANNUAL MEAN									59.0			
LOWEST ANNUAL MEAN									5.29			
HIGHEST DAILY MEAN	260				66				784			
LOWEST DAILY MEAN	.84				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.97				.00				.00			
INSTANTANEOUS PEAK FLOW					91				1800			
INSTANTANEOUS PEAK STAGE					5.25				8.05			
ANNUAL RUNOFF (AC-FT)	24700				6190				17660			
10 PERCENT EXCEEDS	121				27				70			
50 PERCENT EXCEEDS	4.9				2.3				6.3			
90 PERCENT EXCEEDS	1.7				.00				.80			



10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973-78, 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1972 to June 1978 (storm season only for water years 1977-78), October 1979 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1972 to June 1978 (storm season only for water years 1977-78), October 1979 to September 1992.

REMARKS.--In October 1992, station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
05...	1125	4.5	66	8.0	0.008	0.001	1.2
05...	1810	6.6	65	6.0	0.023	0.002	0.67
06...	1545	3.0	71	8.0	0.005	0.001	0.19
07...	1540	2.2	75	8.5	0.028	0.002	0.09
NOV							
09...	1455	1.7	75	2.5	0.003	<0.001	0.05
DEC							
21...	1415	2.2	67	0.0	0.003	<0.001	0.03
JAN							
04...	1745	2.0	62	0.0	0.009	0.004	0.13
19...	1245	2.4	72	0.0	0.006	0.003	0.04
FEB							
15...	1440	2.2	67	0.0	0.009	0.004	0.02
MAR							
14...	1320	8.5	57	2.5	0.012	0.002	0.07
28...	1345	14	53	6.0	0.005	0.001	0.10
APR							
11...	1620	16	47	9.0	0.003	0.001	0.08
14...	1840	42	35	6.5	0.007	0.001	0.55
15...	0900	29	41	2.0	0.013	0.002	0.09
18...	1855	76	32	6.0	0.026	0.003	0.70
19...	1310	43	37	9.0	0.023	<0.001	0.14
29...	1600	23	42	9.5	0.003	<0.001	0.08
MAY							
05...	2015	48	35	6.0	0.017	<0.001	0.16
06...	1050	46	37	4.5	0.018	<0.001	0.10
12...	1330	53	34	10.0	0.013	<0.001	0.10
12...	1915	68	32	7.5	0.016	<0.001	0.13
20...	1700	25	40	12.0	0.003	<0.001	0.06
26...	1705	37	33	11.5	0.003	<0.001	0.22
JUN							
06...	1700	19	40	14.0	0.004	0.002	0.06
13...	1610	14	42	17.0	0.002	0.003	0.10
20...	1345	8.0	48	17.0	0.003	<0.001	0.07
JUL							
11...	1510	1.4	66	23.0	0.004	<0.001	0.10
29...	1240	0.27	82	22.0	0.004	0.006	0.11
SEP							
30...	1300	0.30	92	12.0	0.003	0.001	0.12

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336676 WARD CREEK AT STATE HIGHWAY 89, NEAR TAHOE PINES, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT						
05...	2.02	--	0.010	33900	1020	12
05...	0.686	--	0.007	7240	288	5.1
06...	0.130	--	0.009	401	79	0.64
07...	0.038	--	0.010	636	17	0.10
NOV						
09...	0.040	--	0.010	104	3	0.01
DEC						
21...	0.019	--	0.007	76	4	0.02
JAN						
04...	0.029	--	0.011	225	8	0.04
19...	0.014	--	0.008	77	4	0.03
FEB						
15...	0.013	--	0.008	65	2	0.01
MAR						
14...	0.017	--	0.007	132	6	0.14
28...	0.018	--	0.006	184	6	0.23
APR						
11...	0.018	--	0.005	96	4	0.17
14...	0.117	--	0.005	1840	90	10
15...	0.025	--	0.002	162	9	0.70
18...	0.190	--	0.006	2440	170	35
19...	0.027	--	0.005	174	13	1.5
29...	0.016	--	0.004	85	5	0.31
MAY						
05...	0.065	--	0.005	593	20	2.6
06...	0.022	--	0.004	135	12	1.5
12...	0.024	--	0.004	123	10	1.4
12...	0.034	--	0.004	212	14	2.6
20...	0.021	--	0.005	78	3	0.20
26...	0.015	--	0.005	82	7	0.70
JUN						
06...	0.017	--	0.008	97	2	0.10
13...	0.025	--	0.009	104	2	0.08
20...	0.029	--	0.010	109	6	0.13
JUL						
11...	0.036	--	0.013	159	2	0.01
29...	0.031	--	0.011	47	<1	<0.01
SEP						
30...	0.022	0.018	0.006	70	14	0.01

## 10336780 TROUT CREEK NEAR TAHOE VALLEY, CA

LOCATION.--Lat 38°55'12", long 119°58'17", in NW 1/4 SE 1/4 sec.3, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, on left bank 5 ft upstream from Martin Avenue Bridge, 500 ft upstream from Heavenly Valley Creek, and 1.8 mi east of Tahoe Valley.

DRAINAGE AREA.--36.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1960 to current year.

SPECIFIC CONDUCTANCE: March 1981 to September 1983.

WATER TEMPERATURE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1977 to June 1978, March 1980 to September 1985, October 1987 to September 1988.

GAGE.--Water-stage recorder and sharp-crested weir in culvert at bridge. Datum of gage is 6,241.57 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Minor diversions for local water supply upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 11.14 ft, from rating curve extended above 250 ft<sup>3</sup>/s on basis of computation of peak flow (weir formula); no flow for part of Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 16	0945	Unknown	*a6.76	Apr. 20	0030	*47	6.58

(a) Backwater from ice.

Minimum daily, 6.4 ft<sup>3</sup>/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	e18	15	e15	17	23	21	28	12	8.1	6.8
2	17	17	16	15	e15	17	24	21	27	12	8.0	7.2
3	17	17	16	15	15	18	26	22	27	12	7.9	7.0
4	17	17	16	17	e15	18	24	24	25	12	8.2	7.0
5	25	17	e15	18	e15	19	22	26	25	12	7.8	6.9
6	24	17	e15	e19	15	19	22	38	25	12	7.7	6.9
7	20	17	15	e19	15	18	20	34	24	11	7.3	6.7
8	19	16	15	e18	14	18	20	31	24	11	7.3	6.8
9	19	17	20	17	e14	18	19	36	23	12	7.3	6.4
10	19	17	17	e17	14	19	18	35	22	11	7.6	6.9
11	19	17	14	e16	e14	19	18	37	21	10	7.4	7.2
12	19	17	e17	e16	e14	18	21	38	21	10	7.5	7.9
13	19	e17	18	e15	e15	19	24	37	20	10	7.3	8.8
14	19	e17	16	e15	e15	21	26	37	20	9.9	7.0	8.2
15	27	e17	17	15	e15	23	28	36	19	9.9	7.0	7.6
16	25	e17	18	e15	15	24	32	33	18	11	6.9	7.5
17	22	17	e18	e15	e16	21	34	30	18	11	6.8	7.6
18	21	16	e18	15	e17	21	36	32	17	9.9	6.5	7.6
19	20	e16	e18	15	e17	22	38	33	17	10	6.8	7.7
20	20	e17	18	15	17	21	37	31	16	9.5	6.8	7.8
21	20	e17	17	15	17	22	35	29	16	10	6.8	7.6
22	19	17	16	16	16	21	31	27	16	9.9	7.0	7.3
23	19	17	15	15	e15	e20	28	26	15	9.9	6.8	7.6
24	18	e17	16	15	15	19	24	27	15	9.3	6.9	7.9
25	18	e17	15	15	17	18	24	27	15	9.1	6.9	9.8
26	18	e17	14	e15	17	18	23	27	14	8.9	6.8	8.3
27	17	17	15	16	17	19	22	27	14	8.8	6.6	7.9
28	18	17	16	16	17	20	21	26	13	8.4	6.7	8.4
29	17	17	15	e15	---	21	21	26	13	8.3	6.8	9.8
30	17	17	15	e15	---	23	21	27	13	8.6	6.7	9.0
31	17	---	15	e15	---	24	---	31	---	8.7	6.6	---
TOTAL	604	507	504	490	433	615	762	932	581	318.1	221.8	230.1
MEAN	19.5	16.9	16.3	15.8	15.5	19.8	25.4	30.1	19.4	10.3	7.15	7.67
MAX	27	17	20	19	17	24	38	38	28	12	8.2	9.8
MIN	17	16	14	15	14	17	18	21	13	8.3	6.5	6.4
AC-FT	1200	1010	1000	972	859	1220	1510	1850	1150	631	440	456

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336780 TROUT CREEK NEAR TAHOE VALLEY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.8	19.4	20.6	22.5	24.2	28.1	41.6	74.4	86.5	44.1	22.1	16.3
MAX	37.6	61.1	64.0	60.3	68.7	85.0	81.9	184	286	186	88.7	49.6
(WY)	1983	1984	1984	1970	1986	1986	1982	1969	1983	1983	1983	1983
MIN	5.19	7.43	8.18	8.00	8.02	11.0	15.7	14.2	10.9	5.21	3.43	3.71
(WY)	1989	1978	1991	1991	1991	1977	1988	1988	1988	1988	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1961 - 1994	
ANNUAL TOTAL	15041.4		6198.0			
ANNUAL MEAN	41.2		17.0		34.7	
HIGHEST ANNUAL MEAN					85.3	
LOWEST ANNUAL MEAN					10.2	
HIGHEST DAILY MEAN	140	May 25	38	Apr 19	352	Feb 1 1963
LOWEST DAILY MEAN	7.1	Jan 6	6.4	Sep 9	2.5	Sep 7 1988
ANNUAL SEVEN-DAY MINIMUM	11	Jan 1	6.7	Aug 26	3.0	Sep 9 1977
INSTANTANEOUS PEAK FLOW			47	Apr 20	535	Feb 1 1963
INSTANTANEOUS PEAK STAGE			6.76	Nov 16	11.14	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	29830		12290		25150	
10 PERCENT EXCEEDS	107		26		77	
50 PERCENT EXCEEDS	23		17		22	
90 PERCENT EXCEEDS	14		7.5		8.4	

## 10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA

LOCATION.--Lat 38°55'56", long 119°58'40", in SE 1/4 NW 1/4 sec.3, T.12 N., R.18 E., El Dorado County, Hydrologic Unit 16050101, near center of bridge span on downstream side of U.S. Highway 50 bridge, 1.2 mi upstream from Lake Tahoe, and 1.9 mi northeast of South Lake Tahoe Post Office.

PERIOD OF RECORD.--Water years 1972-74, 1989 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1971 to June 1974, October 1988 to September 1992.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to June 1974, October 1988 to September 1992.

REMARKS.--In October 1992 station was incorporated into the expanded Lake Tahoe Interagency Monitoring Program to monitor tributary contributions of nutrients and sediment to Lake Tahoe. These data are reviewed and provided by the Nevada District Office, U.S. Geological Survey.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (MG/L)
OCT									
26...	0930	18	49	7.3	5.5	3.0	612	10.8	100
NOV									
16...	1045	17	48	--	5.0	0.5	--	--	--
DEC									
29...	1015	16	54	--	2.0	0.5	--	--	--
MAR									
21...	1300	21	52	--	10.5	7.0	--	--	--
APR									
05...	1110	21	53	8.2	6.0	2.5	604	11.3	105
20...	1050	34	41	--	12.0	7.0	--	--	--
26...	1400	21	47	7.9	8.5	5.0	589	10.6	106
MAY									
03...	1200	22	47	--	14.0	9.0	--	--	--
06...	1100	36	43	--	10.0	6.0	--	--	--
12...	1320	38	37	--	21.0	10.5	--	--	--
13...	0900	38	37	--	8.0	7.0	--	--	--
18...	0950	31	39	7.7	6.0	4.0	600	10.8	105
23...	1340	26	42	--	21.0	12.0	--	--	--
JUN									
02...	1100	27	38	7.3	17.0	11.0	605	8.6	99
15...	1030	19	41	--	15.0	10.0	--	--	--
JUL									
01...	1300	13	48	--	26.0	18.0	--	--	--
12...	1200	11	52	7.7	25.0	18.5	608	8.5	114
AUG									
03...	1000	8.0	55	--	21.0	15.5	--	--	--
22...	1030	7.3	58	7.7	17.5	14.5	606	9.0	112
SEP									
19...	1115	7.7	58	7.9	20.0	12.5	608	9.6	113

## PYRAMID AND WINNEMUCCA LAKES BASIN

10336790 TROUT CREEK AT SOUTH LAKE TAHOE, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, BIO. REACT- IVE TOTAL (UG/L AS FE)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT								
26...	0.004	<0.001	0.12	0.035	0.008	400	6	0.29
NOV								
16...	0.006	<0.001	0.19	0.051	0.008	683	47	2.2
DEC								
29...	0.016	0.002	0.09	0.018	0.008	224	4	0.17
MAR								
21...	0.018	0.003	0.18	0.025	0.010	499	7	0.40
APR								
05...	0.017	0.003	0.18	0.024	0.007	419	6	0.34
20...	0.019	0.001	0.25	0.040	0.006	573	14	1.3
26...	0.015	0.001	0.12	0.029	0.008	471	6	0.34
MAY								
03...	0.007	<0.001	0.03	0.028	0.009	160	6	0.36
06...	0.012	<0.001	0.28	0.048	0.008	756	14	1.4
12...	0.009	<0.001	0.22	0.045	0.008	858	21	2.2
13...	0.007	<0.001	0.15	0.041	0.007	491	37	3.8
18...	0.008	<0.001	0.09	0.028	0.007	292	6	0.50
23...	0.003	<0.001	0.13	0.024	0.007	301	9	0.63
JUN								
02...	0.007	0.001	0.13	0.030	0.007	328	8	0.58
15...	0.006	0.001	0.12	0.035	0.008	351	7	0.36
JUL								
01...	0.007	<0.001	0.14	0.041	0.010	449	14	0.49
12...	0.003	<0.001	0.15	0.035	0.013	354	9	0.27
AUG								
03...	0.003	<0.001	0.13	0.043	0.010	612	7	0.15
22...	0.008	<0.001	0.12	0.041	0.012	623	9	0.18
SEP								
19...	0.003	0.001	0.11	0.044	0.010	466	5	0.10

## 10337000 LAKE TAHOE AT TAHOE CITY, CA

LOCATION.--Lat 39°10'51", long 120°07'06", in NE 1/4 NE 1/4 sec.5, T.15 N., R.17 E., Placer County, Hydrologic Unit 16050101, on U.S. Coast Guard pier at Lake Forest, 1.1 mi northeast of Tahoe City, and 1.8 mi northeast of Lake Tahoe outlet dam on Truckee River at Tahoe City.

DRAINAGE AREA.--506 mi<sup>2</sup>, at lake outlet.

PERIOD OF RECORD.--April 1900 to current year. Monthend elevations only for October 1943 to September 1957, published in WSP 1734. Prior to October 1961, published as "at Tahoe."

CHEMICAL DATA: Water year 1969, bimonthly; 1978, biannually; 1979, annually.

REVISED RECORDS.--WDR CA-78-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,220.00 ft above U.S. Bureau of Reclamation datum, 6,218.86 ft above sea level. Prior to Oct. 1, 1957, nonrecording gages at several sites near outlet of lake at same datum except for water years 1907 and 1908, which were at a datum 5.5 ft higher. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum. May 9, 1958, to Sept. 30, 1968, water-stage recorder on pier, 1,000 ft east of dam at lake outlet.

REMARKS.--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Monthly figures given represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 ft, natural rim of lake, and 6,229.1 ft, maximum permissible elevation by Federal Court decree. Lake elevations are referred to U.S. Bureau of Reclamation datum because that datum is used as the official reference point by all local, State, and Federal agencies. There are minor diversions for domestic purposes, irrigation, and power. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6,231.26 ft, July 14, 15, 17, 18, 1907; minimum, 6,220.26 ft, Nov. 30, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,222.86 ft, Oct. 5; minimum, 6,221.43 ft, Sept. 26, 27, 30.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on topographic information available in April 1959)

6,223	0	6,227	486,800
6,224	121,400	6,228	609,300
6,225	243,000	6,229.1	744,600
6,226	364,800		

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.82	2.64	2.28	e2.23	2.15	2.41	2.42	2.53	2.79	2.58	2.33	1.84
2	2.80	2.61	2.31	e2.23	2.14	2.42	2.43	2.54	2.78	2.56	2.32	1.80
3	2.79	2.60	2.33	e2.22	2.14	2.42	2.44	2.53	2.77	2.57	2.31	1.79
4	2.79	2.59	2.30	2.22	2.14	2.43	2.44	2.54	2.78	2.56	2.29	1.78
5	2.86	2.58	2.28	2.23	2.13	2.45	2.44	2.58	2.74	2.55	2.27	1.77
6	2.85	2.57	2.27	2.24	2.11	2.45	2.44	2.63	2.74	2.54	2.25	1.75
7	2.84	2.56	2.25	2.27	2.16	2.45	2.44	2.66	2.74	2.54	2.21	1.73
8	2.82	2.55	2.28	2.25	2.17	2.45	2.44	2.68	2.74	2.53	2.20	1.69
9	2.82	2.52	2.30	2.21	2.16	2.45	2.44	2.68	2.74	2.52	2.17	1.64
10	2.79	2.52	2.28	2.22	2.23	2.47	2.44	2.69	2.74	2.51	2.16	1.60
11	2.79	2.49	2.33	2.21	2.23	2.47	2.44	2.70	2.73	2.50	2.15	1.58
12	2.78	2.51	2.33	2.26	2.23	2.45	2.44	2.70	2.72	2.50	2.14	1.60
13	2.76	2.48	2.33	2.21	2.21	2.45	2.44	2.72	2.69	2.49	2.13	1.57
14	2.76	2.44	2.32	2.27	2.21	2.45	2.44	2.70	2.69	2.49	2.12	1.56
15	2.80	2.43	2.31	2.24	2.21	2.43	2.45	2.73	2.66	2.49	2.10	1.55
16	2.78	2.42	2.30	2.25	2.18	2.43	2.45	2.75	2.66	2.48	2.10	1.54
17	2.79	2.38	2.29	2.22	2.34	2.43	2.45	2.77	2.66	2.48	2.09	1.52
18	2.78	2.39	2.28	2.19	2.36	2.42	2.46	2.78	2.66	2.46	2.06	1.51
19	2.76	2.36	2.28	2.19	e2.37	2.42	2.48	2.77	2.66	2.46	2.05	1.50
20	2.76	2.36	2.27	2.19	e2.38	2.42	2.49	2.77	2.66	2.46	2.03	1.49
21	2.75	2.33	2.26	2.18	e2.39	2.42	2.49	2.78	2.66	2.45	2.01	1.46
22	2.75	2.30	2.25	2.18	e2.40	2.41	2.49	2.78	2.65	2.44	2.00	1.45
23	2.75	2.32	2.25	2.19	2.40	2.41	2.48	2.78	2.65	2.43	1.99	1.45
24	2.74	2.29	2.25	2.19	2.40	2.42	2.48	2.78	2.64	2.41	1.96	1.45
25	2.74	2.27	2.25	2.19	2.40	2.42	2.51	2.79	2.63	2.41	e1.95	1.44
26	2.73	2.28	2.24	2.19	2.42	2.40	2.53	2.79	2.63	2.40	e1.93	1.43
27	2.68	2.28	2.24	2.19	2.43	2.40	2.53	2.79	2.61	2.39	1.90	1.43
28	2.68	2.27	e2.24	2.18	2.41	2.40	2.53	2.79	2.61	2.39	1.89	1.45
29	2.65	2.30	e2.23	2.17	---	2.41	2.52	2.79	2.60	2.38	1.89	1.44
30	2.66	2.30	e2.23	2.16	---	2.40	2.52	2.79	2.60	2.36	1.86	1.43
31	2.64	---	e2.23	2.14	---	2.41	---	2.79	---	2.35	1.84	---
MEAN	2.76	2.43	2.28	2.21	2.27	2.43	2.47	2.71	2.69	2.47	2.09	1.57
MAX	2.86	2.64	2.33	2.27	2.43	2.47	2.53	2.79	2.79	2.58	2.33	1.84
MIN	2.64	2.27	2.23	2.14	2.11	2.40	2.42	2.53	2.60	2.35	1.84	1.43
a	0	0	0	0	0	0	0	0	0	0	0	0
b	0	0	0	0	0	0	0	0	0	0	0	0
CAL YR 1993	MEAN 2.49	MAX 3.69	MIN .67	b 0								
WTR YR 1994	MEAN 2.37	MAX 2.86	MIN 1.43	b 0								

e Estimated.

a Usable contents, in acre-feet, at end of month.

b Change in contents, in acre-feet.

NOTE.--Add 6,220 ft to obtain elevation, U.S. Bureau of Reclamation datum, at 2400 hours.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10337500 TRUCKEE RIVER AT TAHOE CITY, CA

LOCATION.--Lat 39°09'59", long 120°08'36", in NE 1/4 NW 1/4 sec.7, T.15 N., R.17 E., Placer County, Hydrologic Unit 16050102, on left bank 510 ft downstream from dam at outlet of Lake Tahoe at Tahoe City.

DRAINAGE AREA.--507 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1895 to February 1896, March 1900 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Prior to October 1961, published as "at Tahoe."

REVISED RECORDS.--WDR CA-78-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,216.59 ft above sea level. Prior to Nov. 12, 1912, nonrecording gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, nonrecording gage; Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder at datum 2.26 ft higher; and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

REMARKS.--Records poor. Stage-discharge relation affected by beaver dams and ice. Flow completely regulated by dam at outlet of Lake Tahoe (station 10337000), 510 ft upstream. There are several diversions for irrigation, power, and domestic water supply. In addition, sewer effluent is pumped from the Lake Tahoe basin. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,630 ft<sup>3</sup>/s, June 19, 1969, gage height, 9.32 ft; no flow for parts of many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, unknown, Oct. 15, gage height, 2.62 ft, maximum gage height, 3.29 ft, May 6 (backwater from beaver dam); no flow June 2 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.01	e.20	e.20	e.20	e.10	e.20	e.20	e.20	e.01	e.00	e.00	e.00
2	e.01	e.20	e.20	e.20	e.10	e.20	e.20	e.10	e.00	e.00	e.00	e.00
3	e.01	e.20	e.20	e.30	e.10	e.20	e.20	e.01	e.00	e.00	e.00	e.00
4	e.50	e.20	e.20	e.50	e.10	e.20	e.20	e.01	e.00	e.00	e.00	e.00
5	e1.0	e.20	e.20	e.30	e.10	e.20	e.20	e.30	e.00	e.00	e.00	e.00
6	e.50	e.20	e.20	e.20	e.10	e.20	e.20	e.30	e.00	e.00	e.00	e.00
7	e.40	e.20	e.20	e.20	e.10	e.20	e.20	e.30	e.00	e.00	e.00	e.00
8	e.30	e.20	e.40	e.20	e.10	e.20	e.20	e.30	e.00	e.00	e.00	e.00
9	e.20	e.20	e1.0	e.20	e.10	e.30	e.20	e.10	e.00	e.00	e.00	e.00
10	e.10	e.20	e.30	e.20	e.10	e.40	e.20	e.01	e.00	e.00	e.00	e.00
11	e.10	e.30	e.20	e.20	e.10	e.50	e.20	e.01	e.00	e.00	e.00	e.00
12	e.10	e.20	e.20	e.20	e.10	e.50	e.20	e.01	e.00	e.00	e.00	e.00
13	e.50	e.20	e.20	e.20	e.10	e.50	e.20	e.01	e.00	e.00	e.00	e.00
14	e1.0	e.20	e.20	e.20	e.10	e.50	e.20	e.01	e.00	e.00	e.00	e.00
15	e2.0	e.20	e.20	e.20	e.10	e.50	e.20	e.01	e.00	e.00	e.00	e.00
16	e1.5	e.20	e.20	e.20	e.20	e.50	e.20	e.01	e.00	e.00	e.00	e.00
17	e1.0	e.20	e.20	e.20	e.50	e.50	e.20	e.20	e.00	e.00	e.00	e.00
18	e.50	e.20	e.20	e.20	e.30	e.50	e.20	e.01	e.00	e.00	e.00	e.00
19	e.40	e.20	e.20	e.20	e.20	e.40	e.20	e.01	e.00	e.00	e.00	e.00
20	e.30	e.20	e.20	e.20	e.20	e.40	e.20	e.01	e.00	e.00	e.00	e.00
21	e.20	e.20	e.20	e.20	e.20	e.30	e.20	e.01	e.00	e.00	e.00	e.00
22	e.20	e.20	e.20	e.20	e.20	e.30	e.20	e.01	e.00	e.00	e.00	e.00
23	e.20	e.20	e.20	e.20	e.20	e.20	e.20	e.01	e.00	e.00	e.00	e.00
24	e.20	e.20	e.20	e.20	e.20	e.20	e.20	e.01	e.00	e.00	e.00	e.00
25	e.20	e.20	e.20	e.20	e.20	e.20	e.20	e.01	e.00	e.00	e.00	e.00
26	e.20	e.30	e.20	e.20	e.50	e.20	e.20	e.01	e.00	e.00	e.00	e.00
27	e.20	e.40	e.20	e.20	e.30	e.20	e.20	e.01	e.00	e.00	e.00	e.00
28	e.20	e.40	e.20	e.20	e.20	e.20	e.20	e.01	e.00	e.00	e.00	e.00
29	e.20	e.30	e.20	e.20	---	e.20	e.20	e.01	e.00	e.00	e.00	e.00
30	e.20	e.20	e.20	e.20	---	e.20	e.20	e.20	e.00	e.00	e.00	e.00
31	e.20	---	e.20	e.10	---	e.20	---	e.01	---	e.00	e.00	---
TOTAL	12.63	6.70	7.30	6.60	4.90	9.50	6.00	2.22	0.01	0.00	0.00	0.00
MEAN	.41	.22	.24	.21	.17	.31	.20	.072	.000	.000	.000	.000
MAX	2.0	.40	1.0	.50	.50	.50	.20	.30	.01	.00	.00	.00
MIN	.01	.20	.20	.10	.10	.20	.20	.01	.00	.00	.00	.00
AC-FT	25	13	14	13	9.7	19	12	4.4	.02	.00	.00	.00

e Estimated.



## 10337500 TRUCKEE RIVER AT TAHOE CITY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	185	201	224	220	270	242	165	148	217	275	317	268
MAX	413	1575	2209	2088	1767	2235	1806	1746	1673	1071	638	687
(WY)	1910	1983	1984	1984	1983	1986	1983	1958	1969	1983	1918	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1932	1927	1925	1925	1925	1925	1919	1919	1921	1931	1931	1931

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1909 - 1994			
ANNUAL TOTAL	2755.58				55.86							
ANNUAL MEAN	7.55				.15				225			
HIGHEST ANNUAL MEAN									1150			
LOWEST ANNUAL MEAN									.15			
HIGHEST DAILY MEAN	51 Jul 11				2.0 Oct 15				2620 Jun 20 1969			
LOWEST DAILY MEAN	.01 Sep 30				.00 Jun 2				.00 Jan 4 1914			
ANNUAL SEVEN-DAY MINIMUM	.02 Sep 27				.00 Jun 2				.00 Jan 23 1914			
INSTANTANEOUS PEAK FLOW									2630 Jun 19 1969			
INSTANTANEOUS PEAK STAGE					3.29 May 6				9.32 Jun 19 1969			
ANNUAL RUNOFF (AC-FT)	5470				111				163200			
10 PERCENT EXCEEDS	30				.30				467			
50 PERCENT EXCEEDS	2.0				.20				137			
90 PERCENT EXCEEDS	.20				.00				.00			

10337500 TRUCKEE RIVER AT TAHOE CITY, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1978-81, monthly.

WATER TEMPERATURE: June 1993 to September 1994 (discontinued).

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Data logger and temperature sensor since June 4, 1993.

REMARKS.--Temperatures are affected by regulation from Lake Tahoe. There was no flow from Lake Tahoe for the entire year. There was no flow at the station from June 2 to Sept. 30.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 22.0 °C, July 24, 27, and Aug. 2, 1993; minimum recorded, 0.0 °C, on several days during February, 1994.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 17.5 °C, on several days during May and June; minimum recorded 0.0 °C, on several days during February.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	10.5	6.0	4.5	3.0	2.5	2.0	1.5	1.5	1.0	2.5	1.0
2	12.5	10.5	5.5	4.0	3.0	3.0	2.0	1.5	1.5	1.0	2.5	1.5
3	12.5	10.0	5.0	4.5	3.0	3.0	2.5	1.0	1.5	1.0	2.5	1.5
4	12.0	11.0	5.0	4.5	3.0	2.5	3.0	.5	1.5	.5	2.5	1.5
5	11.0	7.0	4.5	4.0	3.0	2.5	2.0	1.5	1.5	1.0	2.5	1.0
6	9.0	5.5	4.5	4.0	3.0	2.0	2.0	1.0	1.5	1.0	3.0	2.0
7	10.0	7.5	4.5	4.5	2.5	2.0	2.0	1.5	1.0	.5	3.5	2.5
8	9.5	7.5	4.5	4.0	2.5	1.0	2.0	1.5	1.0	.0	3.5	3.0
9	10.0	8.5	4.5	4.0	3.0	1.5	2.0	1.5	1.0	.5	3.5	3.0
10	10.0	8.5	4.5	4.0	3.0	2.0	2.0	1.5	1.0	.5	3.5	3.0
11	10.0	9.0	4.5	4.0	3.0	2.0	2.0	1.5	.5	.0	4.0	3.0
12	9.5	7.0	4.5	4.0	2.0	1.5	2.0	1.0	.5	.0	4.5	3.5
13	10.5	8.0	4.5	4.0	2.0	1.5	1.5	1.0	.5	.0	4.0	3.5
14	10.0	8.5	4.5	4.0	2.0	1.5	2.0	1.5	.5	.0	4.5	3.5
15	9.5	7.0	4.5	4.0	2.0	1.5	2.0	.5	.5	.0	4.5	4.0
16	8.5	7.0	4.0	4.0	2.0	1.5	1.5	.5	1.0	.0	4.5	3.5
17	8.0	6.5	4.0	4.0	2.0	2.0	2.0	.5	.5	.0	5.5	3.5
18	7.5	5.5	4.0	3.5	2.0	2.0	1.5	.5	.5	.5	5.5	3.5
19	7.5	5.5	4.0	3.5	2.0	2.0	2.0	1.0	1.0	.5	6.0	3.5
20	8.0	5.5	4.0	3.5	2.0	2.0	2.0	1.0	.5	.5	7.0	4.5
21	8.0	7.0	4.0	3.5	2.0	2.0	2.0	1.0	.5	.5	7.0	4.0
22	7.5	5.5	3.5	3.0	2.5	1.5	2.0	1.0	.5	.0	5.5	3.0
23	8.5	5.5	3.5	3.0	2.5	1.5	2.0	.5	1.0	.0	5.5	4.0
24	8.0	6.5	3.5	3.0	2.0	1.5	1.5	1.5	1.5	.0	6.0	4.5
25	7.5	5.5	3.5	3.5	2.5	1.5	1.5	1.0	1.5	.0	6.0	4.0
26	6.5	5.0	3.5	3.0	2.5	1.5	1.5	1.0	1.0	.0	7.5	4.5
27	6.0	4.5	3.5	3.0	2.0	1.0	1.5	1.0	1.5	.0	9.0	5.0
28	6.0	4.5	3.0	2.0	2.0	1.5	1.5	1.5	2.5	.0	8.5	5.5
29	7.0	6.0	3.0	2.0	2.0	1.5	1.5	1.0	---	---	8.0	5.5
30	6.5	5.0	3.0	1.5	2.0	1.5	1.5	1.0	---	---	9.0	5.5
31	6.5	5.5	---	---	2.0	1.5	1.5	1.0	---	---	8.5	5.0
MONTH	12.5	4.5	6.0	1.5	3.0	1.0	3.0	.5	2.5	.0	9.0	1.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	6.0	14.0	10.5	17.5	15.5	---	---	---	---	---	---
2	9.0	6.5	15.5	11.5	---	---	---	---	---	---	---	---
3	9.0	7.0	15.0	12.5	---	---	---	---	---	---	---	---
4	8.5	5.5	15.0	12.5	---	---	---	---	---	---	---	---
5	9.5	6.0	14.5	12.0	---	---	---	---	---	---	---	---
6	8.5	6.5	13.5	9.0	---	---	---	---	---	---	---	---
7	9.0	5.0	9.0	7.5	---	---	---	---	---	---	---	---
8	7.5	6.5	10.5	8.0	---	---	---	---	---	---	---	---
9	9.0	5.5	13.5	10.5	---	---	---	---	---	---	---	---
10	10.0	5.5	15.5	12.5	---	---	---	---	---	---	---	---
11	11.5	7.0	17.0	14.0	---	---	---	---	---	---	---	---
12	14.0	8.5	17.0	15.0	---	---	---	---	---	---	---	---
13	13.5	9.5	17.0	13.5	---	---	---	---	---	---	---	---
14	14.5	10.0	17.5	15.0	---	---	---	---	---	---	---	---
15	15.0	10.5	17.0	10.5	---	---	---	---	---	---	---	---
16	14.5	11.5	12.0	9.5	---	---	---	---	---	---	---	---
17	14.5	11.5	13.0	8.5	---	---	---	---	---	---	---	---
18	15.5	11.5	11.5	10.0	---	---	---	---	---	---	---	---
19	16.5	12.5	13.0	9.0	---	---	---	---	---	---	---	---
20	16.5	12.5	13.5	10.5	---	---	---	---	---	---	---	---
21	16.5	12.0	15.5	11.0	---	---	---	---	---	---	---	---
22	16.0	12.0	16.0	12.5	---	---	---	---	---	---	---	---
23	13.5	10.5	16.0	14.0	---	---	---	---	---	---	---	---
24	12.0	8.5	16.5	13.5	---	---	---	---	---	---	---	---
25	9.5	7.0	17.0	15.0	---	---	---	---	---	---	---	---
26	9.0	6.5	17.0	15.0	---	---	---	---	---	---	---	---
27	9.0	7.5	17.5	15.0	---	---	---	---	---	---	---	---
28	11.0	7.0	17.5	15.0	---	---	---	---	---	---	---	---
29	12.0	9.0	17.5	14.5	---	---	---	---	---	---	---	---
30	13.5	9.5	17.5	15.0	---	---	---	---	---	---	---	---
31	---	---	17.5	15.5	---	---	---	---	---	---	---	---
MONTH	16.5	5.0	17.5	7.5	---	---	---	---	---	---	---	---

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA

LOCATION.--Lat 39°17'17", long 120°12'16", in SW 1/4 NE 1/4 sec.28, T.17 N., R.16 E., Placer County, Hydrologic Unit 16050102, Tahoe National Forest, on left bank 1.4 mi downstream from Cabin Creek and 2.5 mi southwest of Truckee.

DRAINAGE AREA.--553 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1944 to September 1961, June 1977 to September 1982, October 1992 to current year. Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WDR CA-77-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,857.66 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Tahoe (station 10337000), operating capacity, 744,600 acre-feet. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,760 ft<sup>3</sup>/s, Dec. 23, 1955; gage height, 7.92 ft, from rating curve extended above 3,100 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 7.62 ft and 7.92 ft; minimum daily, 3.4 ft<sup>3</sup>/s several days in Aug. 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 340 ft<sup>3</sup>/s, May 11, gage height, 2.09 ft; minimum daily, 3.4 ft<sup>3</sup>/s, several days in August.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	12	14	e9.6	e11	35	80	72	90	10	4.1	3.5
2	8.9	12	14	e9.5	e11	40	83	81	80	9.5	3.9	3.6
3	8.9	12	13	e9.3	e11	43	97	93	72	9.5	3.9	3.7
4	8.9	12	14	e9.0	e11	40	86	113	64	9.0	3.8	3.8
5	13	12	13	e8.8	e11	55	75	130	60	8.8	3.7	3.8
6	15	11	14	e8.5	e12	54	74	174	55	8.4	3.6	3.8
7	12	11	13	e8.3	e12	47	64	133	48	8.0	3.6	3.8
8	11	11	13	e8.2	e12	48	61	125	45	7.9	3.6	3.8
9	11	11	24	e8.1	e12	51	58	197	43	7.4	3.6	3.7
10	11	11	22	e8.0	e12	57	53	199	42	7.3	3.6	3.8
11	11	11	23	e8.0	e12	55	53	235	41	6.7	3.6	4.0
12	11	12	21	e8.0	e12	48	59	219	38	6.5	3.6	5.1
13	10	11	18	e8.0	e12	48	72	186	35	6.5	3.6	6.1
14	12	11	18	e8.0	e12	60	91	172	32	6.1	3.6	5.3
15	23	9.9	17	e8.0	e12	80	109	137	28	6.1	3.6	5.2
16	25	11	15	e8.1	e12	88	137	103	e26	5.9	3.5	4.9
17	19	11	14	e8.2	e12	73	185	87	e24	5.7	3.5	4.9
18	16	11	e14	e8.4	e12	70	196	81	23	5.5	3.4	4.9
19	15	9.8	e13	e8.5	e12	67	209	77	22	5.3	3.4	5.0
20	14	9.5	e13	e8.5	e12	65	188	71	20	5.3	3.4	5.3
21	14	10	e12	e8.6	e12	70	159	73	19	5.3	3.5	4.9
22	14	11	e12	e8.8	e12	66	137	80	19	5.3	3.4	4.9
23	13	10	e12	e8.9	e12	54	112	90	18	5.2	3.5	4.9
24	13	9.0	e11	e9.0	e13	49	90	103	16	4.9	3.4	5.0
25	12	10	e11	e9.2	e13	46	81	117	15	4.9	3.4	5.3
26	12	10	e11	e9.4	e14	45	73	121	14	4.9	3.4	5.2
27	12	11	e11	e9.6	e15	51	70	117	13	4.8	3.4	5.1
28	12	12	e10	e9.8	e17	61	65	102	12	4.5	3.4	5.4
29	12	15	e10	e10	---	69	65	95	11	4.5	3.5	6.6
30	12	18	e10	e10	---	81	67	93	11	4.4	3.5	6.2
31	12	---	e9.8	e11	---	86	---	103	---	4.4	3.5	---
TOTAL	402.6	338.2	439.8	273.3	343	1802	2949	3779	1036	198.5	110.5	141.5
MEAN	13.0	11.3	14.2	8.82	12.2	58.1	98.3	122	34.5	6.40	3.56	4.72
MAX	25	18	24	11	17	88	209	235	90	10	4.1	6.6
MIN	8.9	9.0	9.8	8.0	11	35	53	71	11	4.4	3.4	3.5
AC-FT	799	671	872	542	680	3570	5850	7500	2050	394	219	281

e Estimated.

## 10338000 TRUCKEE RIVER NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	209	213	254	247	266	264	384	551	424	289	285	260
MAX	387	551	1019	1140	1560	1421	1734	2403	1381	535	492	453
(WY)	1948	1951	1951	1951	1952	1952	1958	1958	1952	1953	1959	1954
MIN	7.60	11.3	14.2	8.82	12.2	58.1	98.3	122	34.5	6.40	3.56	4.72
(WY)	1993	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1945 - 1994			
ANNUAL TOTAL	47920.4				11813.4							
ANNUAL MEAN	131				32.4				309			
HIGHEST ANNUAL MEAN									821			
LOWEST ANNUAL MEAN									32.4			
HIGHEST DAILY MEAN	717				May 20				5280			
LOWEST DAILY MEAN	8.8				Sep 30				3.4			
ANNUAL SEVEN-DAY MINIMUM	8.9				Sep 28				3.4			
INSTANTANEOUS PEAK FLOW									7760			
INSTANTANEOUS PEAK STAGE									7.92			
ANNUAL RUNOFF (AC-FT)	95050				23430				223700			
10 PERCENT EXCEEDS	386				89				479			
50 PERCENT EXCEEDS	34				12				228			
90 PERCENT EXCEEDS	11				3.8				45			

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-66, 1977-82, March 1993 to September 1994 (discontinued).

CHEMICAL DATA: Water years 1951-66.

SPECIFIC CONDUCTANCE: Water years 1977-82.

WATER TEMPERATURE: Water years 1977-82, March 1993 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1977 to September 1982.

WATER TEMPERATURE: July 1977 to September 1982, March 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorder since March 1993.

REMARKS.--Interruptions in record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 24.5°C, July 20, 1994; minimum recorded, 0.0°C, on many days most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.5°C, July 20; minimum recorded, 0.0°C on several days.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.0	7.5	10.0	3.0	---	---	3.0	.5	2.0	.5	6.0	.5
2	19.5	7.0	9.0	1.5	---	---	4.5	.5	3.0	.5	5.5	.5
3	19.5	7.5	9.5	1.5	---	---	4.0	.5	3.0	.5	4.0	.5
4	13.0	8.5	9.5	2.0	---	---	3.0	.5	5.0	1.0	6.0	.5
5	11.0	8.0	8.5	1.5	---	---	2.0	.5	3.0	1.0	4.5	1.5
6	14.5	7.0	8.5	1.0	---	---	1.5	.5	4.0	1.0	6.0	1.5
7	15.5	7.5	8.5	1.0	---	---	1.0	.5	5.0	.5	7.0	1.0
8	15.0	6.5	8.0	1.0	3.5	1.0	2.0	.5	5.0	1.0	7.5	1.5
9	12.0	8.0	7.5	1.5	3.5	1.0	3.0	.5	4.0	1.0	7.5	1.5
10	14.0	7.5	8.5	2.5	4.0	.5	2.0	.0	2.0	.5	6.5	1.5
11	11.0	7.5	9.0	3.5	2.5	.0	3.0	.5	3.0	.5	6.5	1.0
12	13.5	6.0	7.0	3.0	1.5	.5	3.0	.5	2.0	.5	7.5	1.0
13	12.0	7.0	---	---	3.0	.5	2.5	.5	3.0	.5	8.5	1.5
14	10.0	8.5	---	---	1.5	.5	2.5	.5	3.0	.5	9.0	2.0
15	9.5	7.5	---	---	2.0	.5	4.0	.5	3.5	.5	8.5	2.0
16	10.0	6.5	---	---	3.5	.0	3.0	.5	3.5	1.0	7.0	3.0
17	10.0	6.5	---	---	1.5	.0	3.5	.5	2.0	.5	7.5	1.0
18	11.5	4.0	---	---	1.0	.5	3.0	.5	1.0	.5	7.5	3.0
19	11.5	4.0	---	---	2.0	.0	3.0	.5	2.0	.5	8.0	2.5
20	12.0	4.0	---	---	---	---	3.5	.5	2.0	.5	8.5	1.5
21	9.0	6.5	---	---	1.0	.0	3.5	.5	2.0	.5	8.5	3.0
22	11.5	4.0	---	---	1.0	.0	3.5	.5	4.5	1.0	5.0	2.0
23	12.0	4.5	---	---	1.5	.0	2.0	.5	3.5	1.0	5.0	.5
24	12.5	5.5	---	---	1.5	.0	1.5	.5	4.5	.5	7.0	2.5
25	11.5	4.0	---	---	1.5	.0	2.5	.5	5.0	.5	7.0	4.0
26	11.0	4.0	---	---	1.5	.5	4.0	.5	4.0	.5	9.5	2.0
27	10.0	3.0	---	---	3.0	1.0	3.0	.5	5.5	1.0	10.0	3.0
28	10.0	3.0	---	---	2.5	1.5	3.0	.5	5.5	.5	9.0	3.0
29	12.0	5.0	4.5	.5	4.5	.5	2.5	.5	---	---	8.0	3.5
30	11.5	4.0	3.5	.5	3.5	.5	3.0	.5	---	---	10.0	3.5
31	10.0	5.0	---	---	3.0	.0	2.5	.5	---	---	9.5	2.5
MONTH	20.0	3.0	---	---	---	---	4.5	.0	5.5	.5	10.0	.5

10338000 TRUCKEE RIVER NEAR TRUCKEE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	2.5	12.0	5.0	15.5	7.5	---	---	22.5	13.0	22.0	7.5
2	9.0	3.5	12.0	6.0	15.5	9.0	---	---	22.0	12.5	21.0	7.0
3	8.5	4.5	11.5	6.0	15.5	8.5	---	---	22.5	12.0	21.5	7.0
4	9.0	2.5	10.5	5.5	15.5	8.0	---	---	23.0	12.5	22.0	7.0
5	8.5	2.5	10.0	4.5	15.5	9.0	---	---	22.5	12.0	18.5	8.0
6	7.5	4.5	8.0	4.5	14.5	9.0	---	---	22.0	11.5	22.0	7.5
7	8.5	3.0	8.0	4.0	15.0	7.5	---	---	21.5	11.5	21.5	8.0
8	6.5	4.5	12.0	5.0	17.0	9.0	---	---	21.5	12.0	20.5	8.5
9	9.0	3.5	13.5	6.0	18.5	10.5	---	---	21.5	12.0	20.5	7.5
10	10.5	4.0	13.0	4.5	19.5	12.0	---	---	21.5	12.5	19.5	7.0
11	11.0	3.5	13.5	5.5	19.5	12.0	---	---	22.0	12.5	16.5	6.5
12	11.5	5.0	11.0	4.5	18.5	12.0	---	---	22.5	12.5	13.0	6.5
13	11.5	4.5	13.0	5.0	19.0	12.5	---	---	22.0	12.0	15.5	7.5
14	12.0	4.5	12.0	5.0	18.0	10.5	---	---	22.0	12.0	19.0	7.0
15	11.5	3.5	11.0	5.0	17.0	9.5	---	---	22.0	12.0	20.0	7.5
16	11.0	4.0	6.5	3.5	---	---	---	---	23.0	9.0	19.5	8.0
17	11.0	4.0	7.0	4.0	---	---	---	---	22.5	8.5	16.5	9.5
18	11.5	3.5	7.0	4.5	---	---	23.0	13.5	22.5	9.5	20.0	8.0
19	11.5	4.0	10.5	5.0	---	---	22.5	14.0	22.0	9.5	18.5	9.5
20	11.0	3.0	11.5	5.0	---	---	24.5	15.5	21.0	8.0	19.0	9.0
21	10.5	3.5	13.5	6.0	---	---	23.5	15.0	21.0	8.5	20.5	8.5
22	10.0	3.5	14.0	6.0	---	---	23.5	16.0	21.0	8.0	20.5	8.5
23	6.5	3.5	13.0	6.5	---	---	23.0	14.5	21.0	9.0	20.0	9.5
24	7.5	2.5	14.5	6.5	---	---	23.0	13.5	21.0	8.5	18.0	10.0
25	7.0	2.5	12.0	7.0	---	---	22.5	12.5	20.5	8.5	20.0	10.0
26	8.0	3.0	12.5	7.0	---	---	23.0	13.0	20.5	9.0	20.5	9.0
27	7.5	4.5	14.5	7.0	---	---	22.5	13.0	22.0	11.0	19.5	9.5
28	10.0	4.0	14.0	6.0	---	---	23.0	13.0	21.0	9.0	13.5	10.0
29	9.5	4.5	15.0	7.0	---	---	21.5	14.5	21.0	7.5	14.5	10.0
30	11.5	5.5	13.5	7.5	---	---	21.5	15.0	21.5	9.0	18.0	8.5
31	---	---	15.0	9.0	---	---	23.0	13.0	20.5	8.5	---	---
MONTH	12.0	2.5	15.0	3.5	---	---	---	---	23.0	7.5	22.0	6.5

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338400 DONNER LAKE NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'30", long 120°16'53", in SE 1/4 NW 1/4 sec.14, T.17 N., R.15 E., Nevada County, Hydrologic Unit 16050102, on north shore 2.5 mi upstream from outlet gates and 4.9 mi west of Truckee.

DRAINAGE AREA.--14.0 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Westpac Utilities).

REMARKS.--Lake levels regulated by a concrete dam at the outlet constructed in 1928. Usable capacity, 9,490 acre-ft between elevations 5,923.8 and 5,935.8 ft, maximum storage level. Water is used for irrigation and power development downstream. Records, including extremes, represent usable contents. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 9,740 acre-ft, June 29, 1993, elevation, 5,936.08 ft; minimum, 2,510 acre-ft, Jan. 24, 28-31, 1991, elevation, 5,927.23 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,910 acre-ft, June 9, 10, elevation, 5,935.12 ft; minimum, 2,810 acre-ft, Nov. 20-22, elevation, 5,927.63 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Westpac Utilities, dated Aug. 22, 1980)

5,923.8	0	5,932	6,310
5,926.0	1,600	5,934	7,970
5,928.0	3,120	5,936	9,670
5,930.0	4,690		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5170	3100	2920	2930	2890	3110	4060	6900	8850	8610	6830	6220
2	5010	3060	2940	2900	2900	3130	4150	6970	8840	8580	6810	6170
3	4900	3060	2920	2900	2890	3140	4250	7060	8850	8590	6800	6170
4	4800	3030	2940	2920	2890	3130	4350	7160	8870	8560	6770	6150
5	4720	3020	2920	2960	2880	3180	4420	7280	8850	8550	6760	6150
6	4610	2990	2900	2940	2910	3210	4510	7450	8880	8490	6730	6150
7	4470	2980	2890	2960	2930	3220	4560	7590	8900	8390	6690	6040
8	4360	2970	3000	2930	2920	3230	4630	7720	8900	8280	6650	5800
9	4280	2930	3020	2920	2920	3260	4690	7860	8910	8150	6650	5690
10	4190	2930	3010	2910	2980	3310	4740	7980	8910	8060	6630	5590
11	4090	2920	3090	2910	2960	3330	4780	8090	8890	7940	6610	5470
12	4000	2910	3080	2900	2960	3340	4840	8190	8880	7810	6580	5390
13	3920	2890	3050	2920	2950	3350	4930	8270	8850	7700	6560	5260
14	3880	2870	3110	2970	2930	3370	5040	8310	8850	7610	6550	5140
15	3870	2880	3050	2960	2940	3430	5180	8360	8830	7480	6540	5040
16	3770	2860	3040	2940	2930	3450	5350	8410	8860	7380	6530	4930
17	3720	2850	3010	2940	3090	3490	5540	8430	8830	7290	6500	4840
18	3660	2840	3000	2880	3130	3530	5730	8470	8830	7170	6480	4760
19	3600	2840	2940	2890	3130	3550	5930	8500	8850	7080	6460	4660
20	3550	2810	2970	2880	3160	3550	6100	8530	8840	7040	6440	4570
21	3490	2810	2960	2860	3200	3590	6230	8560	8820	7020	6400	4460
22	3440	2810	2940	2870	3160	3630	6330	8590	8780	7020	6400	4380
23	3380	2870	2940	2940	3140	3650	6420	8600	8770	7000	6360	4270
24	3350	2870	2930	2970	3130	3660	6440	8630	8770	6980	6360	4220
25	3310	2850	2920	2960	3130	3650	6550	8670	8710	6970	6350	4160
26	3290	2840	2930	2930	3130	3640	6610	8700	8720	6950	6330	4070
27	3260	2830	2930	2920	3130	3670	6670	8730	8710	6950	6290	4010
28	3230	2890	2930	2910	3130	3740	6710	8750	8680	6930	6290	3960
29	3200	2940	2910	2920	---	3800	6770	8770	8660	6920	6280	3880
30	3180	2920	2880	2910	---	3890	6830	8790	8630	6880	6280	3810
31	3140	---	2890	2890	---	3970	---	8830	---	6850	6240	---
MAX	5170	3100	3110	2970	3200	3970	6830	8830	8910	8610	6830	6220
MIN	3140	2810	2880	2860	2880	3110	4060	6900	8630	6850	6240	3810
a	5928.03	5927.76	5927.73	5927.73	5928.01	5928.09	5932.64	5935.02	5934.79	5932.67	5931.92	5928.90
b	-2160	-220	-30	0	+240	+840	+2860	+2000	-200	-1780	-610	-2430

CAL YR 1993 MAX 9740 MIN 2810 b -340  
WTR YR 1994 MAX 8910 MIN 2810 b -1490

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.



## 10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'25", long 120°14'00", in SW 1/4 NW 1/4 sec.17, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, in Donner Memorial State Park, on left bank 10 ft downstream from bridge on Donner Memorial State Park road, 0.2 mi downstream from outlet of Donner Lake, 0.7 mi upstream from Cold Creek, and 2.5 mi west of Truckee.

DRAINAGE AREA.--14.3 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1909 to August 1910, January 1929 to October 1935, January 1936 to March 1938, July to October 1938, January 1939 to February 1943, June 1943 to December 1953, May 1955 to December 1957, October 1958 to current year. Monthly discharge only prior to October 1958, published in WSP 1314 and 1734.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder and concrete control, completed Oct. 3, 1989. Datum of gage is 5,924.40 ft above sea level. Nov. 1, 1909, to Aug. 31, 1910, nonrecording gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

REMARKS.--Records good. Flow completely regulated at dam at outlet of Donner Lake (station 10338400) since 1928. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 707 ft<sup>3</sup>/s, Feb. 19, 1986; gage height, 4.83 ft; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft<sup>3</sup>/s, Oct. 1, gage height, 3.67 ft; minimum daily, 0.39 ft<sup>3</sup>/s, Jul. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	11	5.5	5.2	6.4	13	3.3	2.7	1.8	3.4	3.5	1.7
2	67	10	5.5	5.0	6.3	13	3.4	2.6	1.9	3.4	3.6	1.6
3	65	9.6	5.5	4.5	5.9	13	3.3	2.5	1.9	3.0	3.6	2.1
4	62	9.4	5.8	5.0	5.9	14	3.3	2.5	1.6	3.0	3.8	2.8
5	61	9.1	5.6	6.6	5.9	15	3.0	2.5	1.5	4.3	3.7	1.5
6	59	8.7	5.4	6.4	5.7	16	2.7	2.3	1.0	27	3.4	6.4
7	56	8.4	5.1	6.4	6.8	15	2.4	4.4	1.0	53	3.1	45
8	53	7.9	6.3	6.3	7.1	14	2.3	6.9	1.0	51	3.2	60
9	49	7.3	8.3	5.9	6.4	15	2.2	6.9	1.2	50	2.9	55
10	47	6.7	8.2	5.9	6.7	16	2.0	7.2	1.3	49	3.3	52
11	45	6.1	9.0	5.6	8.6	17	2.6	6.9	1.3	49	3.9	51
12	42	6.0	9.8	5.5	8.4	17	3.6	6.9	1.3	48	2.7	50
13	40	5.4	9.4	5.5	7.4	18	3.6	6.9	1.3	47	3.2	49
14	38	4.9	9.9	5.5	7.8	18	3.4	6.9	1.1	45	2.6	e49
15	37	4.6	9.5	5.5	7.6	19	3.3	6.9	1.2	46	2.7	e47
16	36	4.1	9.0	5.2	7.1	20	3.2	6.9	1.2	45	2.8	e46
17	34	3.8	8.6	5.5	11	18	3.0	7.1	1.7	43	2.2	47
18	32	3.7	8.3	5.5	15	15	2.5	6.9	2.9	47	2.2	46
19	29	3.6	7.8	5.5	13	16	1.8	6.9	1.5	43	2.4	46
20	27	3.4	7.4	5.5	13	16	1.5	6.9	.91	16	2.1	44
21	25	3.1	7.2	5.4	15	16	1.5	6.9	5.3	2.2	2.0	43
22	23	3.6	6.9	5.4	15	17	3.0	6.9	4.6	1.0	2.0	42
23	22	3.8	6.6	6.2	14	17	5.0	6.9	4.3	.42	1.9	42
24	20	3.6	6.4	7.1	13	17	4.9	6.9	4.5	.39	1.9	41
25	19	3.4	5.9	7.3	13	17	4.1	6.9	4.2	.48	2.0	39
26	17	3.2	5.5	7.3	13	13	3.4	6.9	4.1	.52	2.1	38
27	16	2.9	5.8	7.4	13	11	2.9	5.0	4.4	.68	1.9	36
28	15	3.1	5.5	7.3	13	11	2.8	2.5	4.4	3.0	1.8	35
29	14	3.9	5.5	7.0	---	12	2.8	2.2	4.5	4.6	1.8	35
30	13	5.5	5.5	6.8	---	10	2.8	1.7	3.6	4.1	1.9	34
31	12	---	5.0	6.5	---	3.3	---	1.7	---	3.6	1.9	---
TOTAL	1145	169.8	215.7	185.7	271.0	462.3	89.6	164.2	72.51	697.09	82.1	1088.1
MEAN	36.9	5.66	6.96	5.99	9.68	14.9	2.99	5.30	2.42	22.5	2.65	36.3
MAX	70	11	9.9	7.4	15	20	5.0	7.2	5.3	53	3.9	60
MIN	12	2.9	5.0	4.5	5.7	3.3	1.5	1.7	.91	.39	1.8	1.5
AC-FT	2270	337	428	368	538	917	178	326	144	1380	163	2160

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338500 DONNER CREEK AT DONNER LAKE, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.8	28.0	30.6	29.2	30.4	33.9	50.0	83.9	44.3	12.0	8.05	23.9
MAX	85.7	195	214	174	197	182	144	243	244	67.2	52.7	99.1
(WY)	1973	1951	1951	1970	1986	1986	1940	1952	1983	1934	1932	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1930	1930	1930	1929	1929	1929	1929	1929	1929	1937	1936	1930

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1929 - 1994
ANNUAL TOTAL	17842.4	4643.10	
ANNUAL MEAN	48.9	12.7	34.5
HIGHEST ANNUAL MEAN			83.3
LOWEST ANNUAL MEAN			7.71
HIGHEST DAILY MEAN	155	May 23	700
LOWEST DAILY MEAN	2.9	Nov 27	.00
ANNUAL SEVEN-DAY MINIMUM	3.4	Nov 21	.00
INSTANTANEOUS PEAK FLOW			707
INSTANTANEOUS PEAK STAGE			4.83
ANNUAL RUNOFF (AC-FT)	35390	9210	25030
10 PERCENT EXCEEDS	124	43	95
50 PERCENT EXCEEDS	26	6.3	12
90 PERCENT EXCEEDS	3.9	1.9	.00

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'16", long 120°12'25", in NE 1/4 SW 1/4 sec.16, T.17 N., R.16 E., Nevada County, Hydrologic Unit 16050102, on right bank 50 ft upstream from State Highway 89 bridge, 0.5 mi upstream from mouth, and 1.4 mi southwest of Truckee.

DRAINAGE AREA.--29.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,870 ft above sea level, from topographic map.

REMARKS.--Records fair including estimated periods. About half the drainage area is regulated at dam at outlet of Donner Lake (station 10338400) 2.0 mi upstream. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 695 ft<sup>3</sup>/s, May 31, 1993, gage height, 7.01 ft; minimum daily, 2.3 ft<sup>3</sup>/s, Aug. 21, 22, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 162 ft<sup>3</sup>/s, May 11, gage height, 5.17 ft; minimum daily, 2.3 ft<sup>3</sup>/s, Aug. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	14	8.5	8.2	e9.0	19	31	41	49	6.5	4.8	2.6
2	69	13	8.4	7.9	8.4	20	31	44	45	6.6	4.5	2.6
3	66	12	8.2	7.9	8.1	20	35	48	41	6.3	4.5	2.4
4	64	12	8.5	9.9	8.0	21	33	57	37	6.1	4.8	2.4
5	64	12	8.2	11	7.9	26	31	61	34	6.6	4.8	2.4
6	69	11	8.1	10	7.9	28	30	74	31	27	4.3	6.0
7	68	11	7.8	10	9.1	26	27	69	27	54	4.0	48
8	65	10	10	10	9.3	25	27	75	26	53	4.0	68
9	62	9.7	16	10	8.9	26	26	99	25	53	3.7	65
10	59	9.2	13	9.8	e8.3	28	23	97	25	52	3.6	61
11	55	8.9	13	9.5	e9.0	31	24	115	24	51	3.6	60
12	52	8.8	14	9.4	e8.8	29	30	109	21	52	3.4	64
13	49	8.2	13	9.1	e8.8	30	35	100	20	53	3.2	59
14	47	7.5	14	9.0	e9.0	33	40	91	17	53	3.0	59
15	49	7.2	13	8.9	10	39	45	77	15	53	2.8	58
16	47	7.0	13	8.7	9.6	44	52	62	14	53	2.9	56
17	43	6.8	12	8.6	e9.2	37	64	52	12	53	2.8	55
18	39	6.4	12	8.5	e9.5	35	63	46	12	58	2.7	53
19	36	6.1	11	8.4	e14	35	67	46	11	56	2.8	52
20	34	5.9	11	8.4	15	35	60	45	10	26	2.4	50
21	31	5.7	10	8.4	17	37	57	46	13	7.5	2.3	48
22	29	6.3	10	8.4	17	37	53	48	12	5.2	2.3	47
23	26	6.6	9.8	9.6	16	34	47	53	11	3.9	2.4	45
24	24	6.0	11	10	16	33	40	58	10	3.3	2.4	44
25	22	5.8	9.0	10	17	32	39	61	10	3.0	2.6	42
26	20	5.6	8.7	10	17	29	37	64	9.5	2.8	2.8	41
27	19	5.4	8.7	10	19	28	36	59	9.5	2.6	2.7	36
28	18	5.9	8.4	9.6	19	32	35	51	8.3	4.2	2.6	34
29	17	7.3	8.4	9.4	---	36	36	49	7.7	6.6	2.5	33
30	16	9.1	8.5	9.2	---	40	39	51	7.0	6.2	2.6	32
31	15	---	8.2	9.7	---	34	---	60	---	5.2	2.6	---
TOTAL	1343	250.4	323.4	287.5	325.8	959	1193	2008	594.0	829.6	100.4	1228.4
MEAN	43.3	8.35	10.4	9.27	11.6	30.9	39.8	64.8	19.8	26.8	3.24	40.9
MAX	69	14	16	11	19	44	67	115	49	58	4.8	68
MIN	15	5.4	7.8	7.9	7.9	19	23	41	7.0	2.6	2.3	2.4
AC-FT	2660	497	641	570	646	1900	2370	3980	1180	1650	199	2440

e Estimated.

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	43.3	8.35	10.4	9.27	11.6	30.9	130	218	117	43.7	7.17	50.6
MAX	43.3	8.35	10.4	9.27	11.6	30.9	220	372	215	60.7	11.1	60.2
(WY)	1994	1994	1994	1994	1994	1994	1993	1993	1993	1993	1993	1993
MIN	43.3	8.35	10.4	9.27	11.6	30.9	39.8	64.8	19.8	26.8	3.24	40.9
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	9442.5		
ANNUAL MEAN	25.9	25.9	
HIGHEST ANNUAL MEAN		25.9	1994
LOWEST ANNUAL MEAN		25.9	1994
HIGHEST DAILY MEAN	115	May 11	479
LOWEST DAILY MEAN	2.3	Aug 21	2.3
ANNUAL SEVEN-DAY MINIMUM	2.5	Aug 19	2.5
INSTANTANEOUS PEAK FLOW	162	May 11	695
INSTANTANEOUS PEAK STAGE	5.17	May 11	7.01
ANNUAL RUNOFF (AC-FT)	18730		18740
10 PERCENT EXCEEDS	59		232
50 PERCENT EXCEEDS	16		31
90 PERCENT EXCEEDS	4.3		4.8

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: August 1993 to September 1994 (discontinued).

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorder since August 1993.

REMARKS.--Water temperature is affected by regulation from Donner Lake.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, July 21, 28, 1994; minimum recorded, -0.5°C, Nov. 20, 1993.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, July 21, 28; minimum recorded, -0.5°C, Nov. 20.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	15.0	11.0	7.5	5.5	2.5	4.0	1.5	3.5	.0	7.5	2.0
2	18.5	14.5	10.5	6.0	6.0	3.5	5.5	2.5	4.5	.0	8.0	2.5
3	18.5	15.5	10.5	6.0	6.0	2.5	5.5	1.5	5.0	1.5	6.5	3.0
4	16.5	15.0	10.5	6.5	5.5	3.0	5.0	2.5	5.5	2.0	8.0	2.5
5	15.5	14.0	10.0	6.5	5.0	2.5	3.5	1.5	5.0	.5	6.5	4.0
6	16.5	14.0	9.5	5.5	4.0	2.5	3.0	.5	5.0	2.0	7.0	3.5
7	17.0	14.0	10.0	5.5	4.5	3.0	3.5	.5	5.5	.5	7.5	2.0
8	16.5	13.5	9.5	5.5	5.0	2.0	4.0	1.0	6.0	2.0	8.0	2.5
9	15.0	14.0	9.0	5.5	5.5	2.0	3.5	.5	5.5	1.0	7.5	2.5
10	16.0	13.5	9.5	6.0	5.5	3.0	4.0	.5	3.5	.0	7.5	2.0
11	14.5	13.0	9.5	6.0	4.5	.0	4.0	.5	2.5	.0	7.5	2.5
12	15.5	12.5	8.0	5.5	4.0	1.0	4.0	.5	4.5	.0	8.0	2.5
13	15.0	13.0	7.0	3.5	4.0	2.0	4.0	.5	5.5	.0	8.5	2.0
14	14.0	12.5	5.0	2.5	3.0	1.5	4.0	.5	5.0	.0	9.0	2.5
15	13.5	11.5	6.0	1.5	4.0	2.0	4.5	1.5	6.0	.5	9.0	3.5
16	13.5	11.5	6.0	2.0	4.0	2.0	4.0	.5	5.5	1.0	6.5	3.0
17	14.0	11.5	6.5	3.5	3.5	1.5	4.5	1.0	4.0	.0	8.0	2.0
18	14.5	10.5	6.0	2.5	3.5	1.0	4.5	1.0	.0	.0	8.0	3.5
19	14.5	10.5	5.5	.5	3.5	1.0	4.5	1.0	3.5	.0	8.0	2.5
20	14.5	10.0	5.5	-.5	3.0	.5	5.0	1.0	2.5	.0	9.0	2.5
21	13.0	11.0	6.0	.0	3.0	.5	5.5	2.0	2.0	.5	8.5	3.0
22	14.0	9.5	5.0	2.0	3.0	.0	5.5	1.0	4.0	.5	5.5	2.0
23	14.5	10.5	4.5	1.0	2.5	.0	4.0	1.0	5.5	.5	5.5	1.0
24	14.0	10.5	3.5	.0	2.5	.0	2.5	1.5	6.5	1.0	7.0	3.0
25	13.5	9.5	3.0	.0	3.5	.0	4.5	1.0	6.5	2.0	6.5	3.5
26	12.5	9.0	4.0	.0	3.5	1.5	5.5	2.0	6.0	2.5	9.5	2.5
27	12.5	8.0	5.5	.5	5.0	2.5	4.0	1.0	6.5	2.5	10.0	2.5
28	12.5	8.0	5.0	3.5	5.0	3.0	4.5	.5	7.5	2.5	9.0	2.5
29	12.5	9.5	7.0	1.5	4.5	2.5	4.5	.5	---	---	8.0	3.0
30	12.5	8.0	5.0	2.0	4.0	2.0	4.5	.5	---	---	10.0	3.0
31	12.0	9.0	---	---	4.5	.5	4.0	.0	---	---	10.0	2.0
MONTH	18.5	8.0	11.0	-.5	6.0	.0	5.5	.0	7.5	.0	10.0	1.0

## PYRAMID AND WINNEMUCCA LAKES BASIN

10338700 DONNER CREEK AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	2.0	12.5	3.5	16.0	5.5	23.5	11.0	26.5	13.5	22.5	10.0
2	9.5	2.5	11.0	3.5	16.0	6.5	24.0	11.5	25.5	13.0	21.5	9.5
3	8.5	3.0	12.0	4.0	16.0	6.0	24.5	12.0	26.0	13.0	22.0	8.5
4	9.5	2.5	10.5	4.0	16.5	5.5	25.0	12.5	26.5	13.5	23.0	9.0
5	9.0	2.0	9.0	3.5	16.5	6.5	24.0	12.0	26.0	13.0	21.0	10.0
6	7.5	3.5	7.5	3.0	15.0	6.5	22.5	11.5	26.0	12.5	23.0	9.5
7	8.5	2.0	7.5	2.5	16.5	5.5	22.0	16.5	25.5	12.0	21.0	16.0
8	7.5	3.5	12.0	4.0	18.0	6.5	22.5	17.5	25.0	13.0	20.0	17.0
9	9.5	2.5	12.0	4.5	19.0	7.5	22.5	18.0	25.5	13.0	18.5	14.5
10	10.5	3.0	12.5	4.0	20.0	8.5	22.5	17.5	25.5	13.5	18.5	15.0
11	12.0	2.0	13.0	4.5	20.0	9.0	23.0	18.0	25.5	13.0	18.0	14.5
12	12.0	3.5	11.0	4.5	19.0	9.0	23.5	18.5	26.0	13.5	17.0	14.0
13	11.5	3.0	13.0	4.5	19.0	9.5	23.5	18.5	26.0	13.0	17.0	14.5
14	11.5	3.0	13.0	4.5	18.5	8.0	24.0	18.5	26.0	13.0	18.5	14.0
15	12.0	2.5	9.5	4.5	17.5	7.0	24.0	19.0	26.0	13.0	19.0	14.5
16	11.0	3.0	7.5	3.5	17.5	6.5	24.0	19.5	25.5	12.0	19.0	14.0
17	11.0	3.0	8.0	3.5	18.5	7.0	24.5	19.0	25.0	11.0	18.0	15.0
18	11.5	3.0	7.5	4.5	19.0	7.0	24.0	18.5	25.0	12.0	19.0	14.5
19	11.0	3.0	11.5	4.5	19.5	8.5	24.0	19.0	24.5	12.0	18.5	14.5
20	11.0	2.0	14.0	4.0	20.5	10.0	26.0	18.0	24.5	10.5	18.5	14.0
21	11.0	2.5	14.5	5.0	21.5	9.5	27.0	14.5	24.0	10.5	18.5	14.0
22	11.0	2.5	15.0	5.0	21.5	10.5	26.0	15.0	23.5	10.0	19.0	14.0
23	6.0	3.0	14.0	5.5	22.0	10.5	24.5	13.0	24.0	11.0	18.5	14.5
24	9.0	2.0	14.0	5.0	21.0	11.0	26.0	11.5	24.0	10.5	18.0	14.5
25	5.5	1.5	12.0	6.0	22.5	11.0	26.5	10.5	23.5	10.0	18.5	15.0
26	7.5	2.5	12.5	6.0	21.5	10.5	26.5	11.5	23.5	11.0	19.0	14.0
27	7.5	3.5	15.0	6.5	22.5	12.0	25.5	11.0	24.5	13.0	18.5	14.5
28	10.0	3.0	14.5	4.5	24.0	12.5	27.0	11.5	23.0	11.0	16.5	15.0
29	10.5	3.0	16.0	5.5	24.0	12.0	25.5	15.5	24.0	9.5	17.5	14.5
30	12.0	3.5	14.5	5.5	23.5	12.5	25.5	16.0	24.0	10.5	18.0	14.0
31	---	---	15.0	7.0	---	---	26.0	14.0	23.5	10.5	---	---
MONTH	12.0	1.5	16.0	2.5	24.0	5.5	27.0	10.5	26.5	9.5	23.0	8.5

10339250 MARTIS CREEK AT STATE HIGHWAY 267, NEAR TRUCKEE, CA

## WATER-QUALITY RECORDS

LOCATION.--Lat 39°18'08", long 120°07'13", in SW 1/4 SW 1/4 sec.20, T.17 N., R.17 E., Placer County, Hydrologic Unit 16050102, 4.0 mi southeast of Truckee. Water-quality samples are collected 300 ft upstream from State Highway 267.

DRAINAGE AREA.--25.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1975 to current year.

CHEMICAL DATA: Water years 1975 to current year.

WATER TEMPERATURE: Water years 1975 to September 1988.

SEDIMENT DATA: Water years 1975, 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October to November 1974, August 1975 to September 1988.

REVISED RECORDS.--WDR CA-80-3: Drainage area.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT 28...	0945	3.7	135	8.0	1.5	1.0	620	11.6	102	84
MAY 03...	1015	6.9	118	8.1	7.0	1.6	616	10.0	102	74
JUN 16...	1040	2.7	138	8.2	9.0	1.1	618	10.1	108	--
AUG 16...	0955	1.4	148	8.3	11.5	1.4	620	9.7	110	95

DATE	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA-LINITY WAT TOT IT FIELD MG/L AS CACO3	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT 28...	0	69	<0.050	0.010	<0.20	0.030	0.010	<1	<1
MAY 03...	0	62	<0.050	0.020	<0.20	0.010	<0.010	<1	<1
JUN 16...	--	--	<0.050	0.010	<0.20	<0.010	<0.010	<1	<1
AUG 16...	0	78	<0.050	0.020	<0.20	0.040	0.020	<1	<1

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 28...	270	180	<1	<1	<4	20	19	<10	<3
MAY 03...	320	170	<1	<1	<4	40	22	<10	7
JUN 16...	450	230	<1	<1	<4	30	21	<10	<3
AUG 16...	680	150	<1	<1	<4	---	17	<10	<3

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	TEMPER-ATURE WATER (DEG C)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 28...	0945	3.7	1.5	2	0.02
MAY 03...	1015	6.9	7.0	2	0.04
JUN 16...	1040	2.7	9.0	2	0.02
AUG 16...	0955	1.4	11.5	2	0.01

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339380 MARTIS CREEK LAKE NEAR TRUCKEE, CA

## WATER-QUALITY RECORDS

LOCATION.--Lat 39°19'38", long 120°06'48", in NE 1/4 NW 1/4 sec.17, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, near intake structure at Martis Creek Dam, 2.0 mi upstream from mouth, and 3.5 mi east of Truckee.

DRAINAGE AREA.--39.6 mi<sup>2</sup>.

PERIOD OF RECORD.--

WATER-CONTENT DATA: Water years 1972-90.

CHEMICAL DATA: Water years 1975 to current year.

SEDIMENT DATA: Water years 1975-76, 1978 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3
OCT 28...	1130	144	8.7	10.0	1.0	620	10.2	111	79	4
MAY 03...	1230	123	8.7	14.0	--	617	10.7	129	66	4
JUN 16...	1110	138	9.4	18.0	0.70	617	9.6	126	52	12
AUG 16...	1020	146	9.6	21.0	5.5	620	9.8	136	42	23

DATE	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 28...	71	0.051	0.020	1.5	1.5	0.050	<0.010	<1	<1
MAY 03...	60	<0.050	0.020	0.28	0.30	0.010	<0.010	1	<1
JUN 16...	63	<0.050	0.010	0.29	0.30	<0.010	<0.010	<1	<1
AUG 16...	73	<0.050	0.020	0.68	0.70	0.040	0.020	<1	<1

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 28...	220	96	12	<1	<4	20	4	<10	4
MAY 03...	140	59	<1	2	<4	20	7	<10	--
JUN 16...	150	71	9	1	<4	20	4	<10	<3
AUG 16...	160	58	3	<1	<4	20	4	<10	<3

## SUSPENDED-SEDIMENT CONCENTRATION, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)
OCT 28...	1130	10.0	2
MAY 03...	1230	14.0	1
JUN 16...	1110	18.0	1
AUG 16...	1020	21.0	5



## 10339400 MARTIS CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°19'44", long 120°07'00", in NE 1/4 NW 1/4 sec.17, T.17 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 0.2 mi downstream from Martis Creek Lake Dam, 1.8 mi upstream from mouth, and 3.5 mi east of Truckee.

DRAINAGE AREA.--39.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1990, June 1993 to current year.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,730 ft above sea level, from topographic map. Prior to July 10, 1972, at site 1.0 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Low and medium flow may be regulated and high flow completely regulated by Martis Creek Lake (station 10339380) since Oct. 7, 1971. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 6.16 ft, site and datum then in use; minimum, 1.1 ft<sup>3</sup>/s, July 19, 20, 1961. Maximum discharge since construction of Martis Creek Lake Dam in 1971, 663 ft<sup>3</sup>/s, Feb. 28, 1986, gage height, 5.66 ft; maximum gage height, 6.01 ft, Apr. 2, 1974; minimum daily, 0.20 ft<sup>3</sup>/s, Nov. 9-14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38 ft<sup>3</sup>/s, Mar. 10, gage height, 2.57 ft; minimum daily discharge, 1.9 ft<sup>3</sup>/s, several days in August.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	6.4	8.6	6.9	6.3	13	16	8.9	5.0	2.9	2.2	2.1
2	5.5	6.4	8.1	6.9	6.3	14	16	8.9	5.2	2.9	2.1	2.1
3	5.4	6.5	7.6	6.9	6.4	15	16	8.9	5.4	3.0	2.1	2.1
4	5.3	6.6	7.6	7.8	6.5	13	15	9.1	5.4	3.3	2.1	2.2
5	5.2	6.8	7.3	11	6.6	20	12	9.6	5.6	3.3	2.1	2.2
6	5.7	6.8	7.1	8.8	6.6	30	12	12	5.5	3.3	2.1	2.3
7	4.8	6.9	7.1	7.7	7.2	28	11	15	4.9	3.3	2.1	2.3
8	4.4	6.8	7.2	7.4	7.4	27	11	14	4.1	3.4	2.0	2.3
9	4.2	5.6	12	7.4	7.0	26	11	12	3.9	3.2	1.9	2.1
10	4.3	7.2	10	7.0	7.2	29	11	9.4	3.9	3.1	2.0	2.1
11	5.4	7.1	9.3	7.0	7.3	28	10	8.4	4.0	3.1	2.1	2.1
12	6.4	7.4	8.5	6.8	7.1	22	10	8.0	3.7	3.1	2.0	2.3
13	6.4	7.2	7.5	6.8	6.8	24	11	7.5	3.5	3.1	1.9	2.4
14	6.7	6.8	7.6	6.8	6.9	25	11	6.8	3.3	2.9	1.9	2.5
15	7.9	6.5	7.4	6.9	6.8	26	11	6.2	3.3	2.9	1.9	2.6
16	8.2	6.6	7.2	6.8	6.8	25	12	5.9	3.6	2.7	1.9	2.4
17	7.3	6.8	6.9	6.8	14	20	12	3.4	3.9	2.6	1.9	2.3
18	6.8	6.4	6.9	6.6	12	17	13	6.6	4.0	2.5	1.9	2.4
19	6.6	6.9	6.9	6.5	9.4	16	14	8.8	3.9	2.4	1.9	2.3
20	6.5	6.6	6.9	6.5	9.1	15	15	7.0	3.9	2.3	1.9	2.5
21	6.5	6.7	6.9	6.6	8.2	14	14	6.1	3.6	2.2	1.9	2.5
22	6.6	7.1	6.9	6.6	7.7	14	12	5.5	3.5	2.3	2.0	2.4
23	6.5	7.0	6.9	7.1	7.4	12	12	5.0	3.5	2.2	2.1	2.3
24	6.4	6.7	6.9	7.2	7.5	13	11	5.0	3.4	2.1	2.1	2.4
25	6.3	6.5	6.9	7.1	8.3	12	11	4.9	3.2	2.1	1.9	2.5
26	6.4	6.4	6.9	6.9	10	11	11	4.5	3.2	2.1	1.9	2.5
27	6.4	6.5	6.9	6.9	12	11	11	4.3	3.2	2.1	2.0	2.5
28	6.4	7.1	6.9	6.7	12	12	10	4.2	3.2	2.1	2.1	2.7
29	6.4	8.1	6.9	6.5	---	13	10	4.2	3.1	2.1	2.1	3.2
30	6.4	9.9	6.9	6.5	---	14	9.3	4.3	3.0	2.1	2.1	3.3
31	6.4	---	6.9	6.5	---	15	---	5.1	---	2.2	2.1	---
TOTAL	189.2	206.3	233.6	219.9	226.8	574	361.3	229.5	118.9	82.9	62.3	71.9
MEAN	6.10	6.88	7.54	7.09	8.10	18.5	12.0	7.40	3.96	2.67	2.01	2.40
MAX	8.2	9.9	12	11	14	30	16	15	5.6	3.4	2.2	3.3
MIN	4.2	5.6	6.9	6.5	6.3	11	9.3	3.4	3.0	2.1	1.9	2.1
AC-FT	375	409	463	436	450	1140	717	455	236	164	124	143

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1971, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.05	12.0	18.5	30.6	28.0	36.5	60.2	59.5	22.6	6.40	4.90	5.51
MAX	16.4	18.0	86.5	116	83.4	78.8	148	202	96.6	18.0	10.8	10.1
(WY)	1963	1971	1965	1970	1963	1967	1969	1967	1967	1967	1967	1967
MIN	3.73	4.81	5.38	4.28	9.60	11.1	15.4	9.80	3.21	1.79	1.81	2.37
(WY)	1962	1962	1962	1962	1964	1961	1961	1961	1960	1961	1964	1960

## SUMMARY STATISTICS

WATER YEARS 1959 - 1971

ANNUAL MEAN	24.4	
HIGHEST ANNUAL MEAN	47.2	1969
LOWEST ANNUAL MEAN	6.89	1961
HIGHEST DAILY MEAN	903	Jan 31 1963
LOWEST DAILY MEAN	1.3	Jul 30 1961
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 29 1961
INSTANTANEOUS PEAK FLOW	1880	Feb 1 1963
INSTANTANEOUS PEAK STAGE	6.16	Feb 1 1963
ANNUAL RUNOFF (AC-FT)	17650	
10 PERCENT EXCEEDS	57	
50 PERCENT EXCEEDS	11	
90 PERCENT EXCEEDS	2.7	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.06	18.2	21.6	23.4	34.7	46.1	48.2	48.5	31.6	12.6	7.27	7.58
MAX	20.8	80.0	95.5	77.7	149	181	139	219	169	75.0	20.5	18.9
(WY)	1983	1984	1982	1980	1986	1986	1982	1983	1983	1986	1983	1983
MIN	3.09	1.57	1.25	6.42	8.10	8.35	8.52	7.40	3.96	2.67	2.01	2.40
(WY)	1972	1978	1978	1978	1994	1974	1980	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

FOR 1994 WATER YEAR

WATER YEARS 1972 - 1994

ANNUAL TOTAL	2576.6	
ANNUAL MEAN	7.06	25.7
HIGHEST ANNUAL MEAN		74.5
LOWEST ANNUAL MEAN		6.90
HIGHEST DAILY MEAN	30	Mar 6
LOWEST DAILY MEAN	1.9	Aug 9
ANNUAL SEVEN-DAY MINIMUM	1.9	Aug 13
INSTANTANEOUS PEAK FLOW	38	Mar 10
INSTANTANEOUS PEAK STAGE	2.57	Mar 10
ANNUAL RUNOFF (AC-FT)	5110	18640
10 PERCENT EXCEEDS	13	61
50 PERCENT EXCEEDS	6.6	11
90 PERCENT EXCEEDS	2.1	4.2

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1975 to current year.

WATER TEMPERATURE: Water years 1975 to current year.

SEDIMENT DATA: Water years 1975 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1974 to current year.

INSTRUMENTATION.--Digital water-temperature recorder since October 1974.

REMARKS.--Water temperature is affected by regulation from Martis Creek Lake Dam (station 10339380). Unpublished chemical-quality, water-temperature, and sediment data prior to October 1974, available at the U.S. Geological Survey office in Carson City, NV.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 11, 12, 1993; minimum recorded, 0.0°C, Feb. 16, 17, 1982.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.5°C, July 13, 14, 16; minimum recorded, 2.5°C, many days.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT 28...	1330	6.4	143	8.8	10.5	0.70	620	10.9	120	78
MAY 03...	1450	8.9	123	8.7	13.0	1.3	618	9.8	115	68
JUN 16...	1340	3.8	132	9.5	19.0	1.2	619	10.6	141	51
AUG 16...	1330	1.9	149	9.3	20.5	1.0	622	10.1	141	63

DATE	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)
OCT 28...	2	68	0.140	0.030	0.27	0.30	0.040	0.010	<1
MAY 03...	5	64	<0.050	0.020	0.48	0.50	0.020	<0.010	2
JUN 16...	16	68	<0.050	0.010	0.19	0.20	<0.010	<0.010	<1
AUG 16...	12	72	<0.050	0.030	0.27	0.30	0.040	0.040	<1

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 28...	<1	200	85	<1	<1	<4	20	7	<10	4
MAY 03...	<1	130	51	13	2	<4	20	<1	10	11
JUN 16...	<1	200	80	<1	<1	<4	30	10	<10	<3
AUG 16...	<1	240	54	<1	<1	<4	60	10	<10	<3

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339400 MARTIS CREEK NEAR TRUCKEE, CA--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 28...	1330	6.4	10.5	4	0.07
MAY 03...	1450	8.9	13.0	0	0.0
JUN 16...	1340	3.8	19.0	4	0.04
AUG 16...	1330	1.9	21.5	6	0.03

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	11.5	10.0	7.5	5.0	4.0	4.5	3.5	5.0	3.0	4.5	3.0
2	15.0	11.5	10.0	7.0	5.0	4.0	5.0	4.0	5.0	3.0	4.5	3.0
3	15.0	11.5	9.5	7.0	5.5	4.0	5.0	3.5	4.5	3.5	4.5	3.5
4	13.5	12.0	9.5	7.0	5.0	3.5	4.5	4.0	5.5	3.5	4.5	3.5
5	13.0	12.0	9.0	6.5	5.0	3.5	4.5	3.5	5.0	3.5	4.5	3.5
6	14.0	12.0	8.5	6.5	5.0	3.5	4.5	3.5	5.0	3.5	4.5	3.5
7	13.5	11.5	8.5	6.0	4.0	3.5	4.5	3.5	5.0	3.5	4.5	3.5
8	13.5	11.5	8.0	6.0	4.5	3.5	5.0	3.5	5.5	3.5	4.5	3.5
9	13.0	11.5	9.5	6.0	4.5	3.5	5.0	3.5	5.0	3.0	4.5	3.5
10	13.5	11.5	8.5	6.0	5.0	3.5	5.0	3.5	4.0	2.5	4.5	4.0
11	13.0	11.0	8.0	6.5	4.0	2.5	5.0	3.5	4.5	2.5	4.5	4.0
12	13.0	11.0	7.5	6.0	3.5	2.5	5.0	3.5	5.0	2.5	5.0	3.5
13	13.0	11.0	7.5	5.0	4.5	2.5	5.0	3.5	5.0	3.0	5.5	4.0
14	12.0	11.0	6.5	4.5	3.5	2.5	5.0	3.5	5.5	3.0	6.0	4.0
15	12.0	11.0	6.5	4.0	3.5	2.5	5.0	3.5	5.0	3.0	6.0	4.5
16	12.5	10.5	6.0	4.0	4.0	2.5	5.0	3.5	5.5	3.5	5.5	5.0
17	12.0	10.0	6.0	4.5	4.0	2.5	5.5	3.5	4.0	3.0	6.5	4.5
18	12.0	9.5	8.0	4.0	4.5	2.5	5.5	3.5	4.5	3.0	7.0	5.0
19	11.5	9.5	5.5	3.5	4.5	3.0	5.5	3.5	4.0	3.0	7.0	4.5
20	11.5	9.0	5.5	3.0	4.5	2.5	5.5	3.5	4.0	3.0	7.0	5.0
21	11.0	9.0	5.0	3.5	4.5	2.5	5.0	3.5	3.5	2.5	7.5	5.0
22	11.5	8.5	4.5	3.5	4.5	2.5	5.5	3.5	4.5	2.5	6.0	4.5
23	11.5	8.5	4.5	2.5	5.0	3.0	4.5	3.5	4.0	2.5	6.5	4.5
24	11.5	9.0	4.5	2.5	5.0	3.0	4.0	3.0	4.5	2.5	6.0	4.5
25	11.0	8.5	5.0	2.5	4.5	3.0	4.0	3.0	4.5	3.0	5.5	4.5
26	11.0	8.5	5.0	3.0	4.5	3.5	4.5	3.5	4.5	3.0	6.5	4.5
27	10.5	8.5	5.0	3.5	4.5	3.5	4.5	3.5	4.0	3.0	8.0	4.5
28	10.5	8.0	4.5	4.0	5.0	4.0	4.5	3.0	4.5	3.0	8.5	5.5
29	11.0	8.5	5.0	3.5	5.0	3.5	5.0	3.0	---	---	8.5	6.0
30	10.5	8.0	5.0	3.5	5.0	3.5	5.0	3.0	---	---	10.0	7.0
31	10.5	8.0	---	---	5.0	3.5	5.0	3.0	---	---	9.5	7.0
MONTH	15.0	8.0	10.0	2.5	5.5	2.5	5.5	3.0	5.5	2.5	10.0	3.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

[illegible]

## PYRAMID AND WINNEMUCCA LAKES BASIN

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'07", long 120°06'50", in SE 1/4 NW 1/4 sec.32, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on right bank 0.2 mi upstream from Prosser Creek, and 4.5 mi northeast of Truckee.

DRAINAGE AREA.--644 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1993 to September 1994.

GAGE.--Water-stage recorder. Elevation of gage is 5,560 ft above sea level, from topographic map

REMARKS.--Records fair. Flow regulated by Lake Tahoe, Donner Lake, and Martis Creek Reservoir. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 531 ft<sup>3</sup>/s, May 11, 1994, gage height, 6.20 ft; minimum daily, 11 ft<sup>3</sup>/s, July 28, Aug. 11, 15, 19, 1994.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	51	49	48	46	91	153	138	174	26	13	12
2	128	50	51	47	47	100	156	151	152	24	13	12
3	128	52	44	47	48	107	176	170	143	23	13	12
4	126	55	47	54	45	100	172	201	127	23	13	12
5	124	55	43	84	41	132	145	225	120	21	14	12
6	121	53	44	62	45	154	145	304	114	26	13	13
7	119	53	43	62	48	137	127	267	102	81	12	42
8	116	52	44	63	48	134	123	239	93	80	12	82
9	111	49	74	57	43	138	118	328	90	78	12	81
10	109	49	71	52	48	145	108	353	87	76	12	76
11	104	50	63	52	46	154	104	384	86	74	11	75
12	101	51	59	49	50	131	114	392	81	72	12	73
13	99	50	60	49	48	129	134	335	74	71	12	76
14	96	46	58	48	47	143	161	311	69	69	12	73
15	93	42	57	48	47	172	191	272	62	68	11	71
16	90	43	54	46	45	198	229	204	59	66	12	70
17	87	45	48	46	70	170	299	170	53	66	12	69
18	83	42	50	46	73	155	318	156	49	66	12	67
19	82	42	49	46	70	149	342	160	46	70	11	65
20	81	39	47	49	62	142	328	146	42	46	12	64
21	78	40	49	54	60	149	285	142	41	19	12	62
22	75	44	50	51	59	150	253	151	44	16	12	60
23	72	42	48	58	59	130	220	164	41	14	12	58
24	70	37	46	57	60	120	175	192	38	13	12	58
25	67	39	45	56	65	114	159	222	36	12	12	57
26	65	41	45	54	72	105	143	220	35	12	12	56
27	58	40	46	51	85	107	139	214	33	12	12	54
28	54	42	47	50	87	121	128	192	30	11	12	54
29	54	46	47	46	---	139	129	173	29	14	12	54
30	52	59	47	49	---	152	133	174	27	15	12	52
31	52	---	47	46	---	167	---	186	---	14	12	---
TOTAL	2824	1399	1572	1627	1564	4235	5407	6936	2177	1278	376	1622
MEAN	91.1	46.6	50.7	52.5	55.9	137	180	224	72.6	41.2	12.1	54.1
MAX	129	59	74	84	87	198	342	392	174	81	14	82
MIN	52	37	43	46	41	91	104	138	27	11	11	12
AC-FT	5600	2770	3120	3230	3100	8400	10720	13760	4320	2530	746	3220

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	31017		
ANNUAL MEAN	85.0	85.0	
HIGHEST ANNUAL MEAN		85.0	1994
LOWEST ANNUAL MEAN		85.0	1994
HIGHEST DAILY MEAN	392	May 12	1040
LOWEST DAILY MEAN	11	Jul 28	11
ANNUAL SEVEN-DAY MINIMUM	12	Aug 9	12
INSTANTANEOUS PEAK FLOW	531	May 11	531
INSTANTANEOUS PEAK STAGE	6.20	May 11	6.20
ANNUAL RUNOFF (AC-FT)	61520		61560
10 PERCENT EXCEEDS	171		795
50 PERCENT EXCEEDS	59		107
90 PERCENT EXCEEDS	13		28

10339419 TRUCKEE RIVER ABOVE PROSSER CREEK, NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: March 1993 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1993 to current year.

INSTRUMENTATION.--Water-temperature recorder since March 1993.

REMARKS.--Water temperature is affected by regulation from Lake Tahoe and Donner Lake.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.0°C, July 13, 15, 20, 1994; minimum recorded, 0.5°C, many days each year.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 25.0°C, July 13, 15, 20; minimum recorded, 0.5°C, many days.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	11.5	10.5	5.0	5.0	2.0	4.0	1.5	3.0	.5	9.0	2.5
2	17.5	11.0	9.0	3.5	6.5	4.0	6.0	2.5	4.5	.5	9.0	3.0
3	17.5	11.0	9.5	3.5	5.5	2.0	6.0	1.5	4.5	1.0	6.5	3.0
4	15.0	11.5	9.5	4.0	7.0	3.5	5.0	2.5	6.5	2.5	8.0	2.5
5	13.0	11.0	8.5	3.5	5.0	1.0	4.0	1.5	6.0	1.0	7.5	5.0
6	14.5	9.5	8.5	2.5	4.0	1.5	4.0	.5	5.5	2.0	8.0	3.5
7	15.5	10.5	8.5	3.0	3.5	2.5	2.5	.5	7.0	2.5	9.0	3.0
8	15.0	10.0	8.5	3.0	5.0	3.0	4.0	.5	7.0	3.0	9.5	3.0
9	13.0	10.5	7.5	3.5	6.0	3.5	4.5	.5	6.5	1.0	9.0	3.0
10	15.0	10.0	8.0	4.5	6.5	2.5	4.0	.5	4.0	.5	8.0	4.0
11	13.5	11.0	9.5	6.0	4.0	1.0	5.0	.5	5.5	.5	8.5	3.5
12	14.0	9.0	8.5	5.0	3.0	.5	5.0	.5	3.0	.5	9.5	2.5
13	14.0	9.5	7.0	2.5	4.0	.5	5.0	.5	5.5	.5	10.0	3.0
14	12.0	10.5	4.5	.5	3.5	1.5	4.5	.5	5.5	.5	10.5	4.0
15	11.5	10.0	5.5	.5	3.0	1.0	5.5	1.0	6.0	.5	10.0	4.5
16	12.5	8.5	6.0	.5	4.5	1.5	5.5	.5	5.5	1.0	9.0	5.0
17	12.0	8.5	5.5	1.5	3.0	.5	6.0	.5	5.0	.5	9.0	2.5
18	12.5	7.5	6.5	2.0	2.5	.5	6.0	.5	2.0	.5	9.0	5.0
19	12.5	7.0	5.0	.5	2.5	.5	6.0	.5	4.5	.5	9.0	4.5
20	12.5	7.0	5.0	.5	1.0	.5	6.0	.5	4.5	.5	10.0	3.5
21	10.5	8.5	4.5	.5	1.0	.5	6.0	1.5	4.0	.5	10.5	4.5
22	12.0	6.0	5.5	3.5	.5	.5	6.0	1.0	6.5	.5	7.0	3.5
23	12.5	6.5	5.5	1.5	1.0	.5	4.5	2.5	4.5	.5	6.0	1.0
24	13.0	7.5	2.5	.5	1.0	.5	3.5	2.0	7.5	.5	7.0	3.5
25	12.5	6.5	2.0	.5	1.5	.5	4.0	1.5	8.5	2.5	7.0	4.5
26	11.5	6.0	2.5	.5	3.0	.5	5.5	2.5	7.0	3.0	10.5	3.0
27	10.5	5.0	4.0	.5	4.5	2.0	4.5	1.5	8.0	4.0	11.5	4.0
28	11.0	5.0	4.0	2.5	4.0	2.5	4.5	.5	9.0	3.0	10.5	4.5
29	12.5	7.5	6.0	4.0	5.0	2.5	4.5	.5	---	---	10.0	5.0
30	11.5	6.0	6.5	3.0	5.0	1.5	5.0	.5	---	---	12.0	6.0
31	10.5	7.0	---	---	4.0	.5	4.0	.5	---	---	10.5	4.5
MONTH	18.0	5.0	10.5	.5	7.0	.5	6.0	.5	9.0	.5	12.0	1.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

[illegible]



LOCATION.--Lat 39°22'46", long 120°08'12", in NW 1/4 SW 1/4 sec.30, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house on Prosser Creek Dam on Prosser Creek, 1.4 mi upstream from mouth, and 4.2 mi northeast of Truckee.

PERIOD OF RECORD:--January 1963 to current year. January 1963 to September 1987 (monthend elevations and contents only). Prior to October 1976, published as "near Boca."

GAGE.--Nonrecording gage read five times weekly. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

COOPERATION.--Gage readings and capacity table were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 10,349 acre-ft, Oct. 19, elevation, 5,705.20 ft;  
minimum observed, 9.552 acre-ft, Sept. 12, elevation, 5.702.87 ft.

5,630	17	5,680	3,791	5,720	16,643
5,640	143	5,690	5,901	5,730	22,220
5,650	491	5,700	8,636	5,740	28,949
5,660	1,148	5,710	12,147	5,750	37,046
5,670	2,230				

[illegible]

## 10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°22'24", long 120°07'50", in NW 1/4 NE 1/4 sec.31, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 300 ft downstream from Station Creek, 0.5 mi downstream from Prosser Creek Dam, 0.9 mi upstream from mouth, and 4.2 mi northeast of Truckee.

DRAINAGE AREA.--52.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to current year. Prior to October 1976, published as "near Boca." Monthly discharge only for October 1942 to December 1950 published in WSP 1734; daily discharge in files of U.S. Geological Survey. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Part 2, have been found to be unreliable and should not be used.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,602.31 ft above sea level (levels by U.S. Bureau of Reclamation). See WSP 2127 for history of changes prior to September 1956. October 1956 to May 1976, water-stage recorder at site 0.8 mi downstream at datum 29.69 ft lower.

REMARKS.--Records good except estimated periods which are fair. Flow regulated by Prosser Creek Reservoir (station 10340300) since Jan. 30, 1963. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Water years 1943-63, prior to construction of Prosser Creek Dam, maximum discharge, 4,560 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 10.13 ft, present datum, from rating curve extended above 910 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft from floodmarks, present datum, Nov. 20, 1950; minimum discharge, 0.4 ft<sup>3</sup>/s, July 18, 1961, result of work on dam upstream. Maximum discharge since construction of Prosser Creek Dam in 1963, 1,790 ft<sup>3</sup>/s, Feb. 20-22, 1986, gage height, 6.66 ft, from rating curve extended above 880 ft<sup>3</sup>/s on basis of valve setting at Prosser Creek Dam; minimum daily, 0.02 ft<sup>3</sup>/s, Jan. 2, 1975, result of temporary closing of Prosser Creek Dam for spillway maintenance.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 177 ft<sup>3</sup>/s, Apr. 20, 22, gage height, 3.65; minimum daily, 0.37 ft<sup>3</sup>/s, Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	20	e12	e20	28	13	113	54	e68	e9.4	6.1	e2.2
2	7.7	10	e21	e20	28	32	120	e53	94	e9.4	5.9	e2.2
3	8.0	10	e25	e20	28	40	71	e53	74	e9.4	5.6	e2.2
4	8.2	10	e25	e20	20	40	e84	e65	59	e9.4	5.3	e2.2
5	9.1	10	e25	e20	11	46	97	e81	59	e9.2	5.4	e2.2
6	8.3	11	e25	e20	11	45	72	e90	43	9.0	5.4	e2.2
7	8.1	11	e25	20	11	62	56	e90	29	9.0	5.9	e2.2
8	8.0	11	e25	20	11	82	56	e90	29	9.0	6.1	e2.2
9	8.0	11	e25	20	19	81	57	e101	30	9.0	5.8	e2.2
10	7.7	11	e25	20	24	81	56	e143	43	9.0	2.0	2.1
11	7.4	11	e38	20	23	81	56	e160	54	9.0	.49	2.1
12	7.3	11	e40	20	24	80	56	e159	54	9.1	.43	2.2
13	7.3	11	e40	20	24	79	56	160	39	9.5	.42	2.3
14	8.6	11	e26	16	23	57	56	161	31	7.0	.40	2.3
15	11	11	e20	11	23	47	87	161	e30	5.7	.40	2.3
16	11	11	e20	11	23	e76	101	111	e30	5.6	.37	2.6
17	11	10	e20	11	26	e95	101	67	e30	5.7	1.4	2.3
18	11	10	e12	11	44	e69	137	58	e30	5.7	1.5	2.4
19	19	10	e11	11	56	e50	165	58	e30	5.7	1.4	2.3
20	26	10	e11	11	55	e50	167	57	e25	5.9	1.5	2.1
21	26	11	e11	11	55	e50	166	58	e20	6.1	1.5	2.1
22	26	10	e11	11	30	e50	130	58	e15	5.9	1.5	2.1
23	26	10	e11	11	11	e50	106	43	e9.4	5.8	1.5	2.3
24	26	10	e11	11	11	e50	106	31	e9.4	6.1	1.4	2.3
25	26	11	e11	23	11	e50	79	31	e9.4	6.1	1.5	2.3
26	26	11	e11	28	12	e50	68	e61	e9.4	6.1	1.4	2.2
27	26	11	e11	28	12	e50	70	111	e9.4	6.1	1.6	2.3
28	26	11	e20	28	13	e55	69	85	e9.4	6.1	1.6	2.3
29	26	11	e20	28	---	e60	58	56	e9.4	6.1	1.8	2.3
30	26	11	e20	28	---	e60	53	54	e9.4	5.9	1.7	2.1
31	26	---	e20	28	---	e68	---	34	---	5.9	1.7	---
TOTAL	486.4	328	628	577	667	1799	2669	2594	991.2	226.9	79.01	67.1
MEAN	15.7	10.9	20.3	18.6	23.8	58.0	89.0	83.7	33.0	7.32	2.55	2.24
MAX	26	20	40	28	56	95	167	161	94	9.5	6.1	2.6
MIN	7.3	10	11	11	11	13	53	31	9.4	5.6	.37	2.1
AC-FT	965	651	1250	1140	1320	3570	5290	5150	1970	450	157	133

e Estimated.

## 10340500 PROSSER CREEK BELOW PROSSER CREEK DAM, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1962, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.1	34.5	47.9	36.1	45.1	75.4	203	261	157	48.5	12.1	8.45
MAX	22.4	268	321	155	89.7	175	406	669	395	176	44.5	19.6
(WY)	1946	1951	1956	1956	1943	1943	1952	1952	1952	1952	1952	1952
MIN	6.63	8.62	9.81	10.0	11.0	20.0	94.5	106	55.9	10.0	3.79	3.90
(WY)	1961	1960	1960	1948	1948	1948	1955	1959	1947	1961	1961	1947

## SUMMARY STATISTICS

## WATER YEARS 1943 - 1962

ANNUAL MEAN	76.8	
HIGHEST ANNUAL MEAN	162	1952
LOWEST ANNUAL MEAN	38.1	1961
HIGHEST DAILY MEAN	3490	Dec 23 1955
LOWEST DAILY MEAN	2.7	Aug 24 1961
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 19 1947
INSTANTANEOUS PEAK FLOW	4560	Dec 23 1955
INSTANTANEOUS PEAK STAGE	11.00	Nov 20 1950
ANNUAL RUNOFF (AC-FT)	55620	
10 PERCENT EXCEEDS	212	
50 PERCENT EXCEEDS	27	
90 PERCENT EXCEEDS	7.0	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	97.2	42.5	57.4	66.8	71.4	107	123	201	106	49.1	38.6	110
MAX	282	214	361	321	397	371	372	545	494	167	126	477
(WY)	1983	1982	1965	1970	1986	1986	1969	1983	1983	1985	1993	1983
MIN	5.41	6.84	5.32	7.96	17.5	27.1	21.7	17.2	8.39	6.33	2.55	1.96
(WY)	1989	1989	1989	1989	1991	1977	1977	1985	1966	1966	1994	1992

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1964 - 1994

ANNUAL TOTAL	41074.0	11112.61	
ANNUAL MEAN	113	30.4	89.2
HIGHEST ANNUAL MEAN			214
LOWEST ANNUAL MEAN			24.4
HIGHEST DAILY MEAN	1050	May 22	1790
LOWEST DAILY MEAN	5.0	Apr 21	.02
ANNUAL SEVEN-DAY MINIMUM	7.7	Oct 7	.30
INSTANTANEOUS PEAK FLOW			1790
INSTANTANEOUS PEAK STAGE			6.66
ANNUAL RUNOFF (AC-FT)	81470	22040	64640
10 PERCENT EXCEEDS	274	79	215
50 PERCENT EXCEEDS	65	19	42
90 PERCENT EXCEEDS	11	2.2	8.9

10340500 PROSSER CREEK BELOW PROSSER CREEK DAM NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: June 1993 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1993 to current year.

INSTRUMENTATION.--Water-temperature recorder since June 1993.

REMARKS.--Water temperature is affected by regulation from Prosser Creek Dam. The equipment malfunctioned May 2 to 12. The equipment was stolen three times; Dec. 1 to Jan. 6, Mar. 16 to 31, June 25 to Aug. 2. The recorder was removed to rebuild the gage house Sept. 2 to 9.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, Aug. 13-15, 1994; minimum recorded, 1.0°C, Feb. 17, 23, 1994.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, Aug. 13-15; minimum recorded, 1.0°C, Feb. 17, 23.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.0	10.5	13.5	7.5	---	---	---	---	6.0	2.5	10.5	2.0
2	22.0	10.0	14.0	7.0	---	---	---	---	6.5	2.5	7.0	2.0
3	21.5	10.5	14.0	7.0	---	---	---	---	5.5	3.0	5.5	3.5
4	15.5	11.0	14.0	7.0	---	---	---	---	6.0	2.5	6.0	3.0
5	15.0	11.0	13.0	6.5	---	---	---	---	7.5	2.0	6.5	3.5
6	20.0	11.5	13.0	6.0	---	---	---	---	6.5	2.5	6.5	3.5
7	20.0	11.0	13.0	6.5	---	---	4.5	2.0	8.0	2.0	6.5	3.0
8	20.0	10.5	13.0	6.0	---	---	5.0	2.5	7.5	2.0	5.5	3.5
9	16.0	11.0	11.5	6.0	---	---	6.0	2.5	6.5	2.0	5.5	3.5
10	18.5	11.0	10.5	6.5	---	---	6.0	2.0	5.0	2.0	5.0	3.5
11	16.0	11.0	12.0	6.5	---	---	6.5	2.5	6.5	2.0	5.5	3.5
12	19.0	11.0	11.0	6.0	---	---	6.5	2.5	7.0	2.0	5.5	3.5
13	16.5	10.5	11.5	5.0	---	---	6.5	2.5	7.0	2.0	6.0	3.5
14	14.5	11.5	10.0	4.5	---	---	6.5	2.5	7.0	2.0	7.0	4.0
15	14.0	11.5	10.5	4.5	---	---	7.5	2.0	7.0	2.5	7.0	3.5
16	16.0	11.0	10.5	4.0	---	---	7.5	2.0	6.0	3.0	---	---
17	14.5	10.0	9.5	4.5	---	---	8.0	2.0	4.5	1.0	---	---
18	17.0	9.5	10.0	4.5	---	---	8.0	1.5	5.0	2.0	---	---
19	15.5	9.5	9.5	4.0	---	---	8.0	1.5	5.0	3.5	---	---
20	15.5	10.5	9.5	3.5	---	---	8.0	2.0	5.5	3.0	---	---
21	13.5	10.5	8.0	3.5	---	---	7.0	2.5	5.0	3.5	---	---
22	15.5	10.5	7.5	4.5	---	---	8.0	2.0	9.0	1.5	---	---
23	15.0	10.5	8.5	3.5	---	---	5.0	2.5	6.5	1.0	---	---
24	14.5	10.0	8.0	2.5	---	---	4.5	2.5	10.0	1.5	---	---
25	14.5	10.0	7.5	2.5	---	---	5.0	2.5	10.5	2.5	---	---
26	14.5	10.0	7.5	2.0	---	---	6.0	3.0	7.5	2.5	---	---
27	13.5	9.5	7.0	2.5	---	---	6.0	3.0	9.0	3.0	---	---
28	14.0	9.5	5.5	4.0	---	---	6.0	3.0	10.0	2.5	---	---
29	14.0	10.0	7.0	3.5	---	---	6.5	2.5	---	---	---	---
30	14.0	9.5	7.5	3.0	---	---	6.5	3.0	---	---	---	---
31	13.0	9.5	---	---	---	---	6.0	2.5	---	---	---	---
MONTH	22.0	9.5	14.0	2.0	---	---	---	---	10.5	1.0	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

[illegible]

## 10341950 LITTLE TRUCKEE RIVER BELOW DIVERSION DAM NEAR SIERRAVILLE, CA

LOCATION.--Lat 39°29'29", long 120°17'39", in SE 1/4 SE 1/4 sec.15, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, on left bank 50 ft upstream from Independence Lake Road Bridge, 0.7 mi downstream from diversion dam, and 7.8 mi southeast of Sierraville.

DRAINAGE AREA.--36.1 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,380 ft above sea level, from topographic map.

REMARKS.--Records fair. Some water diverted to Sierra Valley about 0.7 mi upstream for irrigation in the summer months. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 350 ft<sup>3</sup>/s, June 26, 1993, gage height, 5.86 ft; minimum daily, 1.5 ft<sup>3</sup>/s, Aug. 17-19, 29, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 300 ft<sup>3</sup>/s, Apr. 19, gage height, 5.86 ft; minimum daily, 1.5 ft<sup>3</sup>/s, Aug. 17-19, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	6.3	e7.6	8.0	e7.8	14	65	43	52	7.2	6.6	1.6
2	4.4	6.1	e7.2	8.0	e7.8	15	74	55	41	7.0	6.2	1.6
3	4.4	6.1	e7.0	8.4	e7.8	14	86	62	31	6.8	6.1	1.7
4	4.6	6.1	e6.5	e9.0	e7.8	13	76	78	20	6.5	3.7	1.7
5	7.5	6.0	e6.0	e9.6	e7.8	16	66	99	15	6.2	2.2	1.7
6	7.9	5.8	e5.9	e9.8	e7.7	18	66	162	11	6.0	2.1	1.7
7	6.4	5.8	e5.7	e10	e7.6	19	58	134	11	5.7	2.1	1.7
8	5.8	5.8	e5.6	e9.0	e7.7	18	49	110	7.5	5.3	1.9	1.7
9	5.7	5.8	e7.0	e8.5	e7.8	18	42	212	7.1	4.8	1.9	1.6
10	6.0	5.8	e8.6	e8.2	e7.8	19	37	213	7.0	4.6	1.9	1.6
11	5.9	6.1	e8.4	e8.3	e7.8	22	40	227	5.5	4.4	1.9	1.8
12	6.0	6.8	e8.0	e8.3	e7.8	19	45	224	5.2	4.2	1.8	2.0
13	5.9	e5.9	e7.7	e8.3	e7.8	19	54	199	4.6	4.0	1.8	2.3
14	8.1	e6.3	7.6	e8.4	e7.8	22	70	169	17	3.8	1.7	2.3
15	16	e6.0	e8.0	e8.5	e7.8	26	91	125	26	3.7	1.6	2.1
16	15	e5.8	e8.0	e8.4	e8.0	30	126	90	34	3.6	1.6	2.1
17	12	e5.5	e8.0	e8.3	e8.5	27	172	75	26	3.7	1.5	2.1
18	10	e5.4	e8.0	e8.2	e8.7	27	204	58	23	3.4	1.5	2.1
19	9.0	e5.2	e8.0	e8.2	e9.0	27	239	42	21	3.3	1.5	2.1
20	8.9	e5.2	e7.8	e8.0	e9.5	28	234	39	17	3.3	1.6	2.0
21	8.4	e5.2	e7.8	e7.6	e10	32	197	39	17	3.1	1.6	2.0
22	7.9	e5.2	e7.8	e7.4	e10	32	164	41	16	3.2	1.6	2.0
23	7.7	e5.2	e7.8	e7.0	e10	29	119	50	13	3.1	1.6	2.0
24	7.4	e5.3	e7.7	e7.1	e11	27	75	70	12	2.9	1.6	2.1
25	7.1	e5.3	e7.7	e7.2	e11	27	57	74	11	2.8	1.6	2.5
26	6.9	e5.3	e7.7	e7.2	13	28	48	76	9.9	2.8	1.6	2.3
27	6.7	e5.4	e7.7	e7.2	12	34	44	89	9.4	2.8	1.6	2.2
28	6.7	e5.5	e7.7	e7.4	13	42	35	75	10	4.5	1.6	2.4
29	6.7	7.4	e7.7	e7.4	---	48	35	57	8.6	6.9	1.5	3.6
30	6.6	e7.9	e7.7	e7.6	---	60	36	57	7.5	7.1	1.6	2.7
31	6.4	---	e7.6	e7.7	---	64	---	66	---	6.7	1.6	---
TOTAL	232.5	175.5	231.5	252.2	250.3	834	2704	3110	496.3	143.4	68.7	61.3
MEAN	7.50	5.85	7.47	8.14	8.94	26.9	90.1	100	16.5	4.63	2.22	2.04
MAX	16	7.9	8.6	10	13	64	239	227	52	7.2	6.6	3.6
MIN	4.4	5.2	5.6	7.0	7.6	13	35	39	4.6	2.8	1.5	1.6
AC-FT	461	348	459	500	496	1650	5360	6170	984	284	136	122

e Estimated.

## 10341950 LITTLE TRUCKEE RIVER BELOW DIVERSION DAM NEAR SIERRAVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.50	5.85	7.47	8.14	8.94	26.9	90.1	100	16.5	35.0	5.13	4.26
MAX	7.50	5.85	7.47	8.14	8.94	26.9	90.1	100	16.5	65.4	8.05	6.48
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1993	1993	1993
MIN	7.50	5.85	7.47	8.14	8.94	26.9	90.1	100	16.5	4.63	2.22	2.04
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	8559.7		
ANNUAL MEAN	23.5	23.5	
HIGHEST ANNUAL MEAN		23.5	1994
LOWEST ANNUAL MEAN		23.5	1994
HIGHEST DAILY MEAN	239	Apr 19	290 Jun 26 1993
LOWEST DAILY MEAN	1.5	Aug 17	1.5 Aug 17 1994
ANNUAL SEVEN-DAY MINIMUM	1.6	Aug 15	1.6 Aug 15 1994
INSTANTANEOUS PEAK FLOW	300	Apr 19	350 Jun 26 1993
INSTANTANEOUS PEAK STAGE	5.86	Apr 19	5.86 Jun 26 1993
ANNUAL RUNOFF (AC-FT)	16980		16990
10 PERCENT EXCEEDS	65		74
50 PERCENT EXCEEDS	7.8		7.8
90 PERCENT EXCEEDS	2.0		2.1

10341950 LITTLE TRUCKEE RIVER BELOW DIVERSION DAM NEAR SIERRAVILLE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1993 to September 1994 (discontinued).

WATER TEMPERATURE: October 1993 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorder since October 1993.

REMARKS.--Interruptions in record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 7, 8, 1994; minimum recorded, 0.0°C, many days.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	.5	.0	.5	.5	.5	.0	3.0	.0
2	---	---	---	---	1.5	.0	1.0	.5	.5	.0	4.0	.0
3	---	---	---	---	1.0	.0	1.0	.5	.5	.0	2.0	.0
4	---	---	---	---	2.0	.0	1.0	.5	1.0	.0	4.0	.0
5	---	---	---	---	1.0	.0	1.0	.5	.5	.0	2.5	.0
6	---	---	---	---	1.0	.0	1.0	.5	1.5	.0	3.0	.0
7	---	---	---	---	2.0	.0	.5	.5	1.5	.0	3.5	.0
8	---	---	---	---	1.0	.0	.5	.5	1.5	.0	4.5	.0
9	---	---	---	---	.5	.0	.5	.5	1.0	.0	5.0	.0
10	---	---	---	---	2.0	.0	.5	.5	.0	.0	5.0	.0
11	---	---	7.0	1.5	1.0	.0	.5	.0	.0	.0	3.5	.0
12	---	---	6.0	1.5	.0	.0	.5	.0	.0	.0	4.5	.0
13	---	---	4.5	.0	.5	.0	.5	.0	.5	.0	5.0	.0
14	---	---	2.5	.0	.0	.0	.5	.0	.5	.0	5.0	.0
15	---	---	2.5	.0	.0	.0	1.0	.0	.5	.0	5.5	.0
16	---	---	3.0	.0	.5	.0	.5	.0	1.5	.0	3.5	.0
17	---	---	4.0	.0	.0	.0	1.0	.0	.0	.0	4.5	.0
18	---	---	4.0	.0	.0	.0	.5	.0	.0	.0	5.0	.0
19	---	---	3.0	.0	.0	.0	.5	.0	.0	.0	4.5	.0
20	---	---	2.0	.0	.0	.0	1.0	.0	.0	.0	7.0	.0
21	---	---	2.0	.0	.0	.0	1.5	.0	.0	.0	7.0	.5
22	---	---	1.5	.0	.0	.0	1.0	.0	.0	.0	3.0	.0
23	---	---	2.0	.0	.0	.0	1.0	.0	.0	.0	3.0	.0
24	---	---	1.0	.0	.0	.0	.0	.0	.5	.0	5.0	.5
25	---	---	.5	.0	.0	.0	.5	.0	.5	.0	4.0	2.0
26	---	---	.0	.0	.0	.0	1.0	.0	2.0	.0	8.0	.5
27	---	---	.5	.0	.0	.0	1.0	.0	2.0	.0	8.5	1.0
28	---	---	1.0	.0	.5	.0	.5	.0	3.0	.0	7.0	1.5
29	---	---	1.5	.0	.5	.0	.5	.0	---	---	6.0	1.0
30	---	---	.5	.0	.5	.0	.5	.0	---	---	8.0	1.5
31	---	---	---	---	.5	.5	.5	.0	---	---	7.5	.0
MONTH	---	---	---	---	2.0	.0	1.5	.0	3.0	.0	8.5	.0



10341950 LITTLE TRUCKEE RIVER BELOW DIVERSION DAM NEAR SIERRAVILLE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	.5	12.0	3.5	17.0	7.5	22.0	10.5	20.0	14.0	16.0	11.0
2	7.0	.5	12.5	5.0	17.0	8.5	22.5	11.0	19.5	13.5	15.0	11.5
3	5.5	1.0	12.5	5.0	16.5	8.0	23.5	12.5	19.0	13.0	15.5	10.5
4	7.5	.0	11.5	5.0	16.5	7.5	24.5	13.0	19.5	14.0	16.5	10.5
5	6.5	.0	9.0	4.5	17.0	8.5	23.5	12.5	19.0	13.0	15.5	11.5
6	5.5	1.5	8.0	5.0	14.5	7.5	24.5	12.0	18.5	12.5	16.5	11.5
7	6.5	.0	9.5	4.0	16.0	7.0	25.5	12.5	18.0	13.0	16.0	11.0
8	6.5	1.5	13.0	4.5	13.5	8.5	25.5	13.5	17.5	14.0	15.5	11.5
9	7.0	.5	13.5	5.0	16.5	9.5	24.0	14.0	18.0	14.0	14.5	11.5
10	8.5	1.5	14.0	5.5	16.0	10.5	24.0	12.0	18.0	14.5	14.0	9.5
11	9.5	.5	15.5	7.0	19.5	11.0	20.5	12.5	18.5	13.5	13.0	9.0
12	10.0	1.5	13.5	6.5	18.5	11.0	20.5	14.0	18.5	13.5	11.5	8.5
13	9.0	1.0	15.0	6.5	16.0	11.0	20.5	14.0	18.5	13.5	13.0	8.5
14	10.0	1.5	14.5	6.5	18.5	9.5	20.5	13.5	17.5	13.5	15.0	8.5
15	10.5	1.0	10.5	5.0	17.0	8.5	19.5	14.0	18.0	13.5	15.0	9.0
16	9.0	1.5	9.0	3.5	17.5	8.0	20.0	14.5	17.0	13.0	13.5	9.0
17	9.5	2.0	8.5	3.5	18.0	9.0	20.0	14.0	17.0	12.5	13.5	10.0
18	10.0	2.0	10.0	4.5	19.5	8.5	19.5	13.5	17.0	13.0	14.0	9.0
19	9.5	2.0	12.5	5.5	21.0	10.5	20.0	14.0	17.0	13.0	14.5	9.5
20	9.5	2.0	13.5	4.5	21.5	12.0	20.5	15.0	16.5	12.0	15.0	9.5
21	9.5	2.0	13.5	5.0	22.0	11.0	20.0	15.0	16.0	12.0	15.5	9.0
22	9.5	2.5	14.5	5.0	22.0	11.0	20.5	15.5	16.5	12.0	15.5	9.0
23	6.0	2.0	14.5	6.0	22.0	11.0	20.0	14.5	17.0	12.0	15.0	10.0
24	7.0	1.5	14.5	6.5	21.5	11.0	20.0	14.0	16.5	12.0	14.5	11.0
25	6.0	.5	14.5	6.5	22.0	11.5	19.5	13.0	16.5	11.5	15.5	10.0
26	8.0	1.5	14.5	7.0	21.5	10.5	20.0	13.5	16.0	12.5	17.0	10.0
27	7.0	3.0	16.0	7.5	22.5	12.5	19.0	13.5	17.0	13.0	15.0	9.0
28	10.0	3.0	15.5	6.5	23.5	12.5	19.5	13.0	16.0	12.5	13.0	10.0
29	10.5	3.5	16.5	7.0	23.5	12.5	18.5	15.0	16.5	11.0	14.5	9.5
30	12.0	4.0	14.5	7.5	22.0	13.0	19.5	15.5	16.5	11.5	16.0	8.0
31	---	---	16.5	9.0	---	---	19.5	14.0	16.5	11.5	---	---
MONTH	12.0	.0	16.5	3.5	23.5	7.0	25.5	10.5	20.0	11.0	17.0	8.0

## 10342900 INDEPENDENCE LAKE NEAR TRUCKEE, CA

LOCATION.--Lat 39°27'07", long 120°17'23", in NW 1/4 SW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 18050102, on right bank of outlet channel, 60 ft upstream from outlet gates, and 10.5 mi northwest of Truckee.

DRAINAGE AREA.--7.51 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Sierra Pacific Power Co.).

REMARKS.--Lake levels regulated by an earthfill dam at the outlet constructed in 1939. Usable capacity, 17,300 acre-ft between elevations 6,921.0 ft, invert of outlet gate and 6,949.0 ft, normal maximum storage level. Water is used for irrigation and power development downstream. Records, including extremes, represent usable contents. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 17,500 acre-ft, July 1-10, 1993, elevation, 6,949.27 ft; minimum, 4,750 acre-ft, Nov. 10, 11, 1988, elevation, 6,929.39 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,600 acre-ft, May 12-14, elevation, 6,947.94 ft; minimum, 12,700 acre-ft, Sept. 27-30, elevation, 6,942.16 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Sierra Pacific Power Co., dated Nov. 5, 1941)

6,921	0	6,940	11,240
6,925	2,220	6,945	14,530
6,930	5,110	6,950	18,000
6,935	8,110		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15900	15000	14800	14900	14800	15100	15400	16200	16400	16300	15300	13700
2	15900	15000	14800	14900	14800	15100	15400	16200	16400	16300	15200	13700
3	15900	15000	14800	14900	14800	15100	15400	16200	16400	16300	15200	13700
4	15800	15000	14800	14900	14800	15100	15500	16300	16400	16300	15100	13600
5	15900	15000	14800	14900	14800	15100	15500	16300	16400	16300	15100	13600
6	15900	15000	14800	14900	14800	15100	15500	16300	16400	16300	15000	13500
7	15800	15000	14800	14900	14800	15100	15500	16400	16500	16300	15000	13500
8	15800	14900	14900	14900	14800	15100	15600	16400	16500	16300	14900	13400
9	15800	14900	14900	14900	14800	15100	15600	16400	16500	16300	14800	13400
10	15800	14900	14900	14900	14900	15200	15600	16500	16500	16300	14800	13300
11	15800	14900	15000	14900	14900	15200	15600	16500	16500	16300	14700	13300
12	15800	14900	15000	14900	14800	15200	15600	16600	16500	16200	14700	13300
13	15700	14900	15000	14900	14900	15200	15600	16600	16500	16200	14700	13200
14	15700	14800	15000	14900	14900	15200	15700	16600	16500	16100	14600	13200
15	15700	14800	15000	14900	14800	15200	15800	16500	16500	16100	14600	13200
16	15700	14800	15000	14900	14800	15200	15800	16500	16500	16000	14500	13100
17	15600	14800	15000	14900	15000	15200	15900	16500	16500	16000	14500	13100
18	15600	14800	15000	14900	15000	15200	16000	16400	16500	15900	14400	13000
19	15500	14800	15000	14900	15000	15200	16100	16400	16500	15900	14300	13000
20	15500	14800	15000	14800	15000	15200	16200	16400	16500	15800	14300	13000
21	15400	14800	15000	14800	15100	15200	16200	16400	16500	15800	14300	12900
22	15400	14800	15000	14800	15100	15200	16200	16400	16500	15700	14200	12900
23	15300	14800	15000	14800	15100	15300	16200	16300	16400	15700	14200	12900
24	15300	14800	15000	14900	15100	15300	16200	16400	16400	15600	14100	12800
25	15300	14800	15000	14900	15100	15300	16200	16400	16400	15600	14100	12800
26	15200	14800	15000	14900	15100	15300	16200	16400	16400	15500	14000	12800
27	15200	14800	15000	14900	15100	15300	16200	16400	16400	15500	14000	12700
28	15100	14800	14900	14900	15100	15300	16200	16300	16400	15500	13900	12700
29	15100	14800	14900	14900	---	15300	16200	16300	16400	15400	13900	12700
30	15100	14800	14900	14800	---	15300	16200	16300	16400	15400	13900	12700
31	15000	---	14900	14800	---	15400	---	16300	---	15300	13800	---
MAX	15900	15000	15000	14900	15100	15400	16200	16600	16500	16300	15300	13700
MIN	15000	14800	14800	14800	14800	15100	15400	16200	16400	15300	13800	12700
a	6945.75	6945.45	6945.57	6945.44	6945.81	6946.20	6947.47	6947.59	6947.65	6946.12	6943.89	6942.16
b	-900	-200	+100	-100	+300	+300	+800	+100	+100	-1100	-1500	-1100

CAL YR 1993 MAX 17500 MIN 8710 b +6280  
WTR YR 1994 MAX 16600 MIN 12700 b -3200

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA

LOCATION.--Lat 39°27'24", long 120°17'10", in SW 1/4 NW 1/4 sec.35, T.19 N., R.15 E., Sierra County, Hydrologic Unit 16050102, on left bank 0.4 mi downstream from Independence Lake outlet and 10.5 mi northwest of Truckee.

DRAINAGE AREA.--8.10 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1902 to September 1907, November 1909 to June 1910, August 1968 to current year.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,920 ft above sea level, from topographic map. July 1, 1904, to June 30, 1910, nonrecording gage 75 ft downstream from Independence Lake outlet; prior to July 1, 1904, nonrecording gage 600 ft downstream at approximately same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Independence Lake (station 10342900) since 1939. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 291 ft<sup>3</sup>/s, Dec. 20, 1981, gage height, 6.12 ft; maximum gage height, 8.16 ft, Apr. 16, 1993, backwater from snow and ice; no flow Sept. 28 to Nov. 10, 1905, June 1, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47 ft<sup>3</sup>/s, May 15, gage height, 3.13 ft; minimum daily, 1.0 ft<sup>3</sup>/s, July 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.8	6.1	6.1	7.2	7.2	7.8	19	11	3.3	20	18
2	6.6	7.6	6.1	6.1	7.2	7.2	7.5	20	7.9	3.1	20	18
3	6.9	7.6	6.1	6.1	7.2	7.2	7.4	20	6.8	3.1	19	18
4	6.5	7.6	6.2	6.1	7.2	7.2	7.2	21	6.5	2.9	19	18
5	6.3	7.4	6.1	6.1	7.2	7.2	7.0	22	5.9	2.7	19	18
6	6.4	6.7	5.7	6.1	7.2	7.2	6.8	26	5.3	2.2	19	18
7	6.0	6.7	5.9	5.6	7.2	7.2	6.7	30	5.2	1.9	19	18
8	6.3	6.7	6.1	5.3	7.2	7.2	6.7	30	5.0	1.5	19	18
9	6.3	6.7	6.1	5.2	7.2	7.2	6.7	32	4.4	1.2	19	17
10	6.2	6.5	5.6	5.2	7.4	7.2	6.7	35	4.3	1.1	19	16
11	5.7	6.4	5.6	5.6	7.4	7.2	6.9	39	4.3	1.0	18	16
12	5.4	6.3	5.2	5.6	7.2	7.2	7.3	42	4.3	1.1	18	16
13	5.5	6.3	5.3	6.2	7.2	7.2	7.5	42	3.9	18	19	16
14	5.5	6.1	5.2	6.7	7.2	7.2	7.4	43	3.9	33	18	16
15	23	6.1	5.2	6.7	7.2	7.3	7.6	42	3.9	26	18	16
16	34	5.9	5.2	6.7	7.2	7.6	7.8	39	4.3	21	18	16
17	34	5.6	5.2	6.7	7.6	7.6	7.9	35	4.3	21	18	16
18	32	5.6	5.2	6.7	7.6	7.6	7.7	33	4.3	21	18	16
19	30	5.3	5.5	6.7	7.6	7.3	9.8	34	4.3	21	18	16
20	30	5.3	5.6	6.7	7.5	7.3	16	33	4.4	21	18	17
21	30	5.4	5.6	6.7	7.2	7.6	20	33	4.7	20	18	17
22	24	5.6	5.6	6.7	7.2	7.2	22	32	4.7	20	18	17
23	20	5.6	5.9	6.7	7.2	7.2	23	32	4.3	20	18	17
24	20	5.6	5.9	6.7	7.2	7.2	23	31	5.0	20	18	17
25	20	5.6	6.1	6.7	7.3	7.2	24	31	5.9	20	18	17
26	20	5.6	6.1	6.7	7.4	7.2	23	31	5.2	20	18	17
27	20	5.6	6.1	6.9	7.6	7.2	22	31	4.8	20	18	17
28	20	5.7	6.1	7.2	7.4	7.2	21	31	4.7	20	18	17
29	20	5.8	6.1	7.2	---	7.2	21	30	4.0	20	18	17
30	15	6.1	6.1	7.2	---	7.4	20	30	3.7	20	18	16
31	8.1	---	6.1	7.2	---	7.6	---	26	---	19	18	---
TOTAL	486.7	186.8	178.9	198.1	204.4	225.7	375.4	975	151.2	426.1	571	507
MEAN	15.7	6.23	5.77	6.39	7.30	7.28	12.5	31.5	5.04	13.7	18.4	16.9
MAX	34	7.8	6.2	7.2	7.6	7.6	24	43	11	33	20	18
MIN	5.4	5.3	5.2	5.2	7.2	7.2	6.7	19	3.7	1.0	18	16
AC-FT	965	371	355	393	405	448	745	1930	300	845	1130	1010

## PYRAMID AND WINNEMUCCA LAKES BASIN

10343000 INDEPENDENCE CREEK NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.4	22.6	10.9	7.88	10.5	12.4	16.9	39.4	54.0	25.8	21.0	21.8
MAX	45.8	97.6	58.2	25.1	58.0	79.2	72.9	112	188	89.2	114	133
(WY)	1976	1984	1982	1982	1986	1986	1986	1982	1983	1983	1988	1973
MIN	.47	1.36	.70	1.04	1.07	1.45	1.50	1.51	2.09	1.78	2.05	.58
(WY)	1980	1989	1993	1993	1974	1977	1977	1977	1977	1977	1976	1979

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1968 - 1994

ANNUAL TOTAL	6626.17	4486.3	
ANNUAL MEAN	18.2	12.3	21.5
HIGHEST ANNUAL MEAN			46.7
LOWEST ANNUAL MEAN			7.63
HIGHEST DAILY MEAN	133	May 25	269
LOWEST DAILY MEAN	.72	Jan 7	.02
ANNUAL SEVEN-DAY MINIMUM	.72	Jan 5	.02
INSTANTANEOUS PEAK FLOW			47
INSTANTANEOUS PEAK STAGE			3.13
ANNUAL RUNOFF (AC-FT)	13140	8900	15590
10 PERCENT EXCEEDS	40	23	60
50 PERCENT EXCEEDS	6.4	7.2	9.5
90 PERCENT EXCEEDS	1.2	5.2	1.9

## 10343200 LITTLE TRUCKEE RIVER AT HIGHWAY 89, NEAR TRUCKEE, CA

LOCATION.--Lat 39°28'42", long 120°13'54", in SW 1/4 SW 1/4 sec.20, T.19 N., R.16 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, on right bank 10 ft upstream from State Highway 89 bridge, 3.3 mi upstream from Stampede Reservoir, and 10.5 mi north of Truckee.

DRAINAGE AREA.--59.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to September 1994 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 6,090 ft above sea level, from topographic map.

REMARKS.--Records good except estimated daily discharges, which are fair. Flow at times regulated by Independence Lake (station 10342900). Some water diverted to Sierra Valley about 6 mi upstream for irrigation in the summer months. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,260 ft<sup>3</sup>/s, May 31, 1993, gage height, 8.43 ft; minimum daily, 5.8 ft<sup>3</sup>/s, July 12, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	2345	*377	*7.21				

Minimum daily, 5.8 ft<sup>3</sup>/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e15	18	38	e20	e21	28	84	69	70	11	19	17
2	e15	17	21	e20	e21	28	93	81	52	10	19	17
3	e15	16	e20	e20	e20	26	107	89	43	10	18	17
4	e15	16	19	e20	e20	25	93	106	30	9.7	18	17
5	e20	16	e19	e21	e20	30	82	128	25	9.3	18	17
6	22	15	e19	e22	e20	32	82	208	21	8.6	18	17
7	19	15	19	e22	e20	34	73	191	18	8.2	18	17
8	18	15	e25	e22	e20	33	65	153	17	7.6	18	17
9	18	15	e30	e22	e20	33	58	265	15	6.9	17	16
10	18	15	24	e23	e20	35	52	276	15	6.3	17	16
11	18	16	e23	e23	e20	37	55	292	13	6.1	17	16
12	18	17	e22	e23	e20	35	63	303	12	5.8	17	17
13	17	16	e24	e23	e20	35	73	266	12	11	17	17
14	20	22	e21	e23	e20	38	90	232	19	29	17	17
15	40	25	e21	e23	e20	45	112	187	30	26	17	17
16	55	24	e21	e22	e20	52	152	139	39	22	17	16
17	50	14	e21	e22	e20	48	212	121	31	22	16	16
18	44	13	e21	e22	e20	45	250	101	27	21	16	16
19	41	17	e20	e22	e20	45	290	83	26	21	16	16
20	41	22	e20	e22	e20	46	289	76	23	21	16	16
21	41	25	e20	e21	e20	50	246	76	21	21	16	16
22	36	17	e20	e21	e20	48	208	76	22	21	17	16
23	31	18	e20	e21	e20	44	161	84	19	20	17	16
24	31	26	e20	e21	e21	40	112	106	17	20	17	17
25	30	22	e20	e21	e22	39	93	111	17	20	17	17
26	30	27	e20	e21	e23	41	81	111	15	20	16	17
27	30	29	e20	e21	24	49	77	123	14	19	17	17
28	30	29	e20	e21	26	58	64	114	15	19	17	18
29	30	33	e20	e21	---	65	63	90	13	19	17	19
30	28	63	e20	e21	---	79	63	90	12	19	17	18
31	18	---	e20	e21	---	84	---	97	---	19	17	---
TOTAL	854	633	668	668	578	1327	3543	4444	703	489.5	531	503
MEAN	27.5	21.1	21.5	21.5	20.6	42.8	118	143	23.4	15.8	17.1	16.8
MAX	55	63	38	23	26	84	290	303	70	29	19	19
MIN	15	13	19	20	20	25	52	69	12	5.8	16	16
AC-FT	1690	1260	1320	1320	1150	2630	7030	8810	1390	971	1050	998

e Estimated.

## 10343200 LITTLE TRUCKEE RIVER AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.5	21.1	21.5	21.5	20.6	42.8	225	452	247	61.5	18.6	16.1
MAX	27.5	21.1	21.5	21.5	20.6	42.8	332	761	471	107	20.2	16.8
(WY)	1994	1994	1994	1994	1994	1994	1993	1993	1993	1993	1993	1994
MIN	27.5	21.1	21.5	21.5	20.6	42.8	118	143	23.4	15.8	17.1	15.5
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1993

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	14941.5		
ANNUAL MEAN	40.9	40.9	
HIGHEST ANNUAL MEAN		40.9	1994
LOWEST ANNUAL MEAN		40.9	1994
HIGHEST DAILY MEAN	303	May 12	1030 May 20 1993
LOWEST DAILY MEAN	5.8	Jul 12	5.8 Jul 12 1994
ANNUAL SEVEN-DAY MINIMUM	7.1	Jul 6	7.1 Jul 6 1994
INSTANTANEOUS PEAK FLOW	377	May 11	1260 May 31 1993
INSTANTANEOUS PEAK STAGE	7.21	May 11	8.43 May 31 1993
ANNUAL RUNOFF (AC-FT)	29640		29660
10 PERCENT EXCEEDS	90		435
50 PERCENT EXCEEDS	21		23
90 PERCENT EXCEEDS	16		15

10343200 LITTLE TRUCKEE RIVER AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: September 1993 to September 1994 (discontinued).

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorder since September 1993.

REMARKS.--Interruptions in record were due to malfunction of recording instrument.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 13, 1994; minimum recorded, 0.0°C, many days each year.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, July 13; minimum recorded, 0.0°C, many days.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	7.0	3.5	.0	.0	.0	.0	.0	.0	2.5	.0
2	---	---	6.0	1.5	2.0	.0	.0	.0	.0	.0	3.5	.0
3	---	---	6.0	1.5	1.0	.0	.0	.0	.0	.0	3.0	.0
4	---	---	6.5	2.5	2.5	.0	.0	.0	.0	.0	4.0	.0
5	---	---	5.5	1.5	.0	.0	.0	.0	.0	.0	3.0	1.0
6	12.5	7.0	5.0	.5	.5	.0	.0	.0	.0	.0	4.0	.5
7	13.0	7.5	5.0	1.0	2.0	.0	.0	.0	1.0	.0	3.0	.0
8	11.5	6.0	5.0	.5	1.5	.0	.0	.0	2.0	.0	4.0	.0
9	10.5	7.5	5.0	1.5	2.0	.0	.0	.0	.0	.0	4.5	.0
10	12.0	7.5	6.0	2.0	2.0	.0	.0	.0	.0	.0	5.5	.5
11	11.5	8.5	6.0	2.0	1.5	.0	.0	.0	.0	.0	4.5	.0
12	11.5	6.5	5.0	2.0	.0	.0	.0	.0	.0	.0	4.5	.0
13	11.0	7.0	3.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0
14	10.0	8.0	1.0	.0	.0	.0	.0	.0	.0	.0	6.0	.0
15	10.0	7.5	.5	.0	.0	.0	.0	.0	.0	.0	6.5	.5
16	11.0	8.0	1.0	.0	.0	.0	.0	.0	.0	.0	5.5	1.0
17	10.5	7.5	3.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0
18	10.5	6.0	3.0	.0	.0	.0	.0	.0	.0	.0	6.0	1.0
19	11.0	5.5	1.0	.0	.0	.0	.0	.0	.0	.0	7.0	.5
20	11.5	6.0	.5	.0	.0	.0	.0	.0	.0	.0	6.5	.0
21	10.0	7.5	2.0	.0	.0	.0	.0	.0	.0	.0	7.0	1.0
22	10.5	5.5	2.5	1.0	.0	.0	.0	.0	.0	.0	4.0	.5
23	10.5	5.5	1.5	.0	.0	.0	.5	.0	.0	.0	3.0	.0
24	11.0	6.0	.0	.0	.0	.0	.5	.0	.0	.0	5.0	.5
25	9.5	5.0	.0	.0	.0	.0	.5	.0	.0	.0	5.0	1.5
26	9.5	5.0	.0	.0	.0	.0	1.0	.0	2.0	.0	8.0	.0
27	9.0	4.5	.0	.0	.0	.0	.0	.0	3.0	.5	9.0	1.0
28	9.5	4.0	.0	.0	.0	.0	.0	.0	3.0	.0	8.5	1.5
29	10.0	6.0	2.5	.0	.0	.0	.0	.0	---	---	7.5	1.5
30	9.5	4.5	.5	.0	.0	.0	.0	.0	---	---	9.5	2.0
31	8.5	5.0	---	---	.0	.0	.0	.0	---	---	8.0	.5
MONTH	---	---	7.0	.0	2.5	.0	1.0	.0	3.0	.0	9.5	.0

## PYRAMID AND WINNEMUCCA LAKES BASIN

10343200 LITTLE TRUCKEE RIVER AT HIGHWAY 89, NEAR TRUCKEE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	1.0	12.5	4.0	18.0	8.5	22.0	11.0	23.0	13.5	18.5	10.0
2	8.0	1.5	13.0	5.5	---	---	22.5	11.5	22.5	13.0	18.0	10.0
3	6.0	2.5	11.5	5.5	18.0	9.5	23.5	12.5	22.5	12.5	17.5	9.0
4	7.5	.0	11.5	6.0	19.0	8.5	23.5	13.0	23.0	13.5	18.5	9.5
5	7.5	.5	10.0	5.0	18.5	9.5	23.0	12.5	22.5	12.5	17.5	10.5
6	7.5	2.5	8.5	5.5	18.5	9.0	23.0	12.0	22.0	12.0	18.5	10.0
7	7.0	1.5	10.5	4.0	19.0	7.5	24.0	12.5	22.0	12.0	18.5	10.5
8	6.5	2.5	13.5	5.0	20.5	8.5	24.0	14.0	22.0	13.5	18.0	10.5
9	6.5	2.0	14.0	6.0	21.5	10.0	24.0	14.0	21.5	13.0	17.0	10.0
10	8.5	2.5	14.5	5.5	23.0	11.0	24.0	13.0	22.0	13.5	15.5	8.0
11	10.5	2.0	15.5	7.0	22.5	11.5	24.5	13.5	22.0	13.0	14.5	7.5
12	11.0	3.5	14.0	6.5	21.0	11.5	25.0	14.0	22.5	13.0	12.0	7.0
13	10.5	2.5	15.0	7.0	21.5	12.0	25.5	14.5	22.5	13.0	14.5	6.5
14	11.5	3.0	14.5	7.0	21.0	10.5	23.5	13.5	22.5	13.0	15.5	7.5
15	11.5	2.0	11.5	6.0	18.0	8.5	23.5	14.0	22.5	13.0	16.0	8.0
16	10.5	2.5	9.0	4.0	18.0	8.0	23.5	14.5	21.5	12.0	16.0	8.0
17	10.0	3.0	8.0	4.5	18.5	8.5	23.5	14.0	21.0	11.5	15.0	9.5
18	10.5	2.5	11.0	5.0	19.5	8.0	23.5	13.5	21.0	12.0	15.5	8.5
19	10.5	3.0	13.0	6.0	21.0	10.0	23.5	13.5	21.0	12.0	16.0	9.0
20	10.5	2.0	11.5	5.0	21.0	11.5	24.0	15.0	20.5	11.0	16.5	9.0
21	10.5	2.5	15.0	6.0	22.0	11.0	24.0	15.0	20.0	11.0	16.0	8.5
22	10.5	3.0	16.0	6.0	21.5	10.5	23.0	16.0	20.0	10.5	16.5	8.5
23	6.5	2.5	16.0	7.0	21.5	11.0	22.0	14.5	20.0	11.0	15.5	9.5
24	8.5	2.0	15.0	7.5	21.5	11.0	23.0	13.5	20.0	11.0	15.5	10.5
25	7.0	1.0	16.5	7.5	22.0	11.5	22.5	12.5	19.5	10.5	16.0	10.0
26	8.0	2.5	14.5	8.0	21.5	10.5	23.0	13.5	19.5	11.5	16.5	9.5
27	8.0	4.0	16.5	8.5	21.5	12.0	22.5	13.0	20.5	12.5	16.5	9.5
28	9.5	3.5	16.0	7.0	23.0	12.5	23.0	13.0	19.5	11.5	13.5	10.5
29	11.5	4.0	17.5	8.0	23.0	12.0	21.0	15.0	19.0	10.0	14.5	10.5
30	11.5	4.5	16.5	8.5	23.0	12.5	22.5	15.5	19.5	10.5	14.0	8.0
31	---	---	16.5	10.0	---	---	23.0	14.0	19.0	10.5	---	---
MONTH	11.5	.0	17.5	4.0	---	---	25.5	11.0	23.0	10.0	18.5	6.5



10343500 SAGEHEN CREEK NEAR TRUCKEE, CA  
(Hydrologic Benchmark Station)

LOCATION.--Lat 39°25'54", long 120°14'13", in NE 1/4 NE 1/4 sec.7, T.18 N., R.16 E., Nevada County, Hydrologic Unit 16050102, on left bank 2.2 mi upstream from bridge on State Highway 89 and 7.5 mi north of Truckee.

DRAINAGE AREA.--10.5 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 6,320 ft above sea level, from topographic map. Prior to Dec. 2, 1953, nonrecording gage at site 100 ft upstream at different datum.

REMARKS.--Records excellent. No storage or diversion upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 4.64 ft, from floodmarks, from rating curve extended above 160 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 4.28 ft; minimum, 0.6 ft<sup>3</sup>/s, Aug. 8, 1960, Aug. 7, 1961, result of temporary regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 18	1900	*19	*2.18				
Minimum daily, 1.2 ft <sup>3</sup> /s, many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	2.8	e2.4	e2.5	3.3	8.5	7.2	3.2	1.4	1.2	1.2
2	1.6	2.1	2.7	e2.4	2.5	3.5	9.3	7.0	2.9	1.5	1.2	1.2
3	1.6	2.1	2.6	e2.4	2.5	3.6	9.9	7.1	2.8	1.5	1.2	1.3
4	1.6	2.2	2.5	e2.9	2.5	3.6	8.7	7.3	2.7	1.4	1.2	1.3
5	2.9	2.2	2.5	e2.8	2.4	5.0	8.5	7.6	2.5	1.5	1.2	1.3
6	2.8	2.1	2.5	e2.8	2.4	5.0	7.3	11	2.6	1.5	1.2	1.2
7	2.2	2.2	2.4	e2.7	2.5	4.3	7.3	12	2.6	1.5	1.2	1.2
8	2.0	2.2	2.6	e2.7	2.4	4.3	7.0	9.5	2.5	1.4	1.2	1.2
9	2.0	2.2	e2.9	e2.7	2.4	4.6	6.8	9.0	2.4	1.4	1.2	1.2
10	2.0	2.2	e2.8	2.7	2.4	4.8	6.8	8.0	2.3	1.4	1.2	1.3
11	2.0	2.2	e2.8	2.7	e2.4	4.8	7.4	7.7	2.2	1.4	1.2	1.3
12	2.0	2.4	e2.8	2.6	e2.4	4.3	8.8	7.3	2.1	1.4	1.2	1.5
13	2.0	2.4	2.8	2.5	e2.4	4.6	9.7	6.7	e2.1	1.4	1.2	1.5
14	2.5	2.3	2.8	2.5	e2.4	5.4	11	6.2	e2.1	1.4	1.2	1.4
15	3.8	2.2	2.7	2.5	2.4	6.2	12	5.9	e2.0	1.3	1.2	1.4
16	3.0	2.2	2.6	2.5	2.4	6.9	13	5.4	2.0	1.4	1.2	1.4
17	2.6	2.3	2.6	2.5	e2.5	6.2	15	5.4	1.9	1.4	1.2	1.4
18	2.4	2.3	2.6	2.5	e2.5	5.6	15	5.4	1.9	1.3	1.2	1.4
19	2.3	2.2	2.5	2.6	2.5	5.4	16	5.3	1.9	1.3	1.2	1.3
20	2.2	2.2	e2.5	2.5	2.5	5.6	14	4.9	1.8	1.3	1.2	1.3
21	2.2	2.3	e2.5	2.6	2.5	5.8	12	4.7	1.8	1.3	1.2	1.3
22	2.2	2.3	2.5	2.7	2.4	5.4	11	4.3	1.8	1.3	1.2	1.3
23	2.1	2.4	2.4	2.7	2.5	4.8	10	4.0	1.7	1.3	1.2	1.3
24	2.1	2.2	2.4	2.7	2.7	4.3	8.9	3.9	1.7	1.3	1.2	1.3
25	2.0	2.2	2.4	2.7	2.9	4.1	9.3	4.0	1.7	1.3	1.2	1.3
26	2.0	2.1	e2.4	2.7	3.0	4.4	8.6	3.9	1.6	1.3	1.2	1.3
27	2.0	2.2	e2.4	2.6	3.0	5.2	8.3	3.7	1.6	1.3	1.2	1.2
28	2.0	2.5	e2.4	2.6	3.2	6.2	7.5	3.4	1.6	1.3	1.2	1.4
29	2.0	3.2	e2.4	2.5	---	6.9	7.3	3.2	1.5	1.3	1.2	1.5
30	2.1	3.3	e2.4	2.5	---	8.7	7.2	3.1	1.5	1.3	1.2	1.4
31	2.1	---	e2.4	2.5	---	8.7	---	3.6	---	1.2	1.2	---
TOTAL	67.9	69.0	79.6	80.7	71.1	161.5	292.1	187.7	63.0	42.3	37.2	39.6
MEAN	2.19	2.30	2.57	2.60	2.54	5.21	9.74	6.05	2.10	1.36	1.20	1.32
MAX	3.8	3.3	2.9	2.9	3.2	8.7	16	12	3.2	1.5	1.2	1.5
MIN	1.6	2.1	2.4	2.4	2.4	3.3	6.8	3.1	1.5	1.2	1.2	1.2
AC-FT	135	137	158	160	141	320	579	372	125	84	74	79

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.51	5.19	7.23	7.10	8.15	10.2	23.7	41.5	24.1	6.82	3.06	2.68
MAX	11.9	27.7	44.0	33.8	51.0	50.1	51.6	117	142	37.4	11.8	7.56
(WY)	1963	1984	1965	1970	1963	1986	1986	1969	1983	1983	1983	1983
MIN	1.71	1.83	2.03	1.81	2.54	2.74	6.13	3.45	1.82	1.36	1.20	1.11
(WY)	1989	1993	1977	1962	1994	1962	1975	1988	1992	1994	1994	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1954 - 1994		
ANNUAL TOTAL	5418.9			1191.7					
ANNUAL MEAN	14.8			3.26			11.9		
HIGHEST ANNUAL MEAN							30.0		
LOWEST ANNUAL MEAN							2.65		
HIGHEST DAILY MEAN	100	May 11		16	Apr 19		398	Dec 23	1955
LOWEST DAILY MEAN	1.6	Oct 1		1.2	Jul 31		1.0	Sep 13	1960
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 28		1.2	Jul 31		1.1	Sep 9	1960
INSTANTANEOUS PEAK FLOW				19			765		
INSTANTANEOUS PEAK STAGE				2.18			4.64		
ANNUAL RUNOFF (AC-FT)	10750			2360			8640		
10 PERCENT EXCEEDS	51			7.3			30		
50 PERCENT EXCEEDS	2.8			2.4			4.3		
90 PERCENT EXCEEDS	2.0			1.2			1.9		

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

## PRECIPITATION RECORDS

PERIOD OF RECORD.--December 1990 to current year.

INSTRUMENTATION.--Recording-weighing gage since Dec. 1, 1990.

REMARKS.--Oct. 1, 1993, to Nov. 9, 1993, precipitation data provided by National Oceanic and Atmospheric Administration.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded daily precipitation, 3.36 in., Mar. 4, 1991; no precipitation for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum recorded daily precipitation, 1.10 in., Feb. 17; no precipitation for many days.

PRECIPITATION (INCHES), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.07	.00	.03	.04	.00	.00	.00	.00	.00	.00
2	.00	.00	.10	.00	.00	.03	.00	.00	.00	.00	.00	.00
3	.00	.00	.03	.00	.00	.00	.00	.00	.03	.00	.00	.03
4	.08	.00	.00	.03	.00	.00	.03	.00	.00	.00	.00	.00
5	.98	.00	.07	.14	.00	.21	.00	.06	.00	.00	.00	.00
6	.07	.00	.00	.07	.00	.09	.00	.38	.00	.00	.00	.00
7	.00	.00	.00	.00	.38	.11	.00	.19	.07	.00	.00	.00
8	.00	.00	.71	.00	.17	.00	.08	.04	.00	.00	.00	.00
9	.03	.00	.43	.00	.03	.00	.07	.00	.00	.00	.00	.00
10	.01	.00	.00	.00	.76	.28	.00	.10	.00	.00	.13	.00
11	.04	.13	.55	.00	.20	.14	.07	.08	.00	.00	.10	.00
12	.00	.16	.13	.00	.03	.07	.00	.00	.00	.00	.00	.10
13	.00	.00	.06	.00	.00	.03	.00	.00	.00	.00	.00	.03
14	.32	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.54	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
16	.09	.00	.06	.00	.00	.00	.00	.07	.04	.00	.06	.00
17	.00	.00	.04	.00	1.10	.00	.00	.00	.00	.00	.00	.00
18	.00	.29	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00
19	.00	.07	.03	.00	.26	.00	.00	.00	.00	.00	.00	.00
20	.00	.03	.07	.00	.55	.00	.00	.06	.00	.00	.04	.00
21	.00	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.19	.07	.00	.00	.00	.00	.00	.00
23	.00	.17	.00	.15	.12	.14	.00	.00	.00	.00	.00	.00
24	.00	.10	.00	.24	.07	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.04	.00	.00	.26	.00	.00	.00	.00	.00
26	.00	.00	.00	.03	.00	.00	.06	.00	.00	.00	.00	.00
27	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.03	.00	.00	.04	.00	.00	.00	.00	.00
29	.00	.67	.00	.07	---	.00	.03	.00	.00	.00	.00	.17
30	.00	.36	.00	.00	---	.00	.00	.00	.00	.00	.00	.06
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	2.16	1.98	2.87	0.87	4.77	1.21	0.64	1.01	0.14	0.00	0.33	0.39

CAL YR 1993 TOTAL 36.73  
WTR YR 1994 TOTAL 16.37

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-75, 1981 to current year.  
 CHEMICAL DATA: Water years 1968-72, October 1985 to current year.  
 WATER TEMPERATURE: Water years 1970-74.  
 SEDIMENT DATA: Water years 1968-75, 1981 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to September 1974.

## WATER-QUALITY DATA, OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 1993											
09...	1100	2.1	117	8.3	2.5	1.1	608	10.9	100	K2	34
FEB 1994											
23...	1135	2.4	119	8.1	0.0	1.5	605	11.4	98	K1	37
MAY											
10...	1130	7.9	73	8.0	8.0	1.3	608	9.8	104	K6	K2
AUG											
10...	1120	1.2	129	8.2	11.0	0.30	609	8.5	97	K8	41

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3
NOV 1993										
09...	54	0	14	4.5	5.8	18	0.3	2.2	83	0
FEB 1994										
23...	51	0	13	4.5	5.7	19	0.3	2.1	79	0
MAY										
10...	31	0	8.1	2.7	3.6	19	0.3	1.2	51	0
AUG										
10...	58	0	15	5.0	6.6	19	0.4	2.7	108	0

DATE	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
NOV 1993									
09...	68	0.20	0.50	0.10	31	98	99	0.13	0.003
FEB 1994									
23...	65	0.10	0.30	<0.10	28	100	93	0.14	0.003
MAY									
10...	42	<0.10	0.20	<0.10	24	68	--	--	0.002
AUG									
10...	89	<0.10	0.10	<0.10	32	100	--	--	0.004

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 1993										
09...	0.020	0.005	<0.20	0.017	0.013	0.010	40	22	<3	50
FEB 1994										
23...	0.028	0.005	<0.20	0.021	0.016	0.010	190	23	<3	67
MAY										
10...	0.007	0.009	<0.20	0.012	0.008	0.003	270	16	<3	63
AUG										
10...	0.018	<0.002	<0.20	0.016	0.015	0.009	<10	26	<3	46

10343500 SAGEHEN CREEK NEAR TRUCKEE, CA--Continued

WATER-QUALITY DATA, OCTOBER 1993 TO SEPTEMBER 1994

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 1993 09...	<4	3	<10	<1	<1	<1.0	140	<6	--	--
FEB 1994 23...	<4	2	<10	<1	<1	<1.0	140	<6	--	--
MAY 10...	<4	2	<10	<1	<1	<1.0	96	<6	0.02	0.18
AUG 10...	<4	4	<10	<1	<1	<1.0	160	<6	0.04	0.80

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDIMENT, SUS- PENDED (MG/L)
MAY									
10...*	1131	0.82	1.30	73	8.0	8.0	608	10.6	112
10...*	1132	0.60	3.70	73	8.0	8.0	608	10.4	110
10...*	1133	1.00	5.70	73	8.0	8.0	608	10.4	110
10...*	1134	0.78	7.70	74	8.1	8.0	608	10.2	108
10...*	1135	0.90	9.70	74	8.1	8.0	608	10.0	106
AUG									
10...*	1130	0.20	0.60	133	8.2	11.0	609	9.0	102
10...*	1131	0.62	1.80	145	8.2	11.0	609	9.0	102
10...*	1132	0.63	3.00	134	8.2	11.0	609	9.0	102
10...*	1133	0.70	4.50	145	8.2	11.0	609	9.0	102
10...*	1134	0.60	6.30	139	8.2	11.0	609	9.0	68

\* Instantaneous discharge at the time of cross-sectional measurements: May 10, 7.9 ft<sup>3</sup>/s; Aug. 10, 1.2 ft<sup>3</sup>/s.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV 1993					
09...	1100	2.1	2.5	1	0.01
FEB 1994					
23...	1135	2.4	0.0	2	0.01
MAY					
10...	1130	7.9	8.0	3	0.06
AUG					
10...	1120	1.2	11.0	6	0.02

## PYRAMID AND WINNEMUCCA LAKES BASIN

10344300 STAMPEDE RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°28'14", long 120°06'11", in SE 1/4 NE 1/4 sec.29, T.19 N., R.17 E., Sierra County, Hydrologic Unit 16050102, Tahoe National Forest, in control house near base of spillway of Stampede Dam on Little Truckee River, 0.2 mi upstream from Worn Mill Canyon, and 11.0 mi northeast of Truckee.

DRAINAGE AREA.--136 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1969 to current year. August 1969 to September 1977 (monthend elevations and contents only). October 1977 to September 1987 (daily contents). Prior to October 1976, published as "near Boca."

GAGE.--Nonrecording gage read five times weekly. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by rolled-earth and rockfill dam. Storage began Aug. 1, 1969. Total capacity, 226,500 acre-ft at elevation 5,948.7 ft, spillway crest. Inactive contents, 5,010 acre-ft, includes 660 acre-ft dead contents below elevation 5,798.3 ft. Figures given, including extremes, represent total contents at 0800 hours. Reservoir is used for flood control, municipal water supply, enhancement of fishery, and recreation. See schematic diagram of Truckee River basin.

COOPERATION.--Records and capacity table were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 254,493 acre-ft, June 1, 1983, elevation, 5,956.55 ft; minimum since reservoir first filled, 30,772 acre-ft, Jan. 31, Feb. 1, 1978, elevation, 5,853.60 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 171,393 acre-ft, Mar. 15, elevation, 5,931.40 ft; minimum observed, 67,330 acre-ft, Sept. 30, elevation, 5,884.73 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by U.S. Bureau of Reclamation, dated July 1971)

5,850	27,915	5,880	60,185	5,910	115,865	5,940	197,630
5,860	36,470	5,890	76,008	5,920	140,141	5,950	231,005
5,870	47,090	5,900	94,535	5,930	167,355	5,960	267,386

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170696	170435	169510	---	169106	170059	164536	---	78278	75648	73461	---
2	---	170348	169539	---	169106	170088	---	132871	77875	---	73461	68566
3	---	170319	169510	169424	169135	170117	---	130913	77422	---	73461	---
4	170580	170291	---	169424	169135	---	163631	129071	---	---	73461	---
5	170667	170262	---	169452	---	---	163123	125629	76798	75442	72576	---
6	170725	---	169510	169395	---	---	162279	124264	76435	75374	---	68041
7	170725	---	169481	169366	169308	170464	161521	---	76315	75323	---	67914
8	170638	170146	169452	---	169308	170551	160793	---	76297	75272	72117	---
9	---	170117	169654	---	169222	170667	---	120858	76280	75237	---	67851
10	---	170088	169654	169366	169251	170754	158482	119783	76263	75135	71830	---
11	170551	---	---	169337	169452	170986	157210	118529	---	75084	---	---
12	170493	170117	---	169251	---	---	155988	117215	---	75033	71566	67661
13	170464	---	169770	169251	---	171161	154847	115901	76194	74982	---	---
14	170493	---	169857	169251	169337	171190	153673	---	76108	74931	---	67614
15	170522	169857	169828	---	169395	171393	152586	---	76074	74914	71155	---
16	---	169828	169828	---	169395	171335	151558	111476	76008	74880	---	67550
17	---	---	169741	169193	169597	170957	150587	109488	76008	74914	70861	---
18	170580	169741	---	169193	---	170609	149754	107480	---	74880	---	---
19	170580	169654	---	169222	---	---	149272	105241	---	74846	70583	67503
20	170551	---	169626	169193	---	---	148951	103139	76057	74846	---	---
21	170580	---	169626	169193	169943	169251	148550	---	76039	74863	---	67472
22	170638	169597	169568	---	169914	168847	148070	---	76022	74863	70111	---
23	---	169568	169539	---	169886	168387	147192	96503	76008	74863	---	67424
24	---	169481	---	169308	169943	167928	146158	94316	75957	74337	69852	---
25	170609	---	---	169279	169943	167498	145129	92207	---	74185	---	---
26	170522	---	---	169279	---	---	143632	90071	---	74050	69561	67361
27	170522	---	169568	169279	---	---	142067	87949	75819	73915	---	---
28	170493	---	169539	169251	170030	166070	140537	---	75802	73797	---	67345
29	170551	169481	169510	---	---	165643	138729	---	75751	73713	69095	---
30	---	169597	169452	---	---	165331	136767	---	75768	---	---	67330
31	---	---	---	169135	---	164933	---	80293	---	---	---	---

## 10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA

LOCATION.--Lat 39°26'09", long 120°05'00", in SW 1/4 SW 1/4 sec.3, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 1 mi upstream from Boca Reservoir, 1.5 mi upstream from Dry Creek, 3.0 mi downstream from Stampede Dam, and 5.5 mi northeast of Truckee.

DRAINAGE AREA.--146 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1903 to October 1910, September 1939 to current year. Monthly discharge only for some periods, published in WSP 1314 and 1734. Published as "at Pine Station," June 1903 to December 1907, as "at Starr," January 1908 to October 1910, and as "near Boca," September 1939 to September 1976.

REVISED RECORDS.--WSP 1564: 1903-4, 1906-7, 1910, drainage area at site used in 1903-7.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft above sea level (U.S. Bureau of Reclamation Benchmark). June 1903 to October 1910, nonrecording gages at different sites and datums.

REMARKS.--Records excellent except for estimated daily discharges, which are good. Flow regulated by Independence Lake (station 10342900) since 1939 and Stampede Reservoir (station 10344300) since 1969. There is one transbasin diversion to Sierra Valley. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 9.00 ft, from rating curve extended above 1,600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 0.30 ft<sup>3</sup>/s, Sept. 16-21, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,220 ft<sup>3</sup>/s, May 18-20, gage height, 2.83 ft; minimum daily, 27 ft<sup>3</sup>/s, Oct. 9, 10, Sept. 13-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	30	31	29	e29	e30	281	1050	613	e31	e80	e83
2	28	30	31	30	e29	e30	281	1050	292	e31	e80	80
3	28	30	31	30	28	e30	281	1050	237	e31	e80	80
4	29	30	31	30	28	33	337	1030	196	e31	e80	80
5	31	30	31	30	30	36	431	929	196	e31	e80	80
6	30	30	31	e30	29	36	471	845	127	e31	e80	80
7	30	30	30	e29	29	34	471	826	42	e31	e80	e47
8	28	30	31	29	29	33	555	823	40	e31	e80	e30
9	27	30	32	29	31	33	659	817	38	e31	e81	e30
10	27	30	31	e29	30	34	659	897	33	e31	e81	e30
11	28	30	31	29	e30	34	656	959	32	e31	e81	29
12	28	31	33	e29	e30	33	654	955	32	e31	e81	29
13	28	30	32	29	e30	33	653	953	31	e31	e81	27
14	30	30	29	30	e31	33	652	952	29	e31	e81	27
15	31	30	29	28	e31	75	652	952	29	e31	e81	27
16	30	30	28	e29	31	200	652	1070	31	e31	e81	28
17	30	30	29	29	33	285	652	1160	31	e31	e82	29
18	30	30	30	29	33	285	565	1190	31	e31	e82	29
19	30	30	31	e29	34	285	466	1210	31	e31	e82	29
20	30	30	32	29	30	285	467	1210	31	e51	e82	29
21	30	30	34	28	30	285	467	1190	30	e79	e82	29
22	30	30	36	29	31	285	579	1190	30	e79	e82	28
23	30	30	32	29	e30	285	658	1190	30	e79	e82	28
24	30	30	34	29	e30	285	659	1190	30	e79	e82	29
25	30	30	32	28	e30	285	778	1180	30	e79	e83	29
26	30	30	30	e28	e40	284	862	1180	30	e79	e83	29
27	30	31	30	e28	e35	283	854	1130	30	e79	e83	28
28	30	31	30	e29	e32	283	916	1080	30	e79	e83	29
29	30	31	30	e29	---	284	1010	1070	30	e79	e83	30
30	30	31	29	e30	---	283	1050	1080	30	e79	e83	29
31	30	---	30	e30	---	e283	---	1070	---	e79	e83	---
TOTAL	912	905	961	902	863	5002	18328	32478	2422	1509	2525	1191
MEAN	29.4	30.2	31.0	29.1	30.8	161	611	1048	80.7	48.7	81.5	39.7
MAX	31	31	36	30	40	285	1050	1210	613	79	83	83
MIN	27	30	28	28	28	30	281	817	29	31	80	27
AC-FT	1810	1800	1910	1790	1710	9920	36350	64420	4800	2990	5010	2360

e Estimated.

## PYRAMID AND WINNEMUCCA LAKES BASIN

10344400 LITTLE TRUCKEE RIVER ABOVE BOCA RESERVOIR, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1968, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.0	83.5	123	87.3	131	170	399	543	310	78.1	29.8	25.8
MAX	394	630	725	264	835	374	855	1304	1045	433	180	76.5
(WY)	1963	1951	1965	1956	1963	1967	1952	1952	1967	1967	1940	1959
MIN	13.5	13.0	11.6	9.45	22.0	39.0	106	171	45.7	6.06	4.45	5.93
(WY)	1962	1940	1960	1962	1948	1948	1961	1961	1954	1949	1949	1948

## SUMMARY STATISTICS

WATER YEARS 1939 - 1968

ANNUAL MEAN	170
HIGHEST ANNUAL MEAN	321
LOWEST ANNUAL MEAN	58.9
HIGHEST DAILY MEAN	8810
LOWEST DAILY MEAN	3.0
ANNUAL SEVEN-DAY MINIMUM	4.0
INSTANTANEOUS PEAK FLOW	13300
INSTANTANEOUS PEAK STAGE	9.00
ANNUAL RUNOFF (AC-FT)	123200
10 PERCENT EXCEEDS	454
50 PERCENT EXCEEDS	70
90 PERCENT EXCEEDS	13

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	82.7	43.9	71.2	76.7	64.8	124	306	567	331	149	108	57.0
MAX	503	132	711	349	149	368	923	1371	1733	1301	573	359
(WY)	1974	1975	1984	1984	1975	1983	1986	1969	1983	1983	1975	1971
MIN	.56	.75	2.85	16.7	10.6	13.8	25.6	30.6	28.1	24.1	1.65	.47
(WY)	1970	1970	1970	1980	1970	1970	1970	1988	1988	1981	1969	1969

## SUMMARY STATISTICS

FOR 1993 CALENDAR YEAR

FOR 1994 WATER YEAR

WATER YEARS 1969 - 1994

ANNUAL TOTAL	31564	67998	
ANNUAL MEAN	86.5	186	166
HIGHEST ANNUAL MEAN			427
LOWEST ANNUAL MEAN			53.4
HIGHEST DAILY MEAN	464	Jun 26	1210
LOWEST DAILY MEAN	26	Sep 21	27
ANNUAL SEVEN-DAY MINIMUM	27	Sep 16	28
INSTANTANEOUS PEAK FLOW			1220
INSTANTANEOUS PEAK STAGE			2.83
ANNUAL RUNOFF (AC-FT)	62610	134900	120000
10 PERCENT EXCEEDS	289	794	458
50 PERCENT EXCEEDS	31	31	44
90 PERCENT EXCEEDS	27	29	27



## 10344490 BOCA RESERVOIR NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'20", long 120°05'43", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, in control house at Boca Dam on Little Truckee River, 1,800 ft upstream from mouth, and 6.3 mi northeast of Truckee.

DRAINAGE AREA.--172 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1938 to current year. Prior to October 1976 published as "at Boca." Monthend contents only for December 1938 to September 1957, published in WSP 1734.

REVISED RECORDS.--WSP 1634: Drainage area.

GAGE.--Pressure gage with mercury column read most days. Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,868 acre-ft between elevations 5,521 ft, outlet sill, and 5,605 ft, top of spillway gates. Elevation of spillway (gate open) is 5,589.01 ft. Dead contents, 241 acre-ft. Records, including extremes, represent usable contents at 0800 hours. Water is used for irrigation in the State of Nevada and for power development. See schematic diagram of Truckee River basin.

COOPERATION.--Records and capacity table were provided by U.S. Bureau of Reclamation; not rounded to U.S. Geological Survey standards.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 41,440 acre-ft, Dec. 23, 1955, elevation, 5,605.55 ft; minimum, 37 acre-ft, Mar. 4-9, 1955, elevation, 5,521.65 ft.

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 29,093 acre-ft, May 10, elevation, 5,591.95 ft; minimum, 4,175 acre-ft, Aug. 12-15, elevation, 5,547.40 ft.

Capacity table (elevation, in feet, and contents in acre-feet)  
(Based on table provided by U.S. Bureau of Reclamation, dated November 1970)

5,540	2,356	5,570	13,768
5,545	3,513	5,580	20,002
5,550	4,970	5,590	27,488
5,555	6,725	5,600	36,128
5,560	8,778	5,605	40,868

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16419	17042	18163	18228	---	---	25305	28677	28594	7230	4292	---
2	16449	---	---	18196	18491	18524	25460	28718	27084	7132	---	4352
3	16480	17074	18261	18163	---	---	25616	28635	25382	7014	4263	4367
4	16511	---	18327	---	18556	18294	25616	28594	23589	6898	---	4381
5	---	17105	18392	18163	18556	18228	---	28718	21792	6744	4234	4396
6	16635	17105	18458	---	18589	18163	25969	28718	20243	6649	4219	4411
7	16667	17137	---	18163	18589	18098	26088	28760	18655	---	4219	4426
8	16729	17168	18524	18163	---	---	26088	28926	17295	6461	4219	---
9	16760	17200	18589	18163	18622	18131	26285	29009	15929	6350	---	4502
10	16791	17232	18589	18163	18655	18163	26484	29093	14536	6258	4204	4563
11	16822	17232	18622	18163	18689	18261	26563	28885	13295	6167	---	4609
12	---	17263	18655	18196	18722	18294	26643	28760	12115	---	4175	4640
13	16854	17327	18655	18196	18755	18359	26723	28677	10921	5980	4175	---
14	16854	17359	18655	18196	18788	18392	26843	28635	10266	5814	4175	4764
15	16854	17390	18622	18196	---	18359	26923	28594	9842	5643	4175	---
16	16854	---	---	18196	18821	18556	27003	28553	9451	5574	---	4890
17	16854	17454	18589	18196	---	19088	27285	28594	9112	5499	4204	4952
18	16885	17518	18589	---	18954	19559	27732	28553	8867	5431	---	5002
19	16885	17550	18556	18228	18988	20071	27854	28594	8603	---	4204	5067
20	16916	17582	18524	---	19054	20555	28099	28594	8344	5181	4204	---
21	---	17614	---	18261	19054	21010	28264	28594	8152	5067	4219	5165
22	16916	17646	18491	18261	19088	---	28264	28594	8026	4970	4234	---
23	16916	---	18458	18327	19054	22008	28264	28594	8005	4858	---	5281
24	16916	17742	18458	18327	---	---	28305	28594	7921	4748	4248	5347
25	16948	17807	18425	---	18988	22736	28387	28594	7838	4624	---	5415
26	---	17871	18425	18392	18954	23068	28429	28635	7735	---	4263	5465
27	16948	17904	18392	18392	18854	23439	28594	28760	7633	4381	4278	---
28	---	17968	---	18425	18722	23814	28387	28718	7531	---	4278	5585
29	16948	18033	18327	18425	---	24268	28429	28760	7430	4322	4292	---
30	16979	---	18294	18458	---	24726	28635	28718	7330	4307	---	5723
31	17011	---	18261	18458	---	25072	---	28677	---	4307	4322	---
MAX	---	---	---	---	---	---	---	29093	28594	---	---	---
MIN	---	---	---	---	---	---	---	28553	7330	---	---	---

## 10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA

LOCATION.--Lat 39°23'13", long 120°05'40", in NE 1/4 NW 1/4 sec.28, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on right bank 800 ft upstream from mouth, 1,000 ft downstream from Boca Dam, and 6.2 mi northeast of Truckee.

DRAINAGE AREA.--173 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to current year. Prior to October 1976 published as "at Boca." Monthly discharge only for January 1939 to September 1957, published in WSP 1734.

REVISED RECORDS.--WDR CA-79-3: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,500 ft above sea level, from topographic map. Jan. 1, 1911, to Sept. 30, 1915, nonrecording gage at site 650 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Boca Reservoir (station 10344490) since 1938, Independence Lake (station 10342900) since 1939, and Stampede Reservoir (station 10344300) since 1969. There is one transmountain diversion to Sierra Valley of about 6,000 acre-ft per year. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft<sup>3</sup>/s, Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow for many days in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,510 ft<sup>3</sup>/s, May 27, gage height, 5.15 ft; no flow Sept. 13-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	14	2.7	47	18	94	190	1070	1060	81	80	68
2	20	13	2.6	47	18	94	213	1110	1060	84	80	68
3	20	13	2.6	37	18	94	240	1120	1140	84	80	68
4	20	13	2.6	29	18	94	327	1040	1120	84	80	68
5	20	13	2.6	29	18	94	336	954	1010	77	80	68
6	19	13	2.6	29	18	94	384	872	929	73	80	68
7	19	13	2.7	29	18	58	443	788	830	72	80	39
8	19	13	12	29	18	51	530	770	732	72	80	3.6
9	19	13	22	29	18	51	564	788	734	72	79	1.3
10	19	13	22	29	18	38	580	951	716	71	80	2.0
11	19	13	22	29	18	29	626	1030	628	71	80	3.8
12	19	10	22	29	18	28	627	1010	614	71	78	2.5
13	18	8.5	26	29	18	28	627	999	433	70	73	.00
14	24	8.5	39	29	18	54	628	987	262	73	73	.00
15	29	8.5	39	29	18	51	628	980	220	78	73	.00
16	29	8.5	39	29	18	14	564	1090	209	81	73	.00
17	28	8.5	39	29	18	47	464	1180	167	81	73	.00
18	28	8.5	39	22	18	17	436	1200	146	81	73	.00
19	28	8.5	39	18	18	45	367	1210	145	81	73	.00
20	28	8.5	39	18	18	50	359	1210	132	100	73	.00
21	27	8.5	39	18	18	50	465	1210	101	127	73	.00
22	27	5.7	39	18	36	51	584	1210	55	128	73	.00
23	27	2.2	39	18	47	71	635	1200	52	130	73	.00
24	27	2.4	39	18	47	81	636	1180	68	129	73	.00
25	27	2.4	39	18	46	90	752	1180	76	128	73	.00
26	27	2.6	39	18	78	94	810	1140	76	128	73	.00
27	27	2.5	44	18	95	95	911	1150	76	109	73	.00
28	27	2.6	47	18	95	82	960	1110	76	80	73	.00
29	19	2.7	47	18	---	63	960	1110	75	81	71	.00
30	15	2.7	47	18	---	78	1040	1120	75	81	68	.00
31	15	---	47	18	---	159	---	1130	---	81	68	---
TOTAL	710	256.3	883.4	793	822	2039	16886	33099	13017	2759	2332	460.20
MEAN	22.9	8.54	28.5	25.6	29.4	65.8	563	1068	434	89.0	75.2	15.3
MAX	29	14	47	47	95	159	1040	1210	1140	130	80	68
MIN	15	2.2	2.6	18	18	14	190	770	52	70	68	.00
AC-FT	1410	508	1750	1570	1630	4040	33490	65650	25820	5470	4630	913

## 10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM, NEAR TRUCKEE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1915, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.8	38.1	29.2	83.4	75.5	196	721	790	582	169	36.5	26.3
MAX	34.2	58.4	39.3	283	173	558	1367	1260	1211	435	66.3	35.7
(WY)	1915	1913	1914	1914	1914	1914	1914	1911	1911	1911	1911	1912
MIN	14.1	28.4	23.2	20.5	28.4	56.3	106	379	212	50.7	20.1	14.4
(WY)	1914	1915	1912	1913	1912	1912	1912	1912	1913	1912	1915	1915

## SUMMARY STATISTICS

## WATER YEARS 1911 - 1915

ANNUAL MEAN	193
HIGHEST ANNUAL MEAN	387
LOWEST ANNUAL MEAN	94.7
HIGHEST DAILY MEAN	2360
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
ANNUAL RUNOFF (AC-FT)	140100
10 PERCENT EXCEEDS	800
50 PERCENT EXCEEDS	49
90 PERCENT EXCEEDS	16

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1969, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	89.7	106	144	156	160	132	264	426	315	159	146	120
MAX	303	611	856	649	606	442	808	1647	974	389	408	414
(WY)	1968	1951	1951	1965	1963	1967	1952	1952	1967	1967	1958	1952
MIN	.000	.12	.20	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1940	1967	1960	1939	1939	1939	1939	1939	1939	1939	1939	1939

## SUMMARY STATISTICS

## WATER YEARS 1939 - 1969

ANNUAL MEAN	190
HIGHEST ANNUAL MEAN	435
LOWEST ANNUAL MEAN	65.8
HIGHEST DAILY MEAN	5520
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
INSTANTANEOUS PEAK FLOW	8800
ANNUAL RUNOFF (AC-FT)	137700
10 PERCENT EXCEEDS	430
50 PERCENT EXCEEDS	107
90 PERCENT EXCEEDS	.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	109	74.5	98.8	85.5	69.8	115	266	484	304	186	147	104
MAX	441	327	568	410	256	470	975	1148	1788	1131	585	418
(WY)	1972	1984	1984	1984	1975	1983	1986	1985	1983	1983	1975	1971
MIN	.035	.020	.11	.10	4.19	.54	.39	.31	2.63	.75	13.6	.55
(WY)	1991	1991	1978	1978	1978	1979	1988	1988	1977	1981	1984	1970

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1970 - 1994

ANNUAL TOTAL	33550.89	74056.90	
ANNUAL MEAN	91.9	203	171
HIGHEST ANNUAL MEAN			470
LOWEST ANNUAL MEAN			55.6
HIGHEST DAILY MEAN	604	Jun 25	1210
LOWEST DAILY MEAN	.05	Jan 23	.00
ANNUAL SEVEN-DAY MINIMUM	.32	Mar 9	.00
INSTANTANEOUS PEAK FLOW			1510
INSTANTANEOUS PEAK STAGE			5.15
ANNUAL RUNOFF (AC-FT)	66550	146900	123800
10 PERCENT EXCEEDS	230	918	433
50 PERCENT EXCEEDS	39	51	75
90 PERCENT EXCEEDS	1.7	3.2	.60

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM NEAR TRUCKEE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: April 1993 to current year.

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1993 to current year.

INSTRUMENTATION.--Water-temperature recorder since April 1993.

REMARKS.--Records good. Water temperature is affected by regulation from Boca Dam.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 19.5°C, July 20, 24, 1994; minimum recorded, 2.5°C, December 19, 1993.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 19.5°C, July 20, 24; minimum recorded, 2.5°C, December 19.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.5	13.5	11.5	10.0	5.0	3.5	3.5	3.5	4.5	3.5	4.5	4.0
2	15.5	13.5	11.5	9.5	5.5	4.0	4.0	3.5	4.5	3.5	4.5	4.0
3	15.0	13.5	11.0	9.0	5.0	3.5	4.0	3.5	4.5	4.0	4.0	4.0
4	14.0	13.5	11.0	9.0	5.5	3.5	4.0	3.5	5.0	4.0	4.5	4.0
5	14.0	13.0	10.5	9.0	5.0	3.5	4.0	3.5	4.5	3.5	4.5	4.0
6	14.5	13.5	10.5	9.0	4.0	3.5	4.0	3.5	4.5	4.0	4.5	4.0
7	15.0	13.0	10.0	8.5	4.5	3.5	4.0	3.5	5.0	4.0	5.0	4.0
8	14.5	13.0	10.0	8.5	4.5	3.5	4.0	3.5	5.0	4.0	5.0	4.0
9	14.0	13.0	9.5	8.0	4.5	4.0	4.0	3.5	5.0	3.5	5.0	4.0
10	14.5	13.0	9.0	8.5	4.5	4.0	4.0	3.5	4.5	3.5	5.0	3.5
11	14.0	13.0	9.5	8.5	4.0	3.5	4.5	3.5	5.0	3.5	5.0	4.0
12	14.5	13.0	9.0	8.0	4.0	3.5	4.5	3.5	4.5	3.5	5.5	4.0
13	14.0	13.0	9.0	7.0	4.0	3.5	4.5	3.5	5.0	3.5	5.5	4.5
14	13.5	13.0	8.0	6.5	4.0	3.5	4.5	3.5	5.0	3.5	5.5	4.5
15	13.5	13.0	8.0	6.0	3.5	3.0	4.5	3.5	5.0	3.5	5.5	4.5
16	13.5	13.0	7.5	6.0	3.5	3.0	4.5	3.5	5.0	4.0	8.0	4.5
17	13.5	12.5	7.5	6.0	3.5	3.0	4.5	3.5	4.5	3.5	7.0	5.5
18	13.5	12.0	7.5	6.0	3.5	3.0	4.5	3.5	4.5	3.5	7.5	5.0
19	13.0	12.0	7.0	5.5	3.5	2.5	4.5	3.5	4.5	3.5	6.5	5.5
20	13.0	12.0	7.0	5.5	3.5	3.0	4.5	3.5	5.0	3.5	6.5	5.5
21	12.5	11.5	6.5	5.5	3.5	3.0	4.5	4.0	4.5	4.0	6.5	5.5
22	12.5	11.5	6.5	5.0	3.5	3.0	4.5	3.5	4.5	3.5	6.0	5.5
23	12.5	11.5	6.5	4.0	3.5	3.0	4.5	4.0	4.5	4.0	6.0	5.5
24	12.5	11.0	5.0	3.5	3.5	3.0	4.0	4.0	4.5	4.0	6.0	5.5
25	12.5	11.0	4.5	3.5	3.5	3.0	4.5	4.0	4.5	4.0	6.5	5.5
26	12.0	11.0	4.5	3.5	3.5	3.0	4.5	4.0	4.5	4.0	7.0	6.0
27	12.0	11.0	4.5	3.5	3.5	3.5	4.5	4.0	4.5	4.0	6.5	6.0
28	11.5	10.5	4.5	4.0	3.5	3.5	4.5	3.5	4.5	4.0	6.5	6.0
29	12.0	10.5	5.5	4.5	3.5	3.5	4.5	3.5	---	---	6.5	6.0
30	12.0	10.5	5.5	4.0	3.5	3.5	5.0	3.5	---	---	6.5	6.0
31	11.5	10.0	---	---	3.5	3.0	4.5	3.5	---	---	7.0	6.0
MONTH	15.5	10.0	11.5	3.5	5.5	2.5	5.0	3.5	5.0	3.5	8.0	3.5

10344500 LITTLE TRUCKEE RIVER BELOW BOCA DAM NEAR TRUCKEE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.5	6.0	8.5	8.5	11.5	11.0	17.5	16.0	19.0	18.0	16.0	15.0
2	6.5	6.0	8.5	8.5	11.5	10.5	17.5	16.5	18.5	18.0	16.0	15.0
3	6.5	6.0	9.0	8.5	11.5	10.5	17.5	16.5	18.5	17.5	16.0	15.5
4	6.5	6.0	9.0	8.0	11.5	10.5	17.5	16.5	18.5	17.5	16.0	15.0
5	6.5	6.0	9.5	8.5	12.5	11.0	18.0	16.5	18.5	17.5	15.5	14.5
6	7.5	6.5	9.0	9.0	12.0	11.0	17.5	16.5	18.5	17.5	15.5	14.5
7	7.0	6.5	9.0	8.5	12.5	11.5	17.5	16.5	19.0	17.0	15.5	14.5
8	7.0	6.5	9.5	9.0	13.5	12.0	18.0	16.5	18.5	17.0	17.0	13.0
9	7.5	6.5	10.0	9.5	13.5	12.5	18.5	16.5	18.5	17.5	16.5	13.5
10	7.5	6.5	10.0	9.0	14.0	13.0	18.0	17.0	18.5	17.5	16.5	13.5
11	7.0	6.5	10.0	9.0	15.0	13.5	18.0	17.0	18.0	17.5	17.0	13.5
12	7.0	6.5	10.0	9.5	16.0	13.5	18.0	17.0	18.0	17.5	16.0	13.5
13	7.5	6.5	10.0	9.5	15.5	14.0	18.0	17.0	18.0	17.0	15.5	13.0
14	7.5	6.5	10.0	8.5	15.5	14.0	18.5	17.0	19.0	16.5	16.5	12.5
15	7.5	7.0	10.0	9.0	15.5	14.5	18.5	17.5	18.0	17.0	16.0	13.0
16	8.0	7.0	10.0	9.0	15.5	14.5	19.0	17.5	18.0	17.0	16.0	13.0
17	8.0	7.0	10.0	9.0	16.0	15.0	19.0	17.5	17.5	17.0	15.5	13.5
18	8.0	7.0	10.0	9.0	15.5	15.0	18.5	18.0	17.5	17.0	15.0	13.0
19	7.5	7.0	9.5	9.5	16.0	15.0	19.0	18.0	18.0	16.0	15.5	13.0
20	7.5	7.0	9.5	9.5	16.0	15.0	19.5	18.0	17.5	16.5	16.5	13.0
21	8.0	7.5	10.0	9.0	16.0	15.0	19.0	18.5	17.5	16.5	16.5	13.5
22	8.0	7.5	10.0	9.5	16.5	15.0	19.0	18.5	17.0	16.5	17.0	13.5
23	8.5	7.5	10.5	9.5	17.0	14.5	19.0	18.5	17.0	16.0	16.0	13.5
24	8.0	7.5	10.0	9.0	16.5	15.0	19.5	18.5	17.0	16.0	16.0	14.0
25	8.5	7.5	9.5	9.5	17.0	15.0	19.0	18.5	16.5	16.0	17.0	14.5
26	8.5	7.5	10.5	9.5	16.5	15.0	19.0	18.5	17.5	16.0	17.0	14.5
27	9.0	7.5	11.5	9.5	17.0	15.5	19.0	18.0	17.0	16.0	17.5	14.5
28	8.0	7.5	11.5	11.0	17.0	15.0	19.0	18.0	17.0	16.0	16.0	14.5
29	8.0	8.0	12.0	11.0	17.0	15.5	19.0	18.0	16.5	16.0	16.0	14.0
30	8.5	8.0	11.5	11.0	18.0	15.5	19.0	18.0	16.5	15.5	15.5	13.5
31	---	---	12.0	11.0	---	---	19.0	18.0	16.5	15.0	---	---
MONTH	9.0	6.0	12.0	8.0	18.0	10.5	19.5	16.0	19.0	15.0	17.5	12.5

## PYRAMID AND WINNEMUCCA LAKES BASIN

10345700 BRONCO CREEK AT FLORISTON, CA

LOCATION.--Lat 39°23'02", long 120°01'11", in SE 1/4 NW 1/4 sec.31, T.18 N., R.18 E., Nevada County, Hydrologic Unit 16050102, on right bank 80 ft upstream from railroad bridge, 200 ft upstream from mouth, and 0.7 mi north of Floriston.

DRAINAGE AREA.--15.4 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,350 ft above sea level, from topographic map.

REMARKS.--Records fair. No storage or diversion upstream from station. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71 ft<sup>3</sup>/s, May 20, 1993, gage height, 4.03 ft; minimum daily, 2.8 ft<sup>3</sup>/s, several days in 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 12	Unknown	*36	Unknown				

Minimum daily, 2.8 ft<sup>3</sup>/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.3	6.8	5.9	4.2	e5.1	5.9	e7.3	e8.0	8.5	4.4	3.2	2.9
2	6.3	6.5	6.0	4.2	e5.0	6.2	e7.4	e9.0	9.0	4.4	3.2	2.9
3	6.4	6.7	6.1	4.3	5.0	6.0	e7.5	e10	9.2	4.4	3.1	3.0
4	7.0	6.6	6.1	4.7	5.1	5.7	e7.0	e12	9.0	4.3	3.0	3.0
5	9.8	6.3	6.3	4.5	5.1	6.1	e6.5	e15	8.7	4.2	3.0	2.9
6	9.5	6.1	6.2	e4.5	5.1	5.8	e6.2	e13	8.3	4.1	3.1	2.9
7	9.1	6.0	6.2	e4.5	5.4	5.6	e5.8	e12	8.0	4.6	3.2	2.8
8	8.5	5.8	6.6	4.5	5.5	5.6	e5.5	e15	8.0	5.3	3.1	2.8
9	8.3	5.8	6.8	4.4	5.2	5.7	e5.2	e16	7.7	5.0	3.6	2.8
10	8.2	5.4	6.3	e4.4	5.3	5.9	e5.6	e18	7.8	4.6	4.0	3.0
11	8.1	5.6	6.4	4.5	e5.3	6.0	e6.5	e19	7.7	4.6	4.0	3.1
12	7.9	5.6	6.4	e4.5	e5.3	5.6	e7.4	e17	7.2	4.4	4.0	3.5
13	7.8	4.6	6.4	4.6	e5.3	5.9	e8.5	e15	7.1	4.4	4.0	3.5
14	8.2	4.6	6.5	4.6	e5.3	6.4	e10	e13	6.3	4.2	3.8	3.2
15	8.5	7.4	6.3	4.7	5.3	6.7	e11	e10	6.6	4.1	3.6	3.0
16	8.0	7.0	5.7	4.7	5.3	6.7	e12	e9.0	6.9	4.4	3.4	3.0
17	7.6	6.4	e5.6	4.7	6.0	6.0	e16	e8.0	7.0	4.6	3.4	3.0
18	7.6	5.8	e5.5	4.7	5.7	5.8	e17	e8.2	7.3	4.0	3.3	2.9
19	7.7	6.0	e5.4	4.5	5.8	5.6	e15	e8.5	7.2	3.9	3.1	2.9
20	6.9	8.3	e5.3	4.6	5.3	5.6	e13	e9.4	6.5	3.8	3.1	2.9
21	6.4	5.8	e5.3	4.9	5.2	5.8	e11	e9.8	5.8	3.7	3.1	2.9
22	6.8	6.0	e5.2	5.0	5.1	5.5	e10	e10	5.5	3.9	3.0	2.8
23	6.7	5.7	e5.1	5.6	e5.2	6.2	e8.8	e11	5.3	3.7	3.0	2.8
24	6.7	e5.6	e5.0	5.3	e5.2	5.1	e7.8	e12	5.1	3.4	3.0	3.4
25	6.3	e5.5	5.0	5.5	e5.3	4.9	e6.9	e12	5.0	3.5	3.0	4.0
26	6.4	e5.4	5.0	5.6	e5.3	4.7	e6.4	e12	4.9	3.4	3.0	3.3
27	6.8	e5.3	5.1	5.6	5.4	5.1	e6.4	e11	4.9	3.3	3.0	3.1
28	7.1	5.1	4.5	5.4	5.5	5.8	e6.6	e10	4.8	3.2	2.9	3.6
29	7.1	5.5	4.2	e5.4	---	6.2	e7.0	e10	4.6	3.2	2.9	4.0
30	7.2	6.0	4.2	e5.3	---	e6.8	e7.6	e9.8	4.5	3.4	2.8	4.0
31	6.9	---	4.1	e5.2	---	e7.0	---	e9.2	---	3.3	2.8	---
TOTAL	232.1	179.2	174.7	149.1	148.6	181.9	258.9	361.9	204.4	125.7	100.7	93.9
MEAN	7.49	5.97	5.64	4.81	5.31	5.87	8.63	11.7	6.81	4.05	3.25	3.13
MAX	9.8	8.3	6.8	5.6	6.0	7.0	17	19	9.2	5.3	4.0	4.0
MIN	6.3	4.6	4.1	4.2	5.0	4.7	5.2	8.0	4.5	3.2	2.8	2.8
AC-FT	460	355	347	296	295	361	514	718	405	249	200	186

e Estimated.

## 10345700 BRONCO CREEK AT FLORISTON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.49	5.97	5.64	4.81	5.31	5.87	8.63	23.6	22.6	14.0	6.50	5.13
MAX	7.49	5.97	5.64	4.81	5.31	5.87	8.63	35.5	38.3	23.9	9.75	7.14
(WY)	1994	1994	1994	1994	1994	1994	1994	1993	1993	1993	1993	1993
MIN	7.49	5.97	5.64	4.81	5.31	5.87	8.63	11.7	6.81	4.05	3.25	3.13
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	2211.1		
ANNUAL MEAN	6.06	6.06	
HIGHEST ANNUAL MEAN		6.06	1994
LOWEST ANNUAL MEAN		6.06	1994
HIGHEST DAILY MEAN	19	May 11	54
LOWEST DAILY MEAN	2.8	Aug 30	2.8
ANNUAL SEVEN-DAY MINIMUM	2.9	Aug 27	2.9
INSTANTANEOUS PEAK FLOW	36	May 12	71
INSTANTANEOUS PEAK STAGE	Unknown	May 12	4.03
ANNUAL RUNOFF (AC-FT)	4390		4390
10 PERCENT EXCEEDS	9.2		29
50 PERCENT EXCEEDS	5.5		6.6
90 PERCENT EXCEEDS	3.1		3.4

10345700 BRONCO CREEK AT FLORISTON, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF RECORD.--

WATER TEMPERATURE: April 1993 to September 1994 (discontinued).

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1993 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorded since April 1993.

REMARKS.--Equipment malfunction Oct. 1, May 11-12. Equipment stolen Mar. 30 to Apr. 4.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 16.5°C, July 20, 23, 1994; minimum recorded, 0.0°C, Mar. 23, 1994.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 16.5°C, July 20, 23; minimum recorded, 0.0°C, Mar. 23.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	5.5	3.5	3.0	.5	3.0	2.0	.5	.5	5.0	2.0
2	10.5	6.5	5.0	2.0	2.5	1.5	3.5	2.0	1.5	.5	5.5	2.0
3	10.5	6.5	5.5	2.0	3.0	1.0	3.0	2.0	2.0	1.0	5.0	2.5
4	9.0	7.5	5.5	3.0	3.5	1.5	3.5	2.5	3.0	2.0	5.5	2.0
5	8.5	6.0	4.5	2.0	2.0	.5	3.0	1.5	2.5	.5	5.5	3.5
6	8.0	5.0	4.0	1.5	2.5	1.0	1.5	.5	3.0	1.5	5.5	3.0
7	8.5	6.0	4.5	2.0	3.0	2.0	1.5	.5	3.0	1.5	5.5	1.5
8	7.5	5.0	5.0	1.5	3.5	2.5	2.5	1.0	3.0	1.0	5.5	1.5
9	7.5	5.5	5.0	2.0	4.5	3.0	2.0	1.0	3.0	.5	5.5	1.5
10	9.0	6.0	5.5	3.5	4.5	2.5	2.0	.5	2.5	.5	5.5	1.5
11	8.5	6.5	5.0	4.0	3.5	1.5	2.0	.5	1.5	.5	4.5	2.0
12	8.0	5.0	4.0	2.5	2.0	.5	2.0	.5	1.0	.5	5.0	1.5
13	8.0	6.0	3.0	1.0	3.0	1.0	2.0	.5	2.5	.5	5.5	1.0
14	7.5	6.5	2.0	1.0	2.5	1.5	2.5	.5	2.5	.5	6.5	1.5
15	7.0	5.5	2.0	.5	2.0	1.0	2.5	1.5	3.0	1.0	6.5	3.0
16	6.5	5.0	3.0	.5	2.0	.5	2.5	.5	3.5	1.5	6.0	3.0
17	6.5	5.0	3.0	1.5	.5	.5	2.5	1.0	3.0	.5	5.5	1.5
18	6.5	3.5	3.0	1.5	1.0	.5	2.5	1.0	1.5	.5	6.0	3.0
19	6.5	3.0	2.0	.5	.5	.5	2.5	.5	2.0	.5	6.0	3.0
20	7.0	3.5	2.5	.5	.5	.5	3.0	1.0	2.5	1.0	6.0	1.5
21	7.0	5.5	3.0	.5	.5	.5	3.0	1.5	2.5	1.0	6.0	3.0
22	7.0	3.5	3.5	2.5	.5	.5	3.0	1.0	3.0	1.0	3.5	1.0
23	7.0	4.0	2.5	1.0	1.0	.5	3.0	2.0	3.0	.5	3.0	.0
24	7.5	4.5	1.0	.5	1.0	.5	2.5	1.5	3.5	1.5	5.0	1.5
25	7.0	4.0	.5	.5	1.5	.5	2.5	1.5	4.5	2.0	4.0	2.5
26	6.5	4.0	.5	.5	2.0	1.5	2.5	1.5	4.0	2.5	6.0	1.0
27	6.0	3.0	2.5	.5	3.0	2.0	2.0	1.0	4.5	3.0	6.5	1.5
28	6.5	3.0	3.0	2.5	2.5	1.5	2.0	.5	5.0	2.5	7.0	2.0
29	7.0	5.0	4.0	2.5	2.5	1.5	1.5	.5	---	---	6.5	2.5
30	7.0	3.5	3.0	1.5	2.5	1.5	2.0	.5	---	---	---	---
31	7.0	5.0	---	---	2.5	1.0	1.0	.5	---	---	---	---
MONTH	---	---	5.5	.5	4.5	.5	3.5	.5	5.0	.5	---	---



10345700 BRONCO CREEK AT FLORISTON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	9.0	3.0	12.5	6.5	14.0	8.0	15.5	10.5	12.5	7.5
2	---	---	9.5	4.5	12.5	7.0	14.5	8.0	15.0	9.5	12.0	7.5
3	---	---	9.0	4.5	11.5	6.5	15.0	8.5	15.0	9.5	11.5	6.0
4	---	---	9.0	5.0	12.0	6.0	15.0	9.5	15.5	10.0	12.5	7.0
5	6.5	1.5	9.0	4.5	11.5	6.0	14.5	8.5	15.0	9.5	12.0	8.0
6	5.5	3.5	7.0	4.5	10.0	6.5	14.0	8.5	14.5	9.0	13.0	8.0
7	6.0	2.5	6.5	3.0	10.5	4.0	15.0	9.0	14.5	8.5	13.0	8.0
8	4.5	3.0	10.0	3.5	12.0	5.5	15.5	9.5	14.5	10.5	12.5	8.5
9	4.0	2.5	11.5	5.0	13.0	7.0	16.0	10.0	15.0	9.5	11.5	8.5
10	6.5	2.0	12.0	5.5	14.0	8.0	15.0	9.0	15.0	10.5	10.5	6.5
11	7.5	1.5	---	---	14.0	8.5	15.5	9.5	15.5	10.5	8.5	5.0
12	8.0	2.5	---	---	13.0	8.0	16.0	10.0	15.5	10.5	8.0	5.5
13	8.5	2.5	12.0	5.5	13.5	9.0	16.0	10.0	15.5	10.0	9.5	5.5
14	9.0	3.5	11.5	5.5	12.0	7.0	15.5	9.5	16.0	10.5	10.0	5.5
15	9.5	3.5	9.0	5.5	10.5	6.0	16.0	10.5	16.0	10.5	10.5	6.0
16	9.0	4.0	5.5	3.0	10.5	4.5	15.0	11.0	15.0	9.5	11.0	6.0
17	9.5	4.5	6.0	2.5	11.0	5.0	16.0	10.5	14.5	8.5	10.5	7.5
18	10.0	4.0	5.5	3.5	12.0	5.0	15.5	10.0	15.0	9.5	11.0	7.0
19	10.5	4.5	7.0	3.5	13.0	7.0	15.5	10.0	14.5	9.0	11.5	7.5
20	10.0	3.0	7.5	3.0	13.5	8.5	16.5	11.5	13.5	8.0	12.0	7.5
21	9.0	3.5	9.5	3.5	13.5	7.5	15.5	11.0	13.0	7.5	11.5	7.0
22	8.0	3.0	10.5	3.5	13.5	7.5	15.5	12.0	13.0	7.5	11.5	7.0
23	5.0	3.0	11.0	5.5	13.5	8.0	16.5	11.0	13.5	8.5	11.5	7.5
24	5.0	2.0	11.5	5.5	13.5	8.0	16.0	10.5	13.5	8.0	11.5	9.0
25	4.0	2.0	11.5	7.0	14.0	8.0	15.5	9.0	13.0	7.5	11.5	8.0
26	5.0	1.5	10.5	7.0	14.0	7.5	16.0	10.0	13.0	8.0	12.0	7.5
27	5.5	3.0	12.0	7.0	14.0	8.5	15.5	10.0	14.0	9.0	12.0	8.0
28	7.0	3.0	11.5	5.0	15.5	9.0	16.0	10.0	13.5	9.0	10.5	8.5
29	7.5	2.5	12.5	6.0	15.0	9.0	16.0	11.5	12.5	7.0	10.5	8.0
30	8.5	3.5	12.0	6.5	15.0	9.5	15.5	12.5	13.0	7.5	10.0	6.5
31	---	---	12.5	8.0	---	---	16.0	11.0	13.0	8.0	---	---
MONTH	---	---	---	---	15.5	4.0	16.5	8.0	16.0	7.0	13.0	5.0

## PYRAMID AND WINNEMUCCA LAKES BASIN

10346000 TRUCKEE RIVER AT FARAD, CA

LOCATION.--Lat 39°25'41", long 120°01'59", in SE 1/4 NE 1/4 sec.12, T.18 N., R.17 E., Nevada County, Hydrologic Unit 16050102, on left bank 0.5 mi upstream from Mystic Canyon, 0.7 mi downstream from Farad Powerplant, 2.5 mi north of Floriston, and 3.5 mi upstream from California-Nevada State line.

DRAINAGE AREA.--932 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to October 1890 (monthly discharge only), September 1899 to current year. Monthly discharge only for January 1944 to July 1957, published in WSP 1734. Published as "near Boca," March to October 1890, "at or near Nevada-California State Line," September 1899 to August 1912, and as "at Iceland," August 1912 to December 1937.

REVISED RECORDS.--WSP 1714: Drainage area. WDR CA-88-3: 1906-07 (monthly runoff).

GAGE.--Water-stage recorder. Datum of gage is 5,153.21 ft above sea level (U.S. Bureau of Reclamation benchmark). See WSP 2127 for history of changes prior to Aug. 26, 1957.

REMARKS.--Records good. Flow regulated by Lake Tahoe and Donner, Martis Creek, and Independence Lakes, and Prosser Creek, Stampede, and Boca Reservoirs (stations 10337000, 10338400, 10339380, 10342900, 10340300, 10344300, and 10344490), and by several powerplants. See schematic diagram of Truckee River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft<sup>3</sup>/s, Nov. 21, 1950, gage height, 14.5 ft, present datum, from floodmarks, from slope-area measurement of peak flow; minimum, 28 ft<sup>3</sup>/s, Dec. 18, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,700 ft<sup>3</sup>/s, May 12, gage height, 5.01 ft; minimum daily, 69 ft<sup>3</sup>/s, Nov. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	119	81	e130	107	225	458	1230	1310	135	126	108
2	155	93	88	e125	109	242	490	1280	1280	140	126	108
3	152	86	84	e122	109	273	518	1320	1360	140	128	109
4	148	96	85	e109	103	259	600	1290	1300	137	126	109
5	179	93	83	e128	90	283	589	1250	1190	130	127	109
6	175	90	82	e133	88	312	599	1260	1060	124	124	109
7	156	89	83	e126	86	278	620	1160	931	159	120	101
8	144	88	88	e122	97	286	e684	1100	812	170	117	104
9	139	87	134	e117	90	291	e720	1190	809	167	117	103
10	136	86	146	e115	103	293	e720	1420	812	164	118	95
11	133	89	165	e115	101	299	e764	1550	721	164	114	100
12	128	89	160	113	101	276	e777	1560	703	159	114	101
13	125	83	158	115	113	269	e789	1480	555	159	107	95
14	134	79	148	113	103	284	e822	1440	380	159	106	93
15	161	76	145	107	111	301	e869	1400	328	162	110	90
16	175	77	139	103	109	312	e883	1390	315	167	107	87
17	156	94	131	103	137	348	e842	1410	279	167	101	86
18	143	100	125	103	140	283	e862	1410	244	162	103	85
19	142	78	128	95	157	275	e856	1430	242	170	106	83
20	153	76	128	91	164	277	e848	1410	231	167	106	81
21	150	78	145	90	154	283	880	1400	202	175	106	80
22	147	79	e155	91	162	286	952	1410	160	170	107	78
23	143	72	e137	97	144	278	957	1400	123	172	106	77
24	139	69	e137	97	137	287	916	1390	141	167	105	77
25	136	74	e128	109	144	284	963	1410	151	167	106	79
26	134	94	e114	119	172	283	1000	1410	147	164	106	74
27	131	94	e99	109	219	282	1080	1450	145	159	107	72
28	130	73	e137	109	219	288	1130	1400	142	117	109	73
29	124	73	e137	103	---	293	1120	1380	138	119	111	78
30	114	84	e137	107	---	302	1180	1390	133	115	108	75
31	113	---	e140	107	---	401	---	1390	---	124	108	---
TOTAL	4453	2558	3847	3423	3569	8933	24488	42410	16344	4751	3482	2719
MEAN	144	85.3	124	110	127	288	816	1368	545	153	112	90.6
MAX	179	119	165	133	219	401	1180	1560	1360	175	128	109
MIN	113	69	81	90	86	225	458	1100	123	115	101	72
AC-FT	8830	5070	7630	6790	7080	17720	48570	84120	32420	9420	6910	5390

e Estimated.

## 10346000 TRUCKEE RIVER AT FARAD, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	384	427	527	547	622	765	1264	1700	1240	638	503	459
MAX	982	2469	3596	3053	2394	4073	3887	5674	5214	2921	1084	1482
(WY)	1972	1984	1984	1984	1986	1986	1952	1952	1983	1983	1975	1983
MIN	51.0	55.6	80.4	77.7	85.3	142	369	349	142	53.9	53.9	47.3
(WY)	1978	1991	1991	1991	1933	1933	1977	1934	1931	1931	1931	1933

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1909 - 1994
ANNUAL TOTAL	210444	120977	
ANNUAL MEAN	577	331	749
HIGHEST ANNUAL MEAN			2443
LOWEST ANNUAL MEAN			184
HIGHEST DAILY MEAN	2370	May 24	1560
LOWEST DAILY MEAN	69	Nov 24	69
ANNUAL SEVEN-DAY MINIMUM	75	Nov 19	75
INSTANTANEOUS PEAK FLOW			1700
INSTANTANEOUS PEAK STAGE			5.01
ANNUAL RUNOFF (AC-FT)	417400	240000	542400
10 PERCENT EXCEEDS	1340	1140	1640
50 PERCENT EXCEEDS	403	137	503
90 PERCENT EXCEEDS	98	86	195

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD. --

CHEMICAL DATA: Water years 1951-61, 1964-81. Published as Truckee River at Floriston (station 10345900) January 1964 to September 1971.

BIOLOGICAL DATA: Water years 1975-77.

SPECIFIC CONDUCTANCE: Water years 1964-80, July 1993 to current year.

WATER TEMPERATURE: Water years 1964-81, July 1993 to current year.

SUSPENDED SEDIMENT: Water years 1974, 1978.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1964 to September 1980, July 1993 to current year.

WATER TEMPERATURE: January 1964 to September 1981, July 1993 to current year.

INSTRUMENTATION.--Water-quality monitor since July 1993.

REMARKS.--Water temperature and specific conductance are affected by upstream reservoirs and several powerplants.  
Interruption of record due to recorder malfunction.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily recorded, 377 micromhos Dec. 27, 1979; minimum daily recorded, 39 micromhos Dec. 23, 1964.

WATER TEMPERATURE: Maximum recorded, 23.0°C Aug. 5, 1994; minimum recorded, -0.5°C Nov. 25, 1993.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 220 microsiemens Sept. 20, 21; minimum recorded, 68 microsiemens May 12.

WATER TEMPERATURE: Maximum recorded, 23.0°C, Aug. 5; minimum recorded, -0.5°C, Nov. 25.

## SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	139	137	146	143	176	172	---	---	---	---	---	---
2	139	138	157	145	176	168	---	---	---	---	---	---
3	140	139	167	128	170	164	---	---	181	152	---	---
4	148	139	159	156	173	163	---	---	175	159	136	126
5	146	127	161	158	171	166	---	---	183	163	129	125
6	144	130	161	159	175	165	---	---	191	173	126	122
7	145	140	162	159	175	165	---	---	187	170	140	120
8	144	140	162	159	172	166	---	---	184	172	129	124
9	144	143	162	159	170	152	---	---	184	168	125	122
10	145	144	165	155	170	151	---	---	182	167	126	122
11	146	144	164	158	151	134	---	---	174	158	129	121
12	147	145	162	158	138	131	---	---	184	161	130	127
13	148	146	167	161	140	131	---	---	181	155	129	127
14	147	143	171	166	142	135	---	---	176	155	127	122
15	143	138	172	165	144	139	---	---	190	153	125	121
16	140	137	176	164	144	141	---	---	183	155	124	113
17	139	136	173	163	144	138	---	---	174	158	117	102
18	140	137	173	164	158	137	---	---	158	150	124	106
19	144	139	176	166	163	136	---	---	156	141	124	120
20	143	135	176	165	---	---	---	---	146	139	121	119
21	136	134	176	163	---	---	---	---	145	140	121	119
22	136	135	175	164	---	---	---	---	146	137	119	117
23	137	135	180	170	---	---	---	---	150	135	118	113
24	137	135	182	176	---	---	---	---	161	148	117	115
25	138	136	180	175	---	---	---	---	165	149	118	115
26	138	136	180	175	---	---	---	---	172	141	116	113
27	138	136	183	177	---	---	---	---	149	140	116	115
28	138	136	181	174	---	---	---	---	152	139	117	114
29	140	137	177	172	---	---	---	---	---	---	116	112
30	145	140	176	171	---	---	---	---	---	---	116	111
31	145	144	---	---	---	---	---	---	---	---	112	97
MONTH	148	127	183	128	---	---	---	---	---	---	---	---

10346000 TRUCKEE RIVER AT FARAD, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	97	94	77	76	71	71	---	---	---	---	168	151
2	95	92	77	75	72	71	---	---	---	---	155	147
3	94	89	76	75	72	71	---	---	---	---	155	151
4	90	88	76	74	72	71	---	---	---	---	156	152
5	90	88	75	74	73	72	---	---	152	147	157	153
6	90	87	75	73	74	73	---	---	157	150	157	155
7	88	86	78	74	76	74	---	---	161	151	161	156
8	---	---	77	76	76	75	---	---	166	159	219	161
9	---	---	77	74	77	76	---	---	169	163	193	187
10	---	---	75	71	77	75	---	---	167	159	199	188
11	---	---	72	70	78	76	---	---	162	153	199	192
12	---	---	71	68	78	77	---	---	162	156	194	192
13	---	---	71	70	84	77	---	---	167	159	200	192
14	---	---	72	70	89	83	---	---	169	164	205	197
15	---	---	72	70	90	88	---	---	170	163	209	202
16	---	---	74	71	91	89	---	---	173	168	208	203
17	---	---	73	73	97	91	---	---	175	168	208	203
18	---	---	74	73	98	96	---	---	173	162	211	204
19	---	---	74	73	99	97	---	---	163	158	215	206
20	---	---	74	73	101	98	---	---	160	151	220	211
21	79	76	74	73	108	100	---	---	158	153	220	200
22	79	76	74	73	116	107	---	---	157	152	204	199
23	78	77	74	72	135	114	---	---	157	152	206	199
24	79	78	74	72	127	120	---	---	157	153	206	203
25	79	77	73	71	124	118	---	---	158	155	208	183
26	79	78	72	71	122	119	---	---	162	158	214	206
27	79	77	72	71	124	120	---	---	165	160	217	210
28	78	77	71	70	126	121	---	---	170	162	217	209
29	77	77	72	71	126	121	---	---	172	168	213	210
30	78	76	72	70	127	122	---	---	172	165	217	208
31	---	---	71	71	---	---	---	---	168	163	---	---
MONTH	---	---	78	68	135	71	---	---	---	---	220	147

## 10346000 TRUCKEE RIVER AT FARAD, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	11.0	9.5	6.5	4.0	1.0	---	---	---	---	---	---
2	16.5	11.0	9.0	5.0	5.5	2.5	---	---	---	---	---	---
3	16.0	11.0	8.5	4.0	4.5	1.5	---	---	---	---	---	---
4	13.5	11.5	9.0	4.5	5.5	2.5	---	---	6.0	2.5	6.5	3.0
5	12.0	9.0	8.0	4.5	4.0	1.0	---	---	4.5	1.0	7.5	5.0
6	13.0	8.5	7.5	3.5	3.5	1.0	---	---	4.5	2.0	7.0	4.0
7	14.5	10.0	7.5	3.5	4.0	1.5	---	---	5.5	2.5	7.5	3.0
8	13.5	9.5	7.5	3.5	4.5	3.0	---	---	6.5	3.0	7.5	3.0
9	11.5	10.0	7.5	3.5	5.0	4.0	---	---	5.0	1.5	7.5	3.5
10	13.5	10.0	8.5	4.5	6.0	3.0	---	---	3.5	1.0	7.0	4.5
11	12.5	10.5	9.0	6.0	4.0	2.0	---	---	4.0	.5	7.5	3.5
12	13.0	9.0	8.0	5.0	2.5	.5	---	---	3.0	.0	7.5	3.5
13	12.5	9.5	6.5	2.5	3.5	1.0	---	---	4.0	.0	8.0	3.5
14	11.5	10.5	4.0	1.0	3.0	2.0	---	---	4.0	.0	9.0	4.0
15	11.0	10.0	4.0	.5	2.5	1.5	---	---	5.0	.5	9.0	5.0
16	12.0	9.0	4.5	.5	3.5	1.5	---	---	6.5	2.0	9.0	5.5
17	12.0	9.0	5.5	1.5	2.5	.0	---	---	3.5	.5	8.0	4.0
18	11.5	7.5	5.5	2.0	2.5	.0	---	---	2.5	.0	8.5	5.0
19	11.5	7.0	4.5	1.0	1.0	.0	---	---	3.5	.5	9.0	5.0
20	11.5	7.5	4.0	.5	---	---	---	---	4.0	1.5	9.0	4.5
21	10.5	9.0	3.5	.0	---	---	---	---	3.5	1.5	9.5	5.5
22	11.5	7.0	5.5	2.5	---	---	---	---	5.5	2.0	7.0	4.5
23	12.0	7.5	5.0	1.5	---	---	---	---	3.5	.5	5.5	2.5
24	12.0	8.5	3.0	.0	---	---	---	---	6.0	1.0	9.0	4.5
25	11.5	8.0	.5	-.5	---	---	---	---	7.5	3.0	8.0	5.0
26	11.0	7.5	.0	.0	---	---	---	---	6.0	4.0	9.0	4.0
27	10.0	6.5	1.5	.0	---	---	---	---	6.5	4.5	10.0	4.5
28	10.0	6.5	3.5	1.5	---	---	---	---	7.5	4.0	10.0	5.0
29	12.0	9.0	5.5	3.5	---	---	---	---	---	---	10.0	5.5
30	11.5	7.5	6.0	2.5	---	---	---	---	---	---	11.0	6.5
31	10.5	7.5	---	---	---	---	---	---	---	---	10.0	5.5
MONTH	17.0	6.5	9.5	-.5	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	5.5	11.0	8.0	14.5	11.0	---	---	---	---	19.0	12.5
2	10.0	6.0	11.5	8.5	13.5	11.0	---	---	---	---	18.0	12.0
3	9.0	6.5	11.0	8.5	13.5	10.5	---	---	---	---	18.5	11.0
4	9.5	5.5	11.0	9.0	14.0	10.5	---	---	---	---	19.0	12.0
5	9.0	5.0	10.5	8.5	14.0	10.5	---	---	23.0	15.0	17.5	13.0
6	9.0	6.0	10.0	8.5	14.5	10.5	---	---	22.0	14.0	19.0	12.0
7	9.0	5.5	10.0	7.5	15.0	10.5	---	---	21.5	14.0	19.0	12.5
8	---	---	12.0	8.5	15.5	11.5	---	---	21.5	15.0	18.5	12.5
9	---	---	13.0	9.5	17.0	12.0	---	---	20.5	15.0	17.5	12.0
10	---	---	12.5	9.0	17.5	12.5	---	---	21.0	15.5	16.5	10.5
11	---	---	12.5	10.0	18.0	13.0	---	---	20.5	15.5	13.5	9.5
12	---	---	12.0	9.0	17.0	13.0	---	---	21.0	16.0	12.0	9.5
13	---	---	12.5	9.0	18.5	13.5	---	---	21.5	15.0	15.0	9.0
14	---	---	12.5	9.5	18.5	12.5	---	---	21.5	15.5	16.5	9.0
15	---	---	11.5	9.0	17.5	11.5	---	---	22.5	15.5	17.0	10.0
16	---	---	10.0	8.5	18.5	11.0	---	---	22.0	14.0	16.0	10.5
17	---	---	10.0	8.5	18.5	11.5	---	---	21.5	13.5	15.5	11.5
18	---	---	10.0	9.0	19.5	11.5	---	---	21.5	14.0	16.5	10.5
19	---	---	11.5	9.0	20.5	12.5	---	---	21.5	14.0	16.0	11.5
20	---	---	11.5	9.0	20.5	13.5	---	---	20.5	13.0	17.5	11.0
21	11.0	7.0	12.0	9.0	20.5	13.0	---	---	19.5	12.5	17.5	11.0
22	10.5	7.0	12.5	9.5	20.5	13.0	---	---	20.0	12.5	17.5	10.5
23	8.0	7.0	12.5	10.0	20.5	13.0	---	---	20.5	13.5	17.0	11.5
24	8.5	6.5	12.0	10.0	20.5	13.0	---	---	20.5	13.0	17.0	12.5
25	9.0	7.0	13.0	10.0	20.5	13.0	---	---	19.5	13.0	18.5	12.0
26	9.0	7.0	12.0	10.0	20.5	12.0	---	---	19.5	13.0	18.5	11.5
27	9.0	7.5	14.0	10.0	20.0	14.0	---	---	20.5	14.0	17.5	11.5
28	10.5	7.5	14.0	10.5	21.5	14.0	---	---	19.5	13.5	14.5	12.0
29	10.0	7.5	14.0	10.5	21.5	14.0	---	---	19.5	12.0	14.5	11.0
30	11.0	8.0	14.0	11.0	20.5	14.0	---	---	20.0	13.0	16.0	10.5
31	---	---	14.0	11.5	---	---	---	---	19.5	13.0	---	---
MONTH	---	---	14.0	7.5	21.5	10.5	---	---	---	---	19.0	9.0

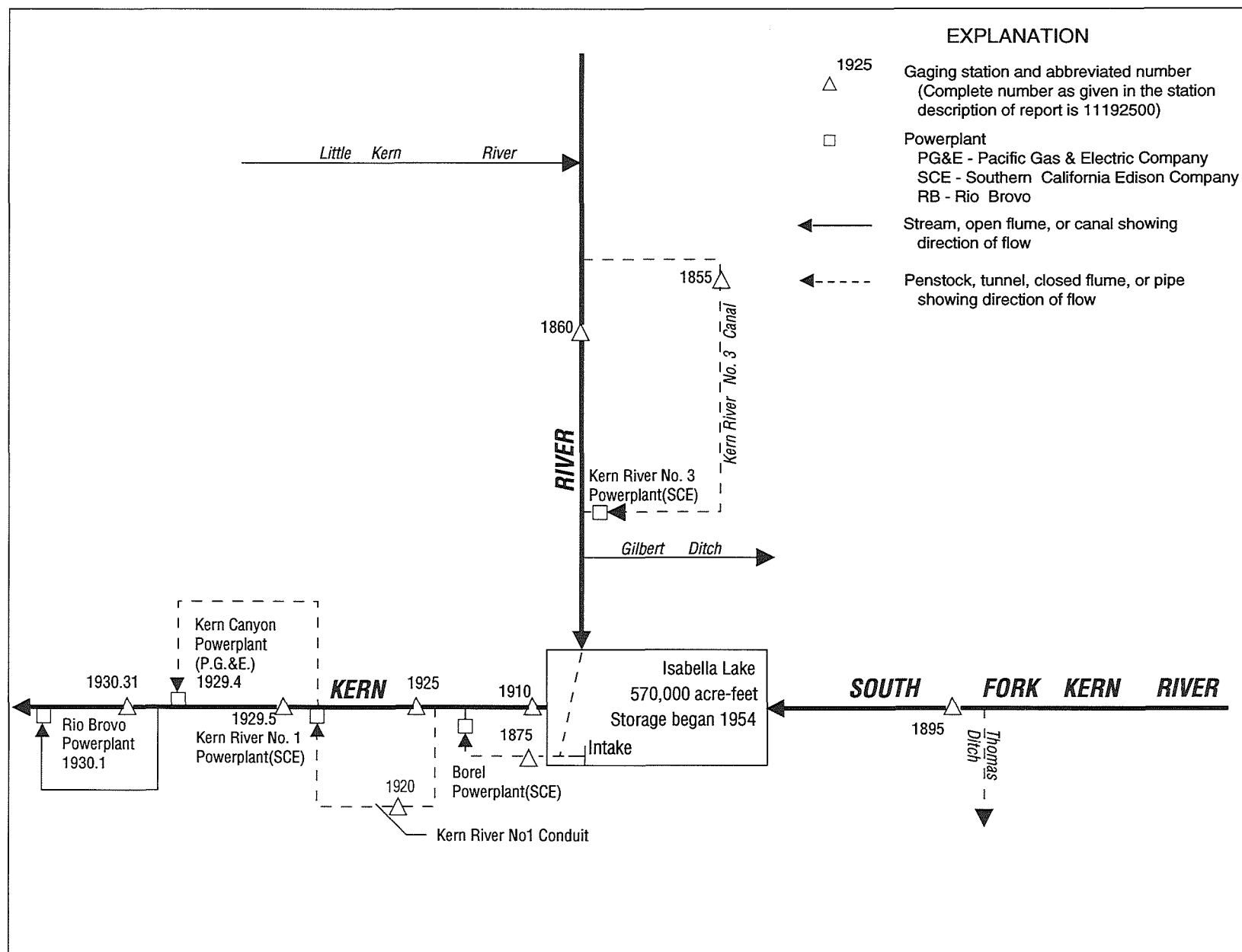


Figure 27. Diversions and storage in Kern River basin.

## PACIFIC SLOPE BASINS IN CALIFORNIA

## BUENA VISTA LAKE BASIN

## 11186000 KERN RIVER NEAR KERNVILLE, CA

LOCATION.--Lat 35°56'43", long 118°28'36", unsurveyed, Tulare County, Hydrologic Unit 18030001, on left bank at Packsaddle Canyon Creek, 100 ft downstream from diversion dam, and 13.4 mi north of Kernville.  
DRAINAGE AREA.--846 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1912 to current year. Records for water year 1912 incomplete; yearly estimates published in WSP 1315-A. March 1921 to October 1953, records for river and canal published separately; combined flow only, October 1953 to September 1960.

REVISED RECORDS.--WSP 1445: 1912, 1916(M). WSP 1930: 1914(M), 1918(M).

GAGE.--Water-stage recorder on river; water-stage recorder and rectangular concrete-lined flume for canal diversion. Elevation of gage is 3,620 ft above sea level, from topographic map. Prior to Apr. 1, 1913, at site 1.4 mi downstream at different datum. Apr. 1 to Sept. 14, 1913, nonrecording gage, and Sept. 15, 1913, to Sept. 30, 1967, water-stage recorder, at site 1.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Since 1921, Kern River No. 3 Canal (station 11185500) diverts up to 630 ft<sup>3</sup>/s 100 ft upstream from station, from left bank of Kern River for power development; water is returned to river 15 mi downstream from station. See schematic diagram of Kern River basin. For records of combined discharge of river and canal, see station 11186001.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 60,000 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 22.77 ft, site and datum then in use, from floodmarks, from rating curve extended above 6,000 ft<sup>3</sup>/s on basis of computed flow over dam at gage height 17.55 ft (basic data for computation provided by Southern California Edison Co.) and slope-area measurement of peak flow; no flow for many days in 1924 and 1925.  
Combined river and diversion: Maximum discharge, 60,000 ft<sup>3</sup>/s, Dec. 6, 1966; minimum daily, 76 ft<sup>3</sup>/s, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,360 ft<sup>3</sup>/s, May 15, gage height, 5.68 ft; minimum daily, 40 ft<sup>3</sup>/s, for several days.  
Combined river and diversion: Maximum daily discharge, 1,920 ft<sup>3</sup>/s, May 15; minimum daily, 107 ft<sup>3</sup>/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	52	42	47	40	76	103	107	848	104	96	105
2	56	48	42	46	40	75	103	108	867	103	101	106
3	55	48	41	45	40	78	104	107	993	105	101	107
4	56	56	41	46	41	74	104	163	887	107	96	106
5	58	51	41	46	41	77	103	304	747	108	96	105
6	58	49	42	52	41	76	107	241	678	109	95	104
7	58	47	42	46	42	76	102	182	514	107	95	103
8	56	47	42	46	43	75	101	137	414	106	95	101
9	57	47	42	46	43	74	102	110	428	106	95	100
10	57	47	42	46	43	76	103	131	514	106	96	102
11	60	48	42	45	43	75	103	253	580	106	96	102
12	57	47	42	45	43	75	104	578	624	106	97	103
13	56	47	42	45	42	75	102	943	571	107	96	105
14	56	47	43	46	42	75	104	1110	500	107	95	110
15	57	46	43	46	42	75	104	1220	443	106	96	112
16	57	46	43	46	43	75	115	991	283	102	97	109
17	57	46	43	46	46	75	125	675	151	100	96	108
18	58	46	45	46	45	75	145	503	120	99	95	109
19	59	46	42	46	44	75	280	365	119	100	95	106
20	56	46	43	46	45	74	444	278	119	99	95	107
21	56	46	52	46	45	76	582	232	111	109	95	109
22	56	45	56	47	44	75	574	252	108	92	94	111
23	56	45	59	47	44	75	458	334	106	91	95	109
24	57	42	57	45	43	75	337	471	104	90	95	110
25	56	42	60	40	43	75	239	532	104	89	95	113
26	58	42	58	41	45	73	135	662	105	90	105	110
27	56	46	54	41	45	74	116	736	105	91	105	108
28	56	43	53	44	53	76	117	785	104	90	105	107
29	56	43	51	41	---	76	105	815	104	90	105	110
30	57	47	48	40	---	78	109	857	105	90	105	81
31	57	---	46	40	---	80	---	882	---	91	105	---
TOTAL	1766	1398	1439	1395	1211	2339	5430	15064	11456	3106	3028	3178
MEAN	57.0	46.6	46.4	45.0	43.2	75.5	181	486	382	100	97.7	106
MAX	61	56	60	52	53	80	582	1220	993	109	105	113
MIN	55	42	41	40	40	73	101	107	104	89	94	81
AC-FT	3500	2770	2850	2770	2400	4640	10770	29880	22720	6160	6010	6300



## BUENA VISTA LAKE BASIN

11186000 KERN RIVER NEAR KERNVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	55.3	47.1	130	127	146	241	572	1433	1581	688	206	107
MAX	197	194	2488	1370	967	1480	2631	5874	6819	3482	1583	538
(WY)	1983	1984	1967	1969	1986	1986	1969	1969	1983	1983	1983	1982
MIN	2.01	1.36	.98	2.01	1.51	1.84	1.93	6.68	7.22	2.66	12.5	2.70
(WY)	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1961	1963
SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR					FOR 1994 WATER YEAR			WATER YEARS 1961 - 1994			
ANNUAL TOTAL	194576					50810						
ANNUAL MEAN	533					139			445			
HIGHEST ANNUAL MEAN									1727			
LOWEST ANNUAL MEAN									3.65			
HIGHEST DAILY MEAN	3100					May 24			33600			
LOWEST DAILY MEAN	27					Jan 11			.20			
ANNUAL SEVEN-DAY MINIMUM	27					Jan 22			.26			
INSTANTANEOUS PEAK FLOW						1360			60000			
INSTANTANEOUS PEAK STAGE						5.68			22.77			
ANNUAL RUNOFF (AC-FT)	385900					100800			322700			
10 PERCENT EXCEEDS	1890					335			1390			
50 PERCENT EXCEEDS	78					81			77			
90 PERCENT EXCEEDS	30					43			26			

## PACIFIC SLOPE BASINS IN CALIFORNIA

## BUENA VISTA LAKE BASIN

11186001 KERN RIVER NEAR KERNVILLE, CA--Continued

KERN RIVER AND KERN RIVER NO. 3 CANAL NEAR KERNVILLE  
 COMBINED DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198	192	234	210	199	334	459	616	1410	435	181	115
2	197	191	224	210	198	350	493	625	1430	419	174	113
3	194	189	221	211	204	373	528	650	1560	437	171	114
4	193	193	217	e212	219	408	514	721	1450	464	165	113
5	196	190	212	e208	216	415	476	865	1310	486	160	112
6	199	188	206	216	208	449	469	802	1240	504	155	111
7	203	187	202	200	236	424	446	741	1080	422	152	110
8	201	189	206	207	290	411	439	696	978	316	149	108
9	199	187	206	206	251	412	430	665	995	302	149	107
10	197	186	204	197	241	420	405	681	1080	290	153	109
11	208	207	216	196	247	430	397	810	1150	283	159	109
12	218	220	219	197	219	400	401	1140	1190	277	155	110
13	209	207	217	199	224	386	416	1510	1140	269	146	115
14	203	222	231	202	228	409	478	1670	1070	260	142	118
15	203	213	223	203	230	447	546	1780	1010	250	142	118
16	207	205	208	200	234	477	648	1560	848	245	139	115
17	208	212	210	197	293	470	684	1240	714	239	135	114
18	211	214	211	201	288	471	709	1070	654	252	134	115
19	210	213	222	202	265	485	846	928	628	270	133	113
20	204	205	208	202	282	461	1020	836	619	258	132	114
21	201	204	200	200	249	452	1170	792	616	238	129	115
22	200	213	206	199	268	455	1160	812	600	250	127	117
23	197	238	205	235	283	407	1030	894	568	257	126	115
24	198	213	209	234	295	398	906	1030	535	233	125	116
25	196	205	207	225	314	390	804	1090	515	220	123	119
26	194	197	213	210	331	365	697	1220	500	210	122	116
27	193	205	224	212	322	363	662	1300	476	201	120	114
28	192	208	216	198	322	369	631	1350	472	193	119	114
29	192	206	210	189	---	373	602	1380	475	188	118	185
30	194	267	211	203	---	391	627	1420	463	187	117	400
31	192	---	209	203	---	431	---	1440	---	186	116	---
TOTAL	6207	6166	6607	6384	7156	12826	19093	32334	26776	9041	4368	3764
MEAN	200	206	213	206	256	414	636	1043	893	292	141	125
MAX	218	267	234	235	331	485	1170	1780	1560	504	181	400
MIN	192	186	200	189	198	334	397	616	463	186	116	107
AC-FT	12310	12230	13100	12660	14190	25440	37870	64130	53110	17930	8660	7470

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

MEAN	245	262	362	409	496	664	1093	1999	2127	1096	495	307
MAX	634	715	2696	1668	1524	2075	3235	6475	7401	4059	2175	934
(WY)	1983	1984	1967	1969	1980	1986	1969	1969	1983	1983	1983	1978
MIN	106	112	109	121	120	181	333	373	303	133	114	100
(WY)	1962	1991	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1961 - 1994

ANNUAL TOTAL	329882	140722	
ANNUAL MEAN	904	386	
HIGHEST ANNUAL MEAN			797
LOWEST ANNUAL MEAN			2264
HIGHEST DAILY MEAN	3680	May 24	228
LOWEST DAILY MEAN	173	Jan 4	228
ANNUAL SEVEN-DAY MINIMUM	189	Nov 4	76
INSTANTANEOUS PEAK FLOW			84
ANNUAL RUNOFF (AC-FT)	654300	279100	60000
10 PERCENT EXCEEDS	2470	899	577400
50 PERCENT EXCEEDS	379	220	1980
90 PERCENT EXCEEDS	201	126	375
			154

## 11187500 BOREL CANAL BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'32", long 118°28'09", in SW 1/4 NE 1/4 sec.30, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030001, on right bank 500 ft downstream from Isabella Dam and 3 mi upstream from point where canal crosses Erskine Creek.

PERIOD OF RECORD.--January 1910 to September 1914, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Kern River Power Co.'s Canal at or near Kernville 1910-14. Published as "at Tillie Creek" 1925-51.

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above sea level, from topographic map. Prior to Apr. 29, 1952, at site 4 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from right bank of Kern River 5.5 mi upstream from Isabella Dam and above South Fork Kern River. When contents of Isabella Reservoir are above 110,000 acre-ft, diversion is at the dam. Canal is used to supply Borel Powerplant of Southern California Edison Co., 6 mi downstream from station, at which point water is returned to the Kern River. See schematic diagram of Kern River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 634 ft<sup>3</sup>/s, Mar. 13, 14, 1952; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	590	.00	303	274	562	566	566	432	13	587	594	463
2	586	.00	313	281	565	564	532	419	120	587	592	453
3	588	.00	335	281	563	565	564	430	536	588	590	428
4	590	.00	317	281	562	568	583	516	560	589	591	415
5	584	.00	307	281	563	567	585	573	560	590	592	404
6	586	.00	305	274	565	567	586	526	560	589	593	375
7	587	132	313	265	484	570	586	400	559	593	594	354
8	585	193	322	265	339	579	582	417	564	594	592	369
9	585	186	313	265	341	578	562	453	565	590	590	355
10	587	202	285	265	348	575	565	435	563	589	591	306
11	587	219	250	265	359	553	577	426	565	589	592	270
12	587	218	246	265	350	523	577	496	566	589	593	235
13	510	219	241	264	337	553	577	521	571	591	592	223
14	371	219	241	269	328	575	580	520	582	592	592	240
15	329	219	241	277	341	575	579	521	586	592	593	241
16	292	216	241	277	365	574	582	502	588	593	590	199
17	318	214	241	276	366	571	582	477	591	593	590	189
18	372	214	258	275	372	552	580	476	590	593	594	194
19	402	213	267	275	380	534	580	474	591	592	596	228
20	400	226	257	275	428	562	580	443	592	591	596	247
21	397	239	256	275	523	581	582	401	589	591	576	242
22	379	239	262	275	551	576	581	446	590	592	578	219
23	359	238	267	337	552	560	583	467	591	593	594	201
24	363	238	267	399	551	517	586	466	590	591	592	179
25	1.5	238	267	380	545	482	588	466	589	593	594	162
26	.00	252	267	323	540	474	588	457	588	595	567	152
27	.00	274	268	309	546	509	589	452	588	593	483	169
28	.00	273	269	310	559	569	594	452	589	594	456	190
29	.00	289	269	310	---	587	545	451	587	594	456	201
30	.00	312	269	358	---	587	444	451	587	595	446	203
31	.00	---	269	471	---	585	---	451	---	592	463	---
TOTAL	11535.50	5482.00	8526	9197	12885	17298	17185	14417	16310	18334	17652	8106
MEAN	372	183	275	297	460	558	573	465	544	591	569	270
MAX	590	312	335	471	565	587	594	573	592	595	596	463
MIN	.00	.00	241	264	328	474	444	400	13	587	446	152
AC-FT	22880	10870	16910	18240	25560	34310	34090	28600	32350	36370	35010	16080

## BUENA VISTA LAKE BASIN

11187500 BOREL CANAL BELOW ISABELLA DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	238	235	265	305	384	458	505	518	535	482	386	287
MAX	588	584	576	584	590	611	605	607	614	605	607	586
(WY)	1979	1984	1951	1984	1984	1985	1984	1989	1989	1985	1952	1993
MIN	.000	.000	.000	.000	.000	.000	.000	.000	9.23	2.25	.000	.000
(WY)	1973	1946	1973	1952	1951	1973	1990	1914	1914	1990	1972	1931

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1910 - 1994
ANNUAL TOTAL	172074.50	156927.50	
ANNUAL MEAN	471	430	382
HIGHEST ANNUAL MEAN			585
LOWEST ANNUAL MEAN			106
HIGHEST DAILY MEAN	608	Jun 25	596
LOWEST DAILY MEAN	.00	Oct 26	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 26	.00
ANNUAL RUNOFF (AC-FT)	341300	311300	276700
10 PERCENT EXCEEDS	598	591	588
50 PERCENT EXCEEDS	588	476	428
90 PERCENT EXCEEDS	240	219	125

## 11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA

LOCATION.--Lat 35°44'15", long 118°10'22", unsurveyed, T.25 S., R.35 E., Kern County, Hydrologic Unit 18030002, on left bank 0.8 mi north of State Highway 178, 1.6 mi upstream from Canebrake Creek, and 5 mi northeast of Onyx.

DRAINAGE AREA.--530 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1911 to August 1914, January 1919 to September 1942, October 1947 to June 1994 (destroyed by fire on June 21, 1994). Yearly estimate for water year 1927 (incomplete) and monthly discharges for incomplete water years 1914, 1919, 1926, 1928, 1929, published in WSP 1315-A.

REVISED RECORDS.--WSP 1151: 1948(M). WSP 1445: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft above sea level, from topographic map. Sept. 12, 1911, to Aug. 31, 1914, nonrecording gage, and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, 140 ft upstream at datum 2.88 ft lower. Apr. 18, 1936, to September 1942, and October 1947 to Feb. 8, 1967, at datum 6.88 ft higher. Feb. 9, 1967, to May 31, 1972, at datum 2.00 ft higher.

REMARKS.--Records good. Lowell and Thomas Ditches divert upstream from station for irrigation downstream of station, combined capacity, 7 ft<sup>3</sup>/s. Satellite telemeter at station. See schematic diagram of Kern River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 18.9 ft, from floodmarks, present datum, from rating curve extended above 3,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for several days in 1929, 1934, 1960-61.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 18	1845	*159	*4.35				

Minimum daily, 9.7 ft<sup>3</sup>/s, Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	28	22	35	33	55	102	104	54	---	---	---
2	19	27	24	36	31	57	112	97	55	---	---	---
3	20	27	27	35	36	60	130	80	48	---	---	---
4	19	28	28	38	42	64	133	65	44	---	---	---
5	20	27	33	37	41	68	115	66	38	---	---	---
6	16	28	34	37	38	71	102	64	32	---	---	---
7	9.7	28	32	31	41	84	108	65	26	---	---	---
8	10	28	32	32	53	78	100	73	25	---	---	---
9	10	28	34	37	42	76	104	83	23	---	---	---
10	10	27	36	33	38	79	97	90	21	---	---	---
11	11	32	36	31	39	82	91	85	19	---	---	---
12	16	32	38	31	34	78	85	78	18	---	---	---
13	21	31	31	35	33	75	85	74	17	---	---	---
14	23	31	29	38	37	88	87	79	16	---	---	---
15	26	31	32	37	40	102	92	82	14	---	---	---
16	28	26	31	35	38	110	95	77	13	---	---	---
17	29	29	30	34	48	124	99	73	12	---	---	---
18	29	33	30	36	52	146	98	75	12	---	---	---
19	30	36	35	36	39	144	98	77	11	---	---	---
20	28	33	29	36	46	149	100	75	11	---	---	---
21	22	32	26	38	42	126	99	72	10	---	---	---
22	22	32	29	36	40	134	97	68	---	---	---	---
23	25	43	29	41	44	123	90	64	---	---	---	---
24	27	38	31	46	44	83	83	62	---	---	---	---
25	27	34	33	38	48	92	84	60	---	---	---	---
26	27	30	36	35	52	84	85	60	---	---	---	---
27	27	33	35	35	55	77	85	56	---	---	---	---
28	26	32	32	33	57	74	96	53	---	---	---	---
29	27	28	32	29	---	79	104	50	---	---	---	---
30	28	25	31	35	---	79	105	48	---	---	---	---
31	28	---	31	36	---	89	---	53	---	---	---	---
TOTAL	679.7	917	968	1102	1183	2830	2961	2208	---	---	---	---
MEAN	21.9	30.6	31.2	35.5	42.2	91.3	98.7	71.2	---	---	---	---
MAX	30	43	38	46	57	149	133	104	---	---	---	---
MIN	9.7	25	22	29	31	55	83	48	---	---	---	---
AC-FT	1350	1820	1920	2190	2350	5610	5870	4380	---	---	---	---

## BUENA VISTA LAKE BASIN

11189500 SOUTH FORK KERN RIVER NEAR ONYX, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.2	35.8	57.8	61.0	92.6	157	348	432	171	48.6	23.5	18.8
MAX	98.9	143	942	426	448	686	1583	2896	1311	349	184	90.2
(WY)	1984	1984	1967	1969	1980	1978	1969	1969	1983	1983	1983	1978
MIN	1.00	8.92	12.4	14.0	17.3	24.1	23.4	9.52	1.00	.19	.20	.10
(WY)	1962	1930	1949	1931	1961	1961	1961	1961	1924	1961	1934	1961

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## WATER YEARS 1912 - 1994

ANNUAL TOTAL	72623.1		
ANNUAL MEAN	199	123	
HIGHEST ANNUAL MEAN		605	1969
LOWEST ANNUAL MEAN		11.5	1961
HIGHEST DAILY MEAN	1150	May 2	14000
LOWEST DAILY MEAN	4.5	Sep 13	.00
ANNUAL SEVEN-DAY MINIMUM	5.0	Sep 9	.00
INSTANTANEOUS PEAK FLOW			28700
INSTANTANEOUS PEAK STAGE			18.90
ANNUAL RUNOFF (AC-FT)	144000		89330
10 PERCENT EXCEEDS	675		282
50 PERCENT EXCEEDS	50		41
90 PERCENT EXCEEDS	19		7.0

## 11191000 KERN RIVER BELOW ISABELLA DAM, CA

LOCATION.--Lat 35°38'21", long 118°29'02", in SW 1/4 NW 1/4 sec.30, T.26 S., R.33 E., Kern County, Hydrologic Unit 18030003, on right bank 200 ft downstream from highway bridge, 0.6 mi downstream from Isabella Dam, and 1.6 mi southwest of town of Lake Isabella.

DRAINAGE AREA.--2,074 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1956-66, 1971 to June 1994 (discontinued).

WATER-DISCHARGE RECORDS: Water years 1945-90.

CHEMICAL DATA: Water years 1956-66.

WATER TEMPERATURE: Water years 1971 to June 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to June 1994 (discontinued).

INSTRUMENTATION.--Temperature recorder November 1970 to June 1994 (discontinued).

REMARKS.--Interruptions in the record were due to malfunction of the recording instrument. Water temperature is affected by regulation from Isabella Dam and the powerplant.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5°C, Aug. 24, 1981; minimum recorded, 2.5°C, Feb. 25, 26, 1989, Dec. 25, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 20.5°C, several days in October and June; minimum recorded, 6.0°C, Dec. 23 and several days in January.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.5	20.0	17.0	17.0	11.5	9.0	9.0	6.5	---	---	---	---
2	20.5	20.0	17.0	16.5	11.5	9.5	9.5	6.5	---	---	---	---
3	20.5	20.0	17.0	16.5	11.5	9.0	9.5	7.0	---	---	---	---
4	20.5	20.0	17.0	16.5	12.0	9.0	9.5	7.0	---	---	---	---
5	20.5	20.0	16.5	16.5	12.0	9.0	8.5	7.0	---	---	---	---
6	20.0	20.0	16.5	16.5	12.0	9.0	9.0	6.5	---	---	---	---
7	20.0	19.5	17.5	14.5	11.5	9.0	9.0	6.5	---	---	---	---
8	20.0	19.5	16.5	13.0	11.5	9.0	9.0	6.0	---	---	---	---
9	20.0	19.5	16.0	12.5	12.0	9.5	9.5	7.0	---	---	---	---
10	20.0	19.0	16.0	13.5	11.5	9.0	9.0	6.5	---	---	---	---
11	19.5	19.0	14.5	13.5	10.0	9.0	9.0	6.0	---	---	---	---
12	20.0	19.0	15.0	13.0	11.0	9.0	9.0	6.0	---	---	---	---
13	20.0	17.5	15.5	12.5	11.0	8.5	8.5	6.5	---	---	---	---
14	20.5	17.5	15.0	11.5	9.5	8.5	9.0	7.0	---	---	---	---
15	19.5	17.0	15.0	12.0	10.5	8.5	9.0	6.5	---	---	---	---
16	19.5	17.5	14.0	11.5	10.0	8.0	9.0	6.0	---	---	---	---
17	19.5	17.0	14.0	11.5	10.0	8.0	9.0	6.0	---	---	---	---
18	19.5	16.5	13.5	11.5	9.5	7.5	9.5	6.5	---	---	14.0	9.5
19	19.5	16.0	13.5	10.5	10.5	8.0	9.0	6.0	---	---	13.0	10.0
20	19.5	16.0	13.5	10.5	9.5	7.0	9.0	6.0	---	---	11.0	9.5
21	18.5	15.5	12.5	10.5	9.0	6.5	8.5	6.0	---	---	12.0	10.0
22	19.0	16.0	13.0	11.5	9.0	6.5	8.5	6.0	---	---	11.5	9.0
23	19.0	15.0	13.0	11.0	8.5	6.0	---	---	---	---	13.0	8.5
24	18.5	14.5	13.0	10.0	9.0	6.5	---	---	---	---	12.0	9.5
25	17.5	17.5	12.5	10.0	9.5	7.0	---	---	---	---	13.5	9.5
26	17.5	17.5	12.5	10.0	8.5	7.5	---	---	---	---	15.0	9.0
27	17.5	17.5	11.5	10.0	10.0	7.0	---	---	---	---	15.5	9.5
28	17.5	17.5	12.5	10.5	9.5	6.5	---	---	---	---	13.0	10.0
29	17.5	17.0	12.0	9.0	9.5	7.0	---	---	---	---	12.0	11.0
30	17.5	17.0	11.5	9.5	9.0	7.0	---	---	---	---	12.0	11.5
31	17.0	17.0	---	---	9.0	6.5	---	---	---	---	12.0	11.5
MONTH	20.5	14.5	17.5	9.0	12.0	6.0	---	---	---	---	---	---

11191000 KERN RIVER BELOW ISABELLA DAM, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	11.0	17.5	12.0	17.0	16.0	---	---	---	---	---	---
2	15.5	10.0	18.0	11.5	17.0	16.0	---	---	---	---	---	---
3	12.5	11.0	16.5	12.0	16.5	16.0	---	---	---	---	---	---
4	12.5	11.5	18.0	12.5	17.0	16.0	---	---	---	---	---	---
5	12.5	11.5	14.0	12.5	17.0	16.5	---	---	---	---	---	---
6	12.5	12.0	14.0	12.0	17.5	16.5	---	---	---	---	---	---
7	12.5	12.0	14.5	12.5	17.5	17.0	---	---	---	---	---	---
8	12.5	12.0	16.0	12.0	18.0	17.5	---	---	---	---	---	---
9	14.0	11.0	17.5	12.5	18.0	17.5	---	---	---	---	---	---
10	15.5	10.5	18.0	13.5	18.0	17.5	---	---	---	---	---	---
11	16.0	10.0	18.5	14.0	18.0	17.5	---	---	---	---	---	---
12	16.5	11.0	18.0	13.0	18.0	17.0	---	---	---	---	---	---
13	14.5	11.0	16.0	14.0	18.0	17.0	---	---	---	---	---	---
14	13.0	12.5	15.5	14.0	19.0	18.0	---	---	---	---	---	---
15	13.5	12.5	15.5	14.0	19.5	19.0	---	---	---	---	---	---
16	13.5	12.5	15.0	14.5	20.0	19.5	---	---	---	---	---	---
17	13.5	12.5	15.5	14.0	20.5	20.0	---	---	---	---	---	---
18	13.5	13.0	15.0	14.0	20.5	20.0	---	---	---	---	---	---
19	13.5	13.0	15.5	15.0	20.5	19.5	---	---	---	---	---	---
20	14.0	13.0	17.0	13.0	---	---	---	---	---	---	---	---
21	13.5	13.5	19.0	13.0	---	---	---	---	---	---	---	---
22	14.0	13.0	19.5	13.0	---	---	---	---	---	---	---	---
23	14.0	13.0	18.0	13.5	---	---	---	---	---	---	---	---
24	13.5	13.0	15.5	15.0	---	---	---	---	---	---	---	---
25	14.0	13.5	15.5	15.0	---	---	---	---	---	---	---	---
26	14.5	12.0	16.0	15.0	---	---	---	---	---	---	---	---
27	15.5	12.0	16.0	15.5	---	---	---	---	---	---	---	---
28	15.5	12.0	16.5	15.5	---	---	---	---	---	---	---	---
29	17.0	11.5	16.5	15.5	---	---	---	---	---	---	---	---
30	16.0	12.0	16.5	15.5	---	---	---	---	---	---	---	---
31	---	---	16.5	16.0	---	---	---	---	---	---	---	---
MONTH	17.0	10.0	19.5	11.5	---	---	---	---	---	---	---	---



## 11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA

LOCATION.--Lat 35°31'15", long 118°40'34", in NE 1/4 SE 1/4 sec.6, T.28 S., R.31 E., Kern County, Hydrologic Unit 18030003, on left bank 1.0 mi southwest of Democrat Springs and 2.1 mi upstream from Cow Creek.

DRAINAGE AREA.--2,258 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1950 to current year. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder for conduit diversion. Datum of gage is 1,837.7 ft above sea level.

REMARKS.--Kern River No. 1 Conduit (station 11192000) diverts up to about 420 ft<sup>3</sup>/s from left bank of Kern River 0.4 mi upstream from station in sec.13, T.28 S., R.30 E., for power development; water is returned to river 10 mi below station. Flow regulated by Isabella Lake 22 mi upstream beginning in 1954. Many diversions upstream from station for irrigation. See schematic diagram of Kern River basin. For records of combined discharge of river and conduit, see station 11192501.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, prior to regulation by Isabella Lake in 1954: Maximum discharge, 40,000 ft<sup>3</sup>/s, Nov. 19, 1950, gage height, 30.7 ft, from rating curve extended above 8,700 ft<sup>3</sup>/s on basis of computation of peak flow over dam (basic data for computation provided by Southern California Edison Co.); minimum daily, 0.7 ft<sup>3</sup>/s, Nov. 17-19, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 18.55 ft; no flow May 26-28, 1977.  
Combined flow, prior to regulation by Isabella Lake: Maximum discharge, 40,000 ft<sup>3</sup>/s, Nov. 19, 1950; minimum daily, 123 ft<sup>3</sup>/s, Sept. 22, 1951. Since regulation by Isabella Lake: Maximum discharge, 10,100 ft<sup>3</sup>/s, Dec. 6, 1966; minimum daily, 10 ft<sup>3</sup>/s, Dec. 17, 1968.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,170 ft<sup>3</sup>/s, July 26, gage height, 9.09 ft; minimum daily, 23 ft<sup>3</sup>/s, Jan. 7-11.  
Combined flow: Maximum daily discharge, 1,330 ft<sup>3</sup>/s, July 9, 10; minimum daily, 160 ft<sup>3</sup>/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	535	31	27	24	163	395	230	57	574	882	794	129
2	484	30	27	24	239	479	151	53	480	908	824	130
3	484	47	27	24	260	517	178	45	607	895	826	129
4	486	32	26	24	289	540	265	99	651	909	787	128
5	459	32	26	24	231	511	273	206	670	870	765	128
6	397	32	26	24	212	452	335	299	716	842	736	e83
7	392	32	26	23	170	298	382	106	765	885	776	e59
8	352	31	25	23	32	267	346	50	793	925	793	e76
9	335	31	25	23	25	222	284	65	791	965	794	e73
10	297	31	25	23	24	233	173	94	766	962	808	e71
11	314	31	25	23	25	203	192	57	768	952	782	e67
12	250	31	25	39	25	152	191	88	769	915	730	e64
13	216	31	25	25	25	156	196	161	771	945	606	e61
14	e87	31	25	25	26	183	323	234	774	943	555	e60
15	e44	31	25	25	26	252	347	233	779	912	612	e59
16	e38	31	25	24	26	285	325	235	780	893	606	e59
17	e36	31	25	24	27	245	345	230	783	895	569	e58
18	e36	31	24	24	27	191	401	167	781	900	498	e58
19	e36	31	24	24	27	158	436	189	767	920	367	e57
20	e35	31	24	24	42	185	455	297	802	907	304	e57
21	e35	30	24	24	141	247	444	98	855	831	229	e57
22	e34	30	24	24	179	387	407	86	846	823	195	e57
23	e34	28	24	24	213	184	335	95	801	748	228	e57
24	e33	27	24	25	187	147	302	132	770	680	297	e57
25	e43	27	24	44	170	95	339	304	749	752	274	e57
26	e40	27	24	25	167	92	342	418	724	862	244	e56
27	e59	27	24	24	255	78	228	436	755	687	164	e56
28	78	27	24	24	313	162	225	442	765	705	127	e59
29	61	27	24	24	---	251	216	528	856	797	128	e59
30	57	27	24	24	---	329	86	638	895	727	128	59
31	41	---	24	29	---	325	---	609	---	744	128	---
TOTAL	5828	916	771	784	3546	8221	8752	6751	22603	26581	15674	2180
MEAN	188	30.5	24.9	25.3	127	265	292	218	753	857	506	72.7
MAX	535	47	27	44	313	540	455	638	895	965	826	130
MIN	33	27	24	23	24	78	86	45	480	680	127	56
AC-FT	11560	1820	1530	1560	7030	16310	17360	13390	44830	52720	31090	4320

e Estimated.

## 11192500 KERN RIVER NEAR DEMOCRAT SPRINGS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	312	215	132	178	256	495	756	953	1456	1432	989	424
MAX	1455	1298	1052	1967	1394	3289	5306	5512	6446	5712	3435	2115
(WY)	1984	1983	1984	1967	1969	1969	1969	1983	1983	1983	1967	1983
MIN	.53	.18	.13	.16	2.19	2.37	1.94	1.69	50.5	57.6	53.1	50.4
(WY)	1978	1977	1977	1977	1977	1961	1961	1977	1961	1961	1961	1981

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	176250				102607							
ANNUAL MEAN	483				281				635			
HIGHEST ANNUAL MEAN									2837			
LOWEST ANNUAL MEAN									23.7			
HIGHEST DAILY MEAN	1850				Jun 18				6640			
LOWEST DAILY MEAN	23				Jan 1				.00			
ANNUAL SEVEN-DAY MINIMUM	23				Jan 10				.01			
INSTANTANEOUS PEAK FLOW									10100			
INSTANTANEOUS PEAK STAGE					9.09				18.55			
ANNUAL RUNOFF (AC-FT)	349600				203500				460100			
10 PERCENT EXCEEDS	1440				793				1770			
50 PERCENT EXCEEDS	338				162				221			
90 PERCENT EXCEEDS	24				24				1.9			

## 11192501 KERN RIVER NEAR DEMOCRAT SPRINGS, CA--Continued

KERN RIVER AND KERN RIVER NO. 1 CONDUIT NEAR DEMOCRAT SPRINGS,  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	919	323	323	277	462	764	629	455	967	1260	e1200	485
2	869	317	303	288	607	849	551	452	877	1280	e1230	484
3	868	e245	347	288	627	889	578	432	1000	1270	1230	461
4	870	e255	330	288	657	914	664	497	1050	1280	1190	444
5	842	e255	314	288	599	886	672	603	1060	1240	1170	443
6	775	e233	316	289	580	828	734	695	1110	1210	1140	e413
7	772	e241	315	272	539	674	781	500	1160	1260	1180	e387
8	732	e214	333	272	377	642	745	428	1180	1300	1200	e381
9	714	e195	323	272	351	597	683	463	1180	1330	1200	e400
10	676	e193	319	272	348	600	573	491	1160	1330	1210	e350
11	693	e227	268	272	371	574	592	441	1160	1320	1190	e321
12	629	e231	281	e268	365	526	591	485	1160	1280	1140	e272
13	596	e227	254	e269	347	530	596	557	1160	1310	1010	e248
14	e441	e233	261	e269	344	558	722	629	1160	1310	961	e248
15	e371	e228	271	e283	340	622	746	627	1160	1280	1020	e284
16	e309	e224	256	e283	372	654	725	628	1160	1260	1010	e235
17	e311	e221	255	e283	385	614	745	621	1160	1270	975	e206
18	e359	e221	255	e284	387	560	800	560	1160	1270	903	e214
19	e402	e222	283	e284	396	528	834	587	1150	1290	773	e225
20	e398	e220	268	e284	413	555	853	696	1180	1270	710	e273
21	e395	e245	267	e283	512	618	842	455	1230	1200	630	e269
22	e392	e247	267	e283	549	582	805	445	1230	1190	596	e246
23	e360	e245	278	e331	583	573	733	493	1190	1110	633	e226
24	e364	e247	277	e398	557	541	700	530	1160	1050	700	e211
25	e406	e246	277	e413	541	492	737	702	1130	1120	678	e179
26	e415	e246	277	e342	538	489	740	815	1100	e1160	648	e180
27	e433	e278	277	e320	625	473	626	832	1140	e1090	566	e160
28	452	e283	277	e317	683	559	623	838	1140	e1110	467	e209
29	435	e283	277	e316	---	648	615	923	1230	e1200	492	e201
30	431	e303	277	e317	---	726	482	1030	1270	e1130	462	236
31	394	---	277	e395	---	723	---	1000	---	e1150	484	---
TOTAL	17023	7348	8903	9300	13455	19788	20717	18910	34174	38130	27998	8891
MEAN	549	245	287	300	481	638	691	610	1139	1230	903	296
MAX	919	323	347	413	683	914	853	1030	1270	1330	1230	485
MIN	309	193	254	268	340	473	482	428	877	1050	462	160
AC-FT	33770	14570	17660	18450	26690	39250	41090	37510	67780	75630	55530	17640

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	544	441	385	461	578	813	1066	1297	1824	1750	1296	677
MAX	1835	1689	1432	2338	1785	3644	5695	5922	6850	6110	3824	2501
(WY)	1984	1983	1984	1967	1969	1969	1969	1983	1983	1983	1967	1983
MIN	116	127	131	154	152	221	260	256	311	400	334	127
(WY)	1962	1991	1991	1991	1991	1961	1961	1961	1961	1961	1961	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1955 - 1994

ANNUAL TOTAL	301515	224637	
ANNUAL MEAN	826	615	930
HIGHEST ANNUAL MEAN			3173
LOWEST ANNUAL MEAN			246
HIGHEST DAILY MEAN	2240	Jun 18	1330
LOWEST DAILY MEAN	193	Nov 10	160
ANNUAL SEVEN-DAY MINIMUM	217	Nov 8	195
ANNUAL RUNOFF (AC-FT)	598100	445600	673500
10 PERCENT EXCEEDS	1810	1180	2010
50 PERCENT EXCEEDS	716	541	583
90 PERCENT EXCEEDS	270	248	196

e Estimated.

11192950 KERN RIVER FISHWATER RELEASE AT KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA

LOCATION.--Lat 35°27'37", long 118°46'43", in SE 1/4 SE 1/4 sec.29, T.28 S., R.30 E., Kern County, Hydrologic Unit 18030003, Sequoia National Forest, on right bank 100 ft downstream of diversion dam, 16.4 mi northeast of Bakersfield.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1987 to current year. Prior to October 1, 1993, at site 100 ft upstream and did not include leakage through diversion dam radial gates. Bypass flow would enter the main channel immediately downstream from the gage. No records were computed above 35 ft<sup>3</sup>/s.

GAGE.--Water-stage recorder. Elevation of gage is 975 ft above sea level, from topographic map.

REMARKS.--Flow regulated at diversion dam 100 ft upstream of gage. See schematic diagram of Kern River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 52 ft<sup>3</sup>/s, Oct. 7, 1993; minimum daily, 6.0 ft<sup>3</sup>/s, Dec. 18, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 52 ft<sup>3</sup>/s, Oct. 7; minimum daily, 14 ft<sup>3</sup>/s, July 15, Aug. 5, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	31	34	34	29	31	28	28	17	16	15	15
2	36	31	33	34	29	31	27	28	16	16	15	15
3	36	31	36	34	29	31	28	28	16	15	15	15
4	36	31	36	34	30	31	28	23	16	15	15	15
5	36	31	34	34	29	31	28	17	16	15	14	15
6	35	31	34	34	29	31	30	17	16	15	15	15
7	52	31	34	34	29	29	30	17	16	15	15	15
8	48	31	34	34	28	28	30	17	16	15	16	15
9	41	31	34	34	29	28	28	17	16	15	15	15
10	36	31	34	34	29	28	27	16	16	15	15	15
11	37	31	34	34	29	27	28	16	16	15	14	15
12	32	31	34	34	29	29	28	16	15	15	15	15
13	29	33	34	34	29	29	28	16	16	15	15	15
14	28	33	34	34	29	29	30	16	15	15	15	15
15	29	33	34	34	29	29	30	16	16	14	e15	15
16	29	32	34	34	29	29	30	16	15	15	e15	15
17	29	32	34	34	29	29	30	16	15	15	e15	15
18	28	32	34	34	29	29	30	16	15	15	e15	15
19	29	32	34	32	29	29	30	16	16	15	15	15
20	28	32	34	29	29	29	30	17	16	15	15	15
21	29	32	34	28	29	29	30	15	16	15	15	15
22	29	32	34	28	29	28	30	16	16	15	15	28
23	29	32	34	28	29	28	30	16	15	15	15	29
24	29	32	34	28	29	28	28	16	15	15	15	16
25	29	32	34	26	29	28	30	16	15	15	15	16
26	30	33	34	28	29	28	30	16	15	15	15	16
27	31	33	34	29	29	28	28	16	15	30	15	16
28	31	33	34	29	29	28	28	21	15	23	15	16
29	31	33	34	29	---	28	28	16	15	16	15	16
30	31	34	34	29	---	30	27	16	16	15	15	16
31	31	---	36	29	---	30	---	16	---	15	15	---
TOTAL	1021	957	1059	984	812	900	867	549	469	490	464	484
MEAN	32.9	31.9	34.2	31.7	29.0	29.0	28.9	17.7	15.6	15.8	15.0	16.1
MAX	52	34	36	34	30	31	30	28	17	30	16	29
MIN	28	31	33	26	28	27	27	15	15	14	14	15
AC-FT	2030	1900	2100	1950	1610	1790	1720	1090	930	972	920	960

e Estimated.

11192950 KERN RIVER FISHWATER RELEASE AT KERN CANYON POWERHOUSE DIVERSION DAM, NEAR BAKERSFIELD, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	32.9	31.9	34.2	31.7	29.0	29.0	28.9	17.7	15.6	15.8	15.0	16.1
MAX	32.9	31.9	34.2	31.7	29.0	29.0	28.9	17.7	15.6	15.8	15.0	16.1
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
MIN	32.9	31.9	34.2	31.7	29.0	29.0	28.9	17.7	15.6	15.8	15.0	16.1
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

ANNUAL TOTAL	9056	
ANNUAL MEAN	24.8	
HIGHEST DAILY MEAN	52	Oct 7
LOWEST DAILY MEAN	14	Jul 15
ANNUAL SEVEN-DAY MINIMUM	15	Jul 9
ANNUAL RUNOFF (AC-FT)	17960	
10 PERCENT EXCEEDS	34	
50 PERCENT EXCEEDS	28	
90 PERCENT EXCEEDS	15	

## 11193031 KERN RIVER AT RIO BRAVO POWERPLANT NEAR BAKERSFIELD, CA

LOCATION.--Lat 35°25'49", long 118°49'18", in NE 1/4 SW 1/4 SW 1/4 sec.1, T.29 S., R.29 E., Kern County, Hydrologic Unit 18030012, on left bank at diversion to Rio Bravo Powerplant, and 15.5 mi northeast of Bakersfield.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and broad-crested weir; water-stage recorder and Parshall flume. Datum of gage is 678.17 ft above sea level.

REMARKS.--No estimated daily discharges. Flow regulated by Isabella Lake, capacity 570,000 acre-ft. Flow at this station has two components which are combined for publication: flow over a broad-crested weir (station 11193020) and flow through a Parshall flume (station 11193030). Water is diverted upstream from weir through a channel to Rio Bravo Powerplant (station 11193010), returning to Kern River about one mile downstream. See schematic diagram of Kern River basin.

COOPERATION.--Records provided by Rio Bravo Hydro Project, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft<sup>3</sup>/s, June 19, 1994; minimum daily, 47 ft<sup>3</sup>/s, June 14-17, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft<sup>3</sup>/s, June 19; minimum daily, 51 ft<sup>3</sup>/s, Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	60	291	242	59	59	59	60	59	64	55	61
2	60	87	269	254	59	59	59	60	58	64	56	62
3	60	194	312	255	59	60	59	60	59	64	55	62
4	61	243	298	255	59	59	59	60	61	64	54	61
5	61	219	284	254	59	59	59	61	61	64	53	61
6	60	197	280	254	59	59	59	61	62	180	52	61
7	61	211	279	239	59	86	60	61	61	164	51	69
8	61	173	298	236	59	65	60	61	64	57	56	203
9	61	154	268	237	59	58	60	61	60	56	58	266
10	61	156	104	236	59	58	61	61	61	56	59	220
11	61	199	197	237	59	59	59	61	60	56	59	200
12	61	199	285	230	59	59	59	61	60	56	60	158
13	61	191	253	264	59	59	59	61	60	57	59	129
14	62	206	242	274	59	59	60	61	60	56	60	116
15	61	192	243	287	64	59	59	61	61	56	80	146
16	61	188	220	288	58	59	59	61	61	55	60	109
17	61	188	218	289	60	59	59	60	62	55	75	89
18	61	188	219	291	59	59	59	60	62	54	167	94
19	61	188	250	275	59	58	59	60	98	55	60	99
20	60	189	233	257	59	59	59	61	63	57	60	139
21	60	217	233	258	59	59	59	61	63	54	60	138
22	60	217	231	258	59	60	59	61	63	53	60	112
23	60	217	243	297	59	58	59	60	62	53	60	103
24	60	217	242	230	59	58	59	60	62	55	60	95
25	60	215	242	58	59	58	59	61	62	59	60	74
26	60	215	242	59	59	58	60	61	62	59	61	74
27	60	251	243	60	60	58	92	61	63	59	61	64
28	60	252	242	57	59	58	60	80	63	57	61	89
29	60	248	243	58	---	59	61	62	63	55	61	89
30	59	305	244	58	---	59	60	61	63	54	61	113
31	59	---	242	59	---	59	---	59	---	55	62	---
TOTAL	1875	5976	7690	6606	1658	1855	1814	1900	1879	2003	1956	3356
MEAN	60.5	199	248	213	59.2	59.8	60.5	61.3	62.6	64.6	63.1	112
MAX	62	305	312	297	64	86	92	80	98	180	167	266
MIN	59	60	104	57	58	58	59	59	58	53	51	61
AC-FT	3720	11850	15250	13100	3290	3680	3600	3770	3730	3970	3880	6660
a	30820	1100	607	4220	23860	36410	36800	30440	62730	68120	48760	5060

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

11193031 KERN RIVER AT RIO BRAVO POWERPLANT NEAR BAKERSFIELD, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	148	190	202	178	133	137	58.1	58.0	82.5	75.3	108	160
MAX	258	261	248	232	267	282	65.3	61.3	156	139	170	258
(WY)	1990	1990	1994	1992	1992	1990	1993	1994	1993	1993	1990	1990
MIN	60.5	122	116	129	59.2	59.8	49.5	51.5	51.6	52.1	63.1	61.0
(WY)	1994	1991	1991	1991	1994	1994	1991	1991	1991	1991	1994	1993

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1990 - 1994			
ANNUAL TOTAL	40388				38568							
ANNUAL MEAN	111				106				118			
HIGHEST ANNUAL MEAN									143			
LOWEST ANNUAL MEAN									106			
HIGHEST DAILY MEAN	500				312				701			
LOWEST DAILY MEAN	57				51				47			
ANNUAL SEVEN-DAY MINIMUM	58				54				47			
INSTANTANEOUS PEAK FLOW					1170				1170			
ANNUAL RUNOFF (AC-FT)	80110				76500				85320			
ANNUAL DIVERSION (AC-FT) a	520600				348900				306600			
10 PERCENT EXCEEDS	243				243				274			
50 PERCENT EXCEEDS	62				61				71			
90 PERCENT EXCEEDS	60				58				53			

a Diversion, in acre-feet, through Rio Bravo Powerplant, provided by Rio Bravo Hydro Project.

## TULARE LAKE BASIN

11199500 WHITE RIVER NEAR DUCOR, CA

LOCATION.--Lat 35°48'36", long 118°55'03", in NW 1/4 SE 1/4 sec.26, T.24 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.6 mi upstream from Tyler Gulch and 9.0 mi southeast of Ducor.

DRAINAGE AREA.--90.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1942 to September 1953, February 1971 to current year. Monthly discharge only for October 1942 to September 1944, published in WSP 1315-A.

GAGE.--Water-stage recorder. Elevation of gage is 715 ft above sea level, from topographic map. October 1942 to September 1946, at site 3,800 ft downstream; October 1946 to September 1953, at site 4,300 ft downstream; and October 1971 to November 1978, at site 4,000 ft downstream, all at different datums.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft<sup>3</sup>/s, estimated by U.S. Bureau of Reclamation, Mar. 9, 1943; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	2030	*17	*1.21				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.5	1.7	3.6	3.8	4.0	1.7	.00	.00	.00
2	.00	.00	.00	1.5	1.7	3.4	3.7	3.7	1.6	.00	.00	.00
3	.00	.00	.00	1.5	1.8	3.4	3.7	3.8	1.3	.00	.00	.00
4	.00	.00	.00	1.7	2.8	3.4	3.7	4.1	1.2	.00	.00	.00
5	.00	.00	.00	2.0	3.0	3.6	3.5	4.4	1.2	.00	.00	.00
6	.00	.00	.00	1.9	2.5	5.7	3.4	4.8	1.2	.00	.00	.00
7	.00	.00	.00	2.0	2.6	7.0	3.3	5.6	1.3	.00	.00	.00
8	.00	.00	.00	1.9	4.8	5.1	3.3	6.1	1.3	.00	.00	.00
9	.00	.00	.00	1.8	6.4	4.3	4.0	4.9	1.0	.00	.00	.00
10	.00	.00	.00	1.6	4.4	3.9	4.3	4.6	.71	.00	.00	.00
11	.00	.00	.00	1.5	4.6	3.7	3.6	4.5	.44	.00	.00	.00
12	.00	.00	.91	1.4	3.9	3.8	3.3	4.2	.28	.00	.00	.00
13	.00	.00	3.9	1.5	2.7	3.3	3.0	4.1	.15	.00	.00	.00
14	.00	.00	3.7	1.5	2.2	3.1	2.8	3.8	.05	.00	.00	.00
15	.00	.00	7.8	1.5	2.0	3.0	3.1	3.5	.02	.00	.00	.00
16	.00	.00	6.5	1.5	1.9	3.0	3.3	3.4	.01	.00	.00	.00
17	.00	.00	3.7	1.4	3.3	3.0	3.3	3.7	.01	.00	.00	.00
18	.00	.00	2.5	1.5	9.1	3.2	3.2	4.4	.00	.00	.00	.00
19	.00	.00	2.1	1.5	8.2	3.1	3.2	5.2	.00	.00	.00	.00
20	.00	.00	1.7	1.4	11	2.9	3.3	4.5	.00	.00	.00	.00
21	.00	.00	1.6	1.4	11	3.0	3.1	4.2	.00	.00	.00	.00
22	.00	.00	1.4	1.4	5.6	2.9	3.1	3.8	.00	.00	.00	.00
23	.00	.00	1.3	1.8	4.0	3.0	3.3	3.2	.00	.00	.00	.00
24	.00	.00	1.3	3.1	3.4	2.9	4.1	2.7	.00	.00	.00	.00
25	.00	.00	1.4	5.8	3.3	4.5	5.1	2.5	.00	.00	.00	.00
26	.00	.00	1.6	4.1	3.2	5.0	6.4	2.3	.00	.00	.00	.00
27	.00	.00	1.5	3.0	3.2	4.2	5.8	2.2	.00	.00	.00	.00
28	.00	.00	1.6	2.4	3.5	3.9	5.8	2.1	.00	.00	.00	.00
29	.00	.00	1.7	2.0	---	3.9	4.7	1.9	.00	.00	.00	.00
30	.00	.00	1.7	1.8	---	3.8	4.2	1.8	.00	.00	.00	.00
31	.00	---	1.7	1.7	---	3.8	---	1.7	---	.00	.00	---
TOTAL	0.00	0.00	49.61	60.6	117.8	116.4	114.4	115.7	13.47	0.00	0.00	0.00
MEAN	.000	.000	1.60	1.95	4.21	3.75	3.81	3.73	.45	.000	.000	.000
MAX	.00	.00	7.8	5.8	11	7.0	6.4	6.1	1.7	.00	.00	.00
MIN	.00	.00	.00	1.4	1.7	2.9	2.8	1.7	.00	.00	.00	.00
AC-FT	.00	.00	98	120	234	231	227	229	27	.00	.00	.00



## 11199500 WHITE RIVER NEAR DUCOR, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.43	2.31	5.65	11.6	16.8	33.2	20.8	10.7	3.88	.80	.25	.21
MAX	8.05	20.6	36.5	52.0	103	260	131	55.3	31.2	12.6	8.30	5.35
(WY)	1984	1984	1984	1983	1983	1943	1943	1983	1983	1983	1983	1983
MIN	.000	.000	.000	.084	.76	1.79	.85	.19	.000	.000	.000	.000
(WY)	1943	1943	1948	1949	1991	1977	1977	1992	1950	1947	1943	1943

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1943 - 1994
ANNUAL TOTAL	1895.00	587.98	
ANNUAL MEAN	5.19	1.61	8.99
HIGHEST ANNUAL MEAN			44.5
LOWEST ANNUAL MEAN			.58
HIGHEST DAILY MEAN	67 Feb 24	11 Feb 20	1320 Mar 9 1943
LOWEST DAILY MEAN	.00 Jul 7	.00 Oct 1	.00 Oct 1 1942
ANNUAL SEVEN-DAY MINIMUM	.00 Jul 7	.00 Oct 1	.00 Oct 1 1942
INSTANTANEOUS PEAK FLOW		17 Feb 20	2300 Mar 9 1943
INSTANTANEOUS PEAK STAGE		1.21 Feb 20	
ANNUAL RUNOFF (AC-FT)	3760	1170	6510
10 PERCENT EXCEEDS	14	4.2	19
50 PERCENT EXCEEDS	1.5	.28	1.9
90 PERCENT EXCEEDS	.00	.00	.00

## 11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA

LOCATION.--Lat 35°56'30", long 118°49'19", in SE 1/4 NE 1/4 sec.10, T.23 S., R.29 E., Tulare County, Hydrologic Unit 18030005, on left bank 1.0 mi upstream from Pothole Creek, 6.3 mi northeast of Fountain Springs, and 12 mi east of Terra Bella.

DRAINAGE AREA.--83.3 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 980 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft<sup>3</sup>/s, Feb. 24, 1969, gage height, 9.85 ft, from rating curve extended above 600 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 8.83 ft in gage well, 9.18 ft from floodmarks, and 12.54 ft from floodmarks; no flow for periods in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 6, 1966, reached a stage of 12.54 ft, from floodmarks, discharge, 5,330 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 17	2230	*57	*3.36				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.9	19	9.8	10	26	14	22	9.3	2.0	.00	.00
2	1.2	3.7	12	9.6	10	26	14	22	9.6	1.4	.00	.00
3	1.6	4.2	9.9	9.7	10	27	14	21	9.2	.73	.00	.00
4	1.6	4.1	9.4	10	13	26	14	21	9.2	.67	.00	.00
5	1.1	3.8	8.9	10	13	26	13	20	5.8	.83	.00	.00
6	1.3	3.4	8.5	10	12	36	13	20	7.3	.82	.00	.00
7	2.0	3.7	8.2	9.9	12	38	12	25	8.9	.60	.00	.00
8	2.1	3.8	8.0	9.5	33	29	12	28	9.0	.77	.00	.00
9	2.0	3.9	7.9	9.0	26	25	16	24	8.3	.91	.00	.00
10	2.1	4.0	7.8	9.0	20	23	17	20	7.8	.96	.00	.00
11	3.2	6.8	12	8.8	22	24	15	20	7.1	1.0	.00	.00
12	4.1	12	27	8.7	18	24	14	19	4.6	.64	.00	.00
13	3.8	9.4	15	8.5	15	21	13	17	4.0	.63	.00	.00
14	4.0	9.4	15	8.5	14	20	13	17	5.9	.46	.00	.00
15	4.1	9.8	22	8.5	14	20	12	14	6.3	.34	.00	.00
16	4.7	8.1	15	8.4	13	19	12	14	6.2	.22	.00	.00
17	7.9	7.6	13	8.3	26	18	12	16	6.2	.04	.00	.00
18	7.4	7.4	12	8.6	40	18	10	20	6.5	.00	.00	.00
19	6.2	7.4	11	8.8	32	17	11	23	4.1	.00	.00	.00
20	5.4	7.4	10	8.7	43	17	12	19	3.4	.00	.00	.00
21	4.6	7.2	10	8.6	34	17	11	18	4.9	.00	.00	.00
22	4.1	7.3	9.3	8.6	26	16	11	15	4.4	.00	.00	.00
23	3.9	7.6	9.4	10	23	16	11	15	4.3	.00	.00	.00
24	3.7	7.5	9.3	18	23	15	17	14	4.4	.00	.00	.00
25	3.5	7.2	9.3	17	24	20	19	13	3.7	.00	.00	.00
26	3.5	6.9	9.7	13	26	17	25	12	2.7	.00	.00	.00
27	3.4	6.8	10	12	27	16	23	11	1.5	.00	.00	.00
28	3.3	6.7	11	12	28	16	27	12	3.0	.00	.00	.00
29	3.3	6.9	10	11	---	15	24	9.5	2.0	.00	.00	.00
30	2.6	30	10	11	---	14	23	10	2.0	.00	.00	.00
31	2.4	---	9.9	11	---	14	---	9.7	---	.00	.00	---
TOTAL	105.1	216.9	359.5	314.5	607	656	454	541.2	171.6	13.02	0.00	0.00
MEAN	3.39	7.23	11.6	10.1	21.7	21.2	15.1	17.5	5.72	.42	.000	.000
MAX	7.9	30	27	18	43	38	27	28	9.6	2.0	.00	.00
MIN	1.0	2.9	7.8	8.3	10	14	10	9.5	1.5	.00	.00	.00
AC-FT	208	430	713	624	1200	1300	901	1070	340	26	.00	.00

## 11200800 DEER CREEK NEAR FOUNTAIN SPRINGS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.93	12.6	21.0	43.7	64.8	79.3	63.5	37.6	19.6	7.92	3.58	3.22
MAX	23.5	62.8	120	229	353	443	254	182	120	53.5	32.1	19.6
(WY)	1984	1984	1984	1969	1969	1983	1983	1983	1983	1983	1983	1983
MIN	.77	3.35	4.88	6.69	4.65	8.38	4.12	2.96	.71	.000	.000	.000
(WY)	1978	1991	1991	1991	1991	1977	1977	1992	1992	1972	1972	1972

## SUMMARY STATISTICS                      FOR 1993 CALENDAR YEAR                      FOR 1994 WATER YEAR                      WATER YEARS 1968 - 1994

ANNUAL TOTAL	7656.48			3438.82			30.0		
ANNUAL MEAN	21.0			9.42			143		
HIGHEST ANNUAL MEAN							1983		
LOWEST ANNUAL MEAN							4.29		
HIGHEST DAILY MEAN	159			43			1610		
LOWEST DAILY MEAN	.45			.00			.00		
ANNUAL SEVEN-DAY MINIMUM	.87			.00			.00		
INSTANTANEOUS PEAK FLOW	57			57			3340		
INSTANTANEOUS PEAK STAGE	3.36			3.36			9.85		
ANNUAL RUNOFF (AC-FT)	15190			6820			21760		
10 PERCENT EXCEEDS	50			23			65		
50 PERCENT EXCEEDS	12			8.6			11		
90 PERCENT EXCEEDS	1.4			.00			.60		

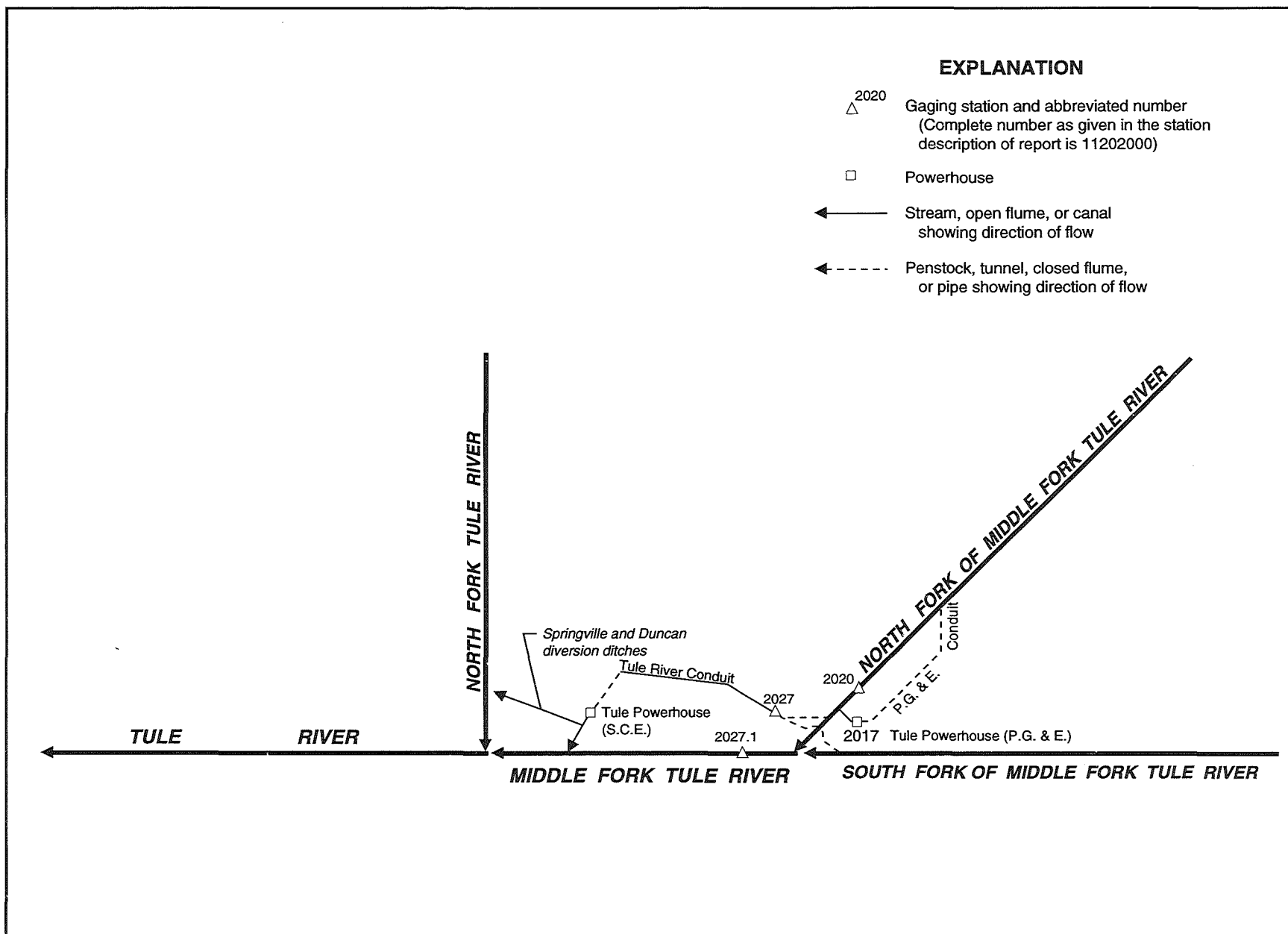


Figure 28. Diversions and storage in Tule River basin.

## 11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA

LOCATION.--Lat 36°10'29", Long 118°41'41", unsurveyed, in T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, on right bank 1.2 mi upstream from mouth, 2.2 mi downstream from Hossack Creek, and 7.4 mi northeast of Springville.

DRAINAGE AREA.--39.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 mi upstream, records not equivalent. Prior to October 1954, records for river and Pacific Gas & Electric Co. Conduit published separately; combined flow only, October 1954 to September 1960. Prior to October 1982, combined flow consisted of river and conduit. October 1982 to present, combined flow consists of river and Pacific Gas & Electric Co., Tule River Powerplant near Springville (station 11201700).

REVISED RECORDS.--WSP 1445: 1951. WSP 1930: Drainage area. WDR CA-91-3: Adjusted data for 1990.

GAGE.--Water-stage recorder. Concrete control on river since Aug. 6, 1958. Rectangular weir and concrete control on river since July 10, 1991. Elevation of gage is 2,920 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Pacific Gas and Electric Co. conduit diverts 2.5 mi upstream from station; water is returned to river 1.1 mi downstream after passing through Tule River Powerplant. See schematic diagram of Tule River basin. For records of combined discharge of river and powerplant, see station 11202001.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 16,900 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 13.83 ft, from floodmarks, from rating curve extended above 1,820 ft<sup>3</sup>/s on basis of critical-depth determinations at gage heights 9.67 and 12.47 ft; no flow Sept. 10, 11, 1955.

Combined flow: Maximum discharge, 16,900 ft<sup>3</sup>/s, Dec. 6, 1966; minimum daily, 6.4 ft<sup>3</sup>/s, Sept. 5-8, 1993.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 47 ft<sup>3</sup>/s, May 13, gage height, 3.38 ft; minimum daily, 4.8 ft<sup>3</sup>/s, Jan. 8-12.

Combined flow: Maximum daily discharge, 102 ft<sup>3</sup>/s, May 13, 14; minimum daily, 5.9 ft<sup>3</sup>/s, July 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	7.7	8.4	5.4	5.8	8.7	6.2	8.4	16	8.8	5.9	5.5
2	5.4	7.2	6.0	5.4	5.8	8.6	6.4	8.6	10	8.6	5.9	5.5
3	5.3	5.4	6.3	5.4	5.8	8.2	6.6	9.0	10	8.5	5.9	5.5
4	5.3	5.2	5.8	5.4	6.8	7.9	6.5	10	10	8.5	5.9	5.5
5	5.2	5.6	6.5	5.2	6.6	7.9	6.2	15	9.8	8.3	5.9	5.5
6	5.0	5.6	7.2	5.0	6.5	8.8	6.3	10	9.7	7.6	5.8	5.5
7	5.1	5.6	8.1	5.0	6.7	8.0	6.3	11	9.9	7.4	5.7	5.5
8	5.1	5.6	7.5	4.8	12	7.7	6.6	9.7	9.6	7.1	5.7	5.5
9	5.1	5.6	5.8	4.8	8.5	7.5	8.0	8.9	9.8	7.0	5.7	5.6
10	5.2	5.6	6.0	4.8	7.7	7.5	7.0	8.4	9.9	6.9	5.8	5.6
11	5.8	7.8	8.1	4.8	8.3	7.5	6.5	12	9.8	6.8	5.7	5.6
12	5.0	8.8	13	4.8	7.4	7.3	6.9	28	9.6	6.4	5.7	5.6
13	5.0	6.0	9.3	5.0	7.2	7.2	6.3	36	9.6	6.3	5.7	5.8
14	5.1	8.8	10	5.0	7.1	7.4	6.4	36	9.6	6.3	5.7	5.7
15	5.3	8.4	7.8	5.0	6.9	7.4	6.6	34	9.5	6.3	5.6	5.6
16	6.6	7.7	7.2	5.0	6.7	7.2	6.9	24	9.6	6.2	5.7	5.5
17	7.1	5.6	7.0	5.2	12	7.2	7.0	11	9.6	6.2	5.7	5.5
18	6.7	6.0	6.5	5.2	11	7.1	7.1	8.7	9.5	6.1	5.7	5.6
19	5.4	5.3	6.5	5.2	9.1	7.0	7.7	8.2	9.3	6.2	5.6	5.6
20	6.5	5.4	6.0	5.2	13	7.0	9.4	7.8	9.2	6.3	5.5	5.5
21	7.1	5.5	6.0	5.4	10	6.7	8.9	7.4	9.1	6.2	5.5	5.5
22	6.7	5.6	5.8	5.4	8.9	6.8	7.1	7.2	9.0	6.2	5.5	5.5
23	6.4	5.4	5.8	7.0	8.3	6.6	6.9	7.2	8.9	6.1	5.5	5.6
24	7.2	6.0	5.8	6.5	8.4	6.5	8.2	7.1	8.9	6.1	5.5	5.6
25	7.2	7.5	6.0	6.7	8.4	6.9	8.5	7.0	8.8	6.1	5.5	5.5
26	6.7	7.0	6.3	6.3	8.7	6.5	8.8	7.1	8.8	6.1	5.5	5.5
27	6.7	5.1	6.7	6.4	9.1	6.5	9.1	7.2	8.8	5.9	5.5	5.9
28	7.2	6.8	6.5	6.0	9.0	6.5	8.9	7.1	9.1	5.9	5.5	7.0
29	6.8	7.7	6.0	5.8	---	6.4	8.7	7.0	9.0	5.9	5.6	8.6
30	6.9	11	5.6	5.8	---	6.3	8.4	7.0	8.8	5.9	5.6	8.1
31	7.4	---	5.6	5.8	---	6.1	---	10	---	5.9	5.5	---
TOTAL	187.0	196.5	215.1	168.7	231.7	224.9	220.4	386.0	289.2	208.1	175.5	174.0
MEAN	6.03	6.55	6.94	5.44	8.27	7.25	7.35	12.5	9.64	6.71	5.66	5.80
MAX	7.4	11	13	7.0	13	8.8	9.4	36	16	8.8	5.9	8.6
MIN	5.0	5.1	5.6	4.8	5.8	6.1	6.2	7.0	8.8	5.9	5.5	5.5
AC-FT	371	390	427	335	460	446	437	766	574	413	348	345

11202000 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.78	12.3	27.1	24.5	26.3	32.9	49.4	80.3	43.5	9.41	4.04	3.27
MAX	19.1	362	786	266	182	337	229	381	316	121	14.4	22.7
(WY)	1953	1951	1967	1980	1986	1943	1969	1969	1983	1983	1983	1952
MIN	.53	.76	.73	.81	.80	1.21	1.13	1.03	.61	.34	.32	.31
(WY)	1965	1963	1991	1991	1991	1977	1977	1992	1992	1961	1964	1961

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1940 - 1994			
ANNUAL TOTAL	9869.2				2677.1							
ANNUAL MEAN	27.0				7.33				26.0			
HIGHEST ANNUAL MEAN									129			
LOWEST ANNUAL MEAN									1.25			
HIGHEST DAILY MEAN	235				36				13300			
LOWEST DAILY MEAN	1.9				4.8				.06			
ANNUAL SEVEN-DAY MINIMUM	2.4				4.9				.20			
INSTANTANEOUS PEAK FLOW					47				16900			
INSTANTANEOUS PEAK STAGE					3.38				13.83			
ANNUAL RUNOFF (AC-FT)	19580				5310				18820			
10 PERCENT EXCEEDS	86				9.6				72			
50 PERCENT EXCEEDS	7.0				6.6				4.5			
90 PERCENT EXCEEDS	4.7				5.4				.80			

## 11202001 NORTH FORK OF MIDDLE FORK TULE RIVER NEAR SPRINGVILLE, CA--Continued

NORTH FORK OF MIDDLE FORK TULE RIVER AND PACIFIC GAS & ELECTRIC CO., TULE RIVER POWERPLANT NEAR SPRINGVILLE  
 COMBINED DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	23	17	19	39	39	49	49	19	13	10
2	13	13	21	17	19	40	39	67	57	18	13	10
3	13	11	20	19	19	39	40	69	57	17	13	10
4	13	11	20	18	20	39	56	70	57	17	13	10
5	16	14	20	18	21	39	39	80	31	21	13	10
6	17	14	21	19	20	40	39	71	44	16	13	10
7	15	14	22	19	18	48	37	72	42	17	13	10
8	15	14	15	19	30	48	37	71	39	17	13	10
9	15	16	14	19	21	49	41	68	35	17	13	11
10	15	16	17	8.8	21	47	40	71	35	17	13	11
11	18	18	19	15	34	44	36	78	35	16	13	11
12	16	24	24	15	23	45	41	94	35	16	13	12
13	16	20	20	17	23	45	40	102	34	15	13	11
14	16	23	21	16	20	30	45	102	31	15	13	12
15	16	22	19	16	20	49	44	100	30	15	11	11
16	18	16	18	16	20	48	44	91	29	15	11	10
17	18	14	20	16	44	45	44	79	29	15	11	10
18	15	14	18	16	33	42	73	69	28	16	11	11
19	14	13	18	16	30	42	74	62	28	15	11	9.6
20	15	13	18	16	33	42	76	64	22	15	10	10
21	16	13	19	16	29	45	76	63	24	15	10	10
22	15	13	19	16	19	41	74	63	23	15	12	10
23	15	19	18	18	16	36	73	43	22	15	12	11
24	16	20	18	17	26	34	65	62	22	15	11	11
25	16	21	18	18	24	35	38	61	22	14	10	10
26	13	15	18	28	25	34	49	71	22	9.1	10	12
27	14	14	19	18	24	34	50	61	24	5.9	10	11
28	14	16	18	18	47	32	50	61	19	9.9	10	7.0
29	12	14	21	18	---	35	50	61	19	14	11	9.6
30	13	25	21	19	---	35	48	61	19	14	13	8.1
31	13	---	22	18	---	36	---	62	---	14	10	---
TOTAL	465	484	599	536.8	698	1257	1497	2198	963	469.9	366	309.3
MEAN	15.0	16.1	19.3	17.3	24.9	40.5	49.9	70.9	32.1	15.2	11.8	10.3
MAX	18	25	24	28	47	49	76	102	57	21	13	12
MIN	12	11	14	8.8	16	30	36	43	19	5.9	10	7.0
AC-FT	922	960	1190	1060	1380	2490	2970	4360	1910	932	726	613

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1994, BY WATER YEAR (WY)

MEAN	17.8	27.9	49.8	50.0	58.4	72.6	103	138	89.0	37.4	21.3	17.8
MAX	44.3	375	794	317	241	381	296	445	384	187	72.3	42.6
(WY)	1983	1951	1967	1980	1980	1943	1969	1969	1983	1983	1983	1983
MIN	8.66	10.5	11.9	13.3	12.5	16.7	21.8	25.1	16.4	10.1	8.99	8.63
(WY)	1962	1962	1991	1961	1991	1977	1977	1977	1992	1961	1977	1961

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1940 - 1994

ANNUAL TOTAL	22385.2	9843.0	
ANNUAL MEAN	61.3	27.0	
HIGHEST ANNUAL MEAN			56.9
LOWEST ANNUAL MEAN			157
HIGHEST DAILY MEAN	298	102	15.1
LOWEST DAILY MEAN	6.4	5.9	13300
ANNUAL SEVEN-DAY MINIMUM	8.0	9.8	5.0
INSTANTANEOUS PEAK FLOW			5.2
ANNUAL RUNOFF (AC-FT)	44400	19520	16900
10 PERCENT EXCEEDS	151	59	41210
50 PERCENT EXCEEDS	34	19	129
90 PERCENT EXCEEDS	14	11	28
			13

## 11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA

LOCATION.--Lat 36°09'41", long 118°42'31", unsurveyed, T.20 S., R.30 E., Tulare County, Hydrologic Unit 18030006, Sequoia National Forest, on right bank 700 ft downstream from confluence of North Fork Middle Fork Tule River and South Fork Middle Fork Tule River, and 6.5 mi northeast of Springville.

DRAINAGE AREA.--85.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1988 to September 1990, October 1991 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir in concrete control on river; water-stage recorder and metal flume for conduit diversion. Elevation of gage is 2,370 ft above sea level, from topographic map.

REMARKS.--Southern California Edison Co.'s Tule River Conduit (station 11202700) diverts from the right bank of Middle Fork Tule River upstream from station. Flow from this conduit passes through Tule River Powerplant of Southern California Edison Co. Diversions are made from powerplant tailrace ditch to Springville Diversion and Duncan Diversion Ditches. Remaining water is returned to the Tule River 1.5 mi upstream from confluence of Middle and North Forks. See schematic diagram of Tule River basin. For records of combined discharge of river and conduit, see station 11202711.

COOPERATION.--Records collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only; maximum discharge, 1,160 ft<sup>3</sup>/s, Oct. 30, 1992, gage height, 5.47 ft; minimum daily, 5.2 ft<sup>3</sup>/s, Dec. 4, 5, 1993.  
Combined flow, maximum daily discharge, 419 ft<sup>3</sup>/s, Jan. 7, 1993; minimum daily, 6.5 ft<sup>3</sup>/s, Dec. 12, 1991.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 122 ft<sup>3</sup>/s, May 13, gage height, 3.24 ft; minimum daily, 5.2 ft<sup>3</sup>/s, Dec. 4, 5.  
Combined flow, maximum daily discharge, 145 ft<sup>3</sup>/s, May 13; minimum daily, 15 ft<sup>3</sup>/s, Sept. 8, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	13	6.6	6.2	6.2	29	36	57	51	11	11	11
2	26	18	5.8	6.2	6.2	35	40	67	49	11	11	11
3	25	17	5.6	6.2	6.2	41	44	73	47	11	11	11
4	26	10	5.2	6.2	6.4	45	41	76	43	11	11	11
5	26	6.2	5.2	6.2	6.3	46	35	87	38	11	11	11
6	28	6.2	5.5	6.2	6.3	53	35	78	37	11	11	11
7	29	6.3	5.5	6.2	12	42	32	80	35	11	11	11
8	29	6.1	5.5	6.2	e36	37	34	75	33	11	11	12
9	28	6.1	5.7	6.2	14	36	38	70	30	12	11	16
10	27	6.1	5.8	6.1	11	38	33	72	26	12	11	16
11	30	8.9	13	6.1	13	38	33	83	23	12	11	17
12	30	7.4	8.4	6.1	6.8	34	37	102	20	12	11	17
13	29	6.0	5.8	6.1	6.4	34	37	110	18	11	11	18
14	29	7.1	8.6	6.1	6.3	39	41	109	16	11	11	18
15	29	5.9	6.3	6.1	6.3	43	48	108	14	11	11	18
16	31	5.9	6.2	6.1	6.2	44	56	97	13	11	11	17
17	31	5.9	6.2	6.1	52	41	58	80	12	11	11	17
18	31	5.9	6.2	6.1	e38	39	62	77	12	12	11	17
19	31	5.9	6.2	6.0	22	40	72	69	12	12	11	17
20	17	5.8	6.2	6.0	34	36	76	63	12	12	11	16
21	5.6	5.8	6.2	6.0	21	35	74	59	12	11	11	16
22	5.8	5.9	6.1	6.0	13	35	66	56	12	11	11	16
23	6.0	5.9	6.2	13	11	31	59	56	12	11	11	16
24	5.9	6.0	6.2	7.1	13	29	62	59	12	11	11	17
25	6.1	6.0	6.3	6.5	16	30	58	58	12	11	11	17
26	6.2	5.9	6.3	6.3	20	21	54	62	12	11	11	16
27	6.3	5.7	6.2	6.3	21	22	52	63	12	11	11	15
28	6.3	5.7	6.2	6.2	24	24	52	58	12	11	11	14
29	6.2	5.8	6.2	6.2	---	23	53	56	12	11	11	24
30	5.9	23	6.2	6.2	---	28	55	54	11	11	11	20
31	5.9	---	6.2	6.2	---	33	---	53	---	11	11	---
TOTAL	624.2	235.4	197.8	198.7	440.6	1101	1473	2267	660	348	341	464
MEAN	20.1	7.85	6.38	6.41	15.7	35.5	49.1	73.1	22.0	11.2	11.0	15.5
MAX	31	23	13	13	52	53	76	110	51	12	11	24
MIN	5.6	5.7	5.2	6.0	6.2	21	32	53	11	11	11	11
AC-FT	1240	467	392	394	874	2180	2920	4500	1310	690	676	920

e Estimated



11202710 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

MEAN	16.4	10.2	7.72	20.2	22.7	53.7	71.5	72.5	35.4	15.5	12.6	14.1
MAX	27.3	14.7	9.87	71.7	51.2	124	146	192	111	28.7	14.6	15.5
(WY)	1993	1993	1989	1993	1993	1993	1993	1993	1993	1993	1990	1994
MIN	6.78	7.85	6.38	6.41	8.21	15.5	32.9	22.6	12.1	11.2	11.0	12.0
(WY)	1989	1994	1994	1994	1990	1992	1990	1992	1992	1994	1994	1989

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1989 - 1994	
ANNUAL TOTAL	23948.0		8350.7			
ANNUAL MEAN	65.6		22.9		29.4	
HIGHEST ANNUAL MEAN					67.0	
LOWEST ANNUAL MEAN					15.6	
HIGHEST DAILY MEAN	386	Jan 7	110	May 13	386	Jan 7 1993
LOWEST DAILY MEAN	5.2	Dec 4	5.2	Dec 4	5.2	Dec 4 1993
ANNUAL SEVEN-DAY MINIMUM	5.5	Dec 3	5.5	Dec 3	5.5	Dec 3 1993
INSTANTANEOUS PEAK FLOW			122	May 13	1160	Oct 30 1992
INSTANTANEOUS PEAK STAGE			3.24	May 13	5.47	Oct 30 1992
ANNUAL RUNOFF (AC-FT)	47500		16560		21280	
10 PERCENT EXCEEDS	173		56		69	
50 PERCENT EXCEEDS	33		12		13	
90 PERCENT EXCEEDS	6.1		6.1		6.5	

## 11202711 MIDDLE FORK TULE RIVER BELOW INTAKE, ABOVE SPRINGVILLE, CA--Continued

MIDDLE FORK TULE RIVER BELOW INTAKE AND SOUTHERN CALIFORNIA EDISON CO.'S TULE RIVER CONDUIT ABOVE SPRINGVILLE, CA  
COMBINED DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	22	39	29	32	67	72	92	85	26	19	16
2	26	23	35	29	31	74	74	102	83	25	19	16
3	25	22	33	31	31	81	79	108	81	26	19	16
4	26	22	31	32	38	85	75	111	77	26	19	16
5	26	22	29	32	35	86	71	122	71	26	19	16
6	28	21	28	32	33	93	71	113	70	25	18	16
7	29	22	27	30	44	82	68	115	68	25	18	16
8	29	22	27	29	74	77	70	110	66	23	18	15
9	28	21	27	29	51	76	74	105	63	24	18	17
10	27	21	27	28	47	78	69	107	59	23	19	17
11	30	30	41	28	50	78	69	118	56	23	19	18
12	30	35	43	27	42	74	73	137	53	23	18	18
13	29	28	36	27	41	73	73	145	50	22	18	19
14	29	35	42	27	40	78	77	144	48	21	18	19
15	29	29	38	27	40	82	84	143	46	21	18	19
16	31	29	34	27	40	83	92	132	45	21	17	17
17	31	27	33	27	89	80	94	115	44	20	17	17
18	31	27	32	28	70	78	98	112	43	22	17	17
19	31	28	31	28	58	79	108	104	41	22	17	17
20	28	28	30	27	72	75	112	98	40	22	17	16
21	24	27	30	27	59	74	110	94	39	22	17	16
22	24	28	29	27	50	74	102	91	37	22	17	16
23	22	30	29	44	49	70	95	91	36	21	17	16
24	22	27	29	40	51	64	98	94	34	21	17	17
25	22	27	30	39	54	65	93	93	33	20	17	17
26	22	27	32	35	59	57	89	97	31	19	17	17
27	21	26	34	36	60	57	87	98	30	19	17	16
28	21	26	32	33	62	59	87	93	29	20	16	15
29	22	28	31	32	---	59	88	91	28	20	17	25
30	22	58	31	32	---	64	90	89	26	20	17	21
31	22	---	30	32	---	69	---	88	---	20	16	---
TOTAL	814	818	1000	951	1402	2291	2542	3352	1512	690	547	514
MEAN	26.3	27.3	32.3	30.7	50.1	73.9	84.7	108	50.4	22.3	17.6	17.1
MAX	31	58	43	44	89	93	112	145	85	26	19	25
MIN	21	21	27	27	31	57	68	88	26	19	16	15
AC-FT	1610	1620	1980	1890	2780	4540	5040	6650	3000	1370	1080	1020

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

MEAN	23.3	26.3	27.7	46.0	54.4	89.3	108	107	61.9	29.5	20.6	18.3
MAX	27.3	29.8	33.5	106	84.8	158	182	231	147	59.2	32.9	24.9
(WY)	1993	1989	1989	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	18.2	22.7	21.4	28.5	34.7	48.2	69.6	53.3	26.6	19.2	15.8	14.8
(WY)	1989	1990	1990	1992	1990	1992	1990	1992	1992	1990	1990	1992

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1989 - 1994

ANNUAL TOTAL	33799	16433	
ANNUAL MEAN	92.6	45.0	51.0
HIGHEST ANNUAL MEAN			92.3
LOWEST ANNUAL MEAN			34.0
HIGHEST DAILY MEAN	419	145	419
LOWEST DAILY MEAN	21	15	6.5
ANNUAL SEVEN-DAY MINIMUM	22	16	13
ANNUAL RUNOFF (AC-FT)	67040	32590	36940
10 PERCENT EXCEEDS	211	92	105
50 PERCENT EXCEEDS	63	31	31
90 PERCENT EXCEEDS	24	17	17

## 11204900 TULE RIVER BELOW SUCCESS DAM, CA

LOCATION.--Lat 36°03'23", long 118°55'22", in NW 1/4 SW 1/4 sec.35, T.21 S., R.28 E., Tulare County, Hydrologic Unit 18030012, on right bank 1,000 ft downstream from Success Dam, 650 ft downstream from hydro-generating plant and 5 mi east of Porterville.

DRAINAGE AREA.--393 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962-69, 1971 to May 1994 (discontinued).

WATER DISCHARGE: Water years 1953-90.

CHEMICAL DATA: Water years 1962-69, 1971-79.

WATER TEMPERATURE: Water years 1971 to May 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to May 1994 (discontinued).

INSTRUMENTATION.--Temperature recorder November 1970 to May 1994 (discontinued).

REMARKS.--Water temperature is affected by regulation from Success Dam and the powerplant.

EXTREMES PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 34.5°C, Aug. 23, 1990; minimum recorded, 3.0°C, Jan. 3, 1975.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.5°C, on several days in October; minimum recorded, 9.0°C, Feb. 21, 22.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	23.5	23.0	20.5	20.0	18.0	14.0	12.0	10.5	12.5	9.5	20.0	11.0
2	23.5	23.0	20.0	20.0	15.0	13.5	13.0	10.5	14.5	9.5	20.5	11.0
3	23.5	23.0	20.0	20.0	18.0	12.5	13.0	10.5	14.0	9.5	21.0	11.5
4	23.5	23.0	20.0	19.5	17.0	12.5	11.0	10.0	14.5	10.5	20.5	12.0
5	23.5	23.0	20.0	19.5	17.5	12.5	10.5	10.0	16.0	10.0	19.5	12.5
6	23.5	23.0	19.5	19.5	16.0	13.0	10.5	10.0	17.0	10.0	14.5	12.5
7	23.0	23.0	19.5	19.5	14.0	12.0	10.0	10.0	15.0	11.0	18.0	12.0
8	23.0	23.0	19.5	19.0	13.5	13.5	10.0	10.0	16.5	10.5	21.0	11.5
9	23.0	22.5	19.0	19.0	13.5	13.5	10.0	10.0	16.0	10.5	20.5	11.5
10	23.0	22.5	19.0	19.0	13.5	13.5	15.0	9.5	17.5	10.0	19.5	12.0
11	23.0	22.5	19.0	18.5	13.5	13.5	15.0	9.5	14.5	9.5	18.5	12.5
12	23.0	23.0	18.5	18.5	13.5	13.0	15.5	9.5	18.0	9.5	21.0	11.0
13	23.0	22.5	18.5	18.0	13.0	13.0	14.5	9.5	17.0	9.5	22.0	11.0
14	23.0	22.5	18.0	17.5	13.0	12.5	15.0	9.5	18.5	9.5	22.0	11.5
15	22.5	22.5	20.0	15.5	12.5	12.5	15.0	9.5	18.0	9.5	21.5	12.0
16	22.5	22.5	19.5	13.0	12.5	12.0	15.5	9.5	13.5	10.5	20.5	12.0
17	22.5	22.0	20.0	13.5	12.0	12.0	16.0	9.5	14.0	11.0	19.0	12.0
18	22.0	21.5	19.0	14.0	12.0	12.0	16.5	9.5	15.5	10.5	22.0	12.5
19	21.5	21.5	18.5	13.5	12.0	11.5	12.0	9.5	17.5	9.5	17.0	13.0
20	21.5	21.0	18.0	13.5	12.0	11.5	10.5	10.0	16.0	10.5	19.5	12.5
21	21.5	21.0	17.0	13.5	11.5	10.5	10.0	10.0	18.0	9.0	22.0	13.0
22	21.5	21.0	18.0	15.0	13.0	10.5	10.5	10.0	16.0	9.0	19.5	12.0
23	21.0	21.0	17.5	13.5	14.5	10.0	10.5	10.0	18.0	9.5	19.5	10.0
24	21.0	21.0	16.0	13.0	12.5	10.0	10.5	10.0	18.5	10.0	18.5	12.0
25	21.0	20.5	15.5	15.0	13.0	10.0	13.0	10.0	19.5	10.5	19.0	11.5
26	21.0	21.0	15.0	14.5	12.0	10.0	15.0	9.5	18.5	11.5	21.5	12.0
27	21.0	21.0	15.0	14.5	16.5	10.5	13.0	9.5	15.5	12.0	22.5	11.5
28	21.0	20.5	14.5	14.0	16.0	10.0	16.0	9.5	19.0	11.5	21.0	12.0
29	20.5	20.5	14.5	14.0	16.0	10.0	14.0	9.5	---	---	21.5	12.0
30	20.5	20.5	16.0	14.0	15.0	9.5	16.0	9.5	---	---	22.5	12.5
31	20.5	20.5	---	---	15.0	10.5	16.5	9.5	---	---	22.5	12.5
MONTH	23.5	20.5	20.5	13.0	18.0	9.5	16.5	9.5	19.5	9.0	22.5	10.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

[illegible]

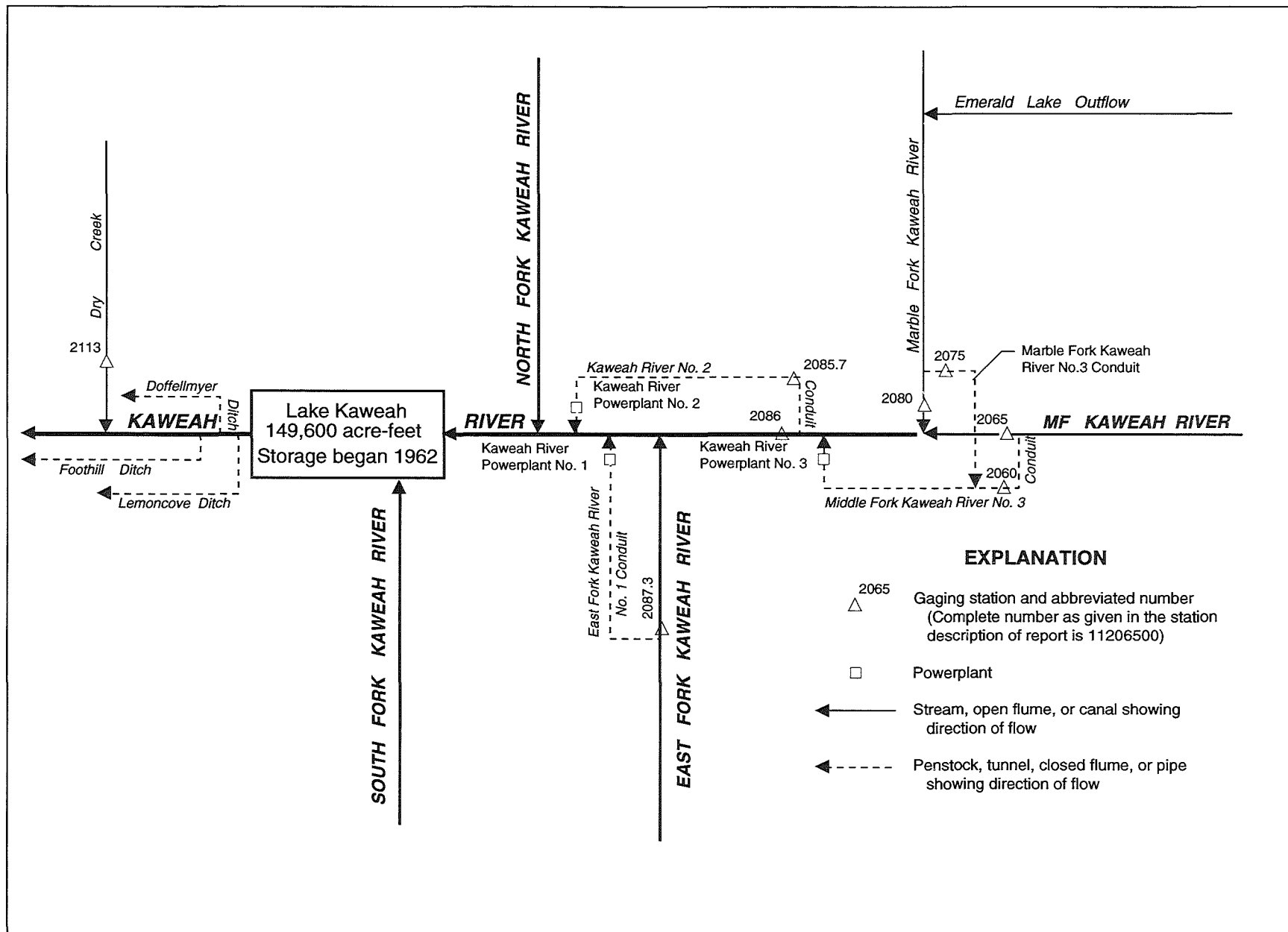


Figure 29. Diversions and storage in Kaweah River basin.

## 11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA

LOCATION.--Lat 36°30'48", long 118°47'27", unsurveyed, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on right bank 0.5 mi southeast of Potwisha Camp and 0.7 mi upstream from confluence with Marble Fork Kaweah River.

DRAINAGE AREA.--102 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1949 to current year. Monthly discharge only for water years 1956-57, published in WSP 1735. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

CHEMICAL ANALYSES: June to September 1980.

SPECIFIC CONDUCTANCE: October 1979 to September 1981.

WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder and rectangular flume on river; water-stage recorder and concrete-lined channel for conduit diversion. Elevation of gage is 2,100 ft above sea level, from topographic map. Prior to October 1955, at datum 0.70 ft higher.

REMARKS.--Middle Fork No. 3 Conduit (station 11206000) diverts from left bank of Middle Fork Kaweah River, 0.1 mi upstream from station. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 Conduit, and passes through Kaweah River No. 3 Powerplant of Southern California Edison Co. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For records of combined discharge of river and diversion to Middle Fork Kaweah No. 3 Conduit, see station 11206501.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,800 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 29.0 ft, from floodmarks, datum then in use, on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft<sup>3</sup>/s, Nov. 12-15, 1949.

Combined flow, maximum discharge, 46,800 ft<sup>3</sup>/s, Dec. 23, 1955; minimum daily, 7.0 ft<sup>3</sup>/s,

Sept. 16, 17, 1990.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 666 ft<sup>3</sup>/s, May 14, gage height, 6.57 ft; minimum daily, 9.3 ft<sup>3</sup>/s, Sept. 22.

Combined flow, maximum daily discharge, 522 ft<sup>3</sup>/s, May 14; minimum daily, 9.3 ft<sup>3</sup>/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	11	16	17	45	93	127	332	31	17	11
2	11	11	11	16	17	60	112	161	349	24	17	11
3	11	11	11	16	17	74	120	205	338	19	16	11
4	11	11	11	17	17	77	89	260	302	17	17	11
5	11	11	11	20	17	81	80	270	272	17	17	10
6	11	11	11	17	17	79	80	225	251	17	17	10
7	12	11	11	22	21	66	67	192	213	17	16	10
8	12	11	11	16	22	64	72	166	210	17	16	9.9
9	12	11	11	16	17	70	75	158	217	17	17	9.9
10	12	11	11	16	17	72	67	202	233	17	18	10
11	12	12	12	16	17	69	67	309	238	17	18	10
12	12	12	11	16	17	54	72	403	223	17	17	11
13	11	11	11	16	17	57	87	428	193	17	17	11
14	11	12	11	16	17	73	121	466	184	17	16	11
15	11	11	11	16	17	87	168	441	164	17	16	11
16	12	11	11	16	17	88	205	342	135	17	15	10
17	12	11	11	16	74	77	206	237	100	17	15	9.8
18	12	11	11	16	37	79	237	204	91	17	14	9.4
19	12	11	11	19	26	80	295	168	86	17	14	9.5
20	12	11	11	16	34	68	329	151	83	17	14	9.9
21	12	11	11	16	22	67	321	147	85	17	14	9.5
22	12	11	11	17	17	76	270	172	76	17	14	9.3
23	11	11	11	17	22	57	226	237	68	17	13	9.4
24	11	11	11	17	27	52	192	289	61	17	13	13
25	11	11	11	17	39	54	154	304	59	16	13	11
26	11	11	11	17	45	49	134	311	56	17	12	10
27	11	11	11	17	37	50	123	339	50	17	12	9.8
28	11	11	11	17	36	56	115	328	49	17	12	11
29	11	11	11	17	---	57	113	348	43	17	12	40
30	11	21	14	17	---	67	123	329	37	17	12	12
31	11	---	17	17	---	77	---	361	---	16	11	---
TOTAL	354	343	351	521	697	2082	4413	8280	4798	548	462	341.4
MEAN	11.4	11.4	11.3	16.8	24.9	67.2	147	267	160	17.7	14.9	11.4
MAX	12	21	17	22	74	88	329	466	349	31	18	40
MIN	11	11	11	16	17	45	67	127	37	16	11	9.3
AC-FT	702	680	696	1030	1380	4130	8750	16420	9520	1090	916	677

## 11206500 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.0	25.7	56.6	81.7	97.6	129	230	423	380	160	45.9	23.2
MAX	125	145	732	528	489	504	630	1178	1271	786	354	157
(WY)	1983	1983	1967	1980	1986	1986	1982	1969	1983	1983	1983	1982
MIN	.92	1.07	1.08	.36	.60	12.8	64.3	78.6	27.1	1.07	2.43	1.56
(WY)	1962	1962	1962	1961	1961	1961	1976	1977	1976	1961	1962	1962

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	60479				23190.4							
ANNUAL MEAN	166				63.5				139			
HIGHEST ANNUAL MEAN									417			
LOWEST ANNUAL MEAN									25.2			
HIGHEST DAILY MEAN	728				466				10500			
LOWEST DAILY MEAN	11				9.3				.30			
ANNUAL SEVEN-DAY MINIMUM	11				9.5				.30			
INSTANTANEOUS PEAK FLOW					666				46800			
INSTANTANEOUS PEAK STAGE					6.57				29.00			
ANNUAL RUNOFF (AC-FT)	120000				46000				100800			
10 PERCENT EXCEEDS	522				211				409			
50 PERCENT EXCEEDS	63				17				29			
90 PERCENT EXCEEDS	11				11				9.8			

## 11206501 MIDDLE FORK KAWEAH RIVER NEAR POTWISHA CAMP, CA--Continued

MIDDLE FORK KAWEAH RIVER AND MIDDLE FORK KAWEAH RIVER NO. 3 CONDUIT NEAR POTWISHA CAMP, CA,  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	36	30	35	97	148	182	388	88	25	11
2	17	16	34	30	33	113	167	216	405	82	24	12
3	16	16	33	32	32	128	175	260	394	75	23	12
4	16	16	32	32	44	131	144	315	358	70	23	12
5	17	16	30	41	40	135	135	326	328	67	22	10
6	18	16	28	36	36	133	134	281	307	64	21	10
7	20	16	27	33	52	120	121	247	269	61	18	10
8	19	15	27	30	67	117	126	221	266	57	18	9.9
9	19	15	25	28	50	124	129	213	274	54	19	9.9
10	18	15	24	27	54	126	121	257	290	52	18	10
11	23	26	36	26	53	124	121	365	295	51	18	10
12	21	36	38	25	47	108	126	459	280	50	17	11
13	19	27	39	25	48	111	142	484	249	48	17	11
14	18	30	44	25	48	127	176	522	240	46	16	11
15	19	23	39	25	50	142	223	497	220	45	16	11
16	21	23	35	24	50	143	260	398	180	42	15	10
17	26	23	36	24	121	132	261	292	155	40	15	9.8
18	24	22	34	24	87	134	292	259	146	39	14	9.4
19	23	22	32	26	75	135	350	223	141	40	14	9.5
20	22	22	30	24	85	122	384	205	138	38	14	9.9
21	21	21	29	24	72	121	376	201	140	37	14	9.5
22	20	26	29	25	63	131	325	227	131	42	14	9.3
23	18	28	28	38	71	111	281	292	122	38	13	9.4
24	18	24	29	34	77	105	247	344	115	35	13	13
25	18	23	30	36	91	107	209	359	113	33	13	11
26	17	22	34	34	98	102	189	367	110	32	12	10
27	17	22	37	40	89	103	178	395	104	30	12	9.8
28	17	22	33	34	87	110	170	384	105	29	12	11
29	17	22	31	33	---	111	168	404	100	28	12	70
30	16	58	32	35	---	121	178	385	94	27	12	45
31	16	---	32	36	---	132	---	417	---	25	11	---
TOTAL	588	679	1003	936	1755	3756	6056	9997	6457	1465	505	407.4
MEAN	19.0	22.6	32.4	30.2	62.7	121	202	322	215	47.3	16.3	13.6
MAX	26	58	44	41	121	143	384	522	405	88	25	70
MIN	16	15	24	24	32	97	121	182	94	25	11	9.3
AC-FT	1170	1350	1990	1860	3480	7450	12010	19830	12810	2910	1000	808

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1994, BY WATER YEAR (WY)

	MEAN	32.6	49.4	98.3	114	137	174	278	472	429	193	68.1	39.1
MAX	177	201	743	565	540	556	683	1225	1318	826	395	201	
(WY)	1983	1983	1956	1980	1986	1986	1982	1969	1983	1983	1983	1982	
MIN	9.58	11.1	12.2	18.9	17.2	40.4	124	139	75.6	25.1	13.7	8.93	
(WY)	1991	1960	1991	1991	1991	1977	1976	1977	1976	1961	1990	1990	

## SUMMARY STATISTICS FOR 1993 CALENDAR YEAR FOR 1994 WATER YEAR WATER YEARS 1955 - 1994

ANNUAL TOTAL	74790	33604.4	
ANNUAL MEAN	205	92.1	174
HIGHEST ANNUAL MEAN			468
LOWEST ANNUAL MEAN			53.5
HIGHEST DAILY MEAN	786	May 19	10500
LOWEST DAILY MEAN	15	Nov 8	7.0
ANNUAL SEVEN-DAY MINIMUM	16	Nov 4	7.1
INSTANTANEOUS PEAK FLOW			46800
ANNUAL RUNOFF (AC-FT)	148300	66650	125900
10 PERCENT EXCEEDS	577	267	459
50 PERCENT EXCEEDS	111	36	83
90 PERCENT EXCEEDS	20	13	16



## 11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA

LOCATION.--Lat 36°31'08", long 118°48'03", in NE 1/4 SW 1/4 sec.23, T.16 S., R.29 E., Tulare County, Hydrologic Unit 18030007, Sequoia National Park, on left bank 0.1 mi north of Potwisha Camp, 0.3 mi upstream from confluence with Middle Fork Kaweah River, and 7.9 mi northeast of Three Rivers.

DRAINAGE AREA.--51.4 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1950 to current year. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately; combined flow only, October 1954 to September 1960.

CHEMICAL ANALYSES: June to September 1980.

SPECIFIC CONDUCTANCE: October 1979 to September 1981.

WATER TEMPERATURE: October 1979 to September 1981.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder and concrete control for conduit diversion. Elevation of gage is 2,150 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Marble Fork Kaweah River No. 3 Conduit (station 11207500) diverts from left bank of Marble Fork 0.3 mi upstream from station. Water is returned to Kaweah River 2.7 mi downstream from confluence of Marble and Middle Forks. See schematic diagram of Kaweah River basin. For records of combined discharge of river and conduit, see station 11208001.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,500 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 13.4 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 0.10 ft<sup>3</sup>/s at times in 1961-64.

Combined flow, maximum discharge, 12,500 ft<sup>3</sup>/s, Dec. 23, 1955; minimum daily, 0.82 ft<sup>3</sup>/s, Oct. 4, 5, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 511 ft<sup>3</sup>/s, May 14, gage height, 5.29 ft; minimum daily, 1.6 ft<sup>3</sup>/s, Nov. 30, Dec. 1, 3.

Combined flow, maximum daily discharge, 360 ft<sup>3</sup>/s, May 14; minimum daily, 2.8 ft<sup>3</sup>/s, Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.5	1.6	10	7.1	12	67	70	211	8.1	6.4	2.8
2	2.6	2.5	1.7	9.9	7.1	17	76	96	257	6.4	6.7	1.8
3	2.5	2.4	1.6	9.7	6.9	26	77	133	244	6.4	6.4	1.9
4	2.5	2.3	1.7	9.5	7.1	32	52	175	206	6.4	6.4	1.9
5	2.3	2.3	1.8	11	7.1	35	43	177	177	6.4	6.4	2.0
6	2.2	2.3	1.8	9.6	7.1	27	45	133	155	6.4	6.3	2.2
7	2.3	2.0	1.7	9.2	7.5	20	33	111	126	6.4	6.0	2.0
8	2.3	2.0	1.7	7.3	7.5	24	36	96	130	6.4	6.0	2.7
9	2.3	2.0	1.7	7.5	7.4	31	33	94	132	6.4	6.0	3.5
10	2.2	2.1	1.7	7.5	7.1	33	27	134	136	6.4	6.0	3.5
11	2.5	2.2	2.2	7.3	7.1	30	27	203	138	6.4	5.9	3.5
12	2.5	2.2	2.2	7.4	7.3	19	36	270	130	6.4	6.0	4.2
13	2.4	2.3	2.2	7.5	7.4	23	55	292	109	6.4	6.0	4.2
14	2.3	2.2	2.3	7.6	7.4	38	85	322	104	6.4	5.9	4.5
15	2.2	2.3	2.5	8.1	7.7	51	116	299	91	6.4	5.4	4.2
16	2.3	2.5	2.7	8.6	7.5	49	133	213	71	6.4	5.2	4.0
17	2.5	2.5	2.5	8.6	19	37	126	134	52	6.4	4.9	3.5
18	2.7	2.3	2.6	8.7	7.8	40	144	112	47	6.4	4.5	3.5
19	2.6	2.5	2.6	9.5	7.6	44	188	93	45	6.4	4.0	3.3
20	2.3	2.5	2.5	8.0	7.5	33	205	82	41	6.4	4.0	3.1
21	2.5	2.4	2.7	7.8	6.8	33	194	90	40	6.4	4.2	3.1
22	2.5	2.3	2.7	7.4	6.5	41	161	127	33	6.4	4.0	2.9
23	2.6	2.3	2.8	8.0	6.4	25	130	176	25	6.4	4.0	2.9
24	2.5	2.5	2.9	8.2	6.5	21	98	210	19	6.4	3.8	4.5
25	2.5	2.4	3.1	8.2	6.8	19	78	203	17	6.4	3.8	5.1
26	2.7	2.3	3.1	8.2	7.1	15	66	218	13	6.4	3.8	3.8
27	2.7	2.5	3.1	7.9	7.1	19	58	263	11	6.4	3.5	3.5
28	2.7	2.9	3.2	7.8	9.4	25	54	249	11	6.4	3.8	4.0
29	2.7	3.7	3.3	7.8	---	27	55	234	11	6.4	4.0	46
30	2.6	1.6	6.9	7.7	---	38	64	208	11	6.4	4.0	3.5
31	2.5	---	10	7.5	---	53	---	220	---	6.4	4.0	---
TOTAL	76.5	70.8	85.1	259.0	214.8	937	2562	5437	2793	200.1	157.3	141.6
MEAN	2.47	2.36	2.75	8.35	7.67	30.2	85.4	175	93.1	6.45	5.07	4.72
MAX	2.7	3.7	10	11	19	53	205	322	257	8.1	6.7	46
MIN	2.2	1.6	1.6	7.3	6.4	12	27	70	11	6.4	3.5	1.8
AC-FT	152	140	169	514	426	1860	5080	10780	5540	397	312	281

## 11208000 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.33	9.75	31.6	36.4	42.8	59.1	134	278	240	84.8	18.3	9.68
MAX	60.5	72.5	385	262	259	278	396	812	784	441	135	103
(WY)	1983	1983	1956	1980	1986	1986	1982	1969	1983	1969	1983	1978
MIN	.38	.39	.44	.15	.17	.92	32.7	46.5	9.58	.57	.83	.38
(WY)	1963	1963	1962	1961	1961	1961	1975	1977	1976	1961	1962	1962

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1955 - 1994			
ANNUAL TOTAL	43485.9				12934.2							
ANNUAL MEAN	119				35.4				79.3			
HIGHEST ANNUAL MEAN									235			
LOWEST ANNUAL MEAN									10.9			
HIGHEST DAILY MEAN	607				322				5700			
LOWEST DAILY MEAN	1.6				1.6				.10			
ANNUAL SEVEN-DAY MINIMUM	1.7				1.7				.10			
INSTANTANEOUS PEAK FLOW					511				12500			
INSTANTANEOUS PEAK STAGE					5.29				13.40			
ANNUAL RUNOFF (AC-FT)	86250				25650				57420			
10 PERCENT EXCEEDS	421				131				240			
50 PERCENT EXCEEDS	20				6.7				12			
90 PERCENT EXCEEDS	2.3				2.3				1.6			

## 11208001 MARBLE FORK KAWEAH RIVER AT POTWISHA CAMP, CA--Continued

MARBLE FORK KAWEAH RIVER AND MARBLE FORK KAWEAH RIVER CONDUIT NO. 2 AT CAMP POTWISHA  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	7.7	14	15	15	39	104	108	245	29	6.4	2.8
2	7.5	7.7	13	16	13	51	115	135	257	26	6.7	3.3
3	7.2	7.6	12	16	13	65	115	172	244	24	6.4	3.4
4	7.1	7.4	12	15	16	71	88	213	209	22	6.4	3.4
5	7.1	7.2	12	18	15	72	79	215	194	20	6.4	3.5
6	8.1	7.2	11	16	15	63	82	169	176	19	6.3	3.6
7	8.6	6.9	10	14	19	56	69	146	150	17	6.0	3.3
8	8.5	6.8	10	14	23	61	73	132	154	16	6.0	3.5
9	8.3	6.6	10	14	21	70	70	131	156	15	6.0	3.6
10	7.9	6.7	10	12	22	71	63	173	160	14	6.0	3.5
11	9.9	9.2	12	12	21	68	63	245	162	13	5.9	3.5
12	10	13	15	12	18	56	73	309	155	12	6.0	4.2
13	9.0	11	14	13	19	60	96	330	134	12	6.0	4.2
14	8.4	11	15	13	19	79	126	360	129	11	5.9	4.5
15	8.3	9.5	14	12	21	92	153	337	115	10	5.4	4.2
16	9.0	9.4	13	12	20	88	168	250	89	9.9	5.2	4.0
17	13	9.6	13	12	39	74	164	171	76	9.2	4.9	3.5
18	11	9.4	14	13	28	77	186	150	72	8.9	4.5	3.5
19	10	9.7	14	13	28	82	230	130	71	8.9	4.0	3.3
20	9.4	9.7	12	13	30	70	246	119	67	9.0	4.0	3.1
21	9.1	9.5	12	12	28	70	234	128	68	8.9	4.2	3.1
22	8.8	9.7	13	12	25	78	197	169	60	10	4.0	2.9
23	8.7	11	12	16	23	60	165	220	53	9.4	4.0	2.9
24	8.5	10	13	16	24	54	134	245	46	8.7	3.8	4.5
25	8.4	9.6	13	16	29	52	114	225	44	8.4	3.8	5.1
26	8.3	9.4	14	15	34	48	102	236	39	8.2	3.8	3.8
27	8.2	9.6	15	17	31	52	95	263	36	8.0	3.5	3.5
28	8.1	10	15	13	30	59	92	260	34	7.4	3.8	4.0
29	7.9	11	14	14	---	62	94	265	36	6.4	4.0	58
30	7.8	17	15	15	---	76	103	243	32	6.4	4.0	16
31	7.7	---	16	15	---	92	---	259	---	6.4	4.0	---
TOTAL	267.2	280.1	402	436	639	2068	3693	6508	3463	394.1	157.3	175.7
MEAN	8.62	9.34	13.0	14.1	22.8	66.7	123	210	115	12.7	5.07	5.86
MAX	13	17	16	18	39	92	246	360	257	29	6.7	58
MIN	7.1	6.6	10	12	13	39	63	108	32	6.4	3.5	2.8
AC-FT	530	556	797	865	1270	4100	7330	12910	6870	782	312	349

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1994, BY WATER YEAR (WY)

MEAN	12.9	21.2	44.8	51.8	65.0	86.3	164	307	268	104	28.9	16.9
MAX	88.8	103	385	300	295	315	426	840	839	487	184	134
(WY)	1983	1983	1956	1980	1986	1986	1982	1969	1983	1983	1983	1978
MIN	2.02	2.77	2.61	5.25	6.67	16.9	57.2	78.4	24.9	4.09	2.43	1.40
(WY)	1962	1991	1991	1991	1991	1977	1975	1977	1976	1961	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1955 - 1994			
ANNUAL TOTAL	51604.1				18483.4							
ANNUAL MEAN	141				50.6							
HIGHEST ANNUAL MEAN									97.5			
LOWEST ANNUAL MEAN									257			
HIGHEST DAILY MEAN	639				360				24.7			
LOWEST DAILY MEAN	6.0				2.8				5700			
ANNUAL SEVEN-DAY MINIMUM	7.0				3.2				.82			
ANNUAL RUNOFF (AC-FT)	102400				36660				1.0			
10 PERCENT EXCEEDS	460				163				70660			
50 PERCENT EXCEEDS	55				14				269			
90 PERCENT EXCEEDS	9.1				4.2				32			
									4.8			

## 11208600 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA

LOCATION.--Lat 36°29'04", long 118°50'06", in NW 1/4 NW 1/4 sec. 37, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, on right bank 0.4 mi upstream of confluence with East Fork Kaweah River, 1.9 mi northeast of Hammond, and 5.2 miles northeast of Three Rivers.

DRAINAGE AREA.--342 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1993 to September 1994.

GAGE.--Water-stage recorder on river; water-stage recorder for conduit diversion. Elevation of gage is 1,360 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Kaweah River No. 2 conduit (station 11208570) diverts up to 130 ft<sup>3</sup>/s from right bank of river near diversion dam. Water is returned to Kaweah River 3.8 miles downstream of diversion and 1.9 miles upstream of confluence with North Fork Kaweah River. For records of combined discharges of river and conduit, see station 11208601. See schematic diagram of Kaweah River basin.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,140 ft<sup>3</sup>/s, May 14, gage height, 6.36 ft; minimum daily, 5.8 ft<sup>3</sup>/s, Sept. 26, 27.

Combined flow, maximum daily discharge, 872 ft<sup>3</sup>/s, May 14; minimum daily, 14 ft<sup>3</sup>/s, several days in September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	24	8.2	20	21	56	166	210	550	27	11	8.0
2	23	16	8.2	20	21	84	199	266	581	16	11	6.0
3	22	8.1	8.0	20	21	110	216	351	560	11	11	6.1
4	23	7.8	8.0	20	21	122	154	442	491	11	11	6.1
5	23	8.1	8.0	22	21	126	133	481	439	11	11	6.1
6	25	8.1	8.0	20	21	121	137	383	409	11	11	6.1
7	28	8.1	8.0	20	26	97	114	322	336	11	11	6.1
8	27	8.1	8.0	20	32	99	118	278	334	11	11	6.1
9	26	8.1	8.0	20	21	112	122	263	343	11	11	6.1
10	25	8.1	8.0	20	21	118	105	342	364	11	11	6.1
11	33	12	14	20	22	113	107	520	371	11	11	6.0
12	32	17	8.5	20	21	86	118	674	353	11	11	6.0
13	28	8.3	7.9	20	21	89	145	732	303	11	11	6.1
14	27	9.1	8.1	20	21	120	216	789	283	11	11	6.1
15	28	8.3	8.0	20	21	149	294	771	260	11	11	6.1
16	31	8.1	8.0	20	21	153	363	603	213	11	11	6.0
17	40	9.4	8.0	20	92	124	354	401	152	11	11	6.0
18	34	12	8.0	20	53	125	396	339	139	11	12	6.1
19	34	10	8.0	20	33	136	503	282	133	11	11	6.1
20	30	9.2	8.0	21	50	113	563	248	125	11	11	6.1
21	28	9.2	9.0	18	32	108	552	251	129	11	12	6.1
22	27	8.6	11	18	25	130	461	304	112	11	11	6.1
23	26	8.3	11	19	54	95	382	414	98	11	12	6.1
24	26	8.1	11	18	30	85	314	496	86	11	12	6.1
25	25	8.1	11	20	39	86	253	496	80	11	12	6.0
26	24	8.1	11	21	56	72	218	501	71	11	11	5.8
27	24	8.1	11	21	42	78	197	567	55	11	11	5.8
28	24	8.1	11	21	40	92	184	551	52	11	11	6.1
29	24	8.3	11	21	---	94	184	575	45	11	11	6.1
30	24	24	11	21	---	113	202	551	37	11	11	8.9
31	23	---	17	21	---	138	---	588	---	11	11	---
TOTAL	838	306.8	291.9	622	899	3344	7470	13991	7504	362	346	241.4
MEAN	27.0	10.2	9.42	20.1	32.1	108	249	451	250	11.7	11.2	8.05
MAX	40	24	17	22	92	153	563	789	581	27	12	61
MIN	22	7.8	7.9	18	21	56	105	210	37	11	11	5.8
AC-FT	1660	609	579	1230	1780	6630	14820	27750	14880	718	686	479

11208600 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.0	10.2	9.42	20.1	32.1	108	249	451	250	11.7	11.2	8.05
MAX	27.0	10.2	9.42	20.1	32.1	108	249	451	250	11.7	11.2	8.05
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
MIN	27.0	10.2	9.42	20.1	32.1	108	249	451	250	11.7	11.2	8.05
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

ANNUAL TOTAL	36216.1	
ANNUAL MEAN	99.2	
HIGHEST DAILY MEAN	789	May 14
LOWEST DAILY MEAN	5.8	Sep 26
ANNUAL SEVEN-DAY MINIMUM	6.0	Sep 21
INSTANTANEOUS PEAK FLOW	1140	May 14
INSTANTANEOUS PEAK STAGE	6.36	May 14
ANNUAL RUNOFF (AC-FT)	71830	
10 PERCENT EXCEEDS	352	
50 PERCENT EXCEEDS	21	
90 PERCENT EXCEEDS	8.0	

## TULARE LAKE BASIN

11208601 KAWEAH RIVER BELOW NO. 2 CONDUIT, NEAR HAMMOND, CA--Continued

KAWEAH RIVER BELOW NO. 2 CONDUIT AND KAWEAH RIVER NO. 2 CONDUIT, NEAR HAMMOND  
 COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	28	50	44	52	130	251	288	624	105	28	16
2	27	25	47	45	48	162	285	347	656	97	26	14
3	26	22	47	49	46	193	301	438	637	88	26	14
4	27	22	46	49	61	204	236	534	569	83	26	14
5	29	22	44	62	57	207	214	569	516	78	23	14
6	31	21	41	55	52	202	218	458	486	74	23	14
7	32	22	38	49	71	176	194	401	411	70	22	14
8	31	22	38	46	97	179	199	359	409	66	22	14
9	30	21	37	43	71	193	204	343	418	62	23	14
10	29	21	35	39	76	200	185	427	440	59	22	14
11	37	35	54	39	75	195	187	615	447	58	22	14
12	36	51	53	38	66	165	199	769	428	56	21	15
13	32	36	53	38	67	168	228	818	377	54	21	15
14	31	39	60	37	67	203	302	872	356	52	20	15
15	32	30	53	37	71	234	379	843	333	51	20	15
16	35	31	48	36	69	237	443	672	265	50	20	14
17	44	30	49	36	162	206	433	474	223	48	19	14
18	38	31	47	35	123	208	478	415	211	47	20	14
19	38	29	46	36	103	217	588	356	205	47	19	14
20	34	28	44	37	124	192	646	323	197	47	19	14
21	32	27	44	34	102	187	632	326	202	46	20	14
22	31	34	45	34	90	210	541	382	185	51	18	14
23	30	39	44	54	96	173	460	498	171	47	19	14
24	30	32	45	50	98	163	391	577	158	44	19	15
25	29	30	47	55	113	165	328	576	152	42	19	16
26	28	29	50	50	132	150	293	581	143	39	18	15
27	28	28	53	59	117	156	272	648	131	36	18	14
28	28	29	49	46	112	171	260	629	130	34	18	15
29	28	30	48	47	---	173	261	654	123	31	18	125
30	28	77	45	51	---	194	280	626	114	30	18	62
31	27	---	44	53	---	221	---	663	---	29	17	---
TOTAL	966	921	1444	1383	2418	5834	9888	16481	9717	1721	644	590
MEAN	31.2	30.7	46.6	44.6	86.4	188	330	532	324	55.5	20.8	19.7
MAX	44	77	60	62	162	237	646	872	656	105	28	125
MIN	26	21	35	34	46	130	185	288	114	29	17	14
AC-FT	1920	1830	2860	2740	4800	11570	19610	32690	19270	3410	1280	1170

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1994, BY WATER YEAR (WY)

MEAN	31.2	30.7	46.6	44.6	86.4	188	330	532	324	55.5	20.8	19.7
MAX	31.2	30.7	46.6	44.6	86.4	188	330	532	324	55.5	20.8	19.7
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
MIN	31.2	30.7	46.6	44.6	86.4	188	330	532	324	55.5	20.8	19.7
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

ANNUAL TOTAL	52007	
ANNUAL MEAN	142	
HIGHEST DAILY MEAN	872	May 14
LOWEST DAILY MEAN	14	Sep 2
ANNUAL SEVEN-DAY MINIMUM	14	Sep 2
ANNUAL RUNOFF (AC-FT)	103200	
10 PERCENT EXCEEDS	430	
50 PERCENT EXCEEDS	50	
90 PERCENT EXCEEDS	19	

## 11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA

LOCATION.--Lat 36°27'04", long 118°47'21", in SW 1/4 NW 1/4 sec. 14, T.17 S., R.29 E., Tulare County, Hydrologic Unit 18030007, 1.9 miles downstream of Grunigen Creek confluence, and 8.2 miles east of Three Rivers.

DRAINAGE AREA.--85.8 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1952 to September 1955, October 1957 to September 1977, October 1993 to current year.

Prior to October 1962, combined, only.

CHEMICAL ANALYSES: July 1968 to September 1971.

WATER TEMPERATURE: August 1968 to September 1976.

SEDIMENT DATA: August 1968 to September 1971.

GAGE.--Water-stage recorder on river; water-stage recorder and Parshall flume for conduit diversion. Elevation of gage is 2,500 ft above sea level, from topographic map.

REMARKS.--East Fork Kaweah River No. 1 Conduit (station 11208720) diverts up to 30 ft<sup>3</sup>/s from left bank of river near diversion dam. Water is returned to Middle Fork Kaweah River, 1.9 mi downstream from mouth of East Fork. See schematic diagram of Kaweah River Basin. For records of combined discharges of river and conduit, see station 11208731.

COOPERATION.--Records were provided by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 13,000 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 21 ft, from floodmarks, from rating curve extended above 850 ft<sup>3</sup>/s, on basis of critical-depth measurement of peak flow over diversion dam; minimum daily, no flow, Jan. 22, Oct. 18-20, 1962.

Combined flow, maximum discharge, 13,000 ft<sup>3</sup>/s, Dec. 6, 1966; minimum daily, 3.5 ft<sup>3</sup>/s, Sept. 28, 29, 1960.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 427 ft<sup>3</sup>/s, May 14, gage height, 5.19 ft; minimum daily, 2.7 ft<sup>3</sup>/s, Nov. 19, 20.

Combined flow, maximum daily discharge, 342 ft<sup>3</sup>/s, May 14; minimum daily, 7.5 ft<sup>3</sup>/s, Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	4.5	5.6	5.2	22	50	75	232	22	9.4	6.0
2	15	13	4.2	5.6	5.2	28	59	99	232	20	7.4	6.0
3	15	e13	4.5	5.5	5.3	33	57	130	226	19	7.3	6.0
4	15	12	4.5	5.6	6.0	34	45	173	203	18	5.7	6.1
5	e15	8.5	4.5	5.5	5.6	39	42	195	179	15	5.7	6.1
6	15	5.6	4.5	5.6	5.3	42	42	170	173	15	5.7	6.0
7	15	5.6	4.5	5.6	9.9	36	38	143	155	14	5.6	6.0
8	15	6.4	3.3	5.6	23	33	40	126	151	13	5.5	6.0
9	15	5.6	3.1	5.6	11	34	40	128	156	13	5.6	6.1
10	15	4.5	4.1	5.6	8.4	35	34	165	160	12	e5.6	6.1
11	16	7.7	14	5.6	8.1	34	35	227	155	12	e5.5	6.1
12	16	11	5.4	5.6	6.3	29	41	273	146	11	e5.5	6.0
13	15	5.9	5.2	5.6	6.5	29	48	300	128	11	e5.7	6.1
14	15	8.4	6.8	5.6	5.7	36	67	320	118	11	e5.3	6.1
15	15	5.1	4.5	5.2	5.6	44	96	297	105	11	e5.1	6.0
16	16	4.9	3.9	5.2	12	49	116	245	85	11	e5.2	6.0
17	17	4.7	3.9	5.2	52	43	124	198	72	11	5.0	6.0
18	17	3.7	3.8	5.2	26	44	142	171	66	11	7.8	6.0
19	16	2.7	3.7	5.2	17	46	182	147	62	11	8.4	6.0
20	15	2.7	4.4	5.2	25	40	205	133	59	11	7.7	6.0
21	15	3.0	5.7	5.4	16	39	204	136	56	11	7.7	6.0
22	15	3.3	5.6	5.4	12	43	184	153	51	11	7.7	6.0
23	14	3.3	5.6	12	11	33	167	184	45	11	7.7	6.1
24	14	4.0	5.6	6.0	12	31	138	201	41	11	6.9	5.8
25	14	4.5	5.6	5.8	17	32	116	215	38	11	6.9	5.5
26	14	4.5	5.5	5.3	22	28	101	231	35	11	6.9	5.4
27	14	4.5	5.2	5.3	19	29	89	234	32	11	6.3	5.5
28	14	4.5	5.2	5.3	19	31	79	224	31	11	6.3	6.8
29	14	4.5	5.2	5.3	---	32	72	238	28	11	7.7	27
30	14	24	5.2	5.2	---	36	73	232	25	11	7.7	10
31	14	---	5.2	5.2	---	43	---	250	---	11	6.9	---
TOTAL	459	204.1	156.9	175.6	377.1	1107	2726	6013	3245	393	203.4	204.8
MEAN	14.8	6.80	5.06	5.66	13.5	35.7	90.9	194	108	12.7	6.56	6.83
MAX	17	24	14	12	52	49	205	320	232	22	9.4	27
MIN	10	2.7	3.1	5.2	5.2	22	34	75	25	11	5.0	5.4
AC-FT	910	405	311	348	748	2200	5410	11930	6440	780	403	406

e Estimated.

## 11208730 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.61	6.51	38.5	44.6	45.0	59.4	139	342	331	103	21.4	8.85
MAX	22.4	26.3	594	359	219	191	350	944	966	552	148	73.9
(WY)	1970	1966	1967	1969	1969	1978	1969	1969	1969	1967	1967	1978
MIN	.32	.48	.23	.55	.37	2.28	45.2	54.8	21.3	.85	.34	.23
(WY)	1959	1963	1959	1961	1961	1977	1977	1977	1976	1959	1955	1953

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1952 - 1994

ANNUAL TOTAL	15264.9		
ANNUAL MEAN	41.8	94.0	
HIGHEST ANNUAL MEAN		300	1969
LOWEST ANNUAL MEAN		15.9	1977
HIGHEST DAILY MEAN	320	May 14	8000
LOWEST DAILY MEAN	2.7	Nov 19	.00
ANNUAL SEVEN-DAY MINIMUM	3.2	Nov 18	.10
INSTANTANEOUS PEAK FLOW	427	May 14	13000
INSTANTANEOUS PEAK STAGE	5.19	May 14	21.00
ANNUAL RUNOFF (AC-FT)	30280		68100
10 PERCENT EXCEEDS	154		291
50 PERCENT EXCEEDS	12		18
90 PERCENT EXCEEDS	5.2		.60



11208731 EAST FORK KAWEAH RIVER NEAR THREE RIVERS, CA--Continued

EAST KAWEAH RIVER AND EAST FORK KAWEAH RIVER NO. 1 CONDUIT NEAR THREE RIVERS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	13	24	21	20	45	73	98	256	45	16	8.7
2	15	13	22	21	20	51	82	122	256	43	16	8.8
3	15	13	21	22	20	56	80	154	249	42	15	8.7
4	15	12	21	22	26	57	68	197	226	40	13	8.6
5	15	14	19	24	24	62	65	218	202	38	12	8.3
6	15	14	19	22	21	65	65	191	196	37	11	8.1
7	15	13	18	21	30	59	61	165	178	36	11	8.0
8	15	14	19	21	45	56	63	149	174	34	11	7.8
9	15	15	19	19	32	57	63	151	179	32	11	7.9
10	15	16	19	18	29	58	57	187	182	30	11	8.2
11	16	23	32	19	28	57	58	249	178	29	11	8.4
12	16	27	27	19	23	52	64	295	169	27	10	8.7
13	15	22	27	20	25	52	71	322	151	26	10	9.3
14	15	24	29	19	25	59	90	342	141	25	9.9	9.4
15	15	20	25	18	25	67	120	319	128	24	9.5	9.0
16	16	20	22	18	25	72	140	266	107	23	9.1	8.4
17	17	20	23	18	71	66	148	219	94	22	9.3	8.2
18	17	20	22	18	46	67	166	193	88	22	11	7.9
19	16	19	22	18	38	69	203	170	84	23	11	8.0
20	15	19	20	18	46	63	228	157	82	23	11	7.9
21	15	19	21	17	37	62	227	160	79	23	10	8.1
22	15	20	21	17	34	66	206	176	74	26	10	8.0
23	14	20	21	30	33	56	189	207	68	22	10	7.5
24	14	18	21	23	34	54	160	224	64	21	9.4	8.7
25	14	17	22	25	40	55	138	239	61	20	9.0	9.5
26	14	17	23	21	45	51	124	255	58	18	8.8	8.6
27	14	18	24	23	42	52	112	257	55	18	8.5	8.4
28	14	18	21	19	42	54	102	247	54	17	9.4	10
29	14	19	21	20	---	55	95	262	50	17	9.9	39
30	14	45	20	21	---	59	96	256	48	16	9.8	29
31	14	---	20	20	---	66	---	274	---	16	9.7	---
TOTAL	465	562	685	632	926	1820	3414	6721	3931	835	333.3	305.1
MEAN	15.0	18.7	22.1	20.4	33.1	58.7	114	217	131	26.9	10.8	10.2
MAX	17	45	32	30	71	72	228	342	256	45	16	39
MIN	14	12	18	17	20	45	57	98	48	16	8.5	7.5
AC-FT	922	1110	1360	1250	1840	3610	6770	13330	7800	1660	661	605

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1994, BY WATER YEAR (WY)

	MEAN	20.5	24.3	56.3	62.3	67.5	81.8	163	367	357	127	42.2	26.7
MAX	42.2	45.2	597	372	223	214	368	966	988	579	174	99.5	
(WY)	1970	1966	1967	1969	1969	1978	1969	1969	1969	1967	1967	1978	
MIN	10.2	9.37	10.2	14.5	17.8	22.9	68.1	79.5	47.4	18.4	10.8	10.2	
(WY)	1960	1960	1960	1961	1961	1977	1977	1977	1976	1977	1994	1994	

SUMMARY STATISTICS

FOR 1994 WATER YEAR

WATER YEARS 1952 - 1994

ANNUAL TOTAL	20629.4		
ANNUAL MEAN	56.5		
HIGHEST ANNUAL MEAN		115	
LOWEST ANNUAL MEAN		317	1969
HIGHEST DAILY MEAN	342	May 14	
LOWEST DAILY MEAN	7.5	Sep 23	
ANNUAL SEVEN-DAY MINIMUM	7.9	Sep 17	
ANNUAL RUNOFF (AC-FT)	40920		
10 PERCENT EXCEEDS	177		83180
50 PERCENT EXCEEDS	23		314
90 PERCENT EXCEEDS	9.8		41
			14

## 11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA

LOCATION.--Lat 36°24'51", long 119°00'42", in SE 1/4 SE 1/4 sec.26, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030012, on left bank 0.6 mi downstream from Terminus Dam, 0.6 mi downstream from the hydroelectric plant below the dam, and 2.2 mi northeast of Lemnecove.

DRAINAGE AREA.--561 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962 to September 1994 (discontinued).

WATER DISCHARGE: Water years 1962-90.

CHEMICAL DATA: Water years 1962-79.

WATER TEMPERATURE: Water years 1971 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to September 1994 (discontinued).

INSTRUMENTATION.--Temperature recorder November 1970 to September 1994 (discontinued).

REMARKS.--Interruptions in record were due to malfunction of recording instrument or no flow. Water temperature is affected by regulation from Terminus Dam and the powerplant.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5°C, Aug. 26, 1988; minimum recorded, 3.0°C, Dec. 31, 1992.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.5°C, Aug. 29-31, Sept. 1; minimum recorded, 7.5°C, many days.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	18.5	15.5	12.5	10.5	8.5	8.0	9.0	7.5	13.5	8.5
2	---	---	19.0	15.0	12.0	11.0	8.5	8.0	9.0	7.5	13.5	8.5
3	---	---	18.5	15.0	12.0	10.5	8.5	8.0	9.0	7.5	13.5	8.5
4	---	---	18.5	15.0	12.0	10.5	9.0	8.0	8.5	8.0	13.5	9.0
5	---	---	18.0	15.0	12.0	10.5	8.5	8.5	9.0	8.0	13.0	9.5
6	---	---	18.0	15.0	12.0	10.5	8.5	8.0	9.5	8.0	11.5	9.5
7	---	---	17.5	14.5	12.0	10.5	9.0	8.0	9.0	8.5	12.5	9.0
8	---	---	17.5	14.0	12.5	10.5	9.0	7.5	9.5	8.5	14.0	9.0
9	21.5	18.5	17.0	14.0	12.0	10.0	8.0	7.5	9.5	8.5	14.5	9.5
10	22.0	18.0	16.5	14.0	12.0	10.5	9.0	7.5	9.5	8.5	14.5	10.0
11	22.5	19.0	16.0	14.5	11.0	10.5	8.5	7.5	9.0	8.5	13.0	10.5
12	22.0	19.0	16.0	13.5	11.0	10.0	9.0	7.5	9.5	8.5	16.0	9.0
13	21.5	18.0	15.5	12.5	11.0	9.5	8.5	7.5	9.5	8.5	17.0	9.0
14	21.5	18.5	15.0	13.0	10.0	9.5	9.0	7.5	9.5	8.5	17.0	9.0
15	21.5	19.0	15.0	12.0	10.0	9.0	8.5	7.5	9.5	8.5	16.5	9.5
16	20.5	18.5	14.5	11.5	10.5	9.0	9.0	7.5	9.5	8.5	15.0	10.5
17	20.0	18.0	14.5	11.5	10.0	9.0	9.5	7.5	9.5	9.0	14.5	10.0
18	20.5	16.5	14.5	12.0	9.5	9.0	9.5	7.5	9.0	9.0	17.0	10.5
19	20.5	16.5	14.0	11.5	9.5	8.5	9.0	7.5	9.0	8.5	14.0	11.0
20	20.5	16.0	14.0	11.5	9.5	8.0	9.5	7.5	9.5	8.5	15.0	10.0
21	19.5	16.5	13.0	11.5	8.5	8.0	9.0	7.5	9.0	8.5	16.0	10.5
22	20.0	16.0	13.5	12.0	9.0	8.0	9.5	7.5	9.0	8.5	15.0	10.0
23	20.0	16.0	12.0	11.0	9.0	8.0	9.5	8.0	9.0	8.5	14.5	8.5
24	20.0	16.0	12.5	11.0	8.5	7.5	9.0	8.5	9.5	8.5	14.5	9.0
25	20.0	15.5	12.5	10.0	8.5	7.5	9.5	8.0	9.5	9.0	13.5	9.5
26	19.5	15.5	12.5	9.5	8.5	7.5	9.5	8.0	10.5	9.0	16.5	9.5
27	19.0	16.0	11.5	10.0	9.0	7.5	8.5	8.0	11.0	8.5	17.0	9.5
28	18.5	16.5	11.5	10.5	9.0	7.5	9.5	8.0	13.0	8.5	16.0	10.0
29	19.0	15.5	12.5	10.5	9.0	7.5	9.0	8.0	---	---	16.0	10.0
30	19.5	15.5	12.0	11.0	9.0	7.5	9.5	7.5	---	---	16.0	10.5
31	18.5	16.0	---	---	8.5	7.5	9.5	7.5	---	---	16.0	10.5
MONTH	---	---	19.0	9.5	12.5	7.5	9.5	7.5	13.0	7.5	17.0	8.5

11210950 KAWEAH RIVER BELOW TERMINUS DAM, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.0	11.0	18.0	11.5	15.5	12.5	---	---	26.5	26.0	27.5	21.5
2	16.0	10.5	18.5	11.5	15.5	12.5	---	---	26.5	26.0	26.5	21.5
3	16.5	11.0	17.5	11.5	15.5	12.0	---	---	26.5	26.0	26.5	21.0
4	16.5	10.5	17.5	11.5	15.5	12.0	---	---	26.5	26.0	26.5	20.5
5	16.5	10.5	15.5	12.0	16.0	12.5	---	---	26.5	26.0	27.0	20.5
6	15.0	11.0	14.0	11.5	14.5	12.0	---	---	26.5	26.0	27.0	21.0
7	16.5	11.0	13.5	11.5	---	---	---	---	26.5	26.0	26.5	21.5
8	13.5	11.0	17.0	11.0	---	---	18.5	17.5	26.5	26.0	26.0	21.0
9	14.0	10.5	18.0	12.0	---	---	19.0	18.0	26.0	25.5	24.5	21.0
10	14.5	10.5	17.5	12.0	---	---	19.0	18.0	25.5	25.0	25.5	21.0
11	16.5	10.5	17.0	13.0	---	---	20.5	18.5	25.0	14.5	25.0	21.0
12	17.0	11.0	15.5	12.5	---	---	21.0	20.0	16.0	14.5	25.0	21.0
13	17.5	11.5	20.0	12.0	---	---	21.5	20.0	18.0	16.0	24.5	20.5
14	18.0	11.5	20.0	13.0	---	---	21.5	21.0	19.5	17.5	25.0	20.5
15	18.0	11.5	16.5	11.5	---	---	22.0	21.5	21.0	19.0	25.0	20.5
16	17.0	12.5	14.5	11.5	---	---	24.5	21.5	23.5	19.0	23.5	19.5
17	16.5	12.5	13.5	11.0	---	---	23.0	22.5	23.0	17.0	25.0	19.5
18	17.5	12.0	13.0	11.0	---	---	23.5	23.0	23.0	18.0	24.5	20.0
19	16.5	12.0	14.0	11.0	---	---	24.0	23.5	24.0	19.5	25.0	20.0
20	16.0	12.0	16.5	11.0	---	---	24.5	24.0	24.5	20.0	25.0	20.0
21	15.0	12.0	16.5	11.5	---	---	26.5	24.0	25.0	20.0	25.5	20.5
22	15.0	11.5	17.0	11.5	---	---	25.0	24.5	25.5	20.5	25.0	20.0
23	13.0	12.0	16.5	12.0	---	---	25.0	25.0	26.5	21.0	23.5	20.5
24	13.5	11.5	16.5	12.0	---	---	25.0	15.5	26.5	22.0	25.5	20.0
25	14.0	12.0	16.0	12.0	---	---	26.0	25.0	26.5	22.0	25.0	20.0
26	13.0	11.5	16.0	12.0	---	---	26.0	25.5	26.5	22.0	25.0	19.5
27	15.0	11.5	16.0	12.0	---	---	26.0	25.5	26.5	22.5	23.5	20.5
28	17.5	12.0	16.0	12.0	---	---	26.0	25.5	26.5	22.5	22.5	20.5
29	18.5	11.5	16.5	12.0	---	---	26.5	26.0	27.5	22.5	24.0	21.0
30	17.5	12.0	15.0	12.5	---	---	26.5	26.0	27.5	21.5	23.5	19.5
31	---	---	16.0	12.5	---	---	26.5	26.0	27.5	21.0	---	---
MONTH	18.5	10.5	20.0	11.0	---	---	---	---	27.5	14.5	27.5	19.5

## TULARE LAKE BASIN

11211300 DRY CREEK NEAR LEMONCOVE, CA

LOCATION.--Lat 36°26'51", long 119°01'38", in NE 1/4 SE 1/4 sec.15, T.17 S., R.27 E., Tulare County, Hydrologic Unit 18030012, on right bank 0.5 mi downstream from Bequette Canyon, 2.9 mi upstream from mouth, and 4.4 mi north of Lemoncove.

DRAINAGE AREA.--75.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1959 to September 1994 (discontinued).

REVISED RECORDS.--WSP 2130: 1960(M).

GAGE.--Water-stage recorder. Elevation of gage is 570 ft above sea level, from topographic map. Prior to Mar. 8, 1969, 1.6 mi downstream at different datum.

REMARKS.--Records good. Small diversions upstream from station for irrigation. See schematic diagram of Kaweah River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft<sup>3</sup>/s, Dec. 6, 1966, gage height, 7.30 ft in gage well, 8.94 ft from floodmarks, site and datum then in use; no flow for several months most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a discharge of 6,070 ft<sup>3</sup>/s, from slope-area measurement. Flood of 1867 is believed to have exceeded that of December 1955 from information provided by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 8	1115	*101	*2.64	Feb. 20	unknown	100	unknown

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	3.2	2.3	3.6	12	4.8	5.2	5.0	.00	.00	.00
2	.00	.00	2.2	2.2	3.6	11	4.6	4.6	2.8	.00	.00	.00
3	.00	.00	1.9	2.2	3.6	11	4.5	4.3	2.4	.00	.00	.00
4	.00	.00	1.8	2.3	4.2	11	4.2	4.0	2.3	.00	.00	.00
5	.00	.00	1.7	2.3	4.6	10	4.0	3.9	2.2	.00	.00	.00
6	.00	.00	1.7	2.3	4.8	13	3.7	4.2	2.1	.00	.00	.00
7	.00	.00	1.7	2.5	6.3	12	3.4	5.4	2.0	.00	.00	.00
8	.00	.00	1.7	2.6	61	10	3.5	6.3	2.0	.00	.00	.00
9	.00	.00	1.7	2.5	28	9.1	6.1	5.2	1.9	.00	.00	.00
10	.00	.00	1.7	2.5	16	8.4	7.8	4.2	1.6	.00	.00	.00
11	.00	.00	e4.3	2.5	15	8.2	5.8	3.8	1.5	.00	.00	.00
12	.00	.00	e19	2.5	12	8.1	4.6	3.4	1.3	.00	.00	.00
13	.00	.00	e5.4	2.5	9.1	7.5	3.9	3.1	1.2	.00	.00	.00
14	.00	.00	3.9	2.5	7.9	7.3	3.7	3.0	1.0	.00	.00	.00
15	.00	.00	4.9	2.5	7.0	7.1	3.4	2.7	.98	.00	.00	.00
16	.00	.00	3.7	2.5	6.6	6.3	3.2	2.6	.93	.00	.00	.00
17	.00	.00	2.8	2.5	e24	6.2	2.9	2.7	.90	.00	.00	.00
18	.00	.00	2.5	2.5	e34	6.2	2.8	4.3	.85	.00	.00	.00
19	.00	.00	2.4	2.5	e33	5.9	2.8	4.2	.78	.00	.00	.00
20	.00	.00	2.3	2.4	e80	5.9	2.8	3.7	.74	.00	.00	.00
21	.00	.00	2.3	2.3	e38	5.7	2.7	3.5	.66	.00	.00	.00
22	.00	.00	2.2	2.3	e22	5.6	2.6	3.0	.56	.00	.00	.00
23	.00	.00	2.2	2.5	e21	5.6	2.6	2.7	.44	.00	.00	.00
24	.00	.00	2.1	2.9	e18	5.6	9.1	2.5	.32	.00	.00	.00
25	.00	.37	2.1	8.1	17	11	11	2.3	.19	.00	.00	.00
26	.00	1.1	2.1	7.2	16	9.7	14	2.3	.08	.00	.00	.00
27	.00	1.2	2.2	5.3	14	7.2	11	2.3	.02	.00	.00	.00
28	.00	1.3	2.2	4.4	13	6.2	9.4	2.2	.00	.00	.00	.00
29	.00	1.4	2.2	4.0	---	5.5	7.8	2.1	.00	.00	.00	.00
30	.00	4.1	2.3	3.7	---	5.2	6.4	2.2	.00	.00	.00	.00
31	.00	---	2.3	3.6	---	5.0	---	4.2	---	.00	.00	---
TOTAL	0.00	9.47	94.7	94.9	523.3	248.5	159.1	110.1	36.75	0.00	0.00	0.00
MEAN	.000	.32	3.05	3.06	18.7	8.02	5.30	3.55	1.22	.000	.000	.000
MAX	.00	4.1	19	8.1	80	13	14	6.3	5.0	.00	.00	.00
MIN	.00	.00	1.7	2.2	3.6	5.0	2.6	2.1	.00	.00	.00	.00
AC-FT	.00	19	188	188	1040	493	316	218	73	.00	.00	.00

e Estimated.

## 11211300 DRY CREEK NEAR LEMONCOVE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.62	3.95	19.9	45.0	64.0	62.2	47.4	17.1	5.92	1.40	.28	.31
MAX	9.38	63.4	263	386	441	419	254	113	35.9	13.5	5.42	3.84
(WY)	1983	1983	1967	1969	1969	1983	1982	1967	1967	1983	1983	1978
MIN	.000	.000	.000	.000	.000	1.14	.30	.000	.000	.000	.000	.000
(WY)	1960	1960	1960	1960	1961	1977	1977	1961	1960	1960	1960	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1960 - 1994			
ANNUAL TOTAL	13048.81				1276.82							
ANNUAL MEAN	35.8				3.50				22.1			
HIGHEST ANNUAL MEAN									129			
LOWEST ANNUAL MEAN									.19			
HIGHEST DAILY MEAN	755				80				6370			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				.00			
INSTANTANEOUS PEAK FLOW					101				14500			
INSTANTANEOUS PEAK STAGE					2.64				8.94			
ANNUAL RUNOFF (AC-FT)	25880				2530				16020			
10 PERCENT EXCEEDS	100				8.3				42			
50 PERCENT EXCEEDS	3.7				2.0				1.4			
90 PERCENT EXCEEDS	.00				.00				.00			

11211785 COTTONWOOD CREEK ABOVE COLLIER CREEK, NEAR ELDERWOOD, CA

LOCATION.--Lat 36°32'33", long 119°06'40", in NW 1/4 NE 1/4 sec.14, T.16 S., R.26 E., Tulare County, Hydrologic Unit 18030012, on left bank, 4.0 mi north of Elderwood and 8.0 mi north of Woodlake, on State Highway 245.

DRAINAGE AREA.--52.3 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1985 to September 1994 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft<sup>3</sup>/s, Jan. 14, 1993, gage height, 7.15 ft; no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 35 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 8	1015	*141	*2.32	Feb. 20	1300	137	2.30

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	1.2	5.1	3.6	3.9	7.9	3.6	2.8	1.8	.00	.00	.00
2	.52	1.2	3.9	3.6	3.9	7.1	3.5	2.7	1.4	.00	.00	.00
3	.55	1.3	3.7	3.6	3.9	6.3	3.4	2.5	1.2	.00	.00	.00
4	.58	1.4	3.6	3.6	4.6	5.7	3.4	2.5	1.1	.00	.00	.00
5	.67	1.5	3.6	3.6	4.8	6.3	3.3	2.5	1.1	.00	.00	.00
6	.74	1.6	3.6	3.8	4.2	9.9	3.3	2.6	1.1	.00	.00	.00
7	.78	1.6	3.5	3.6	6.4	7.2	3.4	4.3	1.2	.00	.00	.00
8	.81	1.6	3.2	3.6	6.5	5.6	3.4	6.5	1.1	.00	.00	.00
9	.85	1.6	3.2	3.6	24	5.0	3.5	3.5	1.1	.00	.00	.00
10	.86	1.7	3.2	3.6	13	4.7	3.5	2.9	.96	.00	.00	.00
11	.83	4.6	5.0	3.6	12	4.7	3.1	2.6	.86	.00	.00	.00
12	.96	5.9	15	3.6	8.5	4.4	2.9	2.3	.76	.00	.00	.00
13	1.1	4.0	5.5	3.6	7.2	4.2	2.8	2.2	.69	.00	.00	.00
14	1.2	3.5	5.7	3.6	7.2	4.0	2.7	2.0	.65	.00	.00	.00
15	1.2	2.8	7.6	3.6	7.2	3.9	2.6	1.8	.63	.00	.00	.00
16	1.4	2.6	4.9	3.6	6.4	3.9	2.6	1.7	.64	.00	.00	.00
17	2.0	2.5	4.3	3.6	24	3.9	2.6	1.8	.63	.00	.00	.00
18	4.0	2.4	3.9	3.4	36	3.9	2.6	2.4	.63	.00	.00	.00
19	2.3	2.4	3.9	3.2	35	3.9	2.5	2.5	.56	.00	.00	.00
20	1.7	2.4	3.9	3.2	85	3.9	2.5	2.3	.42	.00	.00	.00
21	1.4	2.4	3.9	3.2	34	3.8	2.4	2.2	.24	.00	.00	.00
22	1.3	2.6	3.8	3.2	18	3.8	2.4	1.9	.12	.00	.00	.00
23	1.2	2.4	3.8	3.7	14	3.8	2.4	1.7	.02	.00	.00	.00
24	1.2	2.4	3.8	5.0	12	3.8	5.5	1.6	.00	.00	.00	.00
25	1.1	2.4	3.8	14	12	6.8	6.5	1.4	.00	.00	.00	.00
26	1.1	2.6	3.8	6.7	11	4.7	7.5	1.4	.00	.00	.00	.00
27	1.1	2.6	3.8	4.8	10	3.9	5.5	1.4	.00	.00	.00	.00
28	1.1	2.6	3.6	4.4	8.9	3.7	4.4	1.3	.00	.00	.00	.00
29	1.2	2.6	3.6	4.0	---	3.6	3.9	1.2	.00	.00	.00	.00
30	1.1	8.9	3.6	3.9	---	3.6	3.1	1.1	.00	.00	.00	.00
31	1.1	---	3.6	3.9	---	3.6	---	1.6	---	.00	.00	---
TOTAL	36.42	79.3	137.4	128.0	482.1	151.5	104.8	71.2	18.91	0.00	0.00	0.00
MEAN	1.17	2.64	4.43	4.13	17.2	4.89	3.49	2.30	.63	.000	.000	.000
MAX	4.0	8.9	15	14	85	9.9	7.5	6.5	1.8	.00	.00	.00
MIN	.47	1.2	3.2	3.2	3.9	3.6	2.4	1.1	.00	.00	.00	.00
AC-FT	72	157	273	254	956	301	208	141	38	.00	.00	.00

11211785 COTTONWOOD CREEK ABOVE COLLIER CREEK, NEAR ELDERWOOD, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.58	1.23	2.40	14.0	25.1	24.5	8.28	3.11	1.28	.34	.16	.35
MAX	3.00	3.80	4.99	92.9	117	92.0	27.1	10.4	6.27	1.70	.87	2.53
(WY)	1987	1986	1986	1993	1986	1986	1993	1993	1993	1986	1993	1986
MIN	.000	.000	.000	.000	.36	2.45	.96	.18	.000	.000	.000	.000
(WY)	1988	1990	1991	1991	1991	1990	1990	1992	1989	1987	1987	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1986 - 1994			
ANNUAL TOTAL	7919.71				1209.63							
ANNUAL MEAN	21.7				3.31				6.68			
HIGHEST ANNUAL MEAN									21.9			
LOWEST ANNUAL MEAN									.81			
HIGHEST DAILY MEAN	886				85				886			
LOWEST DAILY MEAN	.28				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.33				.00				.00			
INSTANTANEOUS PEAK FLOW					141				3670			
INSTANTANEOUS PEAK STAGE					2.32				7.15			
ANNUAL RUNOFF (AC-FT)	15710				2400				4840			
10 PERCENT EXCEEDS	51				6.3				10			
50 PERCENT EXCEEDS	3.9				2.4				.91			
90 PERCENT EXCEEDS	.57				.00				.00			

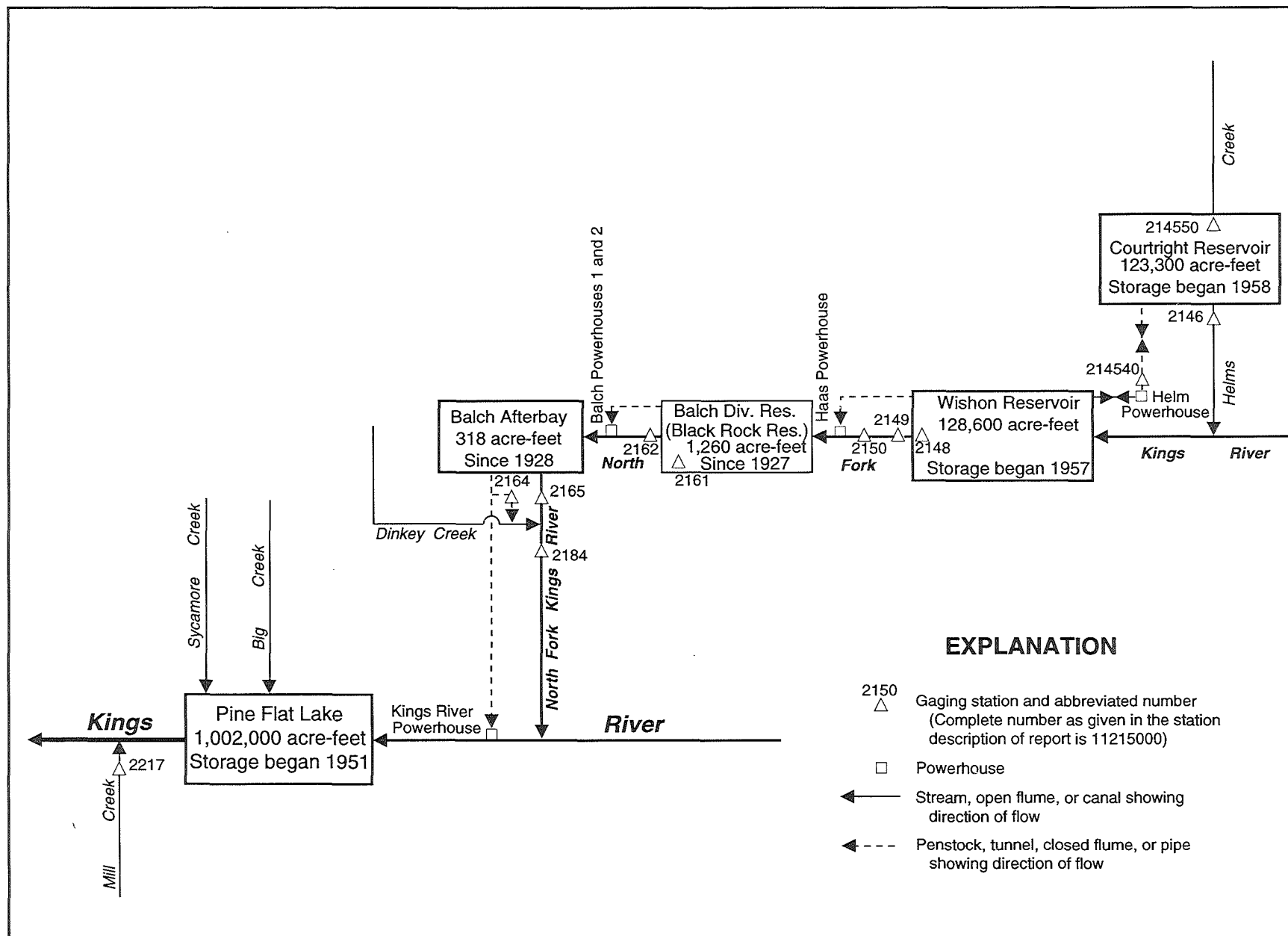


Figure 30. Diversions and storage in Kings River basin.



## 11214540 HELMS POWERPLANT NEAR WISHON RESERVOIR, CA

LOCATION.--Lat 37°02'22", long 118°57'16", unsurveyed, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, underground facility, 2.4 mi north of Wishon Dam, and 2.8 mi south of Courtright Dam.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Acoustic-velocity meter in penstock. Elevation of powerplant, approximately 1,000 ft below land surface, is 6,286.0 ft above sea level (levels by Pacific Gas & Electric Co.)

REMARKS.--No estimated daily discharges. Flow is diverted from Courtright Reservoir (station 11214550) through a tunnel to the powerplant which generates electricity during peak power demand, then to Wishon Reservoir (station 11214800). During periods of low power demand, reversible turbines pump water from Wishon Reservoir to Courtright Reservoir. Turbines draft up to 9,000 ft<sup>3</sup>/s and pump up to 7,200 ft<sup>3</sup>/s. Figures shown represent the net daily flow from Courtright Reservoir to Wishon Reservoir. Negative values represent net flow pumped to Courtright Reservoir. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,250 ft<sup>3</sup>/s, Nov. 1, 1991; maximum daily pumpage, 3,650 ft<sup>3</sup>/s, May 28, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	113	.00	.00	742	74	520	-890	-923	.00	.00	.00
2	527	121	.00	-369	1890	-286	-351	-733	-1060	.00	182	.00
3	208	568	142	1.0	361	-356	-700	66	-923	.00	2350	.00
4	245	1250	287	-254	-361	-353	217	1600	-2330	.00	3210	.00
5	.00	226	447	-725	-857	-568	1200	920	-2500	-270	2840	163
6	24	293	943	-437	-1200	-626	.00	-600	-641	.00	477	1380
7	453	409	294	-18	-442	-721	137	.00	-891	.00	167	.00
8	.00	270	956	93	-473	-556	262	-1850	24	513	-343	576
9	.00	406	198	-103	286	.00	785	-797	2700	1350	-477	393
10	1530	455	.00	-235	-420	.00	84	-881	2210	.00	-474	218
11	1000	.00	.00	812	-351	.00	2460	-950	-1050	35	383	.00
12	445	.00	365	-267	.00	12	2460	-544	-1930	297	494	.00
13	-382	.00	388	-429	.00	.00	-945	-581	-754	164	-30	.00
14	-220	504	276	593	186	296	-362	-316	-9.0	821	-618	136
15	-483	409	1840	-1050	197	.00	-327	-962	-487	607	1610	994
16	-372	164	639	-1110	.00	.00	-514	172	.00	1650	1190	1300
17	797	.00	1260	859	121	-555	-660	335	242	495	273	.00
18	54	.00	134	-8.0	953	-208	1200	.00	-78	.00	-123	194
19	863	.00	-380	142	1050	131	195	101	-1410	.00	-401	1550
20	557	.00	-378	326	-72	411	-295	-802	-736	.00	-526	1220
21	790	496	-301	.00	-674	-121	-371	-1090	126	.00	-845	-397
22	814	47	34	.00	-10	141	.00	-937	-267	.00	-292	.00
23	1390	.00	-151	-96	.00	559	.00	310	476	.00	.00	.00
24	12	845	.00	261	.00	524	.00	1260	-55	84	293	.00
25	152	.00	-149	861	841	504	.00	-951	1480	1120	605	381
26	517	.00	298	127	78	961	229	-727	.00	471	2300	536
27	1160	.00	-446	.00	-711	549	.00	-582	1250	.00	.00	-268
28	790	430	-283	1800	604	383	.00	-862	1960	173	62	891
29	633	404	.00	-571	---	509	-149	-1740	895	.00	.00	639
30	172	.00	.00	-355	---	961	-538	-1810	.00	.00	437	503
31	1010	---	104	580	---	484	---	232	---	.00	225	---
TOTAL	12686.00	7410.00	6517.00	428.00	1738.00	2149.00	4537.00	-13609.00	-4681.00	7510.00	12969.00	10409.00
MEAN	409	247	210	13.8	62.1	69.3	151	-439	-156	242	418	347
MAX	1530	1250	1840	1800	1890	961	2460	1600	2700	1650	3210	1550
MIN	-483	.00	-446	-1110	-1200	-721	-945	-1850	-2500	-270	-845	-397
AC-FT	25160	14700	12930	849	3450	4260	9000	-26990	-9280	14900	25720	20650

## TULARE LAKE BASIN

11214540 HELMS POWERPLANT NEAR WISHON RESERVOIR, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	140	-87.2	57.3	-8.43	135	17.7	-28.3	-418	-19.6	294	277	372
MAX	409	247	220	191	433	215	151	-75.7	242	627	418	894
(WY)	1994	1994	1989	1992	1989	1993	1994	1990	1992	1989	1994	1991
MIN	-110	-734	-65.7	-278	3.43	-315	-310	-722	-194	52.8	177	51.6
(WY)	1993	1992	1991	1989	1990	1989	1989	1992	1991	1991	1990	1990

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1989 - 1994			
ANNUAL TOTAL	47840.00				48063.00							
ANNUAL MEAN	131				132				60.3			
HIGHEST ANNUAL MEAN									132			
LOWEST ANNUAL MEAN									32.0			
HIGHEST DAILY MEAN	2970				3210				4250			
LOWEST DAILY MEAN	-2730				-2500				-4180			
ANNUAL SEVEN-DAY MINIMUM	-1430				-1330				-1910			
ANNUAL RUNOFF (AC-FT)	94890				95330				43720			
10 PERCENT EXCEEDS	977				974				1100			
50 PERCENT EXCEEDS	47				.00				.00			
90 PERCENT EXCEEDS	-733				-684				-919			

## 11214550 COURTRIGHT RESERVOIR NEAR NELSON MOUNTAIN, CA

LOCATION.--Lat 37°04'45", long 119°58'07", in NW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, at left end of dam on Helms Creek, 2.5 mi upstream from mouth, 4.6 mi east of Nelson Mountain, and 9.7 mi west of Blackcap Mountain.

DRAINAGE AREA.--39.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1958 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by rockfill dam completed in 1958. Usable capacity, 123,286 acre-ft between elevations 7,902 ft, invert of tunnel, and 8,184 ft, elevation of spillway. Dead storage negligible. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,220 acre-ft, Sept. 26, 1982, elevation, 8,184.57 ft; no contents in 1961-62, 1968, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 116,623 acre-ft, June 22, elevation, 8,179.84 ft; minimum, 30,375 acre-ft, Dec. 18, elevation, 8,098.45 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

7,902	0	7,970	736	8,035	6,269	8,115	42,141
7,950	267	7,990	1,617	8,060	12,298	8,150	75,878
7,960	462	8,010	3,129	8,085	22,584	8,184	123,286

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71808	61354	47103	34218	34960	35051	44641	49136	92836	104179	89767	63404
2	70816	61193	47086	34884	31388	35558	45566	51240	95345	104120	89308	63363
3	70462	60182	46869	35100	30708	36436	47229	51660	97664	104077	84912	63332
4	69900	57845	46268	35741	31702	37254	47103	48621	102800	104033	82861	63290
5	69867	57315	45172	37312	33779	38405	45213	47507	108744	104500	76694	63056
6	69834	56769	43376	38161	36295	39601	45352	49084	109952	104442	71194	60341
7	68795	55906	42709	38331	37552	41369	45221	49421	112118	104398	70418	60271
8	68762	55297	40821	38110	38702	42574	44918	53469	112164	103422	71272	59300
9	68556	54387	40361	38702	37896	43841	43488	56077	106710	100820	72234	58642
10	65435	53351	40345	39352	38761	44992	43568	58535	102252	100765	73341	58126
11	63579	53396	40445	37933	39609	46102	38731	61294	104413	101334	72639	58087
12	62818	53414	39737	38420	39601	46111	33609	63270	108563	100777	71640	58058
13	62798	53387	38993	39345	39601	47297	35946	65193	110514	100343	71942	58012
14	62777	52355	38435	38110	39217	47643	37574	66738	110559	98741	73171	57787
15	62777	51604	34814	40652	38754	47685	38501	69439	111735	97553	70329	55822
16	62767	51240	33391	43217	38738	47722	40132	69592	111704	94363	67530	53205
17	62614	51213	30618	41625	38627	47752	42063	69187	111398	93509	66919	53194
18	62593	51205	30375	41906	36755	47786	40185	69406	111765	93455	67165	52779
19	62461	51187	31063	41703	34898	47837	40560	69417	114776	93415	67753	49742
20	62440	51169	32098	40921	35051	48126	41773	71417	116418	93362	69034	47364
21	62420	50151	32791	40913	36439	48168	43209	74081	116167	93334	70628	48262
22	62389	50116	32767	40898	36618	48228	43729	76297	116623	93293	71506	48236
23	62358	50115	32959	41322	36611	48253	44171	76285	115666	93240	71461	48228
24	62338	48775	32952	40959	36611	47516	44471	74164	115682	93186	70860	48228
25	62297	48749	33249	39172	34856	47566	44747	76495	112871	91047	69505	47414
26	62023	48732	32871	38866	34633	47592	44479	78548	112810	90227	64847	46426
27	62002	48706	33861	38858	36417	47609	44658	80144	110164	90187	64784	47558
28	61981	47905	34453	35240	35219	46044	44829	82219	106029	89964	64836	46119
29	61698	47137	34446	36295	---	45755	45475	86270	104252	89911	64803	45098
30	61668	47112	34439	37203	---	45821	46994	90610	104223	89872	63858	44495
31	61653	---	34225	36224	---	45541	---	90848	---	89819	63445	---
MAX	71808	61354	47103	43217	39609	48253	47229	90848	116623	104500	89767	63404
MIN	61653	47112	30375	34218	30708	35051	33609	47507	92836	89819	63445	44495
a	8136.90	8121.12	8104.25	8107.10	8105.68	8119.23	8120.98	8162.05	8171.67	8159.73	8138.65	8117.95
b	-10188	-14541	-12887	+1999	-1005	+10322	+1453	+43854	+13375	-14404	-26374	-18950

CAL YR 1993 b -5306  
WTR YR 1994 b -27346

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## TULARE LAKE BASIN

11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA

LOCATION.--Lat 37°04'35", long 118°58'04", in SW 1/4 NW 1/4 sec.7, T.10 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 500 ft downstream from Courtright Dam, 2.5 mi upstream from North Fork Kings River, and 17 mi southeast of town of Huntington Lake.

DRAINAGE AREA.--39.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1958 to February 12, 1986. May 8, 1986 to current year.

REVISED RECORDS.--WSP 1715: 1959. WSP 2130: 1959.

GAGE.--Water-stage recorder and broad-crested weir (with low-water 90° V-notch weir since Nov. 13, 1990). Elevation of gage is 7,836 ft above sea level, from photogrammetry survey.

REMARKS.--Flow regulated since October 1958 by Courtright Reservoir (station 11214550) 500 ft upstream and by Helms Creek Project pump/generator facility since June 1984. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft<sup>3</sup>/s, Aug. 29, 1969, gage height, 5.81 ft; maximum gage height, 7.70 ft, Aug. 23, 1978; no flow on several days in 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16 ft<sup>3</sup>/s, June 15, 25, gage height, 4.07 ft; minimum daily, 4.2 ft<sup>3</sup>/s, Dec. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	9.0	6.3	4.5	4.7	4.6	5.7	7.0	10	13	11	7.3
2	9.9	9.0	6.3	4.6	4.5	4.6	5.7	7.2	11	13	11	7.3
3	9.9	9.0	6.3	4.6	4.3	4.8	5.7	7.3	11	13	11	7.3
4	9.9	8.4	6.3	4.6	4.3	4.8	5.8	7.3	11	13	11	7.2
5	9.9	8.4	6.3	4.8	4.4	4.9	5.8	7.1	12	13	10	7.2
6	9.8	8.2	6.1	4.8	4.6	5.0	5.6	7.1	12	14	9.8	7.1
7	9.6	7.9	5.9	4.9	4.9	5.2	5.5	7.1	13	14	9.3	7.0
8	9.6	7.8	5.8	4.9	4.9	5.3	5.5	7.2	13	13	9.3	6.9
9	9.6	7.8	5.7	4.9	4.9	5.4	5.5	7.4	13	13	9.3	6.8
10	9.5	7.5	5.6	5.0	4.9	5.5	5.4	7.6	13	13	9.3	6.8
11	9.3	7.5	5.6	4.9	4.9	5.6	5.3	7.9	12	13	9.3	6.7
12	9.3	7.5	5.5	4.9	4.9	5.6	4.9	8.2	12	13	9.3	6.7
13	9.3	7.4	5.5	4.9	4.9	5.7	5.7	8.3	14	12	9.1	6.7
14	9.3	7.0	5.3	5.0	4.9	5.9	6.4	8.3	15	12	9.2	6.7
15	9.3	6.7	5.0	5.0	4.9	5.9	6.5	8.8	15	12	9.3	6.6
16	9.3	6.7	4.6	5.2	4.8	5.8	6.5	9.0	15	12	8.6	6.4
17	9.3	6.7	4.4	5.4	4.9	5.8	6.6	9.0	14	12	8.1	6.3
18	9.2	6.7	4.2	5.3	4.8	5.9	6.9	9.0	14	12	8.0	6.2
19	9.1	6.7	4.2	5.3	4.7	5.8	6.8	9.0	14	12	8.0	6.1
20	9.0	6.7	4.3	5.3	4.7	5.9	6.7	9.0	14	12	8.0	5.9
21	9.0	6.7	4.3	5.2	4.6	5.9	6.8	9.2	13	12	8.0	5.8
22	9.0	6.6	4.4	5.2	4.7	5.9	6.8	9.5	13	12	8.1	5.7
23	9.0	6.6	4.4	5.2	4.7	5.8	6.8	9.6	14	12	8.1	5.7
24	9.0	6.5	4.4	5.2	4.7	5.8	6.7	9.6	15	12	8.0	5.7
25	9.0	6.4	4.4	5.2	4.6	5.7	6.7	9.6	15	12	7.9	5.6
26	9.0	6.4	4.5	5.0	4.6	5.7	6.7	9.9	15	11	7.8	5.6
27	9.0	6.4	4.5	5.0	4.6	5.7	6.7	9.9	14	11	7.5	5.6
28	9.0	6.4	4.5	4.8	4.6	5.7	6.7	9.0	14	11	7.4	6.6
29	9.0	6.4	4.6	4.6	---	5.6	6.8	9.3	14	11	7.4	5.8
30	9.0	6.4	4.5	4.7	---	5.8	6.9	9.9	14	11	7.4	5.5
31	9.0	---	4.5	4.8	---	5.8	---	10	---	11	7.3	---
TOTAL	289.0	217.4	158.2	153.7	131.9	171.4	186.1	264.3	399	380	272.8	192.8
MEAN	9.32	7.25	5.10	4.96	4.71	5.53	6.20	8.53	13.3	12.3	8.80	6.43
MAX	9.9	9.0	6.3	5.4	4.9	5.9	6.9	10	15	14	11	7.3
MIN	9.0	6.4	4.2	4.5	4.3	4.6	4.9	7.0	10	11	7.3	5.5
AC-FT	573	431	314	305	262	340	369	524	791	754	541	382

## 11214600 HELMS CREEK BELOW COURTRIGHT DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1983, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	32.4	25.7	25.0	43.0	31.3	43.3	77.0	83.9	73.4	111	209	146
MAX	235	145	212	373	408	642	645	488	410	576	734	890
(WY)	1970	1964	1979	1979	1979	1983	1983	1961	1961	1968	1980	1969
MIN	2.29	.42	.051	.095	.17	.42	1.53	3.35	4.02	3.38	2.39	1.97
(WY)	1973	1971	1971	1971	1971	1971	1971	1971	1971	1976	1977	1977

## SUMMARY STATISTICS

## WATER YEARS 1959 - 1983

ANNUAL MEAN	75.4	
HIGHEST ANNUAL MEAN	185	1983
LOWEST ANNUAL MEAN	2.29	1971
HIGHEST DAILY MEAN	986	Aug 29 1969
LOWEST DAILY MEAN	.00	Nov 21 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 3 1970
INSTANTANEOUS PEAK FLOW	1340	Aug 29 1969
INSTANTANEOUS PEAK STAGE	7.70	Aug 23 1978
ANNUAL RUNOFF (AC-FT)	54610	
10 PERCENT EXCEEDS	287	
50 PERCENT EXCEEDS	10	
90 PERCENT EXCEEDS	2.5	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.6	5.98	4.56	4.71	4.40	5.05	5.71	8.03	12.2	12.4	10.0	7.35
MAX	58.3	8.88	6.43	7.46	6.08	7.65	8.27	11.7	17.5	21.6	18.0	11.9
(WY)	1985	1992	1993	1989	1993	1989	1989	1989	1991	1991	1991	1993
MIN	5.32	4.15	2.92	3.47	3.30	3.48	3.73	5.15	6.80	6.82	6.07	5.71
(WY)	1991	1986	1987	1987	1991	1991	1991	1990	1990	1990	1992	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1985 - 1994

ANNUAL TOTAL	3594.2	2816.6	
ANNUAL MEAN	9.85	7.72	7.79
HIGHEST ANNUAL MEAN			9.98
LOWEST ANNUAL MEAN			5.65
HIGHEST DAILY MEAN	22	Jun 22	15
LOWEST DAILY MEAN	4.2	Dec 18	4.2
ANNUAL SEVEN-DAY MINIMUM	4.3	Dec 17	4.3
INSTANTANEOUS PEAK FLOW			16
INSTANTANEOUS PEAK STAGE			4.07
ANNUAL RUNOFF (AC-FT)	7130	5590	5640
10 PERCENT EXCEEDS	17	12	13
50 PERCENT EXCEEDS	7.8	6.8	6.2
90 PERCENT EXCEEDS	5.4	4.7	3.9

## TULARE LAKE BASIN

## 11214800 WISHON RESERVOIR NEAR CLIFF CAMP, CA

LOCATION.--Lat 37°00'19", long 118°58'07", in NW 1/4 NW 1/4 sec.6, T.11 S., R.28 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right end of dam on North Fork Kings River, 1.2 mi north of Cliff Camp, and 20 mi southeast of Big Creek.

DRAINAGE AREA.--177 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1957 to September 1982 (monthend elevation and contents only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by rockfill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 ft, bottom of slide gates, and 6,550 ft, operating crest of spillway gates. Dead storage negligible. Water is diverted to Haas Powerplant. Records, including extremes, represent contents at 2400 hours. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 129,700 acre-ft, July 29, 1958, elevation, 6,551.1 ft; no contents in 1960.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 105,460 acre-ft, May 24, elevation, 6,526.19 ft; minimum, 32,152 acre-ft, Sept. 14, elevation, 6,427.08 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated Apr. 13, 1959)

6,317	40	6,385	11,618	6,440	39,471	6,520	99,807
6,360	2,810	6,400	18,359	6,460	51,900	6,550	129,118
6,370	5,738	6,420	28,362	6,490	74,128	6,551.1	129,733

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76717	62276	63597	66439	51808	52590	54427	87642	101383	76570	49874	35122
2	75956	61651	63033	65771	54822	52231	54379	86586	99636	75418	48953	34008
3	75215	61948	62725	65557	54938	51696	53507	87633	97927	74346	52054	34002
4	74451	63484	62628	64232	53372	51170	54236	92753	93263	73248	52696	33991
5	73369	63198	63368	61881	51301	50360	56709	95954	87392	71576	57498	33288
6	72142	63680	64581	60192	48818	49422	57222	96194	86518	70396	61866	35206
7	71910	64513	65221	59166	47793	47914	57896	97372	84720	69233	61392	34370
8	70704	64172	67187	59406	46750	46967	58784	94578	84737	68951	59188	34415
9	69601	64695	67651	58798	47585	45992	60786	93386	90219	70396	56751	34169
10	72022	64946	67651	57370	46804	45119	61125	92911	94826	69366	54087	33963
11	72991	64278	67760	57953	45973	44295	66462	92990	92542	67550	53379	33952
12	72574	63612	68530	56716	46023	44534	72262	94738	88590	66778	53030	33076
13	71743	63620	69303	54801	46079	43646	70775	96328	86022	65694	51196	32245
14	70664	64649	69971	55287	46522	43689	70404	98205	85502	65939	48499	32152
15	69703	64680	73643	52716	47036	44154	71020	98502	84296	65733	49938	32232
16	69656	64429	75044	50133	47078	44559	71100	100549	83569	67674	51163	35009
17	69805	63839	77916	51104	47610	44897	70981	102485	83114	67140	50347	34259
18	69022	63371	78156	50191	49680	45286	75109	103500	82005	65802	48505	33897
19	68366	62995	77447	49867	51663	45694	77439	104547	78046	64399	46478	36083
20	67628	62680	75532	50139	51676	45756	79180	103427	75622	63040	43689	37700
21	66909	63552	73941	49647	50341	46154	80584	101665	75198	61592	40594	36083
22	66055	63115	73055	49641	50243	46572	82550	100603	74289	60273	38215	35415
23	66047	62545	72046	49344	50334	46841	84177	101856	73901	58899	36688	34493
24	66047	63379	71203	49312	50432	47882	85374	105460	72702	57682	35800	34169
25	65327	63364	70783	50647	52277	48142	86364	104916	74492	58367	35698	34975
26	64809	63356	71211	50464	52616	48397	87702	104823	73449	57789	39283	35505
27	64043	63356	69421	49984	50954	48658	88426	105118	75028	56492	38710	33597
28	63228	64164	68000	53010	52257	50620	89134	105017	78040	55260	38326	36277
29	62635	64543	67179	51940	---	51334	89385	102832	78767	53884	37181	38186
30	62647	64172	66331	51078	---	51788	88797	100422	77702	52516	36992	37746
31	62647	---	66431	51472	---	52743	---	102138	---	51281	36192	---
MAX	76717	64946	78156	66439	54938	52743	89385	105460	101383	76570	61866	38186
MIN	62635	61651	62628	49312	45973	43646	53507	86586	72702	51281	35698	32152
a	6475.26	6477.28	6480.24	6459.35	6460.54	6461.27	6507.54	6522.57	6494.38	6459.06	6434.33	6437.04
b	-15764	+1525	+2259	-14959	+785	+486	+36054	+13341	-24436	-26421	-15089	+1554

CAL YR 1993 b +19464  
WTR YR 1994 b -40665

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11214900 NORTH FORK KINGS RIVER BELOW WISHON RESERVOIR, CA

LOCATION.--Lat 37°00'05", long 118°58'20", in SE 1/4 NE 1/4 sec.1, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1,700 ft downstream from Wishon Dam and 20 mi southeast of Big Creek.

DRAINAGE AREA.--178 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year (since October 1990, no records computed above 25 ft<sup>3</sup>/s).

GAGE.--Water-stage recorder and 90° V-notch steel weir and concrete control. Elevation of gage is 6,300 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Wishon Reservoir (station 11214800) and Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	19	19	17	19	18	23	24	21	17	13
2	20	19	19	19	17	19	18	22	24	20	17	13
3	20	19	18	19	18	19	18	22	23	20	17	13
4	20	19	18	19	18	19	18	23	23	20	17	13
5	20	19	18	19	17	19	18	23	23	20	17	12
6	20	19	19	18	17	19	18	24	22	20	18	13
7	20	19	19	18	17	18	18	24	22	20	18	13
8	20	19	19	18	17	18	18	24	22	19	18	13
9	20	19	19	18	17	18	19	23	22	20	18	13
10	20	19	19	18	17	18	19	23	22	20	18	13
11	20	19	19	18	16	18	19	23	23	19	17	13
12	20	19	19	18	16	17	20	23	22	19	17	13
13	20	19	19	18	16	17	20	23	22	19	17	12
14	20	19	19	18	16	17	20	23	22	19	17	12
15	20	19	20	17	16	17	20	24	22	19	16	12
16	20	19	20	17	17	17	20	24	22	19	17	12
17	20	19	20	17	18	17	20	24	21	19	17	13
18	20	18	20	17	17	17	20	24	21	19	17	12
19	20	18	20	17	17	17	20	24	21	19	16	13
20	19	18	20	17	18	17	21	24	21	19	16	13
21	22	18	20	17	17	17	21	24	20	19	16	13
22	---	18	20	17	17	17	21	24	20	18	16	13
23	22	18	20	17	17	17	22	24	20	18	18	13
24	19	18	20	17	17	17	22	24	20	18	18	12
25	19	18	20	17	18	17	23	24	20	18	18	12
26	19	18	20	17	18	17	23	24	20	18	17	12
27	19	18	20	17	18	17	23	24	20	18	15	12
28	19	18	19	17	18	17	24	24	20	18	13	14
29	19	19	19	17	---	18	24	24	21	18	13	13
30	19	19	19	17	---	18	23	---	21	17	13	13
31	19	---	19	17	---	18	---	24	---	17	13	---
TOTAL	---	559	599	546	479	547	608	---	646	587	512	381
MEAN	---	18.6	19.3	17.6	17.1	17.6	20.3	---	21.5	18.9	16.5	12.7
MAX	---	19	20	19	18	19	24	---	24	21	18	14
MIN	---	18	18	17	16	17	18	---	20	17	13	12
AC-FT	---	1110	1190	1080	950	1080	1210	---	1280	1160	1020	756

## TULARE LAKE BASIN

## 11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA

LOCATION.--Lat 36°59'38", long 118°58'49", in NE 1/4 NW 1/4 sec.12, T.11 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at Cliff Camp Bridge, 1 mi northwest of Cliff Camp, 1.2 mi downstream from Wishon Dam, and 2 mi downstream from Woodchuck Creek.

DRAINAGE AREA.--181 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1921 to current year (since October 1990, no records computed below 25 ft<sup>3</sup>/s). Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1715: 1951, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,143.95 ft above sea level (levels by San Joaquin Light and Power Corp.). Prior to Nov. 24, 1922, at site 1 mi upstream at different datum.

REMARKS.--Flow regulated since Dec. 5, 1957, by Wishon Reservoir (station 11214800) 1.2 mi upstream, and since Oct. 17, 1958, by Courtright Reservoir (station 11214550). Water diverted for power from Wishon Reservoir by tunnel to Haas Powerplant (station 11216050) since Dec. 10, 1958. See schematic diagram of Kings River basin. Monthly chemical, trace-element, biological, and sediment data are available in files of the U.S. Geological Survey and in U.S. Geological Survey Open-File Report 88-479. Also available in the same report are daily maximum, minimum, and mean specific-conductance and water-temperature values.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon Reservoir).--Maximum discharge, 14,000 ft<sup>3</sup>/s, Dec. 11, 1937, gage height, 18.0 ft, from floodmarks, from rating curve extended above 4,200 ft<sup>3</sup>/s on basis of velocity-area studies.  
1957 to 1990.--Maximum discharge, 5,110 ft<sup>3</sup>/s, Sept. 5, 1978, gage height, 11.96 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	33	26	---	---	---
2	---	---	---	---	---	---	---	31	25	---	---	---
3	---	---	---	---	---	---	25	29	25	---	---	---
4	---	---	---	---	---	---	---	28	25	---	---	---
5	---	---	---	---	---	636	---	28	---	---	---	---
6	---	---	---	---	---	---	---	32	---	---	---	---
7	---	---	---	---	---	---	---	36	---	---	---	---
8	---	---	---	---	---	---	---	33	---	---	---	---
9	---	---	---	---	---	---	25	29	---	---	---	---
10	---	---	---	---	---	---	---	27	---	---	---	---
11	---	---	---	---	---	---	---	26	---	---	---	---
12	---	---	---	---	---	---	---	26	---	---	---	---
13	---	---	---	---	---	---	---	26	---	---	---	---
14	---	---	---	---	---	---	---	26	---	---	---	---
15	---	---	---	---	---	---	---	26	---	---	---	---
16	---	---	---	---	---	---	---	26	---	---	---	---
17	---	---	---	---	---	---	---	27	---	---	---	---
18	---	---	---	---	---	---	---	28	---	---	---	---
19	---	---	---	---	---	---	---	27	---	---	---	---
20	---	---	---	---	---	---	---	27	---	---	---	---
21	---	---	---	---	---	---	---	26	---	---	---	---
22	25	---	---	---	---	---	---	26	---	---	---	---
23	---	---	---	---	---	---	25	25	---	---	---	---
24	---	---	---	---	---	---	28	25	---	---	---	---
25	---	---	---	---	---	---	30	25	---	---	---	---
26	---	---	---	---	---	---	32	25	---	---	---	---
27	---	---	---	---	---	---	33	25	---	---	---	---
28	---	---	---	---	---	---	35	25	---	---	---	---
29	---	---	---	---	---	---	36	25	---	---	---	---
30	---	---	---	---	---	---	35	26	---	---	---	---
31	---	---	---	---	---	---	---	28	---	---	---	---
TOTAL	---	---	---	---	---	---	---	852	---	---	---	---
MEAN	---	---	---	---	---	---	---	27.5	---	---	---	---
MAX	---	---	---	---	---	---	---	36	---	---	---	---
MIN	---	---	---	---	---	---	---	25	---	---	---	---
AC-FT	---	---	---	---	---	---	---	1690	---	---	---	---
a	25900	13670	11780	14070	2570	6.0	16	1990	30590	41990	41450	19280

e Estimated.

a Diversion, in acre-feet, to Haas Powerplant, provided by Pacific Gas and Electric Co.



## 11215000 NORTH FORK KINGS RIVER NEAR CLIFF CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1957, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.3	49.3	84.9	62.2	93.6	197	709	1670	1177	211	27.7	9.45
MAX	121	550	605	300	212	402	1210	3232	3395	1161	131	37.4
(WY)	1946	1951	1956	1956	1945	1956	1926	1952	1938	1938	1938	1938
MIN	5.54	6.25	7.00	11.6	20.3	36.0	306	357	35.7	5.52	1.83	1.60
(WY)	1956	1930	1931	1924	1948	1924	1948	1934	1924	1924	1924	1924

## SUMMARY STATISTICS

## WATER YEARS 1922 - 1957

ANNUAL MEAN	360	
HIGHEST ANNUAL MEAN	749	1938
LOWEST ANNUAL MEAN	80.2	1924
HIGHEST DAILY MEAN	7460	Dec 23 1955
LOWEST DAILY MEAN	1.3	Sep 9 1924
ANNUAL SEVEN-DAY MINIMUM	1.4	Sep 9 1924
INSTANTANEOUS PEAK FLOW	14000	Dec 11 1937
INSTANTANEOUS PEAK STAGE	18.00	Dec 11 1937
ANNUAL RUNOFF (AC-FT)	260600	
10 PERCENT EXCEEDS	1240	
50 PERCENT EXCEEDS	63	
90 PERCENT EXCEEDS	6.5	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1990, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.3	17.5	15.8	17.8	18.4	20.7	36.1	96.1	173	97.3	17.9	19.1
MAX	24.5	29.4	41.0	49.8	66.9	49.2	298	1170	1339	918	27.0	84.1
(WY)	1987	1966	1967	1969	1986	1986	1986	1969	1983	1967	1986	1978
MIN	7.67	7.53	7.45	7.62	8.20	9.21	8.62	8.45	8.21	7.37	7.56	7.83
(WY)	1960	1960	1963	1964	1964	1961	1961	1961	1961	1964	1961	1964

## SUMMARY STATISTICS

## WATER YEARS 1960 - 1990

ANNUAL MEAN	45.5	
HIGHEST ANNUAL MEAN	241	1969
LOWEST ANNUAL MEAN	10.0	1964
HIGHEST DAILY MEAN	3040	Jul 1 1967
LOWEST DAILY MEAN	3.9	Dec 9 1967
ANNUAL SEVEN-DAY MINIMUM	4.2	Dec 6 1967
INSTANTANEOUS PEAK FLOW	5110	Sep 5 1978
INSTANTANEOUS PEAK STAGE	11.96	Sep 5 1978
ANNUAL RUNOFF (AC-FT)	32970	
10 PERCENT EXCEEDS	29	
50 PERCENT EXCEEDS	17	
90 PERCENT EXCEEDS	8.6	

## 11216100 BLACK ROCK RESERVOIR NEAR BALCH CAMP, CA

LOCATION.--Lat 36°55'13", long 119°01'20", in NW 1/4 NW 1/4 sec.6, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank at intake tower on North Fork Kings River, 5.6 mi east-northeast of Balch Camp.

DRAINAGE AREA.--233 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch-type dam, completed to elevation 4,054 ft in 1927 and raised to 4,098 ft in 1958. Storage began in 1927. Spillway is ungated. Capacity, 1,260 acre-ft between elevation 4,054 ft, fish release valve, and 4,098 ft, top of spillway crest. Water is diverted from reservoir through tunnel to Balch Powerplant 3.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. See schematic diagram of Kings River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,275 acre-ft, Mar. 4, 1991, elevation, 4,098.43 ft; minimum, 359 acre-ft, Nov. 3, 1986, elevation 4,064.51 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,241 acre-ft, June 11, elevation, 4,097.45 ft; minimum, 579 acre-ft, Feb. 7, 20, elevation, 4,074.87 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas and Electric Co., dated Dec. 1, 1958)

4,050	165	4,065	367	4,080	706	4,095	1,157
4,055	219	4,070	465	4,085	846	4,100	1,331
4,060	286	4,075	579	4,090	996	4,108	1,635

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	979	1118	1009	1185	1073	670	737	951	779	903	981	1060
2	1028	1066	1016	1216	963	660	790	900	939	960	1000	1060
3	1185	1009	933	847	927	847	1016	882	1125	891	1016	1082
4	1185	1102	982	874	982	979	963	737	1073	900	1041	997
5	1199	1009	856	1028	909	776	770	601	1178	787	1044	1145
6	1212	1073	712	1057	599	787	933	586	1135	1028	1060	1148
7	1172	957	611	1108	579	801	900	745	1092	963	988	970
8	1135	1089	654	1172	644	737	882	1000	1047	868	1006	918
9	1155	1138	691	1202	634	821	942	1102	1216	1108	933	921
10	1219	1070	601	1202	637	799	1115	1115	1212	1082	994	1060
11	1101	903	649	1168	641	665	970	1057	1241	1092	1022	1082
12	1021	915	634	1009	626	737	841	1089	939	942	1038	1065
13	731	982	699	1028	594	662	793	1060	1176	865	1044	1019
14	1092	862	718	924	609	639	790	1060	1221	994	1086	1000
15	1185	966	903	903	649	637	856	1060	999	1086	1089	994
16	933	933	976	963	596	614	816	982	1112	991	1095	994
17	1003	1089	1044	960	591	689	1095	868	1165	1161	1089	1031
18	939	1079	1047	1044	586	909	957	804	1141	1044	1102	1112
19	1155	1135	976	1125	589	1105	954	729	1192	1044	1108	1073
20	1054	1025	1103	1125	579	1112	897	909	1131	1019	1125	1191
21	915	921	970	1055	616	1035	948	871	997	799	1060	1077
22	945	1028	1073	973	584	909	833	903	754	839	1066	1185
23	1009	1135	1172	1041	589	705	1035	1108	1025	833	1047	1185
24	994	997	1182	1025	609	678	1073	966	715	847	1050	1182
25	1079	1057	1185	1054	609	697	960	1099	715	906	982	1202
26	1091	1099	939	1031	639	868	939	994	782	930	1038	939
27	1118	790	1057	1086	662	951	900	1086	850	891	1028	991
28	1060	850	1031	1019	694	841	939	927	839	933	1025	1047
29	992	754	1031	821	---	796	793	918	816	982	1031	1172
30	1038	1019	1205	894	---	844	897	951	793	997	1060	891
31	1089	---	1122	963	---	833	---	951	---	957	1079	---
MAX	1219	1138	1205	1216	1073	1112	1115	1115	1241	1161	1125	1202
MIN	731	754	601	821	579	614	737	586	715	787	933	891
a	4092.92	4090.73	4093.93	4080.91	4079.52	4084.51	4086.74	4088.53	4083.07	4088.73	4092.61	4086.51
b	+403	-70	+103	-159	-269	+139	+64	+54	-158	+164	+122	-188

CAL YR 1993 b +30  
WTR YR 1994 b +205

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA

LOCATION.--Lat 36°54'10", long 119°03'00", in NE 1/4 sec.8, T.12 S., R.27 E., Fresno County, Hydrologic Unit 18030010, on right bank 2.0 mi downstream from Balch Diversion Dam (Black Rock Reservoir), 400 ft upstream from Weir Creek, and 4 mi east of Balch Camp.

DRAINAGE AREA.--238 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 2,890 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100). Water diverted past station from Black Rock Reservoir through tunnel to Balch Powerplant (station 11216300) 1.7 mi downstream and returns to the North Fork Kings River at Balch Afterbay. Flow is again diverted from Balch Afterbay in a closed conduit to Kings River Powerplant. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,360 ft<sup>3</sup>/s, Mar. 4, 1991, gage height, 8.84 ft, from rating curve extended above 827 ft<sup>3</sup>/s on basis of computation of spill over Balch Diversion Dam; minimum daily, 0.89 ft<sup>3</sup>/s, Oct. 21, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft<sup>3</sup>/s, Feb. 17, gage height, 2.14 ft; minimum daily, 3.0 ft<sup>3</sup>/s, Jan. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.3	7.5	3.9	3.4	6.4	3.3	5.3	7.1	6.2	6.3	6.8
2	11	7.2	5.8	4.0	3.5	6.6	3.9	5.2	6.6	6.4	6.4	6.8
3	7.8	7.1	5.1	4.0	3.4	6.8	4.0	4.3	6.7	6.3	6.5	6.7
4	7.7	7.1	5.0	3.6	4.3	6.9	3.7	3.7	7.0	6.3	6.4	6.8
5	7.9	7.3	5.0	4.1	3.7	6.9	3.6	3.5	6.9	6.1	6.5	6.7
6	7.9	7.2	e3.8	3.6	3.5	6.6	3.4	4.4	7.1	6.3	6.6	7.0
7	7.8	7.2	e3.8	3.0	12	5.9	3.5	4.5	7.1	7.3	6.5	6.9
8	7.6	7.0	e3.8	3.5	15	5.3	4.3	4.2	6.7	6.6	6.4	6.4
9	7.6	7.3	e3.8	3.5	6.7	5.0	5.6	4.1	6.6	6.5	6.3	6.3
10	7.6	7.2	e3.8	3.5	5.3	5.0	4.4	3.9	6.7	6.8	6.3	6.3
11	8.2	9.1	e3.8	3.4	5.4	4.8	4.1	3.7	6.7	6.8	6.4	6.7
12	7.1	10	e3.7	3.3	4.2	4.5	3.9	3.6	6.9	6.8	6.5	6.7
13	7.0	7.2	e3.7	3.3	3.9	4.4	3.6	3.5	6.2	6.4	6.5	6.6
14	6.5	7.2	e3.7	3.2	3.6	4.4	3.5	3.4	7.1	6.2	6.6	6.7
15	7.6	6.9	3.6	3.1	3.5	4.4	3.5	3.4	7.8	6.5	6.7	6.5
16	7.2	7.1	3.1	3.2	3.5	4.4	3.5	3.4	7.2	6.5	6.7	6.4
17	7.0	7.0	3.7	3.2	15	4.2	3.4	3.4	7.5	6.6	6.7	6.4
18	6.9	7.3	4.0	3.1	10	3.7	3.7	3.9	7.7	6.7	6.8	6.5
19	7.0	7.4	4.0	3.2	7.4	3.9	3.5	3.8	7.6	6.6	6.8	6.5
20	7.3	7.5	3.8	3.3	8.3	4.0	3.5	3.4	7.8	6.5	6.8	6.6
21	6.9	7.2	3.8	3.2	6.6	3.9	3.5	3.3	7.5	6.1	6.8	6.9
22	6.6	6.9	3.8	3.2	6.4	4.0	3.4	3.1	6.9	5.8	6.7	6.7
23	6.9	7.3	3.9	3.9	6.6	3.6	4.7	3.1	6.8	5.9	6.7	6.9
24	7.0	7.5	3.9	4.5	7.6	3.3	7.3	3.1	7.4	6.0	6.6	7.0
25	7.0	7.1	4.0	5.1	9.3	4.3	8.1	3.3	6.3	6.1	6.5	7.0
26	7.1	7.3	4.2	3.9	9.9	3.5	6.8	4.4	6.4	6.2	6.5	6.9
27	7.1	7.2	4.2	4.5	9.1	3.5	6.1	4.3	6.6	6.3	6.6	6.5
28	7.1	6.5	4.0	4.0	7.8	3.3	5.4	4.3	6.3	6.2	6.6	9.6
29	7.0	7.9	3.9	3.5	---	3.2	4.9	4.1	5.7	6.3	6.6	7.6
30	7.1	12	3.8	3.3	---	3.1	4.9	4.9	6.0	6.4	6.6	6.7
31	7.1	---	4.0	3.3	---	3.1	---	7.9	---	6.4	6.7	---
TOTAL	233.6	225.5	128.0	111.4	186.9	142.9	131.0	124.4	206.9	198.1	203.6	204.1
MEAN	7.54	7.52	4.13	3.59	6.75	4.61	4.37	4.01	6.90	6.39	6.57	6.80
MAX	12	12	7.5	5.1	15	6.9	8.1	7.9	7.8	7.3	6.8	9.6
MIN	6.5	6.5	3.1	3.0	3.4	3.1	3.3	3.1	5.7	5.8	6.3	6.3
AC-FT	463	447	254	221	375	283	260	247	410	393	404	405
a	25250	13870	12850	15820	5970	5600	7450	11920	32560	39850	39850	21090

e Estimated.

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

## 11216200 NORTH FORK KINGS RIVER BELOW BALCH DIVERSION DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.58	7.92	5.81	7.54	24.3	59.3	75.4	108	136	24.4	5.76	5.62
MAX	7.54	26.4	18.8	26.1	193	441	541	615	810	202	8.20	8.02
(WY)	1994	1984	1984	1993	1986	1986	1986	1986	1986	1993	1993	1993
MIN	3.48	3.54	3.18	3.16	4.69	4.61	3.59	3.25	2.84	3.10	3.14	3.06
(WY)	1988	1991	1987	1987	1985	1994	1987	1987	1987	1987	1987	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1984 - 1994			
ANNUAL TOTAL	54389.0				2098.4							
ANNUAL MEAN	149				5.75				38.7			
HIGHEST ANNUAL MEAN									221			
LOWEST ANNUAL MEAN									3.97			
HIGHEST DAILY MEAN	2420				15				2420			
LOWEST DAILY MEAN	3.1				3.0				.89			
ANNUAL SEVEN-DAY MINIMUM	3.6				3.2				2.5			
INSTANTANEOUS PEAK FLOW					26				5360			
INSTANTANEOUS PEAK STAGE					2.14				8.84			
ANNUAL RUNOFF (AC-FT)	107900				4160				28070			
TOTAL DIVERSION (AC-FT) a	420600				232100							
10 PERCENT EXCEEDS	504				7.5				13			
50 PERCENT EXCEEDS	12				6.4				5.7			
90 PERCENT EXCEEDS	6.8				3.4				3.4			

a Diversion, in acre-feet, to Balch Powerplant, provided by Pacific Gas and Electric Co.

## 11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA

LOCATION.--Lat 36°54'29", long 119°07'27", in NW 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, in concrete vault on right bank of Dinkey Creek, 200 ft downstream from Dinkey Creek Siphon at invert of Kings River Powerplant Conduit, and 1,700 ft northwest of Balch Camp.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Pressure-differential flowmeter. Elevation of gage is 1,320 ft above sea level, from topographic map.

REMARKS.--Water diverted from the North Fork Kings River is released into Dinkey Creek for fishery enhancement from June 1 to Sept. 30 when natural flow of Dinkey Creek is equal to or less than 60 ft<sup>3</sup>/s. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 16 ft<sup>3</sup>/s, many days in August 1994; no flow many days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	.00	.00	.00	.00	.00	.00	.00	.00	5.8	13	10
2	5.6	.00	.00	.00	.00	.00	.00	.00	.00	5.8	13	11
3	5.6	.00	.00	.00	.00	.00	.00	.00	.00	5.8	13	12
4	5.6	.00	.00	.00	.00	.00	.00	.00	.00	5.8	15	13
5	5.5	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	13
6	3.2	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	10
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	10
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	10
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	10
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9	e16	10
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9	e16	10
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9	e16	9.9
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	9.8
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	10
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	e16	9.8
16	.00	.00	.00	.00	.00	.00	.00	.00	e3.4	6.8	e16	9.8
17	.00	.00	.00	.00	.00	.00	.00	.00	e5.6	7.6	e16	9.8
18	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.5	e16	9.8
19	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.5	e16	9.7
20	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.5	e16	9.9
21	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.5	e16	e10
22	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.6	e16	e10
23	.00	.00	.00	.00	.00	.00	.00	.00	5.7	7.6	e16	e9.9
24	.00	.00	.00	.00	.00	.00	.00	.00	5.6	7.5	e15	e10
25	.00	.00	.00	.00	.00	.00	.00	.00	5.6	8.8	e12	e10
26	.00	.00	.00	.00	.00	.00	.00	.00	5.7	11	e10	e11
27	.00	.00	.00	.00	.00	.00	.00	.00	5.7	13	e10	e10
28	.00	.00	.00	.00	.00	.00	.00	.00	5.7	13	e10	e10
29	.00	.00	.00	.00	---	.00	.00	.00	5.8	13	e10	e10
30	.00	.00	.00	.00	---	.00	.00	.00	5.8	13	e10	e10
31	.00	---	.00	.00	---	.00	---	.00	---	13	e10	---
TOTAL	32.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.10	239.2	445	308.4
MEAN	1.03	.000	.000	.000	.000	.000	.000	.000	2.77	7.72	14.4	10.3
MAX	6.5	.00	.00	.00	.00	.00	.00	.00	5.8	13	16	13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	10	9.7
AC-FT	63	.00	.00	.00	.00	.00	.00	.00	165	474	883	612

e Estimated.

## TULARE LAKE BASIN

11216400 DINKEY CREEK SIPHON FISH RELEASE AT BALCH CAMP, CA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.38	1.43	.66	.23	.17	.000	.000	.000	3.03	6.76	9.48	9.89
MAX	14.4	7.09	3.20	1.71	1.41	.000	.000	.000	5.63	11.0	14.4	15.0
(WY)	1991	1991	1991	1990	1991	1987	1987	1987	1992	1990	1994	1992
MIN	.22	.000	.000	.000	.000	.000	.000	.000	.000	.000	5.57	5.33
(WY)	1987	1987	1987	1987	1987	1987	1987	1987	1991	1993	1987	1987

## SUMMARY STATISTICS

FOR 1993 CALENDAR YEAR

FOR 1994 WATER YEAR

WATER YEARS 1987 - 1994

ANNUAL TOTAL	398.60	1107.70	
ANNUAL MEAN	1.09	3.03	
HIGHEST ANNUAL MEAN			3.19
LOWEST ANNUAL MEAN			4.76
HIGHEST DAILY MEAN	8.4 Sep 28	16 Aug 5	1.71
LOWEST DAILY MEAN	.00 Jan 1	.00 Oct 7	16 Aug 5
ANNUAL SEVEN-DAY MINIMUM	.00 Jan 1	.00 Oct 7	.00 Oct 3
ANNUAL RUNOFF (AC-FT)	791	2200	.00 Oct 3
10 PERCENT EXCEEDS	5.5	10	2310
50 PERCENT EXCEEDS	.00	.00	11
90 PERCENT EXCEEDS	.00	.00	.00

## 11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA

LOCATION.--Lat 36°54'12", long 119°07'14", in SE 1/4 NE 1/4 sec.10, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on left bank 12 ft downstream from bridge at Balch Camp, 300 ft upstream from Dinkey Creek, and 9.3 mi east of Trimmer.

DRAINAGE AREA.--250 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1919 to September 1930 (published as "above Dinkey Creek"), March 1960 to current year. Records for water year 1920 incomplete; yearly estimate and monthly discharge only for some months, published in WSP 1315-A.

WATER TEMPERATURE: Water years 1968-79.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder and Cippoletti weir since May 9, 1988. Concrete control Apr. 15, 1966, to May 9, 1988. Elevation of gage is 1,240 ft above sea level, from river-profile map. October 1919 to Sept. 30, 1930, and Mar. 24, 1960, to Apr. 14, 1966, at site 100 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant, beginning Mar. 1, 1962. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (prior to regulation by Wishon and Courtright Reservoirs).--Maximum discharge, 6,080 ft<sup>3</sup>/s, June 4, 1922, gage height, 12.18 ft, site and datum then in use; minimum, 4.0 ft<sup>3</sup>/s, Aug. 29 to Sept. 1, 1924.

1960 to current year: Maximum discharge, 14,000 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 13.24 ft, site and datum then in use, backwater from Dinkey Creek, from rating curve extended above 890 ft<sup>3</sup>/s; minimum daily, 0.30 ft<sup>3</sup>/s, Nov. 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 176 ft<sup>3</sup>/s, Dec. 11, gage height, 2.00 ft; minimum daily, 11 ft<sup>3</sup>/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	19	14	12	13	11	12	19	17	17	20
2	17	20	19	14	12	13	11	12	17	17	17	21
3	17	20	19	14	12	13	11	12	17	17	17	21
4	17	19	19	14	12	13	11	12	17	17	17	20
5	17	19	18	14	12	13	11	11	16	17	17	22
6	19	19	17	13	12	12	11	12	17	17	17	22
7	19	19	16	13	14	13	11	12	16	17	17	21
8	21	19	17	13	16	13	12	11	17	17	17	21
9	20	19	17	13	14	13	12	11	17	17	17	21
10	20	20	18	13	14	13	11	11	16	17	17	21
11	20	22	56	12	14	13	11	11	17	17	17	20
12	20	21	18	13	13	13	11	11	16	17	16	20
13	20	21	18	13	13	13	11	11	17	16	17	22
14	20	20	18	13	12	12	11	11	17	17	16	24
15	20	21	18	12	12	12	11	11	17	17	16	24
16	21	20	16	12	13	12	11	11	17	16	17	23
17	20	21	14	13	16	12	11	11	17	17	16	23
18	20	21	13	13	18	12	11	12	17	17	16	22
19	20	21	14	13	16	12	11	13	17	16	17	21
20	19	21	14	12	18	12	11	12	17	17	17	21
21	18	20	15	12	16	12	11	12	17	17	17	23
22	19	21	15	12	14	12	11	12	17	17	17	22
23	18	21	15	12	15	12	12	11	17	17	17	21
24	18	21	14	13	14	11	13	11	17	16	17	21
25	19	19	15	13	14	12	13	11	17	16	19	21
26	19	18	15	12	14	11	13	12	16	17	22	20
27	19	18	15	12	13	11	12	12	16	17	24	21
28	19	19	15	12	13	11	12	12	16	17	22	21
29	19	19	14	12	---	11	12	12	17	17	21	21
30	19	20	14	12	---	12	12	14	17	17	20	20
31	19	---	14	12	---	11	---	23	---	17	20	---
TOTAL	590	598	539	395	388	378	343	372	505	522	551	641
MEAN	19.0	19.9	17.4	12.7	13.9	12.2	11.4	12.0	16.8	16.8	17.8	21.4
MAX	21	22	56	14	18	13	13	23	19	17	24	24
MIN	17	18	13	12	12	11	11	11	16	16	16	20
AC-FT	1170	1190	1070	783	770	750	680	738	1000	1040	1090	1270

## 11216500 NORTH FORK KINGS RIVER ABOVE DINKEY CREEK, AT BALCH CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1930, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	69.3	65.4	66.4	132	280	779	1877	1136	164	29.0	15.3
MAX	52.1	225	130	111	397	498	1434	3040	3200	472	73.8	41.2
(WY)	1921	1928	1923	1923	1927	1921	1926	1922	1922	1922	1922	1923
MIN	10.0	11.2	18.7	24.1	42.2	54.6	389	552	42.2	9.50	5.40	5.09
(WY)	1922	1922	1930	1926	1924	1924	1924	1924	1924	1924	1924	1924

## SUMMARY STATISTICS

## WATER YEARS 1920 - 1930

ANNUAL MEAN	387	
HIGHEST ANNUAL MEAN	646	1922
LOWEST ANNUAL MEAN	102	1924
HIGHEST DAILY MEAN	4890	Jun 4 1922
LOWEST DAILY MEAN	4.0	Aug 29 1924
ANNUAL SEVEN-DAY MINIMUM	4.2	Aug 28 1924
INSTANTANEOUS PEAK FLOW	6080	Jun 4 1922
INSTANTANEOUS PEAK STAGE	12.18	Jun 4 1922
ANNUAL RUNOFF (AC-FT)	280500	
10 PERCENT EXCEEDS	1300	
50 PERCENT EXCEEDS	74	
90 PERCENT EXCEEDS	11	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.7	20.5	26.9	45.2	46.0	40.1	66.2	212	295	157	50.2	29.8
MAX	60.5	92.3	332	408	239	405	490	1838	2042	1176	822	331
(WY)	1962	1962	1967	1969	1962	1986	1986	1969	1983	1967	1960	1960
MIN	5.80	5.42	5.87	8.07	7.32	7.29	7.18	4.54	6.81	7.34	8.86	8.72
(WY)	1978	1978	1978	1977	1964	1971	1971	1977	1977	1968	1976	1964

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1960 - 1994

ANNUAL TOTAL	48810	5822	
ANNUAL MEAN	134	16.0	80.2
HIGHEST ANNUAL MEAN			406
LOWEST ANNUAL MEAN			8.47
HIGHEST DAILY MEAN	2570	Jun 26	7680
LOWEST DAILY MEAN	12	Feb 6	.30
ANNUAL SEVEN-DAY MINIMUM	13	Feb 11	4.3
INSTANTANEOUS PEAK FLOW			14000
INSTANTANEOUS PEAK STAGE			13.24
ANNUAL RUNOFF (AC-FT)	96810	11550	58110
10 PERCENT EXCEEDS	417	21	168
50 PERCENT EXCEEDS	19	17	15
90 PERCENT EXCEEDS	15	11	8.2



## 11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA

LOCATION.--Lat 36°52'47", long 119°07'40", in NE 1/4 NW 1/4 sec.22, T.12 S., R.26 E., Fresno County, Hydrologic Unit 18030010, Sierra National Forest, on right bank 1.1 mi upstream from mouth, 1.7 mi south of Balch Camp, 2.1 mi downstream from Dinkey Creek, and 9 mi east of Trimmer.

DRAINAGE AREA.--387 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,035 ft above sea level, from river-profile map.

REMARKS.--No estimated daily discharges. Flow regulated by Courtright Reservoir (station 11214550), Wishon Reservoir (station 11214800), and Black Rock Reservoir (station 11216100); Balch Afterbay, capacity, 318 acre-ft; and Haas and Balch Powerplants. Water is diverted from Balch Afterbay to Kings River Powerplant, beginning Mar. 1, 1962. Some water diverted from Balch Afterbay returns upstream from station at a release to Dinky Creek. See schematic diagram of Kings River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 19.20 ft, from rating curve extended above 10,100 ft<sup>3</sup>/s; minimum daily, 6.4 ft<sup>3</sup>/s, Oct. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 949 ft<sup>3</sup>/s, May 31, gage height, 5.13 ft; minimum daily, 32 ft<sup>3</sup>/s, Nov. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	33	58	40	42	119	331	352	323	54	43	43
2	39	34	50	40	41	145	355	378	262	53	43	43
3	39	35	47	42	40	181	347	410	237	52	42	45
4	38	33	44	43	42	202	283	437	208	51	42	47
5	39	33	42	70	43	203	271	452	188	51	42	46
6	43	33	39	65	41	194	282	451	179	50	43	44
7	37	33	37	49	55	163	233	427	166	49	43	43
8	39	33	37	45	95	193	241	397	152	47	42	43
9	36	32	37	42	65	215	233	404	140	46	42	43
10	35	33	41	40	60	223	204	452	129	44	41	43
11	37	43	100	37	62	217	205	534	121	43	41	42
12	42	58	62	37	52	189	226	609	115	43	41	43
13	41	47	48	37	53	197	283	563	109	42	41	48
14	38	43	54	38	52	250	355	534	103	42	41	51
15	38	42	50	38	57	276	414	495	98	42	42	50
16	42	39	44	37	58	273	434	413	95	41	42	50
17	44	40	42	37	125	220	435	336	93	42	42	49
18	43	40	39	38	121	237	474	327	88	41	42	47
19	41	41	38	39	88	265	541	300	84	41	42	46
20	39	40	38	38	112	216	540	273	80	43	42	45
21	36	39	38	38	84	233	496	265	77	43	42	46
22	35	41	39	37	75	262	421	270	75	43	43	47
23	34	42	39	39	73	194	395	298	72	43	47	45
24	33	42	39	50	75	176	356	288	70	42	49	45
25	33	38	40	49	87	174	327	288	68	42	50	46
26	33	36	42	44	103	157	303	290	65	42	43	45
27	34	36	46	44	95	181	277	288	63	42	43	45
28	34	37	49	41	101	201	269	269	61	42	43	46
29	33	39	44	39	---	222	297	254	59	42	42	161
30	33	88	42	40	---	257	320	251	56	42	42	72
31	33	---	41	42	---	304	---	551	---	43	43	---
TOTAL	1161	1203	1406	1315	1997	6539	10148	11856	3636	1383	1326	1509
MEAN	37.5	40.1	45.4	42.4	71.3	211	338	382	121	44.6	42.8	50.3
MAX	44	88	100	70	125	304	541	609	323	54	50	161
MIN	33	32	37	37	40	119	204	251	56	41	41	42
AC-FT	2300	2390	2790	2610	3960	12970	20130	23520	7210	2740	2630	2990

11218400 NORTH FORK KINGS RIVER BELOW DINKEY CREEK, NEAR BALCH CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	48.8	87.6	138	213	270	339	593	1001	805	269	58.9	49.6
MAX	288	347	920	1187	1269	1329	2163	4253	4210	1894	422	233
(WY)	1983	1984	1967	1980	1986	1986	1982	1969	1983	1983	1961	1978
MIN	10.6	17.6	19.3	26.3	30.0	48.1	111	129	47.3	21.9	16.2	14.1
(WY)	1978	1978	1977	1991	1991	1977	1977	1977	1976	1976	1968	1968

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	198517				43479							
ANNUAL MEAN	544				119				322			
HIGHEST ANNUAL MEAN									1045			
LOWEST ANNUAL MEAN									49.2			
HIGHEST DAILY MEAN	3130				609				14900			
LOWEST DAILY MEAN	32				32				6.4			
ANNUAL SEVEN-DAY MINIMUM	33				33				9.6			
INSTANTANEOUS PEAK FLOW					949				27400			
INSTANTANEOUS PEAK STAGE					5.13				19.20			
ANNUAL RUNOFF (AC-FT)	393800				86240				233600			
10 PERCENT EXCEEDS	1730				310				783			
50 PERCENT EXCEEDS	165				46				91			
90 PERCENT EXCEEDS	38				37				28			

## 11221500 KINGS RIVER BELOW PINE FLAT DAM, CA

LOCATION.--Lat 36°49'50", long 119°20'07", in SW 1/4 NW 1/4 sec.2, T.13 S., R.24 E., Fresno County, Hydrologic Unit 18030012, on right bank 0.6 mi downstream from Pine Flat Dam, 0.6 mi downstream from the hydroelectric plant on the right bank at the foot of the dam, and 2.9 mi northeast of Piedra.

DRAINAGE AREA.--1,545 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1956-66, 1970 to September 1994 (discontinued).

WATER-DISCHARGE RECORDS: Water years 1954-90

CHEMICAL DATA: Water years 1956-66.

WATER TEMPERATURE: Water years 1970 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1969 to September 1994 (discontinued).

INSTRUMENTATION.--Water-temperature recorder October 1969 to September 1994 (discontinued).

REMARKS.--Interruptions in record were due to malfunction of recording equipment. Water temperature is affected by regulation from Pine Flat Dam and the powerplant.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 26.0°C, Aug. 7, 26-28, Sept. 10, 1990; minimum recorded, 6.0°C, Feb. 13-16, 1989, Dec. 24, 1990, Mar. 8, 1992.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.0°C, Sept. 30; minimum recorded, 9.5°C, for many days in Feb., Mar., and May 24.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	16.0	18.5	16.0	16.5	13.0	12.5	12.0	12.0	10.0	10.5	9.5
2	16.0	16.0	18.5	16.0	16.0	13.5	13.0	12.0	12.5	10.0	10.5	9.5
3	16.0	16.0	18.5	16.0	16.0	13.5	13.0	12.0	13.0	10.0	10.5	9.5
4	16.0	16.0	18.0	16.0	15.5	13.0	12.5	12.0	13.0	11.0	10.5	9.5
5	16.0	16.0	18.0	16.0	15.5	13.0	12.0	12.0	13.5	11.0	10.5	10.0
6	16.0	16.0	18.0	16.0	15.5	13.0	12.5	11.5	11.5	11.0	10.5	9.5
7	16.0	16.0	18.0	16.0	15.5	13.0	13.0	11.0	12.0	11.0	10.5	9.5
8	16.0	16.0	17.5	16.0	15.5	13.5	13.0	11.0	13.0	11.0	11.0	9.5
9	16.0	16.0	17.5	16.0	16.0	13.0	13.0	11.0	14.0	10.5	11.0	9.5
10	16.0	16.0	17.0	16.0	15.5	13.0	13.0	11.5	13.0	11.0	11.0	10.0
11	16.0	16.0	17.0	16.0	13.5	13.0	13.0	11.0	13.5	10.5	10.5	10.0
12	16.0	16.0	17.0	15.5	15.5	13.0	13.0	11.5	13.5	10.0	11.0	9.5
13	16.0	16.0	17.0	15.5	15.0	12.5	12.5	11.0	13.0	10.5	11.0	9.5
14	16.0	16.0	17.0	15.5	13.0	12.5	12.5	11.5	14.0	10.5	11.5	9.5
15	16.0	16.0	17.0	14.5	14.0	12.0	13.0	11.5	13.0	10.5	11.0	10.0
16	16.0	16.0	17.5	14.5	14.5	12.0	13.0	11.5	12.0	11.0	10.5	10.0
17	16.0	16.0	17.5	13.0	14.5	12.0	13.0	11.5	12.0	10.5	10.5	10.0
18	16.0	16.0	17.0	14.0	13.5	12.0	13.0	11.5	13.0	10.0	11.0	10.0
19	16.0	16.0	16.5	14.0	13.5	12.0	13.0	11.5	13.5	9.5	11.0	10.0
20	16.0	16.0	16.5	14.0	14.0	12.0	13.0	11.5	13.5	10.0	11.0	10.0
21	16.0	16.0	15.0	14.0	12.0	11.5	12.5	11.5	11.0	9.5	11.0	10.0
22	16.5	16.0	16.5	14.0	12.5	11.5	13.0	11.5	11.0	9.5	11.0	10.0
23	16.5	16.0	16.0	13.5	13.0	11.0	14.0	12.0	11.0	9.5	11.0	9.5
24	16.5	16.0	16.0	13.0	13.0	11.0	12.0	11.5	10.5	9.5	11.0	10.0
25	16.0	16.0	16.0	13.0	12.5	11.0	14.5	11.0	11.0	9.5	10.5	10.0
26	17.5	16.0	16.0	13.0	13.5	11.5	14.5	11.0	10.5	9.5	11.5	10.0
27	16.0	16.0	14.5	13.0	14.0	11.5	12.0	11.0	10.5	9.5	11.0	10.0
28	16.5	16.0	14.5	13.5	14.0	11.5	13.5	10.5	10.5	9.5	12.0	10.0
29	16.5	16.0	15.5	14.0	14.0	11.5	13.5	10.5	---	---	12.5	10.5
30	17.0	16.0	16.0	13.5	13.5	11.5	13.0	10.5	---	---	13.0	11.0
31	18.5	16.5	---	---	13.0	11.5	13.5	10.5	---	---	13.0	10.5
MONTH	18.5	16.0	18.5	13.0	16.5	11.0	14.5	10.5	14.0	9.5	13.0	9.5

## TULARE LAKE BASIN

11221500 KINGS RIVER BELOW PINE FLAT DAM, CA

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	10.5	10.0	10.0	10.0	10.0	13.0	12.5	19.0	17.0	21.5	20.0
2	13.5	11.0	10.5	10.0	10.0	10.0	13.0	13.0	19.0	17.0	22.0	20.0
3	13.5	11.0	10.5	10.0	10.0	10.0	13.0	13.0	19.5	17.0	21.5	20.0
4	13.5	11.0	10.5	10.0	10.0	10.0	13.5	13.0	20.5	17.0	22.0	20.0
5	13.0	10.5	10.0	10.0	10.0	10.0	---	---	20.0	16.5	21.5	20.0
6	13.0	11.0	10.0	10.0	10.0	10.0	---	---	18.5	17.0	---	---
7	13.0	10.5	10.0	10.0	10.0	10.0	13.5	13.5	19.0	18.5	---	---
8	12.0	10.5	10.5	10.0	10.0	10.0	14.0	13.5	19.0	18.5	20.5	20.0
9	12.5	11.0	10.5	10.0	10.0	10.0	14.0	13.5	19.0	19.0	21.0	19.5
10	12.5	10.5	10.5	10.0	10.0	10.0	14.5	14.0	20.5	17.5	21.0	19.0
11	13.0	10.5	10.5	10.0	10.5	10.0	14.5	14.0	20.0	18.0	21.0	19.0
12	11.5	10.0	10.5	10.0	10.5	10.0	14.5	14.0	19.5	19.0	21.0	19.0
13	10.5	10.0	10.5	10.0	10.5	10.0	14.5	14.5	19.5	19.5	21.0	19.0
14	10.5	10.0	10.5	10.0	10.5	10.5	14.5	14.5	20.0	19.5	20.5	19.0
15	10.5	10.0	10.0	10.0	10.5	10.5	15.0	14.5	20.0	19.5	21.0	19.0
16	10.0	10.0	10.0	10.0	11.0	10.5	15.0	15.0	20.5	19.5	20.5	19.0
17	10.0	10.0	10.5	10.0	11.0	10.5	15.5	15.0	20.5	18.5	20.5	19.0
18	10.0	10.0	10.0	10.0	11.0	11.0	15.5	15.0	20.5	20.0	20.5	19.0
19	10.0	10.0	10.0	10.0	11.0	11.0	15.5	15.5	20.5	20.0	20.5	19.0
20	10.0	10.0	10.0	10.0	11.0	11.0	16.0	15.5	21.0	20.5	20.5	19.0
21	10.0	10.0	10.0	10.0	11.5	11.0	16.0	15.5	21.0	20.5	20.5	19.0
22	10.0	10.0	10.0	10.0	11.5	11.0	17.0	16.0	21.0	20.5	20.5	19.0
23	10.5	10.0	10.0	10.0	12.0	11.5	17.0	16.5	20.5	19.0	20.0	18.5
24	10.5	10.0	10.0	9.5	12.0	12.0	17.5	16.5	21.0	19.0	20.5	18.5
25	10.5	10.0	10.0	10.0	12.0	12.0	17.5	17.0	21.0	19.5	20.5	18.5
26	10.0	10.0	10.0	10.0	12.5	12.0	17.5	17.0	20.0	19.0	21.5	19.0
27	10.5	10.0	10.0	10.0	12.5	12.0	18.0	17.0	20.0	19.0	20.5	19.0
28	10.5	10.0	10.0	10.0	12.5	12.0	17.5	17.0	21.0	19.5	19.5	18.5
29	10.5	10.0	10.0	10.0	12.5	12.5	19.0	17.0	21.0	19.5	20.5	18.5
30	10.0	10.0	10.0	10.0	12.5	12.5	18.0	16.5	20.5	19.5	23.0	18.5
31	---	---	10.0	10.0	---	---	18.5	17.0	21.0	20.0	---	---
MONTH	14.0	10.0	10.5	9.5	12.5	10.0	---	---	21.0	16.5	---	---

## TULARE LAKE BASIN

229

11221700 MILL CREEK NEAR PIEDRA, CA

LOCATION.--Lat 36°49'07", long 119°20'27", in NE 1/4 NE 1/4 sec.10, T.13 S., R.24 E., Fresno County, Hydrologic Unit 18030008, on left bank 150 ft upstream from road bridge, 0.7 mi upstream from mouth, and 2.3 mi east of Piedra.

DRAINAGE AREA.--127 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1957 to September 1994 (discontinued). November 1938 to September 1957 in reports of Kings River Water Association.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 550 ft above sea level, from topographic map. Prior to July 14, 1958, at site 150 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some small diversions upstream from station for irrigation. See schematic diagram of Kings River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft<sup>3</sup>/s, Jan. 14, 1993, gage height, 8.55 ft; maximum gage height, 9.65 ft in gage well (backwater from debris), Jan. 19, 1969; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	1145	*301	*3.51				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	9.4	5.2	7.9	27	10	12	4.2	.02	.00	e.00
2	.00	.00	5.0	5.2	6.8	25	9.9	11	5.3	.00	.00	e.00
3	.00	.00	3.5	5.3	6.7	24	9.6	10	3.8	.00	.00	e.00
4	.00	.00	2.7	5.8	6.9	23	9.3	9.5	2.8	.00	.00	e.00
5	.00	.00	2.5	6.0	7.1	22	9.1	8.9	2.6	.00	.00	e.00
6	.00	.00	2.2	5.7	7.4	24	8.7	9.7	2.1	.00	.00	e.00
7	.00	.00	2.1	5.7	8.6	23	8.7	17	2.0	.00	.00	e.00
8	.00	.00	1.9	5.7	112	21	8.7	16	1.7	.00	.00	.00
9	.00	.00	1.9	5.7	61	19	11	12	1.6	.00	.00	.00
10	.00	.00	1.9	5.7	31	18	15	11	1.5	.00	.00	.00
11	.00	.00	2.9	5.7	31	17	12	9.6	1.2	.00	.00	.00
12	.00	.00	19	5.7	25	17	10	8.5	.90	.00	.00	.00
13	.00	.00	13	5.2	20	15	9.0	7.8	.75	.00	.00	.00
14	.00	.00	11	5.4	17	15	8.5	7.0	.56	.00	.00	.00
15	.00	.00	12	5.7	16	14	8.4	6.4	.43	.00	.00	.00
16	.00	.00	8.8	5.7	14	14	7.9	6.4	.43	.00	.00	.00
17	.00	.00	7.4	5.5	35	14	7.5	6.6	.34	.00	.00	.00
18	.00	.00	6.9	5.2	119	15	7.1	7.9	.33	.00	.00	.00
19	.00	.00	6.3	5.2	110	14	7.0	9.5	.25	.00	.00	.00
20	.00	.04	5.9	5.2	205	14	6.6	9.0	.23	.00	.00	.00
21	.00	.60	5.7	5.2	108	12	6.2	7.9	.23	.00	.00	.00
22	.00	.87	5.7	4.8	60	9.9	6.1	7.2	.22	.00	.00	.00
23	.00	1.0	5.7	5.6	46	9.6	6.0	6.3	.15	.00	.00	.00
24	.00	1.2	5.7	6.7	39	9.4	8.6	5.7	.15	.00	.00	.00
25	.00	1.2	5.5	16	34	17	14	5.1	.15	.00	.00	.00
26	.00	1.2	5.7	15	32	17	27	4.6	.09	.00	e.00	.00
27	.00	1.2	5.7	10	31	13	20	4.0	.07	.00	e.00	.00
28	.00	1.3	5.2	8.7	29	11	17	3.4	.07	.00	e.00	.00
29	.00	1.6	5.2	7.7	---	11	15	3.2	.07	.00	e.00	.00
30	.00	7.0	5.2	7.7	---	11	13	2.9	.07	.00	e.00	.00
31	.00	---	5.2	8.1	---	10	---	3.4	---	.00	e.00	---
TOTAL	0.00	17.21	186.8	206.0	1226.4	505.9	316.9	249.5	34.29	0.02	0.00	0.00
MEAN	.000	.57	6.03	6.65	43.8	16.3	10.6	8.05	1.14	.001	.000	.000
MAX	.00	7.0	19	16	205	27	27	17	5.3	.02	.00	.00
MIN	.00	.00	1.9	4.8	6.7	9.4	6.0	2.9	.07	.00	.00	.00
AC-FT	.00	34	371	409	2430	1000	629	495	68	.04	.00	.00

e Estimated.

## TULARE LAKE BASIN

11221700 MILL CREEK NEAR PIEDRA, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.01	7.26	31.1	97.5	124	118	91.7	27.8	8.35	1.75	.32	.42
MAX	12.3	110	296	1048	756	709	463	169	51.7	18.8	9.57	7.11
(WY)	1983	1983	1967	1969	1969	1983	1967	1967	1967	1983	1983	1983
MIN	.000	.000	.000	.000	.000	3.61	1.78	1.22	.000	.000	.000	.000
(WY)	1958	1958	1960	1991	1991	1977	1977	1972	1966	1959	1959	1958

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1958 - 1994			
ANNUAL TOTAL	30543.27				2743.02							
ANNUAL MEAN	83.7				7.52				41.9			
HIGHEST ANNUAL MEAN									211			
LOWEST ANNUAL MEAN									1.35			
HIGHEST DAILY MEAN	3860				205				7400			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				.00			
INSTANTANEOUS PEAK FLOW					301				11300			
INSTANTANEOUS PEAK STAGE					3.51				9.65			
ANNUAL RUNOFF (AC-FT)	60580				5440				30380			
10 PERCENT EXCEEDS	207				17				78			
50 PERCENT EXCEEDS	6.6				2.5				3.9			
90 PERCENT EXCEEDS	.00				.00				.00			

## 11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA

LOCATION.--Lat 36°12'53", long 120°28'11", in NW 1/4 SE 1/4 sec.5, T.20 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 50 ft downstream from highway bridge, 1.1 mi upstream from Nunez Canyon, 3.0 mi downstream from White Creek, and 8.1 mi northwest of Coalinga.

DRAINAGE AREA.--95.8 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1945 to current year. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1950. WSP 1735: 1952(M), 1956(M). WSP 1930: Drainage area. WDR CA-72-2: 1971(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,065.2 ft above sea level. Aug. 2, 1959, to Jan. 11, 1985, at site on right bank at datum 2.00 ft higher. Prior to Aug. 2, 1959, at site 100 ft downstream on right bank at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Minor diversion for irrigation and stock ponds.

EXTREMES FOR PERIOD OF RECORD (SINCE 1950).--Maximum discharge, 4,360 ft<sup>3</sup>/s, Feb. 24, 1969, gage height, 12.34 ft, present datum, in gage well, 13.30 ft from floodmarks, from rating curve extended above 800 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 12.34 ft; maximum gage height, 12.65 ft in gage well, 13.95 ft from floodmarks, Jan. 16, 1978; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	0445	*62	*4.34				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.9	.75	.57	.95	1.7	.62	.11	.32	.00	.00	.00
2	.00	2.7	.76	.57	.86	1.5	.35	.18	.31	.00	.00	.00
3	.00	2.7	.77	.57	.82	1.3	.20	.13	.23	.00	.00	.00
4	.00	2.6	.76	.57	1.5	1.1	.17	.06	.17	.00	.00	.00
5	.00	2.5	.92	.52	1.1	1.1	.17	.24	.35	.00	.00	.00
6	.00	2.3	.95	.57	1.0	1.7	.12	.51	.38	.00	.00	.00
7	.00	2.2	.98	.53	2.2	1.5	.47	1.3	.32	.00	.00	.00
8	.00	2.2	.95	.57	6.5	1.1	.58	1.6	.32	.00	.00	.00
9	.00	2.0	.95	.57	3.9	.82	1.2	1.2	.25	.00	.00	.00
10	.00	1.8	1.1	.57	3.0	.60	.91	.89	.14	.00	.00	.00
11	.00	2.1	3.5	.57	2.6	.79	.61	.51	.07	.00	.00	.00
12	.00	2.2	4.0	.50	2.1	.67	.32	.39	.06	.00	.00	.00
13	.00	2.2	2.8	.50	1.7	.71	.23	.34	.00	.00	.00	.00
14	.00	2.2	2.6	.49	1.5	.71	.17	.27	.00	.00	.00	.00
15	.00	2.3	2.5	.44	1.3	.74	.12	.25	.00	.00	.00	.00
16	.00	2.2	1.9	.45	1.2	.67	.14	.83	.00	.00	.00	.00
17	.21	2.0	1.7	.44	1.7	.76	.13	2.4	.00	.00	.00	.00
18	2.0	1.6	1.4	.62	2.5	.61	.10	2.9	.00	.00	.00	.00
19	2.9	1.5	1.1	.60	5.6	.77	.08	2.9	.00	.00	.00	.00
20	3.3	1.5	1.0	.50	23	.66	.20	2.5	.00	.00	.00	.00
21	3.5	1.4	1.1	.42	7.6	.54	.14	2.2	.00	.00	.00	.00
22	3.7	.73	.95	.51	4.8	.58	.00	1.9	.00	.00	.00	.00
23	3.6	.54	.82	5.5	3.9	.95	.26	1.5	.00	.00	.00	.00
24	3.4	.95	.57	4.7	3.4	1.2	.63	1.2	.00	.00	.00	.00
25	3.4	2.7	.72	5.5	3.2	1.8	.85	.89	.00	.00	.00	.00
26	3.3	1.1	.57	3.6	2.7	1.6	.91	.68	.00	.00	.00	.00
27	3.3	.72	.50	2.7	2.5	1.2	.58	.72	.00	.00	.00	.00
28	3.4	.48	.57	2.1	2.0	1.0	.44	.58	.00	.00	.00	.00
29	3.3	.51	.64	1.6	---	.75	.39	.27	.00	.00	.00	.00
30	3.0	.81	.68	1.3	---	.73	.18	.27	.00	.00	.00	.00
31	3.0	---	.57	1.1	---	.83	---	.57	---	.00	.00	---
TOTAL	45.31	53.64	39.08	39.75	95.13	30.69	11.27	30.29	2.92	0.00	0.00	0.00
MEAN	1.46	1.79	1.26	1.28	3.40	.99	.38	.98	.097	.000	.000	.000
MAX	3.7	2.9	4.0	5.5	23	1.8	1.2	2.9	.38	.00	.00	.00
MIN	.00	.48	.50	.42	.82	.54	.00	.06	.00	.00	.00	.00
AC-FT	90	106	78	79	189	61	22	60	5.8	.00	.00	.00

## 11224500 LOS GATOS CREEK ABOVE NUNEZ CANYON, NEAR COALINGA, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.27	.96	3.76	12.0	22.8	16.8	8.59	2.38	.86	.21	.074	.25
MAX	7.15	18.2	36.3	139	287	204	160	40.0	16.4	5.71	2.92	8.33
(WY)	1946	1966	1967	1969	1978	1983	1958	1983	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1947	1948	1948	1948	1948	1961	1949	1948	1948	1947	1945	1945

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1945 - 1994			
ANNUAL TOTAL	9082.78				348.08							
ANNUAL MEAN	24.9				.95				5.66			
HIGHEST ANNUAL MEAN									48.5			
LOWEST ANNUAL MEAN									.000			
HIGHEST DAILY MEAN	1310				23				2190			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				.00			
INSTANTANEOUS PEAK FLOW					62				4360			
INSTANTANEOUS PEAK STAGE					4.34				13.95			
ANNUAL RUNOFF (AC-FT)	18020				690				4100			
10 PERCENT EXCEEDS	56				2.7				5.5			
50 PERCENT EXCEEDS	3.3				.51				.00			
90 PERCENT EXCEEDS	.00				.00				.00			



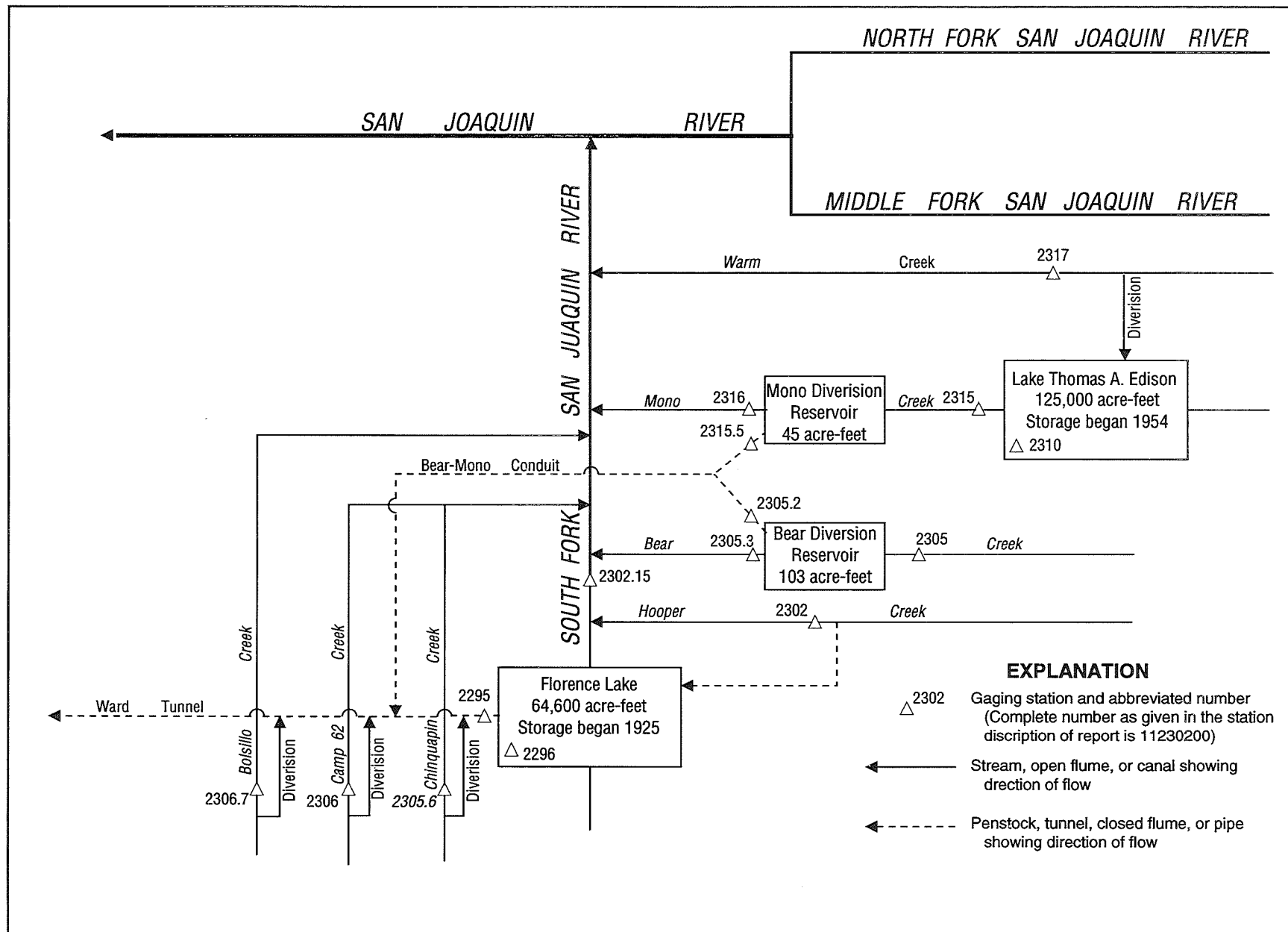


Figure 31. Diversions and storage in upper San Joaquin River basin.

## SAN JOAQUIN RIVER BASIN

## 11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA

LOCATION.--Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse at entrance of tunnel, 0.4 mi south of left abutment of Florence Lake Dam, and 16 mi northeast of town of Big Creek.

PERIOD OF RECORD.--April 1925 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as Florence Lake Tunnel at Intake 1925-36 and as Ward Tunnel at Intake 1937-60.

REVISED RECORDS.--WSP 1515: 1931.

GAGE.--Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Ward Tunnel diverts from Florence Lake (station 11229600), a reservoir on South Fork San Joaquin River, to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500). Water used again in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,990 ft<sup>3</sup>/s, Apr. 30, 1926; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	10	18	12	12	64	151	288	270	561	430	12
2	362	9.5	24	12	12	75	162	347	303	644	428	10
3	696	9.2	25	12	12	86	175	456	108	624	429	8.3
4	703	9.4	24	13	12	91	146	457	228	609	431	6.7
5	639	9.0	19	18	11	89	126	465	326	602	426	5.4
6	639	8.8	18	16	12	81	127	446	332	604	431	4.3
7	190	8.6	16	16	13	74	116	486	410	623	431	3.6
8	60	8.1	16	16	14	76	113	491	390	628	436	2.8
9	36	7.7	15	15	16	82	106	520	335	635	438	2.4
10	28	7.8	13	13	23	83	94	513	305	634	434	1.6
11	29	7.9	16	13	28	79	89	329	299	632	432	.75
12	35	9.1	15	12	29	71	95	310	251	629	429	.44
13	32	7.3	21	12	31	68	121	221	313	626	491	.41
14	28	12	26	12	29	86	184	169	366	636	545	.50
15	26	10	24	11	27	114	252	201	360	643	544	1.1
16	30	12	22	11	26	119	336	341	412	639	549	1.2
17	32	13	21	11	28	102	365	502	516	655	544	1.2
18	28	13	20	11	27	98	404	543	562	661	643	.91
19	26	11	19	11	30	105	430	516	528	657	654	.72
20	24	9.4	18	11	42	95	285	565	515	649	892	2.2
21	22	10	17	11	47	94	295	536	509	645	1350	3.2
22	21	12	16	11	54	96	299	553	486	648	785	2.8
23	19	11	15	12	63	80	308	492	519	642	304	2.0
24	18	11	15	10	66	76	312	438	547	636	79	3.0
25	17	12	15	15	66	71	460	357	560	660	47	2.9
26	15	12	15	16	69	72	548	289	556	666	32	2.2
27	13	13	15	16	64	81	525	276	571	676	24	1.1
28	12	14	14	14	59	94	501	264	598	615	21	.55
29	11	14	14	14	---	66	443	246	552	431	19	715
30	10	18	14	14	---	91	360	224	534	429	17	330
31	10	---	13	13	---	184	---	168	---	430	14	---
TOTAL	4006	319.8	553	404	922	2743	7928	12009	12561	19069	12729	1183.73
MEAN	129	10.7	17.8	13.0	32.9	88.5	264	387	419	615	411	39.5
MAX	703	18	26	18	69	184	548	565	598	676	1350	715
MIN	10	7.3	13	10	11	64	89	168	108	429	14	.41
AC-FT	7950	634	1100	801	1830	5440	15730	23820	24910	37820	25250	2350

## 11229500 WARD TUNNEL INTAKE AT FLORENCE LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	235	135	111	78.9	75.7	108	269	454	545	527	408	338
MAX	522	745	1064	546	240	297	573	949	1161	1199	788	778
(WY)	1943	1938	1946	1939	1986	1986	1962	1974	1974	1967	1965	1983
MIN	.000	.47	3.04	2.13	.64	22.5	35.4	.85	1.49	90.1	48.3	1.50
(WY)	1946	1965	1991	1991	1991	1977	1991	1939	1938	1931	1977	1949

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1925 - 1994
ANNUAL TOTAL	141094.0	74427.53	
ANNUAL MEAN	387	204	276
HIGHEST ANNUAL MEAN			460
LOWEST ANNUAL MEAN			98.1
HIGHEST DAILY MEAN	1250	Jun 7	1350
LOWEST DAILY MEAN	1.1	Jan 26	.41
ANNUAL SEVEN-DAY MINIMUM	8.1	Nov 7	.80
ANNUAL RUNOFF (AC-FT)	279900		147600
10 PERCENT EXCEEDS	947		603
50 PERCENT EXCEEDS	234		71
90 PERCENT EXCEEDS	14		9.4

## SAN JOAQUIN RIVER BASIN

## 11229600 FLORENCE LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°16'20", long 118°58'17", unsurveyed, T.8 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of Ward Tunnel intake, 0.3 mi west of dam on South Fork San Joaquin River and 16 mi northeast of town of Big Creek.

DRAINAGE AREA.--171 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1925 to current year. Prior to October 1931, published in WSP 721. Maximum and minimum daily contents (water years 1926-39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.--WDR CA-78-3: 1977.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,406 acre-ft between elevations 7,220.94 ft, throat of Venturi tube in Ward Tunnel intake (station 11229500), and 7,327.50 ft, top of spillway drum gates. Additional storage of 168 acre-ft is not available for diversion. Water is diverted through Ward Tunnel to Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) and used for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,990 acre-ft, July 3, 1932, elevation, 7,329.14 ft; minimum occurred during period of no record, Oct. 2-4, 1926, or Nov. 30 to Dec. 2, 1927.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 53,596 acre-ft, June 22, elevation, 7,315.96 ft; minimum, 1,025 acre-ft, Sept. 12, elevation, 7,230.89 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated Aug. 26, 1926)

7,220.94	0	7,240	2,976	7,270	17,755
7,222	63	7,245	4,666	7,280	24,588
7,225	281	7,250	6,648	7,290	31,966
7,230	887	7,255	8,950	7,310	48,284
7,235	1,774	7,260	11,608	7,330	66,826

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7878	1064	1091	1076	1071	1142	1264	2259	29282	51691	24361	1071
2	7121	1061	1098	1076	1071	1178	1282	2111	31518	51128	23640	1068
3	5764	1062	1098	1076	1069	1188	1278	1859	34077	50522	22889	1061
4	4283	1062	1091	1086	1071	1195	1246	2014	36106	49901	22124	1056
5	2839	1064	1088	1091	1071	1200	1233	2337	37767	49248	21372	1051
6	1509	1062	1085	1086	1071	1192	1235	2469	39185	48538	20587	1049
7	1195	1061	1085	1086	1076	1188	1221	2426	40121	47771	19797	1044
8	1136	1057	1081	1085	1076	1192	1223	2205	41105	46973	18981	1042
9	1113	1054	1079	1081	1085	1195	1210	1932	42446	46147	18181	1039
10	1105	1056	1078	1079	1100	1195	1200	1981	44113	45293	17373	1034
11	1117	1059	1083	1076	1102	1187	1193	3106	45976	44435	16581	1030
12	1119	1056	1079	1076	1102	1175	1209	5292	47875	43558	15779	1025
13	1110	1061	1100	1074	1102	1185	1255	7363	49425	42655	14834	1027
14	1105	1066	1100	1073	1103	1216	1321	9886	50976	41741	13826	1031
15	1103	1068	1096	1073	1103	1239	1395	12242	52293	40808	12832	1033
16	1112	1073	1093	1071	1103	1225	1443	13525	52943	39892	11821	1033
17	1107	1073	1091	1071	1103	1207	1528	13801	53133	38910	10840	1031
18	1100	1073	1091	1071	1103	1207	1686	13850	53151	37888	9636	1030
19	1095	1073	1086	1071	1102	1207	1927	13813	53215	36859	8419	1031
20	1096	1073	1085	1069	1103	1207	2753	13609	53333	35806	6730	1042
21	1095	1073	1085	1069	1102	1198	3807	13410	53469	34779	3891	1042
22	1091	1073	1083	1068	1102	1192	4662	13279	53596	33720	1735	1037
23	1088	1068	1081	1068	1102	1178	5142	13609	53587	32625	1235	1040
24	1085	1071	1079	1073	1108	1168	5257	14306	53469	31556	1156	1040
25	1083	1071	1081	1078	1112	1164	4893	15439	53296	30488	1125	1039
26	1079	1071	1081	1079	1113	1178	4262	17036	53061	29379	1108	1034
27	1074	1074	1083	1078	1136	1190	3648	18968	52761	28272	1098	1030
28	1071	1073	1081	1076	1141	1202	3061	20832	52446	27215	1091	1621
29	1069	1081	1079	1076	---	1296	2586	22868	52239	26502	1086	1180
30	1066	1085	1079	1074	---	1377	2372	25116	52032	25807	1081	1152
31	1066	---	1076	1073	---	1269	---	27544	---	25088	1076	---
MAX	7878	1085	1100	1091	1141	1377	5257	27544	53596	51691	24361	1621
MIN	1066	1054	1076	1068	1069	1142	1193	1859	29282	25088	1076	1025
a	7231.14	7231.25	7231.20	7231.18	7231.58	7232.32	7237.68	7284.09	7314.23	7280.70	7231.20	7231.65
b	-7183	+19	-9	-3	+68	+128	+1103	+25172	+24488	-26944	-24012	+76

CAL YR 1993 b -41  
WTR YR 1994 b -7097

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11230200 HOOPER CREEK BELOW DIVERSION DAM, NEAR FLORENCE LAKE, CA

LOCATION.--Lat 37°18'21", long 118°56'59", unsurveyed, T.7 S., R.28 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 300 ft downstream from diversion dam, 0.7 mi upstream from mouth, 2.5 mi north of Florence Lake, and 17.6 mi northeast of town of Big Creek.

DRAINAGE AREA.--7.22 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Prior to October 1991, published as Hooper Creek at diversion dam near Florence Lake.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 7,440 ft above sea level, from topographic map.

REMARKS.--Flow regulated by diversion dam 300 ft upstream. Most of the water is diverted at the diversion dam to Florence Lake (station 11229600). See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 110 ft<sup>3</sup>/s, June 25, 1993; minimum daily, 1.2 ft<sup>3</sup>/s, Apr. 25, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9.1 ft<sup>3</sup>/s, Apr. 18; minimum daily, 2.1 ft<sup>3</sup>/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.9	3.1	2.4	2.2	2.6	3.7	3.6	3.5	4.1	3.8	2.3
2	3.2	2.8	2.8	2.5	2.2	2.7	4.0	3.6	4.0	4.1	3.8	2.2
3	3.2	2.8	2.8	2.4	2.2	2.8	3.9	3.5	3.8	4.1	3.7	2.2
4	3.2	2.8	2.8	2.5	2.2	2.7	3.7	3.6	4.0	4.1	3.3	2.2
5	3.4	2.8	2.7	2.6	2.2	2.7	3.6	3.5	7.0	4.0	3.2	2.1
6	3.3	2.9	2.7	2.4	2.2	2.5	3.7	3.6	4.3	3.9	3.1	2.1
7	3.1	2.8	2.8	2.4	2.3	2.6	3.6	3.6	4.2	3.9	3.1	2.1
8	3.1	2.8	2.8	2.4	2.6	2.7	3.6	3.5	4.1	3.9	3.3	2.1
9	3.1	2.7	2.7	2.3	2.4	2.6	3.5	3.5	4.2	3.9	3.2	2.1
10	3.1	2.8	2.6	2.3	2.3	2.7	3.4	3.5	4.0	3.9	3.2	2.1
11	3.3	2.9	2.6	2.3	2.3	2.6	3.3	3.5	4.0	3.9	3.1	2.2
12	3.3	2.8	3.1	2.3	2.5	2.5	3.6	3.2	3.9	3.9	3.1	2.4
13	3.2	3.1	2.9	2.2	2.5	2.7	4.1	3.0	3.8	4.1	3.0	2.4
14	3.1	2.7	2.9	2.2	2.3	3.1	5.2	3.7	3.9	4.1	3.0	2.3
15	3.3	3.1	3.6	2.2	2.3	3.2	6.2	4.2	3.0	4.1	2.9	2.2
16	3.3	e3.0	3.2	2.2	2.2	3.1	6.9	4.2	3.7	4.1	2.9	2.2
17	3.3	e2.9	3.2	2.2	2.3	2.9	7.8	4.1	3.9	4.1	2.8	2.1
18	3.2	e2.9	3.2	2.2	2.5	3.1	9.1	4.1	3.9	4.1	2.8	2.1
19	3.2	e2.9	2.8	2.2	2.5	3.1	7.2	4.1	3.8	4.0	2.7	2.3
20	3.2	e2.8	2.6	2.2	2.7	2.9	3.2	4.0	3.8	4.0	2.6	2.3
21	3.2	e2.8	2.2	2.2	2.5	3.0	3.4	4.0	3.8	4.0	2.6	2.2
22	3.1	e2.8	2.1	2.1	2.7	2.8	3.5	4.0	3.8	4.0	2.6	2.1
23	3.0	2.6	2.5	2.2	2.6	2.8	3.5	4.0	3.8	4.0	2.5	2.3
24	3.0	3.0	2.5	2.2	2.8	2.7	3.7	4.1	3.9	3.9	2.4	2.5
25	3.0	2.9	2.9	2.2	2.7	2.6	3.7	4.1	4.0	3.9	2.4	2.2
26	2.9	2.9	2.6	2.4	2.6	3.0	3.7	3.9	4.1	3.9	2.4	2.2
27	2.9	2.8	2.6	2.2	2.5	3.0	3.6	3.9	4.1	3.9	2.4	2.1
28	2.9	2.8	2.5	2.3	2.5	3.0	3.6	3.8	4.1	3.9	2.4	4.3
29	2.9	2.8	2.5	2.3	---	3.0	3.5	3.6	4.1	3.9	2.4	5.5
30	2.9	3.0	2.5	2.2	---	3.2	3.6	3.2	4.2	3.9	2.3	4.2
31	2.9	---	2.4	2.2	---	3.5	---	3.4	---	3.9	2.2	---
TOTAL	97.0	85.6	85.2	70.9	67.8	88.4	129.1	115.6	120.7	123.5	89.2	73.6
MEAN	3.13	2.85	2.75	2.29	2.42	2.85	4.30	3.73	4.02	3.98	2.88	2.45
MAX	3.4	3.1	3.6	2.6	2.8	3.5	9.1	4.2	7.0	4.1	3.8	5.5
MIN	2.9	2.6	2.1	2.1	2.2	2.5	3.2	3.0	3.0	3.9	2.2	2.1
AC-FT	192	170	169	141	134	175	256	229	239	245	177	146

e Estimated.

## 11230200 HOOPER CREEK BELOW DIVERSION DAM, NEAR FLORENCE LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.26	2.22	2.07	1.94	2.04	2.85	5.15	3.17	8.14	7.12	3.16	2.53
MAX	3.28	2.85	2.87	2.29	2.50	4.29	9.50	3.74	42.5	33.0	5.15	3.82
(WY)	1987	1994	1987	1994	1988	1993	1989	1992	1993	1993	1993	1993
MIN	1.68	1.82	1.59	1.55	1.55	2.10	3.23	2.50	2.46	2.66	2.32	1.91
(WY)	1991	1991	1989	1991	1991	1990	1991	1991	1989	1989	1989	1990

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	3351.5				1146.6							
ANNUAL MEAN	9.18				3.14				3.56			
HIGHEST ANNUAL MEAN									8.92			
LOWEST ANNUAL MEAN									2.42			
HIGHEST DAILY MEAN	110				9.1				110			
LOWEST DAILY MEAN	1.7				2.1				1.2			
ANNUAL SEVEN-DAY MINIMUM	1.8				2.1				1.3			
ANNUAL RUNOFF (AC-FT)	6650				2270				2580			
10 PERCENT EXCEEDS	6.9				4.1				4.1			
50 PERCENT EXCEEDS	3.2				3.0				2.5			
90 PERCENT EXCEEDS	2.0				2.2				1.7			

## 11230215 SOUTH FORK SAN JOAQUIN RIVER BELOW HOOPER CREEK, NEAR FLORENCE LAKE, CA

LOCATION.--Lat 37°18'35", long 118°57'40", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.1 mi downstream from Hooper Creek, 3.5 mi downstream from Florence Lake Dam, and 17 mi northeast of town of Big Creek.

DRAINAGE AREA.--184 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1978 to current year. October 1946 to September 1978, operated as a low-flow station only, in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 6,949.41 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Florence Lake (station 11229600) 3.5 mi upstream, and Hooper Creek Diversion Dam (capacity less than 2 acre-ft) 0.7 mi upstream. Most of the water is diverted at Florence Lake to Ward Tunnel (station 11229500). See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft<sup>3</sup>/s, Sept. 26, 1982, gage height, 11.42 ft, from rating curve extended above 1,300 ft<sup>3</sup>/s on basis of spill flow at Florence Lake; minimum daily, 3.9 ft<sup>3</sup>/s, Oct. 24, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47 ft<sup>3</sup>/s, June 5, gage height, 4.24 ft; minimum daily, 16 ft<sup>3</sup>/s, several days in January and February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	20	18	17	e16	18	23	22	24	24	22	25
2	23	19	18	17	e16	19	22	22	22	23	22	25
3	22	18	18	17	16	19	23	21	22	23	22	25
4	22	18	18	17	16	20	23	21	22	23	22	25
5	21	17	17	18	16	21	21	22	24	23	22	25
6	20	18	17	16	16	21	22	23	22	23	25	25
7	19	18	17	e16	e17	21	22	24	22	22	25	25
8	19	18	17	e16	e17	21	22	24	22	22	25	24
9	19	18	17	e17	e17	22	22	24	22	22	24	23
10	19	18	17	e17	e17	23	21	23	22	22	24	24
11	20	18	18	e17	e17	22	21	24	22	21	24	24
12	19	18	18	e17	e17	21	21	25	22	22	23	24
13	19	18	18	17	e17	22	21	26	22	22	23	24
14	19	17	17	17	e17	25	23	27	22	22	23	24
15	20	18	17	17	e17	26	23	24	22	22	23	24
16	20	17	e17	17	e17	25	24	22	23	22	22	24
17	20	18	e17	17	e17	24	25	22	23	22	22	24
18	20	18	e17	17	e17	25	26	23	22	24	22	24
19	20	18	e17	17	e17	25	25	23	22	24	22	24
20	19	18	e17	17	e17	24	22	22	22	23	24	24
21	19	18	e17	17	e17	23	22	22	22	23	26	24
22	19	19	e17	17	e17	23	23	23	22	23	24	24
23	19	18	e17	17	e18	21	23	23	22	23	23	24
24	19	18	e17	17	e18	21	22	23	22	23	23	25
25	19	18	e17	17	18	21	19	23	23	23	24	24
26	19	18	e17	17	18	22	19	23	23	23	26	24
27	20	18	17	17	18	24	19	23	22	22	26	23
28	20	18	17	e17	18	23	18	23	22	23	26	31
29	20	18	17	e17	---	23	18	23	22	23	26	31
30	20	19	17	e17	---	23	22	23	23	23	25	28
31	20	---	17	e16	---	23	---	26	---	23	25	---
TOTAL	622	542	534	524	476	691	657	719	669	703	735	744
MEAN	20.1	18.1	17.2	16.9	17.0	22.3	21.9	23.2	22.3	22.7	23.7	24.8
MAX	28	20	18	18	18	26	26	27	24	24	26	31
MIN	19	17	17	16	16	18	18	21	22	21	22	23
AC-FT	1230	1080	1060	1040	944	1370	1300	1430	1330	1390	1460	1480

e Estimated.

## SAN JOAQUIN RIVER BASIN

11230215 SOUTH FORK SAN JOAQUIN RIVER BELOW HOOPER CREEK, NEAR FLORENCE LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.5	15.8	15.5	15.9	19.5	24.7	29.1	41.5	401	274	72.1	41.0
MAX	30.5	24.9	25.3	20.5	42.6	43.8	51.3	164	2429	1292	661	268
(WY)	1990	1984	1984	1984	1986	1986	1982	1983	1983	1983	1983	1982
MIN	7.87	11.8	8.93	11.9	12.2	17.8	18.4	20.9	20.5	21.4	13.1	7.19
(WY)	1980	1979	1979	1979	1991	1990	1990	1981	1981	1981	1979	1979

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1979 - 1994

ANNUAL TOTAL	37807		7616									
ANNUAL MEAN	104		20.9							80.7		
HIGHEST ANNUAL MEAN										396		1983
LOWEST ANNUAL MEAN										18.5		1979
HIGHEST DAILY MEAN	2240			Jun 27		31	Sep 28			5200		Sep 26 1982
LOWEST DAILY MEAN	14			Jan 1		16	Jan 6			3.9		Oct 24 1979
ANNUAL SEVEN-DAY MINIMUM	14			Jan 1		16	Jan 31			4.4		Oct 13 1979
INSTANTANEOUS PEAK FLOW						47	Jun 5			5950		Sep 26 1982
INSTANTANEOUS PEAK STAGE						4.24	Jun 5			11.42		Sep 26 1982
ANNUAL RUNOFF (AC-FT)	74990					15110				58500		
10 PERCENT EXCEEDS	111					24				43		
50 PERCENT EXCEEDS	31					22				22		
90 PERCENT EXCEEDS	17					17				14		



## 11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'22", long 118°58'21", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.2 mi upstream from diversion dam, 1.7 mi upstream from mouth, 2.1 mi south of Lake Thomas A. Edison, and 2.4 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--52.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 611: 1922(M). WSP 1345: 1931-35. WSP 1515: 1922-30. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,366.94 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--No storage or diversion upstream from station. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft<sup>3</sup>/s, Sept. 26, 1982, gage height, 8.35 ft, from rating curve extended above 570 ft<sup>3</sup>/s; minimum daily, 1.2 ft<sup>3</sup>/s, Sept. 29 to Oct. 5, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 519 ft<sup>3</sup>/s, May 14, gage height, 5.22 ft; minimum daily, 4.6 ft<sup>3</sup>/s, Sept. 11-13, 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	10	e12	e10	e11	e25	48	67	295	104	26	6.9
2	16	9.7	e11	e10	e11	e30	53	79	346	92	25	6.7
3	16	9.2	e12	e11	e11	e33	50	106	372	82	23	6.2
4	15	9.1	e12	e11	e10	e34	41	155	327	75	22	5.6
5	15	9.2	e11	e12	e10	31	39	171	308	70	21	5.0
6	15	8.8	e12	e12	e10	25	40	144	276	64	20	5.0
7	15	8.0	e11	e12	e10	24	39	134	228	60	19	5.0
8	15	7.8	e11	e12	e13	26	41	118	228	57	18	5.0
9	14	7.0	e11	e11	e15	30	40	124	275	55	19	4.9
10	14	7.1	e11	e11	e14	30	36	156	313	54	18	4.7
11	18	7.2	e10	e11	e14	27	34	242	341	54	19	4.6
12	20	6.9	e10	e11	e14	24	39	318	331	52	18	4.6
13	18	e8.0	e10	e11	e14	25	53	366	275	50	17	4.6
14	17	e7.8	e10	e11	e14	36	71	395	299	48	17	4.7
15	17	e9.1	e10	e11	e15	43	90	353	270	46	17	4.8
16	19	e11	e10	e11	e15	39	101	232	186	44	16	4.8
17	19	e10	e10	e10	e14	31	110	164	156	42	16	4.7
18	19	e10	e10	e11	e14	33	134	138	146	45	15	4.6
19	18	e9.1	e10	e11	e14	33	160	116	150	50	15	4.6
20	18	e8.8	e11	e11	e14	28	197	106	154	42	14	5.3
21	17	e8.8	e11	e11	e14	30	214	105	158	40	13	6.2
22	16	e11	e11	e11	e16	31	190	114	153	41	12	5.7
23	15	e9.3	e11	e10	e20	27	154	147	139	39	12	4.9
24	14	e9.1	e11	e10	e24	25	116	192	131	37	11	5.3
25	14	e9.8	e11	e11	e24	23	90	256	127	34	9.9	5.8
26	13	e9.6	e12	e11	e25	27	85	297	117	33	9.2	5.6
27	12	e9.4	e12	e11	e22	29	74	319	108	31	9.0	5.1
28	11	e9.2	e12	e11	e21	35	72	319	114	30	8.9	63
29	11	e11	e11	e11	---	35	70	334	119	29	8.4	175
30	11	e12	e11	e12	---	40	72	355	113	28	8.0	78
31	10	---	e10	e12	---	45	---	397	---	28	7.3	---
TOTAL	479	273.0	338	342	423	954	2553	6519	6555	1556	483.7	456.9
MEAN	15.5	9.10	10.9	11.0	15.1	30.8	85.1	210	218	50.2	15.6	15.2
MAX	20	12	12	12	25	45	214	397	372	104	26	175
MIN	10	6.9	10	10	10	23	34	67	108	28	7.3	4.6
AC-FT	950	541	670	678	839	1890	5060	12930	13000	3090	959	906

e Estimated.

## 11230500 BEAR CREEK NEAR LAKE THOMAS A. EDISON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.4	15.2	19.5	21.2	23.2	32.2	86.1	252	343	194	62.9	27.5
MAX	62.2	56.1	71.2	82.5	61.0	79.8	172	586	740	637	349	260
(WY)	1983	1951	1956	1980	1986	1986	1926	1969	1983	1967	1983	1982
MIN	2.71	3.10	4.86	4.50	5.80	9.00	33.1	71.3	42.2	12.2	3.15	1.63
(WY)	1925	1930	1930	1924	1991	1924	1975	1977	1924	1924	1924	1924

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1922 - 1994			
ANNUAL TOTAL	48712.0				20932.6							
ANNUAL MEAN	133				57.3				91.2			
HIGHEST ANNUAL MEAN									201			
LOWEST ANNUAL MEAN									29.2			
HIGHEST DAILY MEAN	793				397				2610			
LOWEST DAILY MEAN	6.9				4.6				1.2			
ANNUAL SEVEN-DAY MINIMUM	7.4				4.7				1.2			
INSTANTANEOUS PEAK FLOW					519				3660			
INSTANTANEOUS PEAK STAGE					5.22				8.35			
ANNUAL RUNOFF (AC-FT)	96620				41520				66040			
10 PERCENT EXCEEDS	485				162				288			
50 PERCENT EXCEEDS	40				17				29			
90 PERCENT EXCEEDS	10				8.0				6.9			

## 11230520 BEAR CREEK CONDUIT NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'10", long 118°58'28", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank at diversion dam, 2.2 mi northeast of Mono Hot Springs, and 2.5 mi south of Lake Thomas A. Edison.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Discharge computed as difference between flows at Bear Creek near Lake Thomas A. Edison (station 11230500) and Bear Creek below diversion dam (station 11230530). Datum of conduit invert, 7,340 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Conduit diverts at diversion dam on Bear Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 462 ft<sup>3</sup>/s, June 11, 12, 1991; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	8.3	10	7.9	8.5	22	46	66	308	108	24	4.4
2	13	7.0	e9.0	7.9	8.2	27	51	79	356	96	23	4.1
3	13	e6.7	e10	8.0	e8.0	30	48	106	404	85	22	3.8
4	13	e6.7	e9.0	8.1	e7.8	31	39	157	342	77	21	3.4
5	13	e6.7	e8.8	9.4	e7.6	29	37	180	319	71	20	3.2
6	13	e6.4	e9.0	9.8	7.9	25	39	151	291	65	18	3.0
7	13	e5.6	e8.4	9.9	7.9	23	37	139	243	60	16	2.9
8	13	e5.4	e8.9	9.4	10	25	40	122	238	56	16	2.7
9	12	e4.6	e8.7	9.0	12	28	38	128	284	54	17	2.5
10	12	e4.7	8.5	8.4	e11	29	34	157	322	53	16	2.3
11	17	e4.8	7.6	8.1	e11	26	32	269	349	52	17	2.0
12	19	e4.5	e7.6	8.0	e11	23	36	314	341	50	16	2.0
13	17	e5.6	e7.8	7.8	e11	24	49	388	283	48	15	2.2
14	15	e5.4	e7.6	7.7	e11	34	69	416	306	45	15	2.6
15	15	6.7	e7.6	7.8	e12	42	89	391	286	44	14	2.7
16	17	8.5	e7.6	7.8	12	38	104	255	199	42	14	2.4
17	17	8.0	e7.8	7.7	11	29	112	178	165	41	13	2.3
18	17	7.9	e7.6	8.0	e11	30	138	147	153	42	13	2.2
19	17	6.7	e7.8	8.1	e11	31	163	124	157	49	12	2.1
20	16	1.7	e8.3	8.2	e11	26	198	111	161	40	12	3.4
21	15	11	e8.4	8.1	e11	28	222	110	168	38	11	3.8
22	14	8.4	e8.4	7.8	e13	29	201	118	163	39	10	3.1
23	13	6.9	e8.4	7.8	e17	24	162	154	147	37	9.6	2.6
24	13	e6.7	e8.6	e7.8	21	23	121	198	139	35	8.8	3.3
25	12	7.4	e8.8	e7.8	21	22	94	268	135	32	7.8	3.6
26	11	7.2	e9.0	e8.0	22	24	88	310	125	30	7.3	3.0
27	10	e7.0	9.2	e8.2	19	27	76	338	114	29	7.0	2.5
28	9.5	e6.8	9.0	e8.2	18	33	73	335	121	28	6.9	130
29	8.9	e8.1	8.5	e8.6	---	32	71	349	127	27	6.3	151
30	8.6	9.4	8.4	9.3	---	37	74	387	120	26	5.5	75
31	8.3	---	8.0	e9.2	---	43	---	433	---	26	4.9	---
TOTAL	419.3	200.8	262.3	257.8	342.9	894	2581	6878	6866	1525	419.1	434.1
MEAN	13.5	6.69	8.46	8.32	12.2	28.8	86.0	222	229	49.2	13.5	14.5
MAX	19	11	10	9.9	22	43	222	433	404	108	24	151
MIN	8.3	1.7	7.6	7.7	7.6	22	32	66	114	26	4.9	2.0
AC-FT	832	398	520	511	680	1770	5120	13640	13620	3020	831	861

e Estimated.

## SAN JOAQUIN RIVER BASIN

11230520 BEAR CREEK CONDUIT NEAR LAKE THOMAS A. EDISON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.81	10.5	8.41	11.0	13.3	30.4	95.2	193	198	61.9	19.7	11.6
MAX	19.0	19.0	15.5	26.3	22.9	45.4	138	226	326	137	30.8	29.8
(WY)	1987	1988	1988	1993	1993	1993	1989	1992	1991	1991	1991	1993
MIN	3.23	3.68	3.23	3.46	4.12	17.4	43.2	150	102	41.8	10.6	4.53
(WY)	1989	1991	1991	1991	1991	1987	1991	1990	1992	1992	1989	1987

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	21080.3		
ANNUAL MEAN	57.8	54.4	
HIGHEST ANNUAL MEAN		61.8	1991
LOWEST ANNUAL MEAN		49.2	1990
HIGHEST DAILY MEAN	433	May 31	462
LOWEST DAILY MEAN	1.7	Nov 20	.00
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 10	.90
ANNUAL RUNOFF (AC-FT)	41810		39430
10 PERCENT EXCEEDS	166		177
50 PERCENT EXCEEDS	15		19
90 PERCENT EXCEEDS	5.6		3.8

## 11230530 BEAR CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°20'08", long 118°58'29", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 60 ft downstream from diversion dam, 2.5 mi south of Lake Thomas A. Edison, and 18.3 mi east of town of Big Creek.

DRAINAGE AREA.--52.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Datum of gage is 7,338.30 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Low and medium flow regulated at diversion dam. Most of the flow is diverted at the diversion dam to Bear Creek Conduit (station 11230520), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 156 ft<sup>3</sup>/s, June 12, 1991; minimum daily, 0.94 ft<sup>3</sup>/s, Oct. 15, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78 ft<sup>3</sup>/s, May 14, gage height, 11.63 ft; minimum daily, 2.2 ft<sup>3</sup>/s, many days during year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.5	2.4	e2.4	2.5	2.6	2.4	2.5	2.4	2.2	2.2	2.3
2	2.6	2.5	2.4	e2.4	2.5	2.6	2.4	2.5	4.9	2.3	2.2	2.3
3	2.6	2.5	2.4	e2.5	2.5	2.6	2.4	2.5	4.7	2.3	2.2	2.3
4	2.6	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.3	2.3	2.2	2.3
5	2.6	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.2	2.2	2.2	2.3
6	2.6	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.2	2.2	2.2	2.3
7	2.6	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.2	2.2	2.2	2.3
8	2.6	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.2	2.2	2.2	2.3
9	2.7	2.4	2.5	e2.5	2.5	2.6	2.4	2.4	2.2	2.2	2.2	2.3
10	2.7	2.4	2.5	e2.6	2.5	2.6	2.4	2.4	2.4	2.2	2.2	2.3
11	2.6	2.4	2.5	e2.6	2.6	2.6	2.4	2.4	2.4	2.3	2.2	2.3
12	2.5	2.4	2.6	e2.7	2.6	2.5	2.4	6.6	2.4	2.2	2.2	2.3
13	2.6	2.4	2.6	e2.7	2.7	2.5	2.4	8.4	2.3	2.2	2.2	2.3
14	2.6	2.4	2.6	e2.8	2.6	2.6	2.4	14	2.3	2.2	2.2	2.3
15	2.6	2.4	e2.5	e2.7	2.6	2.6	2.4	6.4	2.3	2.2	2.2	2.3
16	2.6	2.4	e2.5	e2.7	2.6	2.5	2.4	2.2	2.2	2.2	2.2	2.3
17	2.6	2.4	e2.5	e2.7	2.6	2.5	2.4	2.2	2.2	2.3	2.2	2.4
18	2.6	2.4	e2.5	e2.7	2.6	2.5	2.4	2.2	2.2	2.4	2.3	2.3
19	2.5	2.4	e2.5	e2.6	2.6	2.5	2.4	2.2	2.2	2.4	2.3	2.3
20	2.5	2.4	e2.3	e2.7	2.6	2.5	2.4	2.2	2.2	2.4	2.3	2.3
21	2.6	2.4	e2.3	e2.7	e2.7	2.5	2.4	2.2	2.2	2.3	2.3	2.2
22	2.6	2.4	e2.3	e2.7	e2.9	2.5	2.3	2.2	2.2	2.4	2.3	2.2
23	2.6	2.4	e2.4	e2.6	e2.9	2.5	2.3	2.2	2.3	2.2	2.3	2.6
24	2.6	2.4	e2.5	e2.6	e2.8	2.5	2.2	2.4	2.3	2.2	2.3	2.6
25	2.6	2.4	e2.5	e2.7	2.7	2.5	2.2	2.6	2.2	2.2	2.3	2.6
26	2.6	2.4	e2.5	e2.6	2.6	2.5	2.2	2.6	2.2	2.2	2.3	2.6
27	2.6	2.4	e2.5	e2.6	2.6	2.5	2.2	2.5	2.3	2.2	2.3	2.6
28	2.6	2.4	e2.5	e2.6	2.6	2.5	2.2	2.3	2.3	2.2	2.3	2.8
29	2.5	2.4	e2.5	e2.5	---	2.5	2.2	2.2	2.3	2.2	2.3	4.6
30	2.5	2.4	e2.4	e2.5	---	2.5	2.3	2.2	2.2	2.2	2.3	2.4
31	2.5	---	e2.4	e2.5	---	2.5	---	10	---	2.2	2.3	---
TOTAL	80.6	72.3	76.6	80.4	72.9	78.8	70.5	106.5	72.9	69.6	69.6	73.3
MEAN	2.60	2.41	2.47	2.59	2.60	2.54	2.35	3.44	2.43	2.25	2.25	2.44
MAX	3.0	2.5	2.6	2.8	2.9	2.6	2.4	14	4.9	2.4	2.3	4.6
MIN	2.5	2.4	2.3	2.4	2.5	2.5	2.2	2.2	2.2	2.2	2.2	2.2
AC-FT	160	143	152	159	145	156	140	211	145	138	138	145

e Estimated

## SAN JOAQUIN RIVER BASIN

11230530 BEAR CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS EDISON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

MEAN	1.91	1.71	1.76	1.86	1.88	1.92	2.06	3.04	6.52	2.62	2.64	3.23
MAX	2.60	2.41	2.47	2.59	2.60	2.54	2.98	4.00	29.7	2.75	2.85	6.43
(WY)	1994	1994	1994	1994	1994	1994	1991	1987	1991	1989	1989	1989
MIN	1.33	1.38	1.41	1.49	1.46	1.48	1.42	2.57	2.43	2.25	2.25	2.44
(WY)	1988	1990	1993	1990	1988	1988	1990	1991	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	924.0		
ANNUAL MEAN	2.53	2.59	
HIGHEST ANNUAL MEAN		4.44	1991
LOWEST ANNUAL MEAN		1.98	1990
HIGHEST DAILY MEAN	14	May 14	156
LOWEST DAILY MEAN	2.2	Apr 24	.94
ANNUAL SEVEN-DAY MINIMUM	2.2	May 16	1.0
INSTANTANEOUS PEAK FLOW	78	May 14	
INSTANTANEOUS PEAK STAGE	11.63	May 14	
ANNUAL RUNOFF (AC-FT)	1830		1870
10 PERCENT EXCEEDS	2.6		2.9
50 PERCENT EXCEEDS	2.4		2.3
90 PERCENT EXCEEDS	2.2		1.5

## 11230560 CHINQUAPIN CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'26", long 119°01'08", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 30 ft downstream from diversion dam to Ward Tunnel, 0.7 mi upstream from mouth, 1.7 mi south of Mono Hot Springs, and 14.0 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.65 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Prior to October 1991 published as "at Diversion Dam."

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,260 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records of fishery release normally computed only during periods of diversion to Ward Tunnel. During the current year, diversion occurred from Apr. 19 to June 16. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	1.1	1.2	---	---	---
2	---	---	---	---	---	---	---	1.1	1.2	---	---	---
3	---	---	---	---	---	---	---	1.2	1.2	---	---	---
4	---	---	---	---	---	---	---	1.2	1.1	---	---	---
5	---	---	---	---	---	---	---	1.2	1.1	---	---	---
6	---	---	---	---	---	---	---	1.2	1.1	---	---	---
7	---	---	---	---	---	---	---	1.2	1.1	---	---	---
8	---	---	---	---	---	---	---	1.1	1.1	---	---	---
9	---	---	---	---	---	---	---	1.2	1.1	---	---	---
10	---	---	---	---	---	---	---	1.2	1.1	---	---	---
11	---	---	---	---	---	---	---	3.3	1.1	---	---	---
12	---	---	---	---	---	---	---	6.0	1.1	---	---	---
13	---	---	---	---	---	---	---	2.3	1.1	---	---	---
14	---	---	---	---	---	---	---	1.4	1.1	---	---	---
15	---	---	---	---	---	---	---	1.3	1.2	---	---	---
16	---	---	---	---	---	---	---	1.2	.69	---	---	---
17	---	---	---	---	---	---	---	1.2	---	---	---	---
18	---	---	---	---	---	---	---	1.2	---	---	---	---
19	---	---	---	---	---	---	.79	1.1	---	---	---	---
20	---	---	---	---	---	---	.82	1.1	---	---	---	---
21	---	---	---	---	---	---	.82	1.1	---	---	---	---
22	---	---	---	---	---	---	.79	1.1	---	---	---	---
23	---	---	---	---	---	---	.76	1.2	---	---	---	---
24	---	---	---	---	---	---	.73	1.2	---	---	---	---
25	---	---	---	---	---	---	.70	1.2	---	---	---	---
26	---	---	---	---	---	---	.70	1.2	---	---	---	---
27	---	---	---	---	---	---	.70	1.2	---	---	---	---
28	---	---	---	---	---	---	.70	1.2	---	---	---	---
29	---	---	---	---	---	---	.70	1.2	---	---	---	---
30	---	---	---	---	---	---	.92	1.2	---	---	---	---
31	---	---	---	---	---	---	---	1.3	---	---	---	---
TOTAL	---	---	---	---	---	---	---	44.9	---	---	---	---
MEAN	---	---	---	---	---	---	---	1.45	---	---	---	---
MAX	---	---	---	---	---	---	---	6.0	---	---	---	---
MIN	---	---	---	---	---	---	---	1.1	---	---	---	---
AC-FT	---	---	---	---	---	---	---	89	---	---	---	---

## SAN JOAQUIN RIVER BASIN

11230600 CAMP 62 CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'32", long 119°01'37", unsurveyed, T.7 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 30 ft downstream from diversion dam, 1.4 mi southwest of Mono Hot Springs, and 13.5 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.97 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Prior to October 1991 published as "at Diversion Dam."

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,320 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records of fishery release normally are computed only during periods of diversion to Ward Tunnel. Diversion during the current year occurred Apr. 18 to June 15, June 23 to July 8, and July 18. Flow over the spillway bypasses this station. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.49	.42	.42	---	---
2	---	---	---	---	---	---	---	.49	.40	.42	---	---
3	---	---	---	---	---	---	---	.50	.33	.40	---	---
4	---	---	---	---	---	---	---	.51	.38	.40	---	---
5	---	---	---	---	---	---	---	.52	.49	.40	---	---
6	---	---	---	---	---	---	---	.52	.49	.40	---	---
7	---	---	---	---	---	---	---	.50	.47	.40	---	---
8	---	---	---	---	---	---	---	.49	.49	.40	---	---
9	---	---	---	---	---	---	---	.49	.50	---	---	---
10	---	---	---	---	---	---	---	.51	.49	---	---	---
11	---	---	---	---	---	---	---	.53	.48	---	---	---
12	---	---	---	---	---	---	---	.50	.45	---	---	---
13	---	---	---	---	---	---	---	.50	.46	---	---	---
14	---	---	---	---	---	---	---	.56	.45	---	---	---
15	---	---	---	---	---	---	---	.54	.32	---	---	---
16	---	---	---	---	---	---	---	.52	---	---	---	---
17	---	---	---	---	---	---	---	.51	---	---	---	---
18	---	---	---	---	---	---	.12	.48	---	.31	---	---
19	---	---	---	---	---	---	.51	.46	---	---	---	---
20	---	---	---	---	---	---	.45	.46	---	---	---	---
21	---	---	---	---	---	---	.54	.46	---	---	---	---
22	---	---	---	---	---	---	.54	.47	---	---	---	---
23	---	---	---	---	---	---	.54	.49	.11	---	---	---
24	---	---	---	---	---	---	.54	.49	.44	---	---	---
25	---	---	---	---	---	---	.54	.51	.44	---	---	---
26	---	---	---	---	---	---	.51	.53	.44	---	---	---
27	---	---	---	---	---	---	.50	.52	.42	---	---	---
28	---	---	---	---	---	---	.50	.53	.42	---	---	---
29	---	---	---	---	---	---	.49	.52	.42	---	---	---
30	---	---	---	---	---	---	.49	.48	.42	---	---	---
31	---	---	---	---	---	---	---	.45	---	---	---	---
TOTAL	---	---	---	---	---	---	---	15.53	---	---	---	---
MEAN	---	---	---	---	---	---	---	.50	---	---	---	---
MAX	---	---	---	---	---	---	---	.56	---	---	---	---
MIN	---	---	---	---	---	---	---	.45	---	---	---	---
AC-FT	---	---	---	---	---	---	---	31	---	---	---	---



## 11230670 BOLSILLO CREEK BELOW DIVERSION DAM, NEAR BIG CREEK, CA

LOCATION.--Lat 37°18'43", long 119°02'23", unsurveyed, T.7 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 50 ft downstream from diversion dam, 1.5 mi upstream from mouth, 1.7 mi southwest of Mono Hot Springs, and 13.3 mi northeast of town of Big Creek.

DRAINAGE AREA.--1.40 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 7,600 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records of fishery release normally computed only during periods of diversion to Ward Tunnel. Diversion during the current water year occurred Apr. 18 to June 20. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.56	.56	---	---	---
2	---	---	---	---	---	---	---	.56	.56	---	---	---
3	---	---	---	---	---	---	---	.56	.56	---	---	---
4	---	---	---	---	---	---	---	.56	.56	---	---	---
5	---	---	---	---	---	---	---	.56	.56	---	---	---
6	---	---	---	---	---	---	---	.56	.56	---	---	---
7	---	---	---	---	---	---	---	.56	.56	---	---	---
8	---	---	---	---	---	---	---	.56	.56	---	---	---
9	---	---	---	---	---	---	---	.56	.56	---	---	---
10	---	---	---	---	---	---	---	.56	.56	---	---	---
11	---	---	---	---	---	---	---	.56	.56	---	---	---
12	---	---	---	---	---	---	---	.59	.56	---	---	---
13	---	---	---	---	---	---	---	.59	.56	---	---	---
14	---	---	---	---	---	---	---	.59	.54	---	---	---
15	---	---	---	---	---	---	---	.59	.54	---	---	---
16	---	---	---	---	---	---	---	.56	.54	---	---	---
17	---	---	---	---	---	---	---	.56	.54	---	---	---
18	---	---	---	---	---	---	.19	.56	.54	---	---	---
19	---	---	---	---	---	---	.56	.56	.54	---	---	---
20	---	---	---	---	---	---	.56	.56	.53	---	---	---
21	---	---	---	---	---	---	.56	.56	---	---	---	---
22	---	---	---	---	---	---	.56	.56	---	---	---	---
23	---	---	---	---	---	---	.56	.56	---	---	---	---
24	---	---	---	---	---	---	.56	.56	---	---	---	---
25	---	---	---	---	---	---	.56	.56	---	---	---	---
26	---	---	---	---	---	---	.56	.56	---	---	---	---
27	---	---	---	---	---	---	.56	.56	---	---	---	---
28	---	---	---	---	---	---	.56	.56	---	---	---	---
29	---	---	---	---	---	---	.56	.56	---	---	---	---
30	---	---	---	---	---	---	.56	.56	---	---	---	---
31	---	---	---	---	---	---	---	.56	---	---	---	---
TOTAL	---	---	---	---	---	---	---	17.48	---	---	---	---
MEAN	---	---	---	---	---	---	---	.56	---	---	---	---
MAX	---	---	---	---	---	---	---	.59	---	---	---	---
MIN	---	---	---	---	---	---	---	.56	---	---	---	---
AC-FT	---	---	---	---	---	---	---	35	---	---	---	---

## SAN JOAQUIN RIVER BASIN

11231000 LAKE THOMAS A. EDISON NEAR BIG CREEK, CA

LOCATION.--Lat 37°22'09", long 118°59'17", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in outlet works of Vermillion Valley Dam on Mono Creek 18.1 mi northeast of town of Big Creek.

DRAINAGE AREA.--90.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1954 to current year. Prior to 1960, maximum and minimum daily contents were published.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by earthfill dam; dam completed and storage began Oct. 12, 1954. Usable capacity, 125,035 acre-ft between elevations 7,508.9 ft, invert of outlet works, and 7,642.50 ft, top of gates in service spillway. Water is diverted at times into lake from Warm Creek (station 11231700). Water is released for diversion to Ward Tunnel via Mono Creek Conduit (station 11231550). See schematic diagram of upper San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 125,983 acre-ft, Sept. 26, 1982, elevation, 7,643.55 ft; minimum since appreciable storage was attained, 4,553 acre-ft, Dec. 27, 1987, elevation, 7,552.07 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 108,005 acre-ft, Oct. 1, elevation, 7,633.16 ft; minimum, 32,632 acre-ft, Sept. 28, elevation, 7,583.60 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated July 22, 1955)

7,550	3,567	7,580	28,515	7,620	85,006
7,555	6,147	7,590	40,454	7,630	102,367
7,560	9,521	7,600	53,769	7,640	120,424
7,570	18,137	7,610	68,616	7,644	127,820

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108005	92848	70006	57054	52236	48511	35401	38535	56982	71582	71677	57011
2	107611	91896	69374	57068	51933	48470	35292	38722	58035	71725	71231	56050
3	107593	91015	68758	57068	51616	48524	35232	39133	58909	71837	70849	55109
4	107593	90135	68116	57169	51298	48578	35087	39485	59684	71966	70402	54150
5	107342	89242	67491	57198	50995	48646	34942	39963	60495	72095	69974	53183
6	107342	88332	66899	57198	50681	48700	34846	40378	61220	72207	69500	52250
7	107074	87442	66296	57213	50463	48727	34689	40810	61816	72304	69058	51326
8	106286	86537	65709	57213	50149	48767	34580	41141	62397	72400	68632	50354
9	105518	85669	65080	57227	49849	48821	34460	41510	63061	72480	68147	49442
10	104733	84769	64470	57227	49577	48619	34303	41996	63770	72561	67709	48511
11	104358	83906	64042	57241	49267	47853	34148	42651	64531	72625	67241	47599
12	104108	82994	63438	57256	48997	47064	34017	43543	65248	73011	66821	46653
13	103842	82170	62879	57256	48700	46308	33910	44519	65832	73075	66450	45752
14	103664	81213	62308	57256	48349	45620	33839	45476	66450	73124	66188	44833
15	102936	80477	61741	56996	48040	44938	33815	46454	66929	73188	65894	43894
16	102190	79610	61160	56679	47853	44205	33827	47158	67287	73252	65585	42985
17	101447	78747	60568	56393	47960	43504	33863	47706	67631	73284	65309	42073
18	101022	78019	60008	56108	48027	42805	34065	48187	67975	73349	65035	41166
19	100544	77377	59449	55822	48094	42112	34448	48578	68319	73349	64943	40265
20	100103	76718	58938	55522	48187	41408	34978	48902	68648	73381	64821	39384
21	99874	76096	58414	55237	48201	40708	35558	49253	68995	73429	64790	38485
22	99469	75492	57934	54940	48228	40051	36083	49604	69327	73478	64607	37604
23	98711	74807	57400	54672	48268	39333	36558	49986	69595	73510	64103	36766
24	97957	74175	56982	54404	48322	38634	36865	50490	69879	73543	63242	35900
25	97465	73527	56996	54136	48362	37999	37197	51147	70148	73559	62353	34990
26	96974	72899	57011	53840	48416	37308	37456	51878	70386	73592	61637	34136
27	96555	72287	57011	53546	48457	36595	37703	52639	70625	73608	61115	33256
28	96031	71646	57011	53267	48484	35924	37900	53406	70880	73462	60686	32632
29	95245	71151	57025	52946	---	35607	38123	54235	71151	73027	59861	32831
30	94480	70578	57025	52625	---	35631	38323	55138	71375	72609	58924	32865
31	93680	---	57040	e52319	---	35497	---	56207	---	72159	57977	---
MAX	108005	92848	70006	57256	52236	48821	38323	56207	71375	73608	71677	57011
MIN	93680	70578	56982	52319	47853	35497	33815	38535	56982	71582	57977	32632
a	7625.05	7611.24	7602.30	7598.96	7596.15	7586.00	7588.30	7601.72	7611.74	7612.23	7602.95	7583.80
b	-14756	-23102	-13538	-4721	-3835	-12987	+2826	+17884	+15168	+784	-14182	-25112

CAL YR 1993 b +32992

WTR YR 1994 b -75571

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°21'41", long 118°59'28", unsurveyed, T.6 1/2 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 0.5 mi upstream from diversion dam, 0.9 mi downstream from Vermilion Valley Dam, and 1.0 mi south of Lake Thomas A. Edison.

DRAINAGE AREA.--92.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

REVISED RECORDS.--WSP 1011: 1943. WSP 1515: 1956. WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,380 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Lake Thomas A. Edison (station 11231000) 1 mi upstream beginning Oct. 12, 1954. Water is diverted at times into the basin from Warm Creek (station 11231700) to Lake Thomas A. Edison. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft<sup>3</sup>/s, Sept. 26, 1982, gage height, 8.87 ft; minimum daily, 0.3 ft<sup>3</sup>/s, Nov. 11, 12, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 504 ft<sup>3</sup>/s, Aug. 30, gage height, 6.62 ft; minimum daily, 17 ft<sup>3</sup>/s, Jan. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	364	430	348	19	155	20	133	22	25	27	235	497
2	217	483	348	19	164	20	133	22	25	27	235	500
3	29	486	348	19	164	20	133	22	25	27	235	500
4	26	486	348	19	164	20	133	22	25	27	235	500
5	18	486	346	19	164	20	133	22	25	27	235	496
6	18	486	342	19	164	20	133	22	25	27	235	495
7	148	486	340	19	164	20	133	22	25	27	235	491
8	406	486	340	19	164	20	133	22	25	27	235	490
9	418	486	340	19	164	20	133	22	25	27	235	490
10	418	486	340	19	164	169	133	22	25	27	235	490
11	217	486	340	19	164	414	133	22	25	27	235	488
12	173	482	340	18	164	414	133	22	26	27	235	486
13	133	481	340	17	164	414	133	22	26	27	193	485
14	138	477	338	23	164	414	133	22	26	27	145	481
15	409	396	314	159	169	414	133	22	26	27	156	481
16	409	455	321	159	117	414	133	22	26	27	153	478
17	409	472	321	157	45	412	133	22	26	27	147	476
18	242	421	315	157	20	409	95	22	26	27	149	476
19	269	352	308	157	20	409	42	23	26	27	59	474
20	235	356	308	157	20	408	22	23	26	28	69	470
21	123	352	308	157	20	405	22	23	26	28	27	466
22	254	352	279	157	20	405	22	23	26	28	102	467
23	414	352	276	157	20	405	22	23	26	28	249	465
24	414	352	221	157	20	405	22	23	27	28	456	462
25	259	351	26	157	20	403	22	23	27	27	476	460
26	257	348	26	156	20	401	22	25	27	27	373	458
27	239	348	26	154	20	398	22	25	27	27	265	458
28	315	348	23	154	20	397	22	25	27	106	199	444
29	416	348	18	154	---	201	22	25	27	235	427	25
30	418	348	19	154	---	74	22	25	26	235	497	39
31	418	---	19	154	---	133	---	25	---	235	494	---
TOTAL	8223	12678	7926	2924	2838	8098	2640	707	775	1545	7456	13488
MEAN	265	423	256	94.3	101	261	88.0	22.8	25.8	49.8	241	450
MAX	418	486	348	159	169	414	133	25	27	235	497	500
MIN	18	348	18	17	20	20	22	22	25	27	27	25
AC-FT	16310	25150	15720	5800	5630	16060	5240	1400	1540	3060	14790	26750

## 11231500 MONO CREEK BELOW LAKE THOMAS A. EDISON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1954, BY WATER YEAR (WY)

MEAN	24.4	29.4	31.4	33.3	39.8	59.4	170	457	548	270	79.6	31.3
MAX	60.8	124	127	76.8	74.4	94.8	282	714	1135	672	233	86.6
(WY)	1946	1951	1951	1951	1951	1934	1926	1952	1938	1938	1938	1938
MIN	11.3	10.5	12.0	14.0	17.0	25.0	77.8	197	79.6	36.6	17.6	11.5
(WY)	1925	1930	1931	1949	1949	1924	1948	1933	1924	1924	1924	1924

## SUMMARY STATISTICS

## WATER YEARS 1922 - 1954

ANNUAL MEAN	148	
HIGHEST ANNUAL MEAN	268	1938
LOWEST ANNUAL MEAN	52.8	1924
HIGHEST DAILY MEAN	1550	Jun 3 1938
LOWEST DAILY MEAN	8.0	Sep 29 1924
ANNUAL SEVEN-DAY MINIMUM	8.1	Sep 28 1924
INSTANTANEOUS PEAK FLOW	1760	Jun 2 1938
INSTANTANEOUS PEAK STAGE	8.62	Jun 2 1938
ANNUAL RUNOFF (AC-FT)	107300	
10 PERCENT EXCEEDS	470	
50 PERCENT EXCEEDS	48	
90 PERCENT EXCEEDS	18	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	91.7	161	209	225	213	174	115	61.4	71.6	191	217	166
MAX	265	423	437	467	472	479	647	515	577	635	414	450
(WY)	1994	1994	1968	1984	1973	1973	1983	1983	1969	1983	1983	1994
MIN	11.0	12.1	9.05	9.95	10.4	13.8	12.7	12.7	11.5	12.1	12.2	14.0
(WY)	1972	1982	1991	1991	1991	1990	1966	1966	1977	1977	1981	1966

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1956 - 1994

ANNUAL TOTAL	66778	69298	
ANNUAL MEAN	183	190	158
HIGHEST ANNUAL MEAN			366
LOWEST ANNUAL MEAN			53.2
HIGHEST DAILY MEAN	486	Nov 3	500
LOWEST DAILY MEAN	17	Jan 26	17
ANNUAL SEVEN-DAY MINIMUM	20	Jun 15	19
INSTANTANEOUS PEAK FLOW			504
INSTANTANEOUS PEAK STAGE			6.62
ANNUAL RUNOFF (AC-FT)	132500	137500	114300
10 PERCENT EXCEEDS	400	471	420
50 PERCENT EXCEEDS	157	154	92
90 PERCENT EXCEEDS	22	20	13

## 11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Discharge computed as difference between flow at Mono Creek below Lake Thomas A. Edison (station 11231500) and Mono Creek below diversion dam (station 11231600). Datum of conduit invert is 7,338 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Conduit diverts at diversion dam on Mono Creek to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 442 ft<sup>3</sup>/s, Aug. 7, 9, 10, 1989; minimum daily, -18 ft<sup>3</sup>/s, June 11, 1993 (reverse flow from Bear Creek Conduit).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	352	418	338	10	146	12	125	13	16	16	225	487
2	206	472	338	10	155	12	125	13	16	16	225	490
3	19	476	338	10	155	12	125	13	16	17	225	490
4	16	476	338	10	155	12	125	13	16	17	225	490
5	7.0	476	336	11	155	12	125	13	16	17	225	486
6	7.0	476	332	11	155	12	125	13	16	17	225	485
7	137	476	330	10	155	12	125	13	16	17	225	481
8	394	476	330	11	155	12	125	13	16	17	225	480
9	406	476	330	10	155	12	124	13	16	17	225	480
10	406	476	331	10	155	160	124	13	16	17	225	480
11	206	476	331	10	155	404	124	13	16	17	225	478
12	162	472	331	9.4	155	404	124	13	17	17	225	476
13	122	472	331	8.4	155	404	125	13	17	17	183	475
14	127	467	329	14	155	405	125	13	17	17	135	471
15	397	387	305	150	160	406	125	13	16	17	146	471
16	397	445	312	150	108	406	125	12	15	17	143	468
17	397	462	312	148	36	404	125	12	15	17	137	466
18	231	411	306	148	11	401	87	12	15	17	139	466
19	258	343	299	147	12	401	34	13	15	17	48	464
20	224	335	299	147	12	400	14	13	15	18	57	460
21	112	342	299	148	12	397	14	13	15	18	16	456
22	243	342	270	147	12	397	14	13	15	18	92	457
23	402	342	267	147	12	397	14	13	15	18	240	455
24	402	342	212	147	12	397	14	13	16	18	446	452
25	248	341	18	148	12	395	14	13	16	17	466	450
26	246	338	18	147	12	393	14	15	16	17	364	448
27	228	338	18	145	12	390	14	15	16	17	256	448
28	303	338	15	145	12	389	14	15	16	17	190	433
29	404	338	9.0	145	---	193	14	16	16	225	417	15
30	406	338	10	145	---	65	13	16	15	225	487	29
31	406	---	10	145	---	125	---	16	---	225	484	---
TOTAL	7871.0	12367	7642.0	2643.8	2596	7841	2395	415	474	1233	7146	13187
MEAN	254	412	247	85.3	92.7	253	79.8	13.4	15.8	39.8	231	440
MAX	406	476	338	150	160	406	125	16	17	225	487	490
MIN	7.0	335	9.0	8.4	11	12	13	12	15	16	16	15
AC-FT	15610	24530	15160	5240	5150	15550	4750	823	940	2450	14170	26160

## SAN JOAQUIN RIVER BASIN

11231550 MONO CREEK CONDUIT NEAR MONO HOT SPRINGS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.4	129	127	76.1	44.6	95.7	82.0	39.7	62.0	167	247	157
MAX	254	412	421	213	162	253	214	124	155	417	383	440
(WY)	1994	1994	1987	1987	1993	1994	1987	1988	1989	1989	1989	1994
MIN	13.8	12.6	1.39	4.08	3.72	8.00	14.8	6.07	8.20	9.30	134	11.8
(WY)	1990	1989	1991	1991	1991	1990	1992	1989	1993	1990	1992	1989

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	59956.0				65810.8							
ANNUAL MEAN	164				180				109			
HIGHEST ANNUAL MEAN									204			
LOWEST ANNUAL MEAN									50.5			
HIGHEST DAILY MEAN	476				Nov 3				490			
LOWEST DAILY MEAN	-18				Jun 11				7.0			
ANNUAL SEVEN-DAY MINIMUM	3.0				Jun 11				9.8			
ANNUAL RUNOFF (AC-FT)	118900				130500				78990			
10 PERCENT EXCEEDS	382				461				383			
50 PERCENT EXCEEDS	141				145				26			
90 PERCENT EXCEEDS	10				12				7.1			

## 11231600 MONO CREEK BELOW DIVERSION DAM, NEAR MONO HOT SPRINGS, CA

LOCATION.--Lat 37°21'36", long 118°59'51", unsurveyed, T.6 1/2 S, R.27 E, Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 20 ft downstream from diversion dam, 1.0 mi southwest of Lake Thomas A. Edison, and 2.5 mi northeast of Mono Hot Springs.

DRAINAGE AREA.--92.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Prior to October 1991, published as "at Diversion Dam."

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Elevation of gage is 7,340 ft above sea level, from topographic map. Prior to Oct. 1, 1991, at datum 10 ft higher.

REMARKS.--No estimated daily discharges. Flow regulated by diversion reservoir and Lake Thomas A. Edison (station 11231000). Most of the flow is diverted at the diversion dam to Mono Creek Conduit (station 11231550), then to Ward Tunnel and Huntington Lake (station 11236000) via Portal Powerplant (station 11235500) for further power development in Big Creek powerplants. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 300 ft<sup>3</sup>/s, July 19, 1993; minimum daily, 4.1 ft<sup>3</sup>/s, Dec. 12-16, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 21 ft<sup>3</sup>/s, Nov. 20; minimum daily, 7.5 ft<sup>3</sup>/s, Mar. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	9.5	8.9	9.4	8.4	8.4	9.4	9.4	11	10	9.7
2	11	11	9.5	8.9	9.4	8.4	8.3	9.4	9.4	11	10	9.7
3	10	10	9.6	8.9	9.4	8.4	8.3	9.4	9.4	10	10	9.6
4	10	9.9	9.5	8.6	9.4	8.4	8.4	9.4	9.4	10	9.8	9.7
5	11	9.8	9.5	8.4	9.4	8.4	8.4	9.4	9.4	10	9.8	9.7
6	11	9.8	9.5	8.4	9.4	8.4	8.4	9.4	9.4	10	9.8	9.7
7	11	9.8	9.5	8.5	9.4	8.4	8.4	9.4	9.4	10	9.8	9.6
8	12	9.6	9.5	8.4	9.4	8.3	8.4	9.4	9.4	10	9.7	9.6
9	12	9.6	9.5	8.5	9.4	8.3	8.5	9.4	9.4	10	9.7	9.6
10	12	9.5	9.4	8.5	9.4	9.1	8.6	9.4	9.4	10	9.7	9.6
11	11	9.5	9.4	8.5	9.4	10	8.6	9.4	9.3	10	9.7	9.6
12	11	9.5	9.4	8.6	9.4	10	8.6	9.4	9.3	10	9.6	9.6
13	11	9.4	9.3	8.6	9.4	10	8.4	9.4	9.3	10	9.7	9.6
14	11	9.5	9.3	8.6	9.4	9.1	8.4	9.4	9.3	10	9.7	9.6
15	12	9.3	9.1	9.4	9.4	8.1	8.4	9.4	9.9	10	9.7	9.6
16	12	9.5	8.9	9.4	9.0	8.0	8.4	9.5	11	10	9.7	9.6
17	12	9.6	8.8	9.4	8.7	8.0	8.4	9.5	11	10	9.6	9.6
18	11	9.5	8.8	9.4	8.6	8.0	8.2	9.5	11	10	9.8	9.6
19	11	9.4	8.8	9.5	8.4	8.0	7.9	9.5	11	10	11	9.6
20	11	21	8.8	9.5	8.4	7.9	7.8	9.6	11	10	12	9.6
21	11	9.5	8.8	9.4	8.4	7.9	8.2	9.6	11	10	11	9.6
22	11	9.5	8.7	9.5	8.4	7.8	8.2	9.5	11	10	9.8	9.5
23	12	9.5	8.6	9.5	8.4	7.9	8.1	9.5	11	10	9.4	9.5
24	12	9.6	8.5	9.5	8.4	7.9	8.1	9.5	11	10	10	9.5
25	11	9.6	7.7	9.4	8.4	7.9	8.1	9.5	11	10	9.7	9.5
26	11	9.5	7.7	9.4	8.4	7.8	8.1	9.5	11	10	9.4	9.5
27	11	9.5	7.8	9.4	8.4	7.8	8.1	9.5	11	10	9.1	9.7
28	12	9.5	8.4	9.4	8.4	7.5	8.1	9.5	11	10	8.9	11
29	12	9.5	9.0	9.4	---	7.9	8.1	9.4	11	10	9.6	10
30	12	9.5	9.0	9.4	---	8.8	8.7	9.4	11	10	9.9	9.7
31	12	---	8.9	9.4	---	8.4	---	9.4	---	10	9.7	---
TOTAL	352	302.4	278.7	280.6	251.3	259.2	249.0	292.9	306.1	312	305.3	290.0
MEAN	11.4	10.1	8.99	9.05	8.97	8.36	8.30	9.45	10.2	10.1	9.85	9.67
MAX	12	21	9.6	9.5	9.4	10	8.7	9.6	11	11	12	11
MIN	10	9.3	7.7	8.4	8.4	7.5	7.8	9.4	9.3	10	8.9	9.5
AC-FT	698	600	553	557	498	514	494	581	607	619	606	575

## 11231600 MONO CREEK BELOW DIVERSION DAM, NEAR MONO HOT SPRINGS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.50	7.22	6.92	6.67	6.74	6.67	6.88	10.7	11.6	22.9	11.1	11.1
MAX	11.4	10.1	8.99	9.05	8.97	9.20	9.55	13.9	15.3	108	15.0	14.8
(WY)	1994	1994	1994	1994	1994	1987	1987	1993	1993	1993	1993	1993
MIN	6.96	5.62	5.69	5.66	5.69	5.84	5.88	9.45	9.98	9.91	9.85	9.67
(WY)	1990	1992	1993	1993	1993	1990	1992	1994	1990	1991	1994	1994

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	6789.6	3479.5	
ANNUAL MEAN	18.6	9.53	9.79
HIGHEST ANNUAL MEAN			17.7
LOWEST ANNUAL MEAN			7.83
HIGHEST DAILY MEAN	300	21	300
LOWEST DAILY MEAN	5.4	7.5	4.1
ANNUAL SEVEN-DAY MINIMUM	5.5	7.8	4.2
ANNUAL RUNOFF (AC-FT)	13470	6900	7090
10 PERCENT EXCEEDS	16	11	12
50 PERCENT EXCEEDS	11	9.5	9.0
90 PERCENT EXCEEDS	5.7	8.4	5.8



11231700 WARM CREEK BELOW DIVERSION DAM, NEAR LAKE THOMAS A. EDISON, CA

LOCATION.--Lat 37°23'31", long 119°01'39", unsurveyed, T.6 S., R.27 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank, 40 ft downstream from diversion dam, 1.5 mi northwest of Lake Thomas A. Edison, and 17.4 mi northeast of town of Big Creek.

DRAINAGE AREA.--2.14 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and 90° V-notch weir control. Elevation of gage is 8,030 ft above sea level, from topographic map.

REMARKS.--Records normally computed only in summer months or during periods of diversion to Lake Thomas A. Edison. Diversion occurred Apr. 19 to July 10. See schematic diagram of upper San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.32	.32	---	---	---	---	---	.29	.32	.24	.11	.09
2	.32	---	---	---	---	---	---	.29	.30	.23	.11	.09
3	.32	---	---	---	---	---	---	.30	.29	.23	.11	.09
4	.32	---	---	---	---	---	---	.29	.29	.24	.10	.09
5	.32	---	---	---	---	---	---	.28	.28	.24	.10	.10
6	.32	---	---	---	---	---	---	.28	.28	.23	.09	.10
7	.32	---	---	---	---	---	---	.27	.28	.23	.08	.10
8	.32	---	---	---	---	---	---	.27	.27	.23	.08	.09
9	.32	---	---	---	---	---	---	.27	.27	.22	.08	.09
10	.32	---	---	---	---	---	---	.25	.27	.21	.08	.09
11	.32	---	---	---	---	---	---	.25	.27	.22	.07	.08
12	.32	---	---	---	---	---	---	.26	.27	.19	.07	.09
13	.32	---	---	---	---	---	---	.27	.29	.17	.07	.10
14	.32	---	---	---	---	---	---	.27	.30	.15	.08	.09
15	.32	---	---	---	---	---	---	.27	e.29	.14	.07	.08
16	.32	---	---	---	---	---	---	.26	e.29	.13	.07	.08
17	.32	---	---	---	---	---	---	.25	e.30	.12	.08	.08
18	.32	---	---	---	---	---	---	.26	.30	.12	.08	.09
19	.32	---	---	---	---	---	---	.27	.29	.13	.10	.09
20	.32	---	---	---	---	---	.29	.28	.28	.12	.10	.09
21	.32	---	---	---	---	---	.29	.29	.27	.10	.10	.09
22	.32	---	---	---	---	---	.28	.29	.27	.11	.10	.09
23	.32	---	---	---	---	---	.56	.29	.25	.09	.10	.12
24	.32	---	---	---	---	---	.89	.28	.25	.08	.10	.17
25	.32	---	---	---	---	---	.89	.29	.24	.07	.10	.17
26	.32	---	---	---	---	---	.58	.30	.24	.07	.09	.16
27	.32	---	---	---	---	---	.26	.30	.24	.08	.09	.16
28	.32	---	---	---	---	---	.27	.30	.23	.08	.09	.23
29	.32	---	---	---	---	---	.27	.29	.22	.10	.09	.20
30	.32	---	---	---	---	---	.28	.31	.23	.10	.09	.17
31	.32	---	---	---	---	---	---	.33	---	.11	.09	---
TOTAL	9.92	---	---	---	---	---	---	8.70	8.17	4.78	2.77	3.36
MEAN	.32	---	---	---	---	---	---	.28	.27	.15	.089	.11
MAX	.32	---	---	---	---	---	---	.33	.32	.24	.11	.23
MIN	.32	---	---	---	---	---	---	.25	.22	.07	.07	.08
AC-FT	20	---	---	---	---	---	---	17	16	9.5	5.5	6.7

e Estimated.

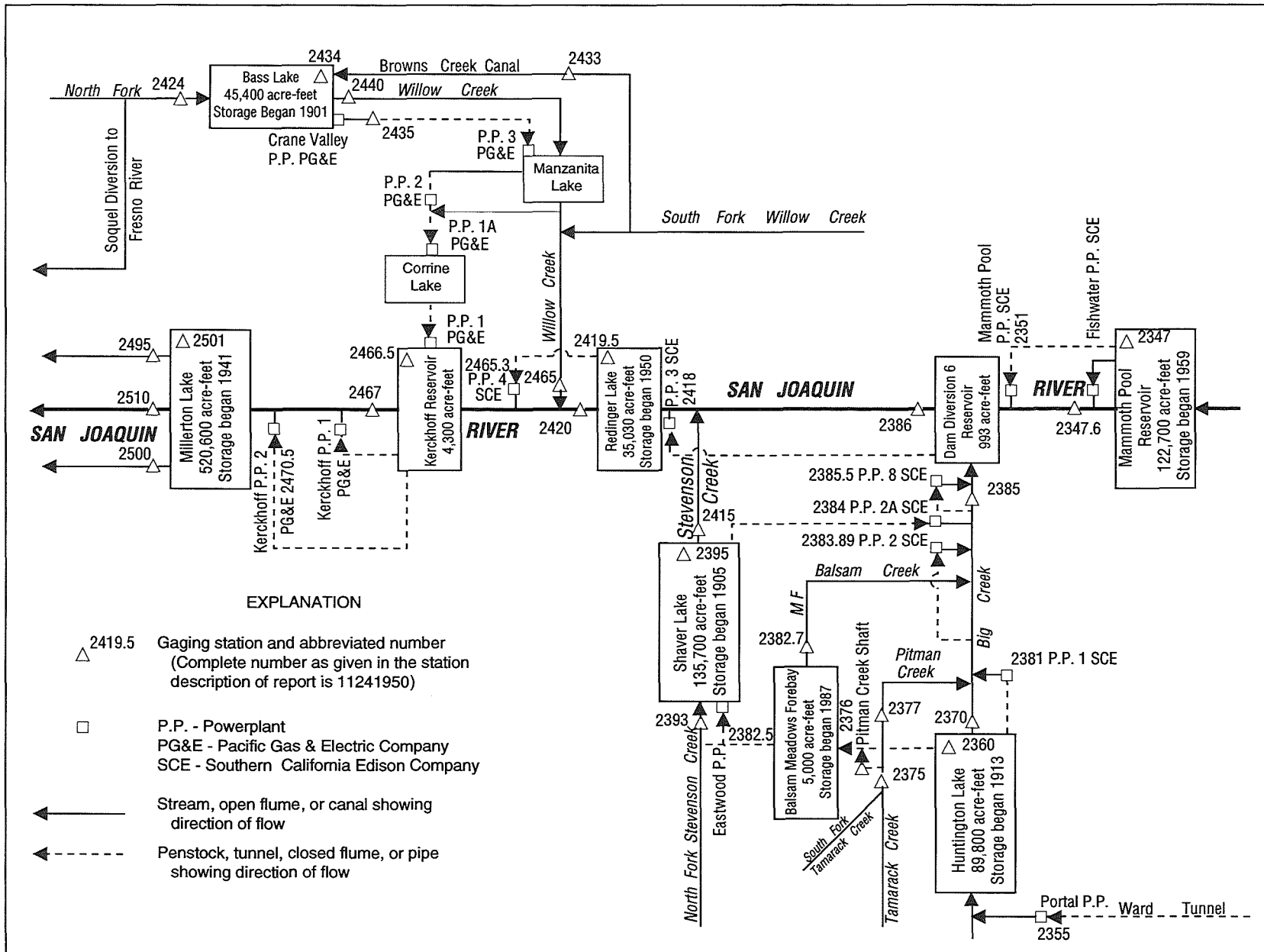


Figure 32. Diversions and storage in lower San Joaquin River basin.

## 11234700 MAMMOTH POOL RESERVOIR NEAR BIG CREEK, CA

LOCATION.--Lat 37°19'40", long 119°19'38", in SE 1/4 SE 1/4 sec.10, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, in gatehouse of power tunnel intake 0.7 mi northwest of dam on San Joaquin River, 9.0 mi northwest of town of Big Creek.  
DRAINAGE AREA.--995 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.--Reservoir is formed by an earthfill dam; storage began Oct. 8, 1959. Usable capacity, 119,940 acre-ft between elevations 3,100.00 ft, invert of power tunnel, and 3,330.00 ft, crest of spillway. Additional storage of 2,780 acre-ft is not available for release. Water is diverted from basin through Ward Tunnel (stations 11229500 and 11235500). Water is diverted from Mammoth Pool through tunnel for power development and returned to river 8.5 mi downstream from dam. Records, including extremes, represent usable contents at 2400 hours. See schematic diagrams of upper and lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 126,503 acre-ft, June 2, 3, 1969; maximum elevation, 3,335.86 ft, June 3, 1969; minimum contents since appreciable storage was attained, 1,134 acre-ft, Sept. 25, 1992, elevation, 3,112.82 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 98,103 acre-ft, June 4, elevation, 3,308.79 ft; minimum, 8,301 acre-ft, Sept. 19, elevation, 3,158.66 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated Nov. 6, 1959)

3,100	0	3,130	3,114	3,180	14,060	3,260	56,381
3,105	417	3,140	4,605	3,190	17,414	3,280	72,109
3,110	861	3,150	6,402	3,200	21,400	3,300	89,781
3,115	1,355	3,160	8,618	3,220	31,109	3,320	109,336
3,120	1,900	3,170	11,165	3,240	42,787	3,336	126,661

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67179	15539	9617	11914	14483	17734	14483	36037	96230	84765	45903	11731
2	66129	14759	9617	11852	14008	18226	16412	34449	96651	83987	44505	11165
3	65262	13875	9673	11550	13546	18731	18226	33361	97264	83202	43257	10495
4	63891	12966	9726	11492	13285	19239	18731	35418	98103	82232	41959	9944
5	61542	12343	9562	11611	13157	20193	18393	38466	97891	81267	41096	9744
6	59578	11976	9562	11793	13031	21184	18899	40830	97688	80124	39773	9673
7	57475	11492	9562	11852	13095	21925	18311	42303	97264	78611	38208	9293
8	55572	11195	9562	11914	13031	22686	17734	43397	97063	77118	36088	9135
9	53401	10333	9187	11793	12841	23364	18226	45201	97063	75823	34712	8921
10	51279	10503	9027	11852	12654	23169	18645	47745	97264	74347	33405	8975
11	48755	10277	8921	11611	12283	22686	17734	51733	97688	72521	32235	8763
12	47314	10277	9293	11492	12158	22878	17171	56994	97891	71800	31066	8659
13	46040	10056	9726	11492	12220	23075	16786	61871	97264	71076	29794	8609
14	44782	9946	10223	11550	11914	22496	17407	66483	96440	70008	28526	8816
15	43257	9946	10616	11731	12467	22008	18226	70902	96030	68237	27253	8816
16	41629	9891	10960	11673	12966	22593	20104	73246	95201	67001	25772	8763
17	40560	9782	11373	11976	14073	22117	22398	74347	94177	65614	25151	8609
18	38725	9726	11731	12283	14554	21925	24746	75634	92957	64232	24052	8402
19	36663	9726	12035	12654	14901	21552	28274	76560	91734	63546	22878	8301
20	35299	9726	12406	13031	15396	21552	31935	77118	90928	62041	21552	8454
21	33245	9562	12343	13351	15830	20818	35174	77858	90722	60070	20104	8609
22	31347	9562	12220	13676	15682	20193	37820	78793	90527	59089	19069	8816
23	29963	9617	12220	14073	15346	19069	39639	79737	89716	57958	18062	8975
24	28717	9673	12158	14483	15469	17814	40830	83058	89318	56521	16786	9135
25	26949	9726	12098	14901	15756	16564	41498	83599	88919	54951	15612	9293
26	25255	9835	11976	14691	16266	15682	42034	84131	88319	53253	14969	9510
27	23853	9726	12098	14347	16786	15254	42442	88522	87721	52336	14277	9673
28	22305	9673	12158	14413	17407	14901	42172	89308	86932	51279	13875	9562
29	20638	9562	11976	14413	---	14347	39901	91537	86338	49488	13413	9673
30	19326	9617	11731	14483	---	14008	37945	92345	85945	48318	12841	9227
31	17251	---	11852	14554	---	14142	---	95201	---	47170	12406	---
MAX	67179	15539	12406	14901	17407	23364	42442	95201	98103	84765	45903	11731
MIN	17251	9562	8921	11492	11914	14008	14483	33361	85945	47170	12406	8301
a	3189.55	3164.06	3172.48	3181.56	3189.98	3180.26	3232.10	3305.76	3295.83	3246.79	3174.43	3162.49
b	-525.75	-7634	+2235	+2702	+2853	-3265	+23803	+57256	-9256	-38775	-34764	-3179

CAL YR 1993 b -16648  
WTR YR 1994 b -60599

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA

LOCATION (REVISED).--Lat 37°19'00", long 119°19'43", in NE 1/4 SE 1/4 sec.15, T.7 S., R.24 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft upstream from Shakeflat Creek, 4,900 ft downstream from Mammoth Pool Dam, and 9.0 mi northwest of town of Big Creek.

DRAINAGE AREA.--1,003 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,865.50 ft above sea level (levels by Southern California Edison Co.). Since 1961, supplementary water-stage recorder and sharp-crested weir at different datum at outlet of dam 4,900 ft upstream, used at times for low flows.

REMARKS.--No estimated daily discharges. Flow regulated by Mammoth Pool Reservoir (station 11234700) 4,900 ft upstream. Diversions upstream through Ward Tunnel (see stations 11229500 and 11235500). Since March 1960, most of the water is diverted past this station to Mammoth Pool Powerplant (station 11235100). See schematic diagrams of upper and lower San Joaquin River basins.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft<sup>3</sup>/s, June 3, 1969, gage height, 18.38 ft; minimum daily, 0.3 ft<sup>3</sup>/s, Oct. 14, Dec. 5, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29 ft<sup>3</sup>/s, Oct. 1, gage height, 2.79 ft; minimum daily, 12 ft<sup>3</sup>/s, many days during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	26	12	12	13	13	12	16	16	15	14	15
2	29	26	12	12	13	13	12	16	16	15	14	15
3	29	21	12	12	13	13	12	15	16	15	14	15
4	29	13	12	13	13	13	12	15	16	15	14	15
5	29	13	12	13	13	14	12	15	16	15	14	15
6	29	13	12	13	13	14	12	15	16	15	14	14
7	29	13	12	13	15	14	12	16	16	15	14	14
8	29	13	12	13	16	14	12	16	16	15	15	14
9	29	13	12	13	14	14	13	16	16	15	14	14
10	29	13	12	13	15	14	13	16	16	15	14	14
11	28	13	15	12	16	15	13	16	16	15	14	14
12	28	13	15	12	15	15	13	16	16	15	14	14
13	28	13	14	12	15	15	13	16	16	15	14	14
14	28	13	14	12	15	14	13	16	15	15	14	14
15	28	13	13	12	14	13	14	16	15	15	14	14
16	28	13	13	12	14	13	15	16	15	15	14	14
17	28	13	12	12	19	13	15	16	15	15	14	14
18	28	13	12	12	18	13	15	16	15	15	15	14
19	28	13	12	12	16	13	15	16	15	15	15	14
20	28	13	12	12	19	13	15	16	15	15	15	14
21	27	13	12	12	17	13	15	16	15	15	15	14
22	27	13	12	12	16	13	15	16	15	15	15	14
23	27	13	12	13	16	13	16	16	15	15	15	14
24	27	13	12	13	15	13	16	16	15	15	15	15
25	27	13	12	14	14	13	16	16	16	15	15	15
26	26	13	12	13	14	13	17	16	17	15	15	15
27	26	13	12	13	14	13	16	16	15	15	15	15
28	26	13	12	13	14	12	16	16	15	15	15	15
29	26	13	12	13	---	12	16	16	15	15	15	15
30	26	12	12	13	---	12	16	16	15	14	15	15
31	26	---	12	13	---	12	---	16	---	14	15	---
TOTAL	861	423	384	389	419	412	422	492	466	463	449	432
MEAN	27.8	14.1	12.4	12.5	15.0	13.3	14.1	15.9	15.5	14.9	14.5	14.4
MAX	29	26	15	14	19	15	17	16	17	15	15	15
MIN	26	12	12	12	13	12	12	15	15	14	14	14
AC-FT	1710	839	762	772	831	817	837	976	924	918	891	857
a	62600	17070	9130	9430	15390	49440	65030	74250	74950	55090	42130	9840

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

## 11234760 SAN JOAQUIN RIVER ABOVE SHAKEFLAT CREEK, NEAR BIG CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	23.4	12.9	15.2	28.7	57.7	77.1	158	1295	1947	731	63.5	22.1
MAX	61.9	20.1	66.3	422	754	1032	1724	9681	12400	5992	1184	45.3
(WY)	1960	1974	1967	1967	1980	1986	1980	1969	1983	1983	1983	1978
MIN	12.6	.82	3.06	10.2	10.8	10.9	12.3	12.9	11.8	12.4	12.8	12.4
(WY)	1961	1960	1960	1986	1985	1960	1964	1961	1961	1961	1972	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1960 - 1994			
ANNUAL TOTAL	251591				5612				370			
ANNUAL MEAN	689				15.4				2022			
HIGHEST ANNUAL MEAN									13.2			
LOWEST ANNUAL MEAN									16400			
HIGHEST DAILY MEAN	6330				May 19				Jun 2			
LOWEST DAILY MEAN	12				Nov 30				Oct 14			
ANNUAL SEVEN-DAY MINIMUM	12				Nov 30				Dec 1			
INSTANTANEOUS PEAK FLOW					29				Oct 1			
INSTANTANEOUS PEAK STAGE					2.79				Oct 1			
ANNUAL RUNOFF (AC-FT)	499000				11130				267900			
TOTAL DIVERSION (AC-FT) a	997800				484300							
10 PERCENT EXCEEDS	3540				18				75			
50 PERCENT EXCEEDS	29				15				15			
90 PERCENT EXCEEDS	13				12				12			

a Diversion, in acre-feet, to Mammoth Pool Powerplant, provided by Southern California Edison Co.

## SAN JOAQUIN RIVER BASIN

## 11235500 PORTAL POWERPLANT AT HUNTINGTON LAKE, CA

LOCATION.--Lat 37°15'25", Long 119°09'30", in SE 1/4 SW 1/4 sec.5, T.8 S., R.26 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in powerplant at tunnel outlet at east end of Huntington Lake, 0.9 mi east of Lakeshore Post Office, and 6 mi northeast of town of Big Creek.

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1960, published as Ward Tunnel at Outlet. October 1960 to September 1991, published as Ward Tunnel Outlet at Huntington Lake.

GAGE.--Acoustic-velocity meter in tunnel since Dec. 1, 1987. Oct. 1, 1968, to Nov. 30, 1987, pressure-differential recorder recorded discharge through penstock. November 1927 to May 23, 1956, water-stage recorder at datum 6,999.00 ft above sea level (levels by Southern California Edison Co.). May 24, 1956, to Sept. 30, 1968, no recorder, see REMARKS below.

REMARKS.--No estimated daily discharges. Daily discharge for the period May 24, 1956, to Sept. 30, 1968, computed as the sum of Ward Tunnel at Intake, Mono-Bear Conduit, Camp Creek Conduit, and corrected for change in contents of Portal Forebay. Powerplant receives water from Florence Lake (station 11229600) via Ward Tunnel, receives diversions from Bear and Mono Creeks (stations 11230520 and 11231550), and at times from several other small tributaries to South Fork San Joaquin River. See schematic diagrams of upper and lower San Joaquin River basins.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,080 ft<sup>3</sup>/s, June 21, 1935; no flow at times many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	625	429	363	3.5	171	115	393	342	686	731	741	519
2	655	495	376	43	212	119	380	498	731	731	696	534
3	771	509	421	47	158	189	386	731	691	741	731	519
4	691	501	378	31	238	148	422	696	665	726	731	498
5	751	501	380	50	233	115	304	716	741	716	731	490
6	741	500	330	53	168	194	354	736	731	731	731	486
7	358	499	427	46	261	127	373	726	721	711	731	490
8	447	466	270	46	215	133	321	721	726	726	731	480
9	441	488	392	44	218	149	324	721	731	726	731	494
10	425	509	448	86	160	234	297	741	716	706	731	500
11	214	472	287	3.5	289	555	255	741	731	716	731	487
12	276	496	441	87	243	539	328	746	726	716	731	539
13	178	514	298	3.5	187	560	360	842	676	731	731	462
14	229	496	459	.00	266	534	352	686	726	731	731	478
15	414	412	316	242	220	650	565	731	736	711	731	474
16	470	502	443	175	195	555	625	711	681	716	731	472
17	451	500	301	151	109	625	706	726	726	701	731	500
18	287	469	413	264	5.0	615	736	741	736	721	822	482
19	382	362	311	187	112	610	736	741	741	716	731	486
20	263	374	361	142	73	600	620	736	726	736	1020	421
21	186	389	261	203	43	461	645	736	731	716	1430	544
22	230	369	329	217	180	610	615	726	731	736	1220	467
23	503	368	391	202	133	519	565	736	711	736	539	435
24	430	381	219	186	75	534	524	756	721	736	570	514
25	262	338	11	199	123	555	645	706	726	736	534	470
26	315	354	53	195	145	550	711	736	726	731	446	483
27	282	387	135	241	92	519	726	736	726	716	368	380
28	305	405	.00	203	.00	550	575	736	731	736	216	539
29	457	332	.00	202	---	338	640	716	726	741	441	1090
30	427	441	106	194	---	279	575	721	711	726	485	295
31	423	---	6.6	201	---	402	---	736	---	741	524	---
TOTAL	12889	13258	8926.60	3947.50	4524.00	12683	15058	22070	21584	22491	21748	15028
MEAN	416	442	288	127	162	409	502	712	719	726	702	501
MAX	771	514	459	264	289	650	736	842	741	741	1430	1090
MIN	178	332	.00	.00	.00	115	255	342	665	701	216	295
AC-FT	25570	26300	17710	7830	8970	25160	29870	43780	42810	44610	43140	29810

## 11235500 PORTAL POWERPLANT AT HUNTINGTON LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	322	267	275	257	254	278	511	839	906	820	629	478
MAX	734	908	1102	793	806	815	953	1459	1665	1321	1126	1104
(WY)	1970	1983	1946	1985	1985	1985	1936	1946	1974	1956	1982	1983
MIN	.82	.81	5.29	13.4	10.3	78.8	98.9	119	3.93	150	147	2.00
(WY)	1946	1946	1991	1991	1991	1976	1991	1983	1938	1931	1934	1949

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1928 - 1994
ANNUAL TOTAL	260525.10	174207.10	
ANNUAL MEAN	714	477	487
HIGHEST ANNUAL MEAN			742
LOWEST ANNUAL MEAN			196
HIGHEST DAILY MEAN	1760	May 27	2080
LOWEST DAILY MEAN	.00	Dec 28	.00
ANNUAL SEVEN-DAY MINIMUM	45	Dec 25	.00
ANNUAL RUNOFF (AC-FT)	516800	345500	353200
10 PERCENT EXCEEDS	1400	736	1060
50 PERCENT EXCEEDS	514	490	457
90 PERCENT EXCEEDS	254	139	62

## SAN JOAQUIN RIVER BASIN

## 11236000 HUNTINGTON LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°14'04", long 119°12'44", in SW 1/4 sec.14, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in gate tower of dam 1 on Big Creek, 2.7 mi northeast of town of Big Creek.  
DRAINAGE AREA.--80.5 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1913 to current year. Prior to October 1926, monthly contents only, published in WSP 1315-A; 1926-31, published in WSP 721. Maximum and minimum daily contents (water years 1913-39) were summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,166 acre-ft between elevations 6,819.90 ft, invert of Outlet Tunnel No. 1, and 6,950.00 ft, spillway crest at Dam 1. Additional storage of 600 acre-ft is not available for release. Lake receives water from South Fork San Joaquin River basin via Ward Tunnel through Portal Powerplant (station 11235500). Water is diverted from lake through Huntington-Shaver Conduit and Eastwood Powerplant (station 11238250) to Shaver Lake (station 11239500) since Apr. 21, 1928. Water is also diverted to Big Creek Powerplant No. 1 (station 11238100) on Big Creek. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Records not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 90,491 acre-ft, May 31, 1926, elevation, 6,950.92 ft; minimum, 2,103 acre-ft, Nov. 6, 1937, elevation, 6,838.53 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 87,822 acre-ft, June 8, elevation, 6,949.06 ft; minimum, 31,290 acre-ft (estimated), Mar. 9, 10.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated Sept. 24, 1964)

6,835	1,552	6,870	11,293	6,920	50,812
6,840	2,354	6,880	16,370	6,930	62,555
6,845	3,324	6,890	22,882	6,940	75,344
6,850	4,480	6,900	30,861	6,950	89,166
6,860	7,427	6,910	40,216	6,951	90,606

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86049	75464	73138	62555	44934	32020	44818	52538	84280	87353	86984	86601
2	86190	74576	73164	61882	44618	31789	44755	52890	84532	87268	86998	86615
3	86572	74470	73099	61053	44031	31843	45166	53875	84629	87211	87012	86729
4	86729	73795	73559	60252	43864	31754	45039	54879	85444	87268	87012	86743
5	86885	73980	73848	59422	43562	31675	44776	55950	86345	87282	86615	86459
6	87097	74152	73625	58572	43157	31816	44323	57006	87211	87339	86700	85866
7	86757	74138	73519	57845	43033	31719	43864	57976	87750	87381	86771	84839
8	86856	74178	73296	57171	42765	31552	43322	58977	87822	87424	86686	84797
9	86941	74165	73217	56382	42518	31290	43064	60023	87651	87466	86686	84741
10	86714	74191	73099	55786	42209	31290	42796	61138	87452	87608	86842	84937
11	85979	74258	72770	55099	42047	31825	42159	62408	87537	87608	86771	85148
12	84937	74337	72547	54439	41792	32704	41426	63788	87537	87679	86700	85261
13	84252	74443	72104	53691	41527	33665	41121	65332	87466	87651	86643	85162
14	82928	74377	71947	52958	41202	34444	40789	66448	87381	87637	86629	84979
15	84123	74218	71412	52788	40840	35235	41101	67611	87353	87381	86714	84266
16	83358	74244	71257	52515	40266	35949	41487	68528	87268	87395	86785	83345
17	83567	74244	70752	51228	39520	36738	42220	69360	87310	87410	86757	83150
18	82831	74178	70416	50801	37602	37486	43064	70325	87367	87395	86587	82498
19	82374	73901	70183	50523	36594	36882	44187	71399	87395	87410	86275	81683
20	81642	73651	70131	50034	35808	39908	45145	72391	87438	87424	86331	80706
21	80160	73480	69964	49535	35132	40628	46176	73283	87481	87112	87126	79996
22	78974	73427	69900	49348	34686	41629	47014	74165	87452	87112	87779	79164
23	79096	73243	69938	49172	34343	42518	47760	75132	87495	87112	87708	78215
24	79245	73046	69360	48841	34041	42940	48643	76065	87509	87168	87651	77635
25	79137	72809	68413	48479	33320	42940	49293	77069	87168	87126	87594	77042
26	78974	72574	67534	48055	32643	43989	49934	78052	87225	87168	87481	76479
27	78717	72743	66890	47327	32394	44797	50857	78703	87353	87168	87452	75531
28	78079	72875	65921	46949	32083	45292	51430	79859	87424	87112	87055	74841
29	77783	72967	64944	46540	---	45103	52163	81091	87481	87069	86572	75318
30	76935	73138	64161	46091	---	44818	52527	82069	87410	86941	86345	74452
31	76252	---	63307	45355	---	44776	---	84042	---	86956	86459	---
MAX	87097	75464	73848	62555	44934	45292	52527	84042	87822	87679	87779	86743
MIN	76252	72574	63307	45355	32083	31290	40789	52538	84280	86941	86275	74452
a	6940.68	6938.33	6930.61	6914.99	6901.39	6914.44	6921.52	6946.38	6948.77	6948.75	6948.10	6939.33
b	-10122	-3114	-9831	-17952	-13272	+12693	+7751	+31515	+3368	-454	-497	-12007

CAL YR 1993 b +16971

WTR YR 1994 b -11922

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.



## 11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA

LOCATION.--Lat 37°13'17", long 119°12'42", in SE 1/4 NW 1/4 sec.23, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 800 ft upstream from Grouse Creek, 1.0 mi south of main dam of Huntington Lake, and 2.1 mi northeast of town of Big Creek.

DRAINAGE AREA.--81.1 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1925 to September 1970, October 1986 to current year.  
WATER TEMPERATURE: Water years 1961-70.

REVISED RECORDS.--WSP 1315-A: 1943(M). WSP 1635: 1925-29. WSP 1930: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 6,630 ft above sea level, from topographic map. Prior to Oct. 1, 1942, at datum 1.00 ft lower and Oct. 1, 1942, to Sept. 30, 1948, at datum 1.00 ft higher.

REMARKS.--Flow regulated by Huntington Lake (station 11236000). Diversions to Big Creek Powerplant No. 1 (station 11238100) and Eastwood Powerplant (station 11238250) bypass this station. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,040 ft<sup>3</sup>/s, June 23, 1925, gage height, 11.3 ft, present datum; minimum daily, 0.1 ft<sup>3</sup>/s, many days in 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.0 ft<sup>3</sup>/s, May 30, gage height, 2.65 ft; minimum daily, 3.2 ft<sup>3</sup>/s, Feb. 27 to Mar. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	4.5	4.6	4.4	3.8	3.2	e4.0	e4.2	4.8	4.7	4.8	4.7
2	4.8	4.5	4.6	4.4	3.7	3.3	e4.1	e4.2	4.8	4.8	4.8	4.7
3	4.8	4.5	4.6	4.4	3.7	3.3	e4.0	e4.2	4.8	4.8	4.8	4.7
4	4.9	4.5	4.6	4.5	3.6	3.3	e3.9	e4.2	4.8	4.8	4.8	4.8
5	4.9	4.5	4.6	4.6	3.6	3.3	e3.8	4.3	4.9	4.8	4.8	4.8
6	4.9	4.5	4.6	4.4	3.6	3.4	e3.9	4.5	4.9	4.8	4.8	4.7
7	4.9	4.5	4.6	4.3	3.6	3.4	e3.8	4.7	5.0	4.9	4.8	4.7
8	4.9	4.5	4.6	4.3	3.6	3.4	e3.7	4.7	5.0	4.9	4.8	4.6
9	4.9	4.6	4.6	4.2	3.6	3.4	e3.6	4.6	5.0	4.9	4.8	4.7
10	4.9	4.6	4.6	4.2	3.6	3.4	e3.5	4.6	5.0	4.8	4.8	4.7
11	4.9	4.6	4.7	4.2	3.6	3.4	e3.6	4.6	5.0	4.8	4.8	4.8
12	4.8	4.7	4.6	4.2	3.5	3.4	e3.7	4.5	5.0	4.8	4.8	4.8
13	4.8	4.7	4.6	4.2	3.5	3.4	e3.7	4.5	5.0	4.8	4.7	4.8
14	4.8	4.6	4.6	4.1	3.5	3.5	e3.8	4.5	4.9	4.8	4.8	4.8
15	4.8	4.6	4.6	4.1	3.5	3.5	e3.9	4.5	4.9	4.8	4.8	4.8
16	5.0	4.6	4.6	4.1	3.5	3.5	e4.1	4.5	4.9	4.8	4.8	4.7
17	4.9	4.6	4.6	4.1	3.5	3.6	e4.2	4.6	4.9	4.8	4.8	4.6
18	4.9	4.6	4.6	4.1	3.5	3.7	e4.3	4.7	4.9	4.8	4.8	4.6
19	4.9	4.6	4.6	4.0	3.5	3.7	e4.4	4.6	4.9	4.8	4.8	4.5
20	4.8	4.5	4.6	4.0	3.5	3.8	e4.5	4.6	4.8	4.8	4.8	4.5
21	4.8	4.5	4.6	4.0	3.5	3.8	e4.5	4.6	4.8	4.8	4.8	4.5
22	4.8	4.5	4.6	4.0	3.5	3.8	e4.6	4.6	4.8	4.9	4.9	4.5
23	4.7	4.5	4.6	4.0	3.5	3.7	e4.4	4.6	4.8	4.8	4.9	4.5
24	4.7	4.5	4.6	4.0	3.5	3.7	e4.2	4.6	4.8	4.8	4.9	4.5
25	4.7	4.5	4.5	3.9	3.4	3.7	e4.1	4.6	4.8	4.8	4.9	4.5
26	4.6	4.5	4.5	3.9	3.3	3.8	e4.1	4.6	4.7	4.8	4.9	4.5
27	4.6	4.5	4.5	3.9	3.2	3.8	e4.0	4.6	4.7	4.8	4.8	4.5
28	4.6	4.5	4.5	3.9	3.2	e3.8	e4.0	4.6	4.7	4.8	4.8	4.7
29	4.6	4.6	4.5	3.9	---	e3.9	e4.1	4.6	4.7	4.8	4.7	4.6
30	4.6	4.7	4.4	3.8	---	e3.9	e4.1	4.9	4.7	4.8	4.7	4.5
31	4.6	---	4.4	3.8	---	e4.0	---	5.1	---	4.8	4.7	---
TOTAL	148.6	136.6	141.8	127.9	98.6	110.8	120.6	141.2	145.7	149.1	148.9	139.3
MEAN	4.79	4.55	4.57	4.13	3.52	3.57	4.02	4.55	4.86	4.81	4.80	4.64
MAX	5.0	4.7	4.7	4.6	3.8	4.0	4.6	5.1	5.0	4.9	4.9	4.8
MIN	4.6	4.5	4.4	3.8	3.2	3.2	3.5	4.2	4.7	4.7	4.7	4.5
AC-FT	295	271	281	254	196	220	239	280	289	296	295	276
a	21760	20010	19340	14890	10810	11620	15940	18940	20470	21430	25300	21660

e Estimated.

a Diversion, in acre-ft, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

## SAN JOAQUIN RIVER BASIN

11237000 BIG CREEK BELOW HUNTINGTON LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.29	1.32	1.35	1.14	1.22	1.56	2.57	9.28	9.35	10.7	1.87	1.39
MAX	4.79	4.55	4.70	4.13	3.52	4.21	5.50	297	242	293	8.34	4.86
(WY)	1994	1994	1956	1994	1994	1991	1993	1926	1926	1925	1969	1993
MIN	.16	.23	.18	.20	.30	.38	.47	.46	.43	.31	.16	.12
(WY)	1932	1932	1932	1932	1931	1948	1934	1934	1931	1931	1931	1931

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1925 - 1994			
ANNUAL TOTAL	3805.4				1609.1							
ANNUAL MEAN	10.4				4.41				3.14			
HIGHEST ANNUAL MEAN									45.9			
LOWEST ANNUAL MEAN									.35			
HIGHEST DAILY MEAN	115				5.1				1160			
LOWEST DAILY MEAN	2.0				3.2				.10			
ANNUAL SEVEN-DAY MINIMUM	2.1				3.3				.10			
INSTANTANEOUS PEAK FLOW					7.0				2040			
INSTANTANEOUS PEAK STAGE					2.65				11.30			
ANNUAL RUNOFF (AC-FT)	7550				3190				2280			
TOTAL DIVERSION (AC-FT) a	335100				222100							
10 PERCENT EXCEEDS	10				4.9				3.8			
50 PERCENT EXCEEDS	4.7				4.6				1.2			
90 PERCENT EXCEEDS	2.7				3.6				.30			

a Diversion, in acre-feet, to Big Creek Powerplant No. 1, provided by Southern California Edison Co.

## 11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'55", long 119°12'46", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 250 ft upstream from Huntington-Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

DRAINAGE AREA.--22.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1927 to current year. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WSP 931: 1940. WSP 1315-A: 1944. WSP 1395: 1928-29, 1938. WSP 1515: 1929. WSP 1930: Drainage area.

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Elevation of gage is 7,020 ft above sea level, from topographic map. Prior to Sept. 29, 1940, at site 10 ft downstream at same datum.

REMARKS.--No diversion upstream from station; practically all flow is diverted downstream from station to Huntington-Shaver Conduit. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 11.20 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 10.77 ft; no flow, Oct. 15-18, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft<sup>3</sup>/s, May 31, gage height, 5.49 ft; minimum daily, 0.10 ft<sup>3</sup>/s, Sept. 2, 8-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	.74	1.6	1.4	1.6	4.5	50	74	63	3.9	.33	.11
2	.55	.74	1.5	1.4	1.6	5.9	55	89	48	3.5	.30	.10
3	.53	.74	1.4	1.5	1.6	7.7	54	100	40	3.2	.29	.11
4	.52	.75	1.4	1.6	1.6	7.4	46	114	34	2.9	.27	.11
5	.54	.75	1.2	3.4	1.6	7.3	47	124	30	2.7	.25	.11
6	.59	.74	1.1	3.7	1.6	7.3	45	111	28	2.5	.23	.11
7	.65	.74	1.1	2.3	1.7	7.7	38	93	26	2.3	.21	.11
8	.68	.72	1.2	1.9	1.7	8.1	38	92	23	2.0	.20	.10
9	.66	.74	1.3	1.8	1.8	8.4	32	107	21	1.8	.21	.10
10	.64	.76	1.3	1.6	1.9	10	30	125	19	1.6	.20	.10
11	1.1	.93	1.2	1.4	1.9	12	31	143	17	1.5	.19	.10
12	1.0	1.2	1.3	1.3	2.0	11	41	153	15	1.4	.18	.12
13	.93	1.2	1.4	1.4	2.0	12	58	138	14	1.4	.17	.15
14	.84	1.1	1.4	1.5	2.1	14	76	133	13	1.3	.15	.15
15	1.0	.96	1.4	1.6	2.2	17	93	121	13	1.2	.14	.15
16	1.4	.98	1.3	1.6	2.2	20	103	97	12	1.1	.13	.14
17	2.0	1.1	1.3	1.5	e5.0	21	113	74	11	1.0	.12	.13
18	1.9	1.2	1.3	1.6	2.8	23	126	69	10	.96	.12	.13
19	1.6	1.1	1.3	1.7	e3.4	25	139	61	9.6	.99	.12	.15
20	1.4	.97	1.3	1.7	2.9	23	140	56	9.0	1.0	.12	.15
21	1.2	1.1	1.3	1.6	2.9	28	128	57	8.7	1.0	.12	.14
22	1.1	1.2	1.3	1.6	3.0	29	111	59	8.1	.96	.12	.13
23	.98	1.1	1.3	1.7	3.1	e41	91	61	7.7	.84	.12	.14
24	.92	.87	1.3	1.6	3.2	20	71	64	7.3	.72	.12	.23
25	.89	.75	1.4	1.7	3.5	17	61	61	6.9	.64	.12	.19
26	.84	.71	1.4	1.7	3.7	16	56	61	6.6	.58	.12	.15
27	.79	.93	1.5	1.7	3.3	e34	50	57	6.2	.52	.12	.14
28	.76	1.2	1.5	1.6	3.5	22	50	51	5.9	.46	.12	.83
29	.76	1.4	1.5	1.6	---	27	56	46	5.5	.42	.12	1.9
30	.75	1.7	1.5	1.6	---	34	62	46	4.6	.38	.12	.99
31	.74	---	1.4	1.6	---	44	---	128	---	.36	.11	---
TOTAL	28.83	29.12	41.7	53.9	69.4	564.3	2091	2765	523.1	45.13	5.24	7.27
MEAN	.93	.97	1.35	1.74	2.48	18.2	69.7	89.2	17.4	1.46	.17	.24
MAX	2.0	1.7	1.6	3.7	5.0	44	140	153	63	3.9	.33	1.9
MIN	.52	.71	1.1	1.3	1.6	4.5	30	46	4.6	.36	.11	.10
AC-FT	57	58	83	107	138	1120	4150	5480	1040	90	10	14

e Estimated.

## 11237500 PITMAN CREEK BELOW TAMARACK CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.93	5.39	10.7	9.45	13.4	26.0	90.2	197	112	17.2	2.21	1.39
MAX	42.0	110	135	91.1	91.1	136	264	550	648	170	21.4	18.9
(WY)	1983	1951	1951	1980	1986	1986	1982	1969	1983	1983	1983	1978
MIN	.13	.18	.20	.20	.20	.30	16.6	24.3	7.82	.67	.11	.10
(WY)	1989	1930	1932	1930	1949	1949	1975	1977	1976	1934	1931	1928

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1928 - 1994			
ANNUAL TOTAL	28116.86				6223.99							
ANNUAL MEAN	77.0				17.1				40.9			
HIGHEST ANNUAL MEAN									118			
LOWEST ANNUAL MEAN									6.16			
HIGHEST DAILY MEAN	624 May 18				153 May 12				1590 Dec 23 1955			
LOWEST DAILY MEAN	.52 Oct 4				.10 Sep 2				.00 Oct 15 1931			
ANNUAL SEVEN-DAY MINIMUM	.55 Sep 30				.10 Sep 5				.04 Oct 13 1931			
INSTANTANEOUS PEAK FLOW					229 May 31				3670 Dec 23 1955			
INSTANTANEOUS PEAK STAGE					5.49 May 31				11.20 Dec 23 1955			
ANNUAL RUNOFF (AC-FT)	55770				12350				29610			
10 PERCENT EXCEEDS	303				61				124			
50 PERCENT EXCEEDS	8.9				1.6				5.3			
90 PERCENT EXCEEDS	.77				.15				.30			

## 11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA

LOCATION.--Lat 37°11'54", long 119°12'48", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank at Huntington-Shaver Conduit Tunnel, 0.8 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.4 mi upstream from mouth, and 1.9 mi east of town of Big Creek.

PERIOD OF RECORD.--October 1986 to February 1989, March 1989 to current year.

GAGE.--Discharge computed as difference between Pitman Creek below Tamarack Creek (station 11237500) and Pitman Creek near Tamarack Mountain (station 11237700). Elevation of diversion point is 7,010 ft above sea level, from topographic map.

REMARKS.--Flow is diversion from Pitman Creek into Huntington-Shaver Conduit for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 560 ft<sup>3</sup>/s, May 17, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.56	.31	.52	3.3	49	73	62	3.2	.00	.00
2	.00	.00	.52	.34	.49	4.7	54	88	47	2.8	.00	.00
3	.00	.00	.41	.40	.50	6.5	52	100	39	2.5	.00	.00
4	.00	.00	.37	.51	.53	6.2	44	113	33	2.2	.00	.00
5	.00	.00	.22	2.3	.52	6.1	45	124	29	2.0	.00	.00
6	.00	.00	.12	2.6	.54	6.1	44	110	28	1.8	.00	.00
7	.00	.00	.05	1.2	.58	6.5	37	92	25	1.6	.00	.00
8	.00	.00	.23	.80	.63	6.8	37	91	22	1.3	.00	.00
9	.00	.00	.33	.70	.66	7.1	31	106	20	1.1	.00	.00
10	.00	.00	.32	.50	.84	8.7	28	124	18	.93	.00	.00
11	.33	.21	.16	.32	.83	10	29	143	16	.82	.00	.00
12	.24	.37	.29	.17	.86	10	39	151	15	.76	.00	.00
13	.14	.33	.43	.27	.92	10	56	136	13	.73	.00	.00
14	.05	.12	.42	.39	.99	13	74	131	13	.64	.00	.00
15	.20	.00	.36	.49	1.1	16	91	118	12	.55	.00	.00
16	.60	.00	.33	.47	1.1	18	102	94	11	.46	.00	.00
17	1.2	.00	.31	.45	1.2	20	112	72	10	.37	.00	.00
18	1.1	.00	.30	.49	1.7	22	125	66	9.5	.32	.00	.00
19	.79	.00	.29	.59	1.7	24	138	59	8.9	.35	.00	.00
20	.55	.00	.28	.59	1.8	22	139	54	8.3	.39	.00	.00
21	.38	.00	.28	.54	1.8	26	127	55	7.9	.36	.00	.00
22	.29	.19	.28	.52	1.9	27	111	57	7.4	.32	.00	.00
23	.19	.11	.31	.59	2.0	24	90	59	6.9	.18	.00	.00
24	.14	.00	.34	.54	2.1	18	70	62	6.6	.06	.00	.00
25	.13	.00	.36	.57	2.4	16	60	60	6.1	.00	.00	.00
26	.09	.00	.43	.57	2.6	15	55	60	5.9	.00	.00	.00
27	.00	.00	.48	.56	2.2	19	49	56	5.5	.00	.00	.00
28	.00	.23	.50	.54	2.4	21	50	50	5.2	.00	.00	.47
29	.00	.38	.47	.50	---	25	56	44	4.8	.00	.00	1.3
30	.00	.69	.47	.52	---	33	62	44	3.9	.00	.00	.35
31	.00	---	.44	.54	---	42	---	127	---	.00	.00	---
TOTAL	6.42	2.63	10.66	19.88	35.41	493.0	2056	2719	499.9	25.74	0.00	2.12
MEAN	.21	.088	.34	.64	1.26	15.9	68.5	87.7	16.7	.83	.000	.071
MAX	1.2	.69	.56	2.6	2.6	42	139	151	62	3.2	.00	1.3
MIN	.00	.00	.05	.17	.49	3.3	28	44	3.9	.00	.00	.00
AC-FT	13	5.2	21	39	70	978	4080	5390	992	51	.00	4.2

## SAN JOAQUIN RIVER BASIN

11237600 PITMAN CREEK SHAFT BELOW TAMARACK CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.37	.49	.35	1.52	2.83	17.2	88.9	127	46.5	3.78	.41	.030
MAX	1.03	2.76	2.25	6.75	9.95	38.3	124	440	211	10.9	2.72	.13
(WY)	1990	1988	1988	1993	1988	1993	1989	1993	1993	1993	1993	1989
MIN	.000	.000	.000	.000	.000	.000	47.4	57.4	9.14	.83	.000	.000
(WY)	1989	1989	1989	1987	1987	1992	1991	1987	1992	1994	1988	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1987 - 1994
ANNUAL TOTAL	24743.71	5870.76	
ANNUAL MEAN	67.8	16.1	25.0
HIGHEST ANNUAL MEAN			67.8
LOWEST ANNUAL MEAN			13.5
HIGHEST DAILY MEAN	560 May 17	151 May 12	560 May 17 1993
LOWEST DAILY MEAN	.00 Sep 4	.00 Oct 1	.00 Nov 12 1986
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 4	.00 Oct 1	.00 Dec 5 1986
ANNUAL RUNOFF (AC-FT)	49080	11640	18140
10 PERCENT EXCEEDS	298	59	80
50 PERCENT EXCEEDS	7.0	.54	.40
90 PERCENT EXCEEDS	.00	.00	.00

## 11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA

LOCATION.--Lat 37°11'57", long 119°12'51", in NW 1/4 NW 1/4 sec.35, T.8 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Huntington-Shaver Conduit Tunnel, 0.9 mi downstream from confluence of Tamarack and South Fork Tamarack Creeks, 1.3 mi upstream from mouth, and 1.8 mi east of town of Big Creek.

DRAINAGE AREA.--23.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to February 1989, March 1989 to current year. No record of release for fishery maintenance Feb. 19 to Mar. 24, 1989.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 7,000 ft above sea level, from topographic map.

REMARKS.--Most of the flow is diverted upstream from station at Pitman Creek Shaft below Tamarack Creek (station 11237600) to Huntington-Shaver Conduit. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 152 ft<sup>3</sup>/s, June 10, 1993; no flow, Feb. 15 to Apr. 4, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2.9 ft<sup>3</sup>/s, May 13, 14; minimum daily, 0.09 ft<sup>3</sup>/s, Sept. 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	.74	e1.0	e1.1	e1.1	e1.2	e1.6	.67	1.0	.70	.33	.12
2	.56	.70	e1.0	e1.1	e1.1	e1.2	e1.6	.69	.96	.70	.30	.12
3	.53	.70	e1.0	e1.1	e1.1	e1.2	e1.6	.70	.91	.70	.28	.11
4	.51	.70	e1.0	e1.1	e1.1	e1.2	e1.6	.71	.88	.70	.26	.11
5	.54	.70	e1.0	e1.1	e1.1	e1.2	e1.6	.71	.88	.70	.25	.11
6	.60	.70	e1.0	e1.1	e1.1	e1.2	e1.6	.73	.88	.70	.23	.10
7	.68	.68	e1.0	e1.1	e1.1	e1.2	e1.6	.73	.84	.70	.20	.10
8	.71	.66	e1.0	e1.1	e1.1	e1.3	e1.6	.73	.82	.70	.19	.09
9	.69	.67	e1.0	e1.1	e1.1	e1.3	e1.6	.73	.82	.70	.20	.09
10	.66	.68	e1.0	e1.1	e1.1	e1.3	e1.6	.74	.82	.70	.19	.09
11	.78	.72	e1.0	e1.1	e1.1	e1.3	e1.6	.74	.82	.70	.18	.10
12	.79	e.80	e1.0	e1.1	e1.1	e1.3	e1.6	1.7	.82	.68	.17	.13
13	.79	e.90	e1.0	e1.1	e1.1	e1.3	e1.6	2.9	.82	.64	.16	.15
14	.79	e1.0	e1.0	e1.1	e1.1	e1.3	e1.6	2.9	.80	.64	.15	.16
15	.80	e1.0	e1.0	e1.1	e1.1	e1.4	1.6	2.8	.79	.64	.13	.15
16	.84	e1.0	e1.0	e1.1	e1.1	e1.4	1.3	2.6	.79	.64	.12	.14
17	.83	e1.0	e1.0	e1.1	e1.1	e1.4	1.1	2.5	.79	.64	.12	.12
18	.82	e1.0	e1.0	e1.1	e1.1	e1.4	1.0	2.5	.77	.64	.12	.12
19	.82	e1.0	e1.0	e1.1	e1.1	e1.4	.90	2.4	.75	.64	.12	.16
20	.82	e1.0	e1.0	e1.1	e1.1	e1.4	.80	2.3	.73	.64	.12	.15
21	.79	e1.0	e1.0	e1.1	e1.1	e1.4	.78	2.3	.73	.64	.12	.13
22	.79	e1.0	e1.0	e1.1	e1.1	e1.5	.73	2.3	.73	.64	.12	.12
23	.79	e1.0	e1.0	e1.1	e1.1	e1.5	.70	2.3	.73	.66	.12	.13
24	.79	e.90	e1.0	e1.1	e1.1	e1.5	.86	2.0	.73	.67	.12	.22
25	.76	e.80	e1.0	e1.1	e1.1	e1.5	.88	1.3	.73	.65	.11	.18
26	.76	e.70	e1.0	e1.1	e1.1	e1.5	.85	1.3	.73	.61	.11	.15
27	.76	e.90	e1.0	e1.1	e1.1	e1.5	.71	1.2	.72	.54	.11	.14
28	.76	e1.0	e1.0	e1.1	e1.1	e1.6	.58	1.2	.70	.51	.12	.36
29	.76	e1.0	e1.0	e1.1	---	e1.6	.61	1.2	.70	.44	.12	.61
30	.76	e1.0	e1.0	e1.1	---	e1.6	.65	1.2	.70	.39	.12	.64
31	.76	---	e1.0	e1.1	---	e1.6	---	1.2	---	.37	.12	---
TOTAL	22.62	25.65	31.0	34.1	30.8	42.7	36.45	47.98	23.89	19.62	5.11	5.10
MEAN	.73	.85	1.00	1.10	1.10	1.38	1.21	1.55	.80	.63	.16	.17
MAX	.84	1.0	1.0	1.1	1.1	1.6	1.6	2.9	1.0	.70	.33	.64
MIN	.51	.66	1.0	1.1	1.1	1.2	.58	.67	.70	.37	.11	.09
AC-FT	45	51	61	68	61	85	72	95	47	39	10	10

e Estimated.

## SAN JOAQUIN RIVER BASIN

11237700 PITMAN CREEK NEAR TAMARACK MOUNTAIN, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.59	.88	1.03	1.36	2.00	6.26	9.53	3.76	2.52	3.40	.54	.37
MAX	1.40	1.74	1.50	2.17	5.19	24.8	53.5	15.4	13.3	21.3	1.40	.90
(WY)	1987	1990	1990	1990	1992	1990	1993	1993	1993	1993	1993	1993
MIN	.13	.31	.41	.56	.35	.000	1.21	1.22	.66	.52	.16	.13
(WY)	1989	1991	1991	1991	1991	1991	1994	1990	1990	1992	1994	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1987 - 1994
ANNUAL TOTAL	3384.90	325.02	
ANNUAL MEAN	9.27	.89	2.82
HIGHEST ANNUAL MEAN			9.27
LOWEST ANNUAL MEAN			.79
HIGHEST DAILY MEAN	152	2.9	152
LOWEST DAILY MEAN	.11	.09	.00
ANNUAL SEVEN-DAY MINIMUM	.13	.10	.00
ANNUAL RUNOFF (AC-FT)	6710	645	2040
10 PERCENT EXCEEDS	27	1.5	2.3
50 PERCENT EXCEEDS	1.2	.88	1.0
90 PERCENT EXCEEDS	.70	.15	.18



## 11238250 EASTWOOD POWERPLANT ABOVE SHAVER LAKE, NEAR BIG CREEK, CA

LOCATION.--Lat 37°07'55", long 119°15'39", in NE 1/4 SW 1/4 sec.20, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, 0.25 mi upstream from Shaver Lake and 5.0 mi south of Big Creek.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Acoustic flow meter in powerplant penstock. Elevation of gage is 5,400 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow is diverted from Huntington Lake (station 11236000) and Pitman Creek (station 11237600) to Balsam Meadows Forebay, then through a tunnel to the powerplant. Water is returned to Shaver Lake (station 11239500) 0.25 mi downstream for further power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,910 ft<sup>3</sup>/s, May 24, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	575	456	443	301	153	0	325	751	882	385	316	247
2	153	771	377	196	247	0	359	660	837	504	271	281
3	565	630	350	524	252	0	205	539	786	625	529	280
4	457	655	292	378	534	0	197	341	397	585	226	221
5	233	550	379	446	503	0	283	179	359	595	352	539
6	233	147	448	255	503	0	336	468	529	640	466	454
7	0	158	316	193	426	0	367	334	610	691	509	590
8	389	286	4	160	367	0	312	238	640	385	266	428
9	0	205	316	410	225	0	349	403	706	716	308	327
10	310	300	405	113	277	0	362	490	731	600	259	292
11	151	249	376	233	467	0	386	414	509	580	257	309
12	468	411	370	377	201	0	565	456	786	472	240	295
13	605	292	555	252	198	0	449	307	473	477	519	443
14	913	375	600	215	99	0	414	471	346	524	278	580
15	484	160	451	179	428	0	288	237	441	440	328	443
16	364	137	171	247	274	0	381	400	379	681	351	726
17	62	282	313	276	529	0	403	362	446	585	278	565
18	257	334	373	258	390	0	711	336	410	590	375	595
19	328	322	0	534	338	0	524	0	807	422	478	726
20	396	375	0	377	373	0	413	368	555	447	585	741
21	645	429	0	555	311	0	368	267	625	716	726	340
22	605	427	0	442	263	0	469	0	420	336	248	395
23	0	365	149	222	340	0	271	605	341	310	335	575
24	0	203	176	203	344	436	438	519	420	671	251	477
25	39	132	235	244	106	0	391	227	736	580	306	534
26	0	150	210	253	202	230	369	343	721	385	268	205
27	222	112	226	477	232	189	575	386	776	369	203	630
28	519	140	285	138	0	234	90	204	681	395	142	595
29	312	77	198	190	---	348	630	279	615	355	272	310
30	560	326	0	188	---	186	415	382	620	232	218	493
31	334	---	165	281	---	273	---	423	---	343	223	---
TOTAL	10179	9456	8183	9117	8582	1896	11645	11389	17584	15636	10383	13636
MEAN	328	315	264	294	306	61.2	388	367	586	504	335	455
MAX	913	771	600	555	534	436	711	751	882	716	726	741
MIN	0	77	0	113	0	0	90	0	341	232	142	205
AC-FT	20190	18760	16230	18080	17020	3760	23100	22590	34880	31010	20590	27050

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1994, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	184	130	180	245	247	193	376	639	719	532	419	344
MAX	408	315	375	400	406	534	852	1604	1501	969	771	556
(WY)	1992	1994	1988	1989	1988	1989	1989	1993	1993	1993	1993	1993
MIN	.000	.000	21.4	6.19	85.4	19.5	29.3	159	270	156	181	81.7
(WY)	1988	1988	1991	1990	1992	1991	1991	1991	1990	1992	1992	1992

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1988 - 1994

ANNUAL TOTAL	224534	127686	
ANNUAL MEAN	615	350	351
HIGHEST ANNUAL MEAN			583
LOWEST ANNUAL MEAN			141
HIGHEST DAILY MEAN	1910	May 24	1910
LOWEST DAILY MEAN	0	Jan 2	0
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 19	.00
ANNUAL RUNOFF (AC-FT)	445400	253300	254300
10 PERCENT EXCEEDS	1560	612	775
50 PERCENT EXCEEDS	448	344	287
90 PERCENT EXCEEDS	.00	.00	.00

## 11238270 MIDDLE FORK BALSAM CREEK BELOW BALSAM MEADOWS FOREBAY, NEAR BIG CREEK, CA

LOCATION.--Lat 37°09'46", long 119°15'12", in NE 1/4 NW 1/4 sec.9, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 80 ft downstream from control house at base of Balsam Meadows Dam, 2.6 mi south of Big Creek.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--January 1989 to current year.

GAGE.--Water-stage recorder, 90° V-notch weir and concrete control. Elevation of gage is 6,560 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow consists of fishery maintenance release and spill over Balsam Meadows Dam. No record of flow over spillway Apr. 15, 1989. Diversion from Balsam Meadows Dam through penstock to Eastwood Powerplant (station 11238250). See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, unknown, Apr. 15, 1989, as there was no record of flow over spillway; minimum daily, 0.31 ft<sup>3</sup>/s, Feb. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft<sup>3</sup>/s, Nov. 3, June 6, Sept. 14, gage height, 0.86 ft; minimum daily, 0.60 ft<sup>3</sup>/s, Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.72	.67	.70	.74	.72	.77	.91	.81	1.3	1.3	1.3
2	.71	.72	.66	.70	.76	.71	.8	.88	.80	1.3	1.3	1.3
3	.71	.76	.67	.71	.76	.70	.76	.88	.80	1.3	1.3	1.3
4	.70	.71	.65	.70	.77	.70	.76	.86	.78	1.3	1.3	1.3
5	.70	.78	.63	.72	.74	.71	.77	.79	.78	1.3	1.3	1.3
6	.70	.72	.61	.74	.75	.70	.76	.75	1.2	1.3	1.3	1.3
7	.70	.72	.63	.75	.78	.70	.75	.71	1.5	1.3	1.3	1.3
8	.70	.69	.62	.75	.77	.70	.75	.71	1.4	1.3	1.3	1.3
9	.68	.67	.66	.75	.77	.70	.75	.77	1.2	1.3	1.3	1.3
10	.67	.67	.63	.75	.77	.71	.74	.76	1.2	1.3	1.3	1.3
11	.67	.67	.66	.77	.74	.70	.77	.76	1.2	1.3	1.3	1.3
12	.67	.67	.69	.77	.75	.70	.78	.76	1.2	1.3	1.3	1.3
13	.69	.67	.67	.75	.74	.72	.78	.79	1.2	1.3	1.3	1.3
14	.72	.63	.64	.81	.72	.72	.77	.79	1.2	1.3	1.3	1.3
15	.71	.63	.70	.79	.70	.72	.78	.78	1.3	1.3	1.4	1.5
16	.71	.62	.72	.78	.72	.72	.79	.75	1.2	1.3	1.4	1.4
17	.71	.60	.70	.76	.72	.74	.80	.75	1.2	1.3	1.4	1.4
18	.71	.62	.72	.78	.75	.73	.79	.76	1.2	1.3	1.4	1.4
19	.71	.63	.72	.76	.74	.71	.81	.78	1.2	1.3	1.4	1.4
20	.70	.61	.70	.77	.72	.75	.78	.78	1.2	1.3	1.4	1.4
21	.70	.63	.69	.77	.70	.77	.74	.77	1.2	1.3	1.4	1.4
22	.70	.64	.71	.74	.71	.80	.73	.75	1.2	1.3	1.4	1.4
23	.70	.65	.69	.76	.71	.78	.71	.79	1.2	1.3	1.4	1.4
24	.70	.66	.70	.75	.71	.79	.75	.81	1.2	1.3	1.4	1.4
25	.68	.68	.69	.76	.73	.75	.90	.84	1.2	1.3	1.4	1.4
26	.70	.66	.69	.77	.70	.78	.79	.82	1.2	1.3	1.3	1.4
27	.70	.65	.68	.77	.76	.79	.93	.84	1.2	1.3	1.3	1.4
28	.70	.66	.68	.76	.72	.78	.90	.83	1.3	1.3	1.3	1.4
29	.71	.67	.69	.75	---	.79	.92	.83	1.3	1.3	1.3	1.4
30	.72	.67	.67	.74	---	.77	.89	.83	1.3	1.3	1.3	1.4
31	.71	---	.66	.75	---	.78	---	.80	---	1.3	1.3	---
TOTAL	22.19	20.08	20.90	23.33	20.65	22.84	23.72	24.63	34.87	40.3	41.4	40.7
MEAN	.72	.67	.67	.75	.74	.74	.79	.79	1.16	1.30	1.34	1.36
MAX	1.2	.78	.72	.81	.78	.80	.93	.91	1.5	1.3	1.4	1.5
MIN	.67	.60	.61	.70	.70	.70	.71	.71	.78	1.3	1.3	1.3
AC-FT	44	40	41	46	41	45	47	49	69	80	82	81

11238270 MIDDLE FORK BALSAM CREEK BELOW BALSAM MEADOWS FOREBAY, NEAR BIG CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.83	.81	.90	.85	.85	1.07	1.27	.85	1.31	1.35	1.36	1.37
MAX	.93	1.15	1.44	1.10	1.10	2.20	2.75	1.10	1.43	1.38	1.48	1.50
(WY)	1992	1992	1992	1993	1993	1992	1992	1993	1990	1990	1992	1992
MIN	.72	.66	.67	.75	.74	.74	.79	.74	1.16	1.29	1.26	1.22
(WY)	1994	1993	1994	1994	1994	1994	1994	1992	1994	1991	1991	1991

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1989 - 1994
ANNUAL TOTAL	396.89	335.61	
ANNUAL MEAN	1.09	.92	1.07
HIGHEST ANNUAL MEAN			1.38
LOWEST ANNUAL MEAN			.92
HIGHEST DAILY MEAN	1.5 Jun 23	1.5 Jun 7	3.4 Apr 2 1992
LOWEST DAILY MEAN	.60 Nov 17	.60 Nov 17	.31 Feb 4 1989
ANNUAL SEVEN-DAY MINIMUM	.62 Nov 14	.62 Nov 14	.54 Oct 8 1992
INSTANTANEOUS PEAK FLOW		1.6 Nov 3	
INSTANTANEOUS PEAK STAGE		.86 Nov 3	
ANNUAL RUNOFF (AC-FT)	787	666	779
10 PERCENT EXCEEDS	1.4	1.3	1.4
50 PERCENT EXCEEDS	1.1	.77	.91
90 PERCENT EXCEEDS	.67	.67	.71

## 11238500 BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA

LOCATION.--Lat 37°12'28", long 119°19'13", in SE 1/4 NW 1/4 sec.26, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 0.6 mi upstream from mouth and 3.9 mi west of town of Big Creek.

DRAINAGE AREA.--131 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1923 to May 1932, October 1986 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Elevation of gage is 2,620 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Huntington Lake (station 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 8 (station 11238550). See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records collected by the Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft<sup>3</sup>/s, June 23, 1925, gage height, 6.25 ft, from rating curve extended above 1,200 ft<sup>3</sup>/s; no flow several days in 1925 and 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50 ft<sup>3</sup>/s, Sept. 15, gage height, 1.99 ft; minimum daily, 4.5 ft<sup>3</sup>/s, Oct. 23, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	5.7	5.2	5.7	5.6	5.9	6.1	6.1	5.4	6.1	6.4	6.1
2	6.1	5.5	5.1	5.7	5.6	5.9	6.1	6.1	5.4	6.1	6.3	6.1
3	6.3	5.5	5.1	5.7	5.7	5.9	6.1	5.9	5.4	6.1	6.3	6.2
4	6.3	5.5	4.8	5.9	5.8	5.8	6.1	5.9	5.4	6.1	6.4	6.1
5	6.3	5.5	5.0	5.8	5.7	6.0	6.1	5.9	5.4	6.0	6.3	6.1
6	6.2	5.4	4.9	5.7	5.7	5.8	6.1	6.0	5.5	6.1	6.5	5.9
7	6.2	5.4	4.9	5.5	6.6	5.7	6.1	6.2	5.5	5.8	6.6	6.0
8	6.1	5.3	4.8	5.5	6.6	5.7	6.2	5.9	5.5	5.4	6.8	6.1
9	5.9	5.2	4.7	5.5	6.0	5.7	6.3	5.9	5.5	5.4	6.5	6.1
10	5.8	5.4	4.7	5.5	6.1	5.7	6.1	5.9	5.5	5.7	6.5	6.3
11	5.9	5.8	5.8	5.5	6.0	5.7	6.1	5.9	5.4	5.9	6.4	6.3
12	5.9	5.5	5.6	5.5	5.9	5.7	6.1	6.0	5.4	5.9	6.1	6.5
13	5.8	5.3	5.3	5.5	5.9	5.7	6.1	5.9	5.4	5.9	6.1	6.5
14	5.7	5.3	5.5	5.5	5.9	5.7	6.1	5.9	5.4	5.9	6.1	6.5
15	5.9	5.1	5.4	5.5	5.9	5.7	6.1	5.9	5.4	5.9	6.2	7.8
16	5.9	4.8	5.4	5.5	5.9	5.7	6.1	5.9	5.4	5.9	6.5	6.5
17	5.8	4.9	5.8	5.5	8.2	5.7	5.9	6.0	5.4	6.0	6.4	6.8
18	5.8	5.0	5.9	5.5	7.5	5.7	5.9	6.1	5.4	6.1	6.3	6.6
19	5.5	5.2	5.8	5.5	6.6	5.7	5.9	5.9	5.4	6.1	6.2	6.6
20	5.3	5.3	5.7	5.5	7.0	5.7	5.9	6.1	5.5	6.1	6.3	6.5
21	5.0	5.4	5.7	5.5	6.4	5.7	5.9	5.7	5.5	6.0	6.3	6.1
22	4.7	5.7	5.7	5.5	6.3	5.7	6.1	5.7	5.6	6.0	6.1	6.1
23	4.5	5.9	5.7	5.7	6.1	5.7	6.3	5.6	6.3	6.0	6.1	6.2
24	4.5	5.7	5.7	5.9	5.9	5.7	6.3	5.5	6.1	6.0	5.6	6.1
25	4.7	5.6	5.7	6.0	5.9	5.9	6.4	5.7	6.1	6.2	5.5	6.1
26	5.0	5.4	5.7	5.6	5.9	5.7	6.4	5.9	6.1	6.0	5.6	6.2
27	5.2	5.2	5.7	5.7	5.9	5.8	6.3	5.9	6.1	6.1	6.1	6.3
28	5.4	5.1	5.7	5.7	5.9	5.9	6.1	5.7	6.1	6.3	6.0	6.6
29	5.7	5.6	5.7	5.7	---	6.0	6.1	5.7	6.1	6.3	6.2	6.6
30	6.0	5.5	5.7	5.7	---	6.1	6.1	5.6	6.3	6.2	6.0	6.3
31	5.9	---	5.7	5.7	---	6.1	---	5.5	---	6.3	6.0	---
TOTAL	175.4	161.7	168.1	174.2	172.5	179.4	183.5	181.9	168.9	185.9	192.7	190.2
MEAN	5.66	5.39	5.42	5.62	6.16	5.79	6.12	5.87	5.63	6.00	6.22	6.34
MAX	6.3	5.9	5.9	6.0	8.2	6.1	6.4	6.2	6.3	6.3	6.8	7.8
MIN	4.5	4.8	4.7	5.5	5.6	5.7	5.9	5.5	5.4	5.4	5.5	5.9
AC-FT	348	321	333	346	342	356	364	361	335	369	382	377
a	35180	39970	49150	33860	26280	28130	33170	42190	37120	47310	52560	47260

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

## 11238500 BIG CREEK NEAR MOUTH, NEAR BIG CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.31	2.96	2.55	7.12	3.42	8.87	5.77	5.48	7.53	9.59	3.53	3.61
MAX	5.66	5.39	5.42	39.0	9.08	50.2	13.6	18.5	37.1	54.0	6.22	6.34
(WY)	1994	1994	1994	1993	1993	1993	1993	1993	1993	1993	1994	1994
MIN	2.44	1.97	1.61	1.61	1.69	2.03	2.35	2.23	2.23	2.20	2.27	2.33
(WY)	1988	1988	1992	1989	1988	1992	1989	1987	1987	1987	1988	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	7643.2				2134.4							
ANNUAL MEAN	20.9				5.85				5.33			
HIGHEST ANNUAL MEAN									20.4			
LOWEST ANNUAL MEAN									2.34			
HIGHEST DAILY MEAN	886				8.2				886			
LOWEST DAILY MEAN	3.9				4.5				1.3			
ANNUAL SEVEN-DAY MINIMUM	4.8				4.8				1.4			
INSTANTANEOUS PEAK FLOW					50				1500			
INSTANTANEOUS PEAK STAGE					1.99				5.37			
ANNUAL RUNOFF (AC-FT)	15160				4230				3860			
TOTAL DIVERSION (AC-FT) a	706600				472200							
10 PERCENT EXCEEDS	27				6.3				6.1			
50 PERCENT EXCEEDS	5.9				5.9				2.7			
90 PERCENT EXCEEDS	5.1				5.4				1.7			

a Diversion, in acre-feet, to Big Creek Powerplant No. 8, provided by Southern California Edison Co.

## 11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA

LOCATION (REVISED).--Lat 37°12'28", long 119°19'44", unsurveyed, T.8 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, in intake structure near left bank, 300 ft upstream from Dam 6, 3.5 mi upstream from Stevenson Creek, 4.4 mi west of town of Big Creek, and at mile 313.6.

DRAINAGE AREA.--1,197 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to September 1987, October 1992 to current year. Records for water years 1951 to 1972 in files of Southern California Edison Co. Records for water years 1974 to 1986 in files of the U.S. Geological Survey.

GAGE.--Acoustic-velocity meter since Oct. 1, 1992. Water-stage recorders at various sites downstream prior to 1992. Elevation of gage is 2,200 ft above sea level, from topographic map.

REMARKS.--Record consists of computed flow over spillway at Dam 6 and flow through fish-water release valve. At times the sluice valve leaks and this flow bypasses the station. Flow regulated by Mammoth Pool Reservoir and Huntington Lake (stations 11234700 and 11236000) and diversions for power development in Big Creek powerplants. Most of the water is diverted past this station to Big Creek Powerplant No. 3 (station 11241800). See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records collected by the Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,960 ft<sup>3</sup>/s, May 25, 1993; minimum daily, 3.0 ft<sup>3</sup>/s, Dec. 4, 5, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 54 ft<sup>3</sup>/s, June 3; minimum daily, 3.0 ft<sup>3</sup>/s, Dec. 4, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.4	3.4	3.4	3.4	3.2	3.2	3.3	3.4	3.4	e3.4	e3.4
2	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.3	3.4	3.4	e3.4	e3.4
3	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.3	e9.5	3.4	e3.4	e3.4
4	3.4	3.4	3.0	3.4	3.4	3.2	3.2	3.4	e3.4	3.4	e3.4	e3.4
5	3.4	3.4	3.0	3.4	3.4	3.2	3.2	3.4	e3.4	3.4	e3.4	e3.4
6	3.4	3.4	3.3	3.4	3.4	3.2	3.2	3.4	e3.4	3.4	e3.4	e3.4
7	3.4	3.4	3.4	3.4	3.4	3.2	3.1	3.4	e3.4	3.4	e3.4	e3.4
8	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	e3.4	3.4	e3.4	e3.4
9	3.3	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
10	3.3	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
11	3.3	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
12	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
13	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	3.5
14	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	3.5
15	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.4	3.4	3.4	e3.4	3.5
16	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.4	3.4	3.4	e3.4	3.5
17	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
18	3.3	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
19	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
20	3.4	3.4	3.4	3.4	3.4	3.2	3.2	3.4	3.4	3.4	e3.4	e3.4
21	3.4	3.4	3.4	3.4	3.4	3.2	3.3	3.4	3.4	e3.4	e3.4	e3.4
22	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
23	3.4	3.4	3.4	3.4	3.4	3.1	3.4	3.4	3.4	e3.4	e3.4	e3.4
24	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
25	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
26	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
27	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
28	3.4	3.4	3.4	3.4	3.3	3.2	3.4	3.4	3.4	e3.4	e3.4	e3.4
29	3.4	3.4	3.4	3.4	---	3.2	3.3	3.4	3.4	e3.4	e3.4	e3.4
30	3.4	3.4	3.4	3.4	---	3.2	3.3	3.4	3.3	e3.4	e3.4	e3.4
31	3.4	---	3.4	3.4	---	3.2	---	3.3	---	e3.4	e3.4	---
TOTAL	104.9	102.0	104.5	105.4	94.8	99.1	97.6	105.0	108.0	105.4	105.4	102.4
MEAN	3.38	3.40	3.37	3.40	3.39	3.20	3.25	3.39	3.60	3.40	3.40	3.41
MAX	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	9.5	3.4	3.4	3.5
MIN	3.3	3.4	3.0	3.4	3.3	3.1	3.1	3.3	3.3	3.4	3.4	3.4
AC-FT	208	202	207	209	188	197	194	208	214	209	209	203
a	98400	57180	58350	43490	43580	79850	100600	120600	114500	103000	95050	56560

e Estimated.

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

## 11238600 SAN JOAQUIN RIVER ABOVE STEVENSON CREEK, NEAR BIG CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.47	3.51	3.56	3.66	3.78	68.1	197	1244	1352	482	3.58	3.58
MAX	3.90	3.95	4.06	4.32	4.65	196	584	3726	4048	1437	4.00	4.04
(WY)	1987	1987	1987	1987	1987	1993	1993	1993	1993	1993	1987	1987
MIN	3.14	3.20	3.25	3.26	3.30	3.20	3.25	3.39	3.60	3.40	3.35	3.29
(WY)	1993	1993	1993	1993	1993	1994	1994	1994	1994	1994	1993	1993

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR					FOR 1994 WATER YEAR			WATER YEARS 1987 - 1994			
ANNUAL TOTAL	305789.7					1234.5						
ANNUAL MEAN	838					3.38			282			
HIGHEST ANNUAL MEAN									838			
LOWEST ANNUAL MEAN									3.38			
HIGHEST DAILY MEAN	6700					9.5			6700			
LOWEST DAILY MEAN	3.0					3.0			3.0			
ANNUAL SEVEN-DAY MINIMUM	3.2					3.2			3.1			
INSTANTANEOUS PEAK FLOW						54			7960			
ANNUAL RUNOFF (AC-FT)	606500					2450			204100			
TOTAL DIVERSION (AC-FT) a	1650000					971100						
10 PERCENT EXCEEDS	3960					3.4			311			
50 PERCENT EXCEEDS	3.4					3.4			3.4			
90 PERCENT EXCEEDS	3.3					3.2			3.2			

a Diversion, in acre-feet, to Big Creek Powerplant No. 3, provided by Southern California Edison Co.

## 11239300 NORTH FORK STEVENSON CREEK AT PERIMETER ROAD, NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'13", long 119°15'13", in SE 1/4 NW 1/4 sec.21, T.9 S., R.25 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 100 ft upstream from Perimeter Road and 4.8 mi south of town of Big Creek.

DRAINAGE AREA.--4.42 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1989 to current year.

GAGE.--Water-stage recorder, modified Parshall flume, and concrete control. Elevation of gage is 5,740 ft above sea level, from topographic map.

REMARKS.--Releases for fishery maintenance from Balsam Meadows Forebay on Balsam Creek enter creek upstream from station. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 261 ft<sup>3</sup>/s, Apr. 13, 1992, gage height, 4.62 ft; minimum daily, 1.6 ft<sup>3</sup>/s, Feb. 14, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft<sup>3</sup>/s, Dec. 23, gage height, 2.55 ft; minimum daily, 3.8 ft<sup>3</sup>/s, July 25, 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	6.8	6.1	5.9	e6.0	6.3	9.7	7.3	5.5	5.7	e4.3	4.1
2	5.9	6.6	5.9	5.8	e6.0	6.8	10	7.9	5.0	5.7	e4.3	4.0
3	5.9	5.3	5.9	6.0	e6.0	7.1	9.7	8.3	4.7	5.7	e4.3	4.0
4	5.9	6.1	5.8	6.3	6.1	7.1	9.6	8.7	4.5	5.7	4.3	4.0
5	5.9	5.5	5.8	6.8	5.8	7.9	9.6	9.5	4.3	5.7	4.3	4.0
6	6.0	5.5	5.8	6.1	5.7	7.9	9.7	9.9	6.2	5.7	4.5	4.1
7	6.1	5.5	5.7	6.1	6.1	7.8	9.4	9.9	7.1	5.7	4.4	4.3
8	6.1	5.5	5.6	6.0	6.1	8.0	9.5	9.8	5.3	5.5	4.4	4.1
9	6.0	5.5	5.4	5.8	6.2	8.3	9.1	9.7	5.9	5.2	4.5	4.1
10	6.0	5.5	5.5	6.3	5.9	8.4	8.9	10	5.7	5.2	4.3	4.1
11	6.6	6.0	e6.7	6.3	6.4	8.2	9.0	10	5.6	5.3	4.3	4.0
12	6.9	6.1	6.6	6.4	e6.0	7.9	9.4	10	5.4	5.1	4.3	4.0
13	6.7	6.0	5.9	5.8	e6.0	8.1	9.7	9.7	5.3	4.3	4.3	4.0
14	7.0	5.9	6.0	5.8	e6.0	8.6	10	9.3	5.4	4.3	4.3	4.0
15	6.3	5.8	5.8	5.7	6.1	8.7	e12	8.6	5.3	4.4	4.3	4.3
16	6.6	5.8	6.4	5.7	6.2	8.7	e12	8.0	5.2	4.2	4.2	4.4
17	6.7	5.8	5.8	6.3	e6.1	8.4	e12	7.7	5.1	4.1	4.2	4.1
18	6.7	5.8	6.8	5.7	e6.1	8.6	e13	7.6	5.0	4.1	4.4	4.2
19	6.8	5.8	6.7	5.7	e6.1	8.8	e12	7.0	4.9	e4.1	4.4	4.2
20	6.8	5.7	6.6	5.7	e6.1	8.4	8.1	6.6	4.8	e4.1	4.5	4.2
21	7.0	5.7	e12	5.7	e6.1	8.5	7.7	6.3	4.8	e4.0	4.8	4.2
22	7.1	5.8	18	5.7	e6.1	8.5	7.2	6.0	4.7	e4.0	4.7	4.2
23	6.3	5.9	18	6.2	e6.1	8.1	7.0	5.8	4.7	e3.9	4.6	4.3
24	6.1	5.8	5.8	e6.0	e6.1	8.0	6.5	6.4	4.7	e3.9	4.4	4.5
25	6.0	5.7	5.9	e6.0	6.7	8.5	6.3	6.1	4.6	e3.8	4.3	4.5
26	5.9	5.7	6.0	e6.0	6.9	7.9	6.7	5.9	4.6	e3.8	4.2	4.4
27	5.9	5.7	6.2	e6.0	6.4	8.1	6.0	5.7	4.6	e3.9	4.1	4.3
28	6.4	5.7	6.0	e6.0	6.4	8.4	6.3	5.2	5.7	e4.4	4.0	4.4
29	6.5	6.3	6.0	e6.0	---	8.7	6.6	4.9	5.7	e4.3	4.3	4.6
30	6.9	6.8	5.9	e6.0	---	9.1	7.0	5.0	5.7	e4.3	4.3	4.5
31	6.9	---	5.9	e6.0	---	9.5	---	7.4	---	e4.3	4.1	---
TOTAL	198.0	175.6	216.5	185.8	171.8	253.3	269.7	240.2	156.0	144.4	134.6	126.1
MEAN	6.39	5.85	6.98	5.99	6.14	8.17	8.99	7.75	5.20	4.66	4.34	4.20
MAX	7.1	6.8	18	6.8	6.9	9.5	13	10	7.1	5.7	4.8	4.6
MIN	5.9	5.3	5.4	5.7	5.7	6.3	6.0	4.9	4.3	3.8	4.0	4.0
AC-FT	393	348	429	369	341	502	535	476	309	286	267	250

e Estimated.



11239300 NORTH FORK STEVENSON CREEK AT PERIMETER ROAD, NEAR BIG CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.54	5.79	7.17	5.62	5.90	12.8	25.2	16.6	9.66	5.57	4.69	4.81
MAX	6.39	9.75	14.1	6.98	8.08	33.8	53.9	49.5	26.3	8.44	5.60	6.66
(WY)	1994	1992	1992	1993	1993	1993	1992	1993	1993	1993	1992	1993
MIN	3.65	3.80	4.29	4.59	3.89	7.15	8.99	5.80	4.66	4.00	4.08	4.14
(WY)	1991	1993	1993	1992	1991	1991	1994	1990	1989	1989	1989	1991

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1989 - 1994			
ANNUAL TOTAL	6585.3				2272.0							
ANNUAL MEAN	18.0				6.22							
HIGHEST ANNUAL MEAN									9.55			
LOWEST ANNUAL MEAN									17.4			
HIGHEST DAILY MEAN	120				18				5.57			
LOWEST DAILY MEAN	3.5				3.8				209			
ANNUAL SEVEN-DAY MINIMUM	4.0				3.9				1.6			
INSTANTANEOUS PEAK FLOW					19				2.0			
INSTANTANEOUS PEAK STAGE					2.55				261			
ANNUAL RUNOFF (AC-FT)	13060				4510				4.62			
10 PERCENT EXCEEDS	48				8.7				6920			
50 PERCENT EXCEEDS	7.2				5.9				16			
90 PERCENT EXCEEDS	5.5				4.2				5.6			
									4.0			

## SAN JOAQUIN RIVER BASIN

11239500 SHAVER LAKE NEAR BIG CREEK, CA

LOCATION.--Lat 37°08'41", long 119°18'06", in SW 1/4 SE 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, near center of dam on Stevenson Creek, 5.2 mi southwest of town of Big Creek.

DRAINAGE AREA.--29.1 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1909 to current year. Prior to January 1927, monthly contents only, published in WSP 1315-A; January 1927 to September 1931, published in WSP 721. Maximum and minimum daily contents (water years 1928-39) summarized in WSP 881. Prior to 1960, maximum and minimum daily contents were published.

REVISED RECORDS.--WSP 1565: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rockfill dam a short distance upstream at different datum.

REMARKS.--Storage began prior to 1905. Original lake formed by rockfill dam, usable capacity, 5,500 acre-ft. Water diverted by Fresno Flume and Lumber Co.'s Flumes Nos. 1 and 2 beginning prior to 1907 and discontinued July 7, 1920. Present lake formed by concrete-arch dam; dam completed Nov. 18, 1927. Usable capacity of present lake, 135,568 acre-ft between elevations 5,225 ft, trash-rack foundation, and 5,370.13 ft, crest of spillway. Additional storage of 92 acre-ft is not available for release. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) via Huntington-Shaver Conduit and Eastwood Powerplant (station 11238250). Water is released for power development in Big Creek powerplants. See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 135,897 acre-ft, July 5, 1946, Aug. 4, 1978; maximum elevation, 5,370.28 ft, Aug. 4, 1978; minimum contents, 652 acre-ft, Mar. 7, 1942, elevation, 5,248.38 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 123,799 acre-ft, Nov. 5, elevation, 5,364.63 ft; minimum, 80,355 acre-ft, Sept. 30, elevation, 5,342.13 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated Oct. 1, 1967)

5,245	379	5,270	4,748	5,320	46,797
5,250	700	5,280	9,189	5,330	60,942
5,255	1,254	5,290	15,598	5,340	76,741
5,260	2,070	5,300	24,004	5,350	94,568
5,265	3,206	5,310	34,455	5,371	137,476

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120164	122352	112758	94398	90008	91450	83426	90892	89053	95902	93700	84344
2	119729	123464	111928	93851	89861	91022	83601	91134	89567	96130	93265	83937
3	119460	123631	111040	93303	89769	90633	83778	91078	90229	96092	93020	83619
4	119087	123778	111121	92774	89861	90210	83778	91134	90008	96073	92531	83252
5	119398	123799	111182	92289	89806	89898	83937	90929	89604	96073	92252	82920
6	119812	123610	110637	92009	89843	89567	84220	91301	89494	95882	92140	82553
7	119688	123401	109792	91618	90155	89126	84503	91320	89255	95806	92102	82763
8	119294	122981	108770	91190	90119	88761	84875	91227	89347	95749	91711	82868
9	118797	122834	108389	90866	90119	88416	85211	90929	89512	95844	91432	82344
10	118859	122519	107412	90505	90155	88089	85531	91115	89659	95578	90985	82134
11	118652	122331	107174	90229	89880	87563	85872	91078	89457	95254	90560	81683
12	119046	122143	107074	89990	89769	87163	86607	91227	90210	95540	90174	81527
13	119149	121789	106537	89953	89604	86804	87037	91096	90985	95768	90229	81045
14	119729	121497	106140	89769	89218	86410	87435	91264	91674	96035	89218	80838
15	119398	121247	105627	89861	89622	85998	87708	91059	92550	96016	88997	80855
16	119087	120997	105054	89714	89733	85621	88107	91041	93303	96054	88834	81027
17	118756	120330	104324	89714	90596	85317	88362	91003	94190	95940	88507	80648
18	118839	119874	103913	89512	90966	84963	89053	90929	95006	95806	88343	80734
19	119025	119916	102857	89733	91320	84450	88943	90174	95806	95425	88398	80924
20	119377	119501	101883	89475	91767	83972	89071	90063	95768	95044	88725	81114
21	120475	119232	100971	89549	91749	83496	89016	89788	95749	95749	89163	80924
22	121205	118922	100043	89659	92028	83287	89291	89071	95844	95559	88779	80786
23	120455	118445	99369	90008	92438	82903	89347	89457	95749	95444	88634	81062
24	120081	117909	98753	89751	92680	83339	89788	89144	95749	95387	88452	81165
25	119750	117148	98349	89714	92382	83095	90119	88797	96225	95330	87726	81183
26	119336	116366	97870	89916	92345	83357	90247	88507	96378	95120	87345	80683
27	119377	115548	97277	90449	92419	83479	90358	88452	96359	94949	86858	80976
28	119999	114853	96894	90284	91916	83444	89916	87980	96111	94816	86231	80855
29	120185	114159	96302	90210	---	83531	90284	87835	95997	94587	85711	80562
30	121018	113347	95330	90100	---	83322	90394	88198	95921	94190	85246	80355
31	121643	---	94739	90174	---	83339	---	88416	---	94020	84804	---
MAX	121643	123799	112758	94398	92680	91450	90394	91320	96378	96130	93700	84344
MIN	118652	113347	94739	89475	89218	82903	83426	87835	89053	94020	84804	80355
a	5363.60	5359.57	5350.09	5347.65	5348.59	5343.85	5347.77	5346.69	5350.71	5349.71	5344.68	5342.13
b	+1458	-8296	-18608	-4565	+1742	-8577	+7055	-1978	+7505	-1901	-9216	-4449

CAL YR 1993 b +51882

WTR YR 1994 b -39830

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11241500 STEVENSON CREEK AT SHAVER LAKE, CA

LOCATION.--Lat 37°08'41", long 119°18'27", in NE 1/4 SW 1/4 sec.13, T.9 S., R.24 E., Fresno County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 400 ft downstream from Hwy 168, 1,600 ft downstream from Shaver Lake Dam, 2.6 mi north of town of Shaver Lake, and 5.1 mi southwest of town of Big Creek.

DRAINAGE AREA.--29.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1916 to August 1919, October 1919 to September 1920, May 1922 to September 1928, and October 1986 to current year. Prior to October 1986, published as "at Shaver."

GAGE.--Water-stage recorder, Parshall flume, and concrete control. Elevation of gage is 5,200 ft above sea level, from topographic map. See WSP 1315-A for history of changes prior to October 1986.

REMARKS.--No estimated daily discharges. Flow regulated by Shaver Lake (station 11239500). Flow diverted into basin through Eastwood Powerplant (station 11238250). Diversion to Big Creek Powerplant No. 2A (station 11238400) bypasses station and returns to Big Creek. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft<sup>3</sup>/s, Nov. 27, 1926, gage height, 3.65 ft, site and datum then in use; maximum gage height, 7.64 ft, Apr. 26, 1993; no flow at times in 1924, 1925, 1927.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.8 ft<sup>3</sup>/s, Oct. 6, gage height, 3.85 ft; minimum daily, 2.1 ft<sup>3</sup>/s, several days in January.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.7	3.8	3.7	2.3	2.7	3.7	3.9	3.3	3.2	3.4	3.3
2	3.9	3.7	3.7	3.7	2.3	2.7	3.7	3.8	3.3	3.2	3.4	3.3
3	3.9	3.7	3.7	3.7	2.3	2.7	3.7	3.8	3.3	3.2	3.4	3.3
4	3.9	3.7	3.7	3.7	2.3	2.7	3.7	3.8	3.3	3.2	3.4	3.3
5	3.8	3.7	3.7	3.3	2.4	2.8	3.7	3.8	3.3	3.2	3.4	3.3
6	4.1	3.7	3.7	2.2	2.4	2.8	3.7	3.8	3.3	3.2	3.4	3.3
7	4.3	3.7	3.7	2.1	2.7	2.7	3.7	3.9	3.3	3.2	3.4	3.3
8	3.5	3.7	3.7	2.1	2.6	2.7	3.8	3.9	3.2	3.2	3.4	3.3
9	3.5	3.7	3.7	2.1	2.6	2.7	3.9	3.8	3.2	3.2	3.4	3.3
10	3.5	3.7	3.7	2.1	2.5	2.7	3.8	3.8	3.2	3.2	3.3	3.3
11	3.6	3.8	3.8	2.1	2.5	2.8	3.8	3.7	3.2	3.2	3.3	3.3
12	3.6	3.8	3.8	2.1	2.5	2.8	3.8	3.7	3.2	3.2	3.3	3.3
13	3.5	3.7	3.8	2.1	2.5	2.7	3.8	3.7	3.1	3.2	3.3	3.3
14	3.5	3.7	3.8	2.2	2.4	2.7	3.8	3.7	3.2	3.3	3.3	3.3
15	3.5	3.7	3.8	2.2	2.4	2.7	3.8	3.7	3.2	3.1	3.3	3.3
16	3.7	3.7	3.8	2.2	2.4	2.7	3.8	3.8	3.2	3.1	3.3	3.4
17	3.6	3.7	3.8	2.2	3.3	2.7	3.8	3.8	3.2	3.1	3.4	3.4
18	3.5	3.7	3.7	2.2	2.8	2.7	3.8	3.8	3.3	3.1	3.3	3.4
19	3.5	3.7	3.7	2.2	2.6	2.7	3.8	3.8	3.3	3.1	3.3	3.4
20	3.6	3.7	3.7	2.2	2.6	2.7	3.8	3.8	3.2	3.1	3.3	3.4
21	3.6	3.7	3.7	2.2	2.6	2.6	3.8	3.7	3.2	3.1	3.3	3.4
22	3.6	3.7	3.7	2.2	2.6	2.6	3.8	3.8	3.2	3.1	3.3	3.3
23	3.6	3.7	3.7	2.3	2.6	2.6	3.8	3.7	3.2	3.1	3.3	3.4
24	3.6	3.7	3.7	2.3	2.6	2.6	3.9	3.7	3.2	3.1	3.3	3.4
25	3.7	3.7	3.7	2.3	2.7	2.6	3.9	3.7	3.2	3.1	3.3	3.4
26	3.6	3.7	3.7	2.3	2.7	2.6	3.9	3.5	3.2	3.1	3.3	3.3
27	3.7	3.7	3.7	2.3	2.7	2.6	4.0	3.3	3.2	3.3	3.3	3.3
28	3.7	3.7	3.7	2.3	2.7	2.6	4.0	3.3	3.2	3.3	3.3	3.5
29	3.7	3.9	3.7	2.3	---	2.6	4.0	3.3	3.2	3.4	3.3	3.4
30	3.7	4.0	3.7	2.3	---	2.6	3.9	3.3	3.2	3.4	3.3	3.4
31	3.7	---	3.7	2.3	---	2.9	---	3.4	---	3.4	3.3	---
TOTAL	114.1	111.7	115.5	75.5	71.6	83.3	114.4	114.5	96.8	98.9	103.3	100.3
MEAN	3.68	3.72	3.73	2.44	2.56	2.69	3.81	3.69	3.23	3.19	3.33	3.34
MAX	4.3	4.0	3.8	3.7	3.3	2.9	4.0	3.9	3.3	3.4	3.4	3.5
MIN	3.5	3.7	3.7	2.1	2.3	2.6	3.7	3.3	3.1	3.1	3.3	3.3
AC-FT	226	222	229	150	142	165	227	227	192	196	205	199
a	13240	19940	29560	18710	14910	15770	18660	22190	16290	25560	27180	25400

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

## 11241500 STEVENSON CREEK AT SHAVER LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1928, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.54	8.14	7.53	5.13	12.9	38.7	66.8	59.8	20.3	5.73	4.76	3.51
MAX	9.76	45.5	33.5	15.1	40.7	147	245	203	61.3	16.5	12.7	10.9
(WY)	1917	1927	1927	1920	1927	1917	1917	1922	1922	1920	1927	1927
MIN	.48	.30	.13	.15	.25	.37	.46	.27	.070	.000	.000	.000
(WY)	1926	1928	1928	1928	1928	1924	1928	1928	1924	1924	1924	1924

## SUMMARY STATISTICS

## WATER YEARS 1917 - 1928

ANNUAL TOTAL	
ANNUAL MEAN	19.6
HIGHEST ANNUAL MEAN	61.9
LOWEST ANNUAL MEAN	.76
HIGHEST DAILY MEAN	854
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
ANNUAL RUNOFF (AC-FT)	14170
10 PERCENT EXCEEDS	46
50 PERCENT EXCEEDS	4.5
90 PERCENT EXCEEDS	.20

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.58	3.28	2.73	2.71	2.80	3.05	6.71	17.2	35.2	26.8	3.50	3.49
MAX	3.80	3.84	3.73	3.20	3.34	3.68	28.4	112	258	191	4.31	3.93
(WY)	1987	1988	1994	1993	1991	1991	1993	1993	1993	1993	1993	1993
MIN	3.31	2.92	2.22	2.40	2.39	2.58	3.43	3.45	3.23	3.19	3.26	3.34
(WY)	1993	1993	1990	1992	1990	1990	1989	1992	1994	1994	1988	1994

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	18857.5	1199.9	
ANNUAL MEAN	51.7	3.29	9.28
HIGHEST ANNUAL MEAN			51.5
LOWEST ANNUAL MEAN			3.06
HIGHEST DAILY MEAN	516	Jun 21	516
LOWEST DAILY MEAN	1.9	Jan 1	1.2
ANNUAL SEVEN-DAY MINIMUM	2.6	Jan 1	1.9
INSTANTANEOUS PEAK FLOW			590
INSTANTANEOUS PEAK STAGE			7.64
ANNUAL RUNOFF (AC-FT)	37400	2380	6720
TOTAL DIVERSION (AC-FT) a	359100	245400	
10 PERCENT EXCEEDS	264	3.8	3.8
50 PERCENT EXCEEDS	3.8	3.3	3.4
90 PERCENT EXCEEDS	2.9	2.5	2.6

a Diversion, in acre-feet, to Big Creek Powerplant No. 2A, provided by Southern California Edison Co.

## 11241950 REDINGER LAKE NEAR AUBERRY, CA

LOCATION.--Lat 37°08'42", long 119°26'58", in NE 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at intake structure on Dam No. 7 on San Joaquin River, 4.2 mi northeast of Auberry.

DRAINAGE AREA.--1,295 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1950 to current year. Prior to October 1965, monthend contents only, published in WSP 1930.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Southern California Edison Co.).

REMARKS.--Lake is formed by a concrete dam; storage began Nov. 19, 1950. Usable capacity, 26,120 acre-ft between elevations 1,320.00 ft, invert of tunnel, and 1,403.00 ft, top of radial gates. Additional storage of 8,914 acre-ft not available for release. Water is used for power development in Big Creek Powerplant No. 4 (station 11246530). See schematic diagram of lower San Joaquin River basin. Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,586 acre-ft, Aug. 5, 1978, elevation, 1,404.00 ft; minimum since appreciable storage was attained, 5,985 acre-ft, Nov. 22, 1981, elevation, 1,346.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,980 acre-ft, Oct. 19, elevation, 1,402.70 ft; minimum, 7,920 acre-ft, Sept. 30, elevation, 1,354.02 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Southern California Edison Co., dated Oct. 27, 1950)

1,340	4,284	1,380	16,455
1,350	6,809	1,390	20,427
1,360	9,651	1,400	24,748
1,370	12,858	1,405	27,058

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8347	25438	24372	25273	24663	25046	24658	25073	24264	24893	25155	24681
2	8868	24780	24149	25177	24390	24748	24327	24789	24843	25105	25146	25019
3	9139	24708	24412	25191	24025	24703	24430	24753	25451	24920	25250	25214
4	10246	24834	24739	25314	24131	24703	23746	23923	24979	24632	24614	25269
5	11883	24582	24834	25259	24153	24699	23869	23281	25301	24528	24011	24933
6	12944	24906	24614	25319	24207	24884	23596	23377	25488	24167	23834	24211
7	15219	25060	24336	25146	24029	24811	23706	23923	25296	24811	23737	23967
8	17094	24667	24528	25069	24242	24775	23838	24122	25259	24979	24694	23478
9	19629	24775	24658	25060	24176	24951	23909	24349	25410	25078	25214	22866
10	22245	24153	24658	25119	24412	24929	23967	24838	25488	25141	25566	22378
11	24902	23883	24551	25365	24784	25132	24358	25282	25465	25323	25689	21996
12	25488	23495	24318	25351	24816	24911	24658	25319	25209	25957	25269	21502
13	25346	23645	23967	25028	24569	24708	25046	24843	25397	25611	25046	20882
14	25319	23750	23940	24735	24520	24457	25429	24712	25246	25731	25287	19948
15	25515	23552	24394	24744	24546	24614	25342	24744	25433	25823	25492	19332
16	25689	23500	23998	24690	24038	24412	24997	24915	25168	25625	25456	18771
17	25101	23750	23706	23940	24087	24717	25024	25096	25082	25547	24951	17997
18	25639	23883	23522	24256	24273	24915	24979	25264	24870	25001	25200	17516
19	25980	24145	23671	24511	24470	25037	25182	25378	25110	24520	25374	16859
20	25584	24318	23530	24578	24681	25259	24888	25287	25465	24861	25511	16089
21	25069	24466	23416	24546	24748	25406	24825	25232	25488	25250	25625	15296
22	25333	24425	23816	24502	24847	25291	25060	25024	25447	25064	25433	14581
23	25310	24247	24176	24609	24879	24956	24992	25168	25064	24960	25291	14115
24	25209	24251	23963	24739	24744	25105	24825	25164	24434	25374	25064	13421
25	25474	24011	23958	24685	24838	25383	24730	25474	24578	25611	24834	12131
26	25773	24385	24087	24699	24911	25314	25092	24739	24703	25470	24775	11352
27	25652	25073	24233	24439	25024	25287	25132	23649	24784	25128	24807	10289
28	25731	25073	24363	24457	25137	25073	25051	24060	25051	25296	24318	9765
29	25934	25051	24555	24327	---	24979	25223	24694	25028	25543	24233	8570
30	25429	24466	24708	24421	---	24721	25351	24988	24843	25731	24403	7920
31	25584	---	24699	24623	---	24636	---	23601	---	25392	24600	---
MAX	25980	25438	24834	25365	25137	25406	25429	25474	25488	25957	25689	25269
MIN	8347	23495	23416	23940	24025	24412	23596	23281	24264	24167	23737	7920
a	1401.84	1399.37	1399.89	1399.72	1400.86	1399.75	1401.33	1397.42	1400.21	1401.42	1399.67	1354.02
	+17300	-1118	+233	-76	+514	-501	+715	-1750	+1242	+549	-792	-16680

CAL YR 1993 b -18

WTR YR 1994 b -364

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA

LOCATION.--Lat 37°08'40", long 119°27'13", in SW 1/4 SW 1/4 sec.15, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,000 ft downstream from Redinger Lake Dam, 0.4 mi upstream from Willow Creek, and 4.2 mi northeast of Auberry.

DRAINAGE AREA.--1,295 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1951 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,175.54 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--No estimated daily discharges. Flow regulated by Redinger Lake (station 11241950). Most of the flow, since June 1951, is diverted at Redinger Lake to Big Creek No. 4 Powerplant (station 11246530). See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,200 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 54.2 ft, from floodmarks, from rating curve extended above 7,000 ft<sup>3</sup>/s on basis of computed flow over dam; no flow Sept. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft<sup>3</sup>/s, Aug. 24, gage height, 4.53 ft; minimum daily, 8.4 ft<sup>3</sup>/s, Feb. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	23	28	24	21	16	11	16	22	22	23	24
2	21	23	28	24	22	15	11	16	21	22	23	24
3	24	23	28	24	30	11	11	16	21	23	23	24
4	24	23	28	24	22	11	11	16	22	23	23	24
5	25	23	28	23	22	11	11	16	22	23	23	24
6	25	23	27	21	22	11	11	16	22	23	23	24
7	26	23	22	21	22	11	11	16	22	23	23	24
8	23	23	22	20	22	11	11	16	22	23	23	24
9	22	23	22	21	22	10	11	16	22	23	24	24
10	22	23	22	21	22	9.9	11	16	22	23	24	23
11	23	23	22	21	22	9.4	13	16	22	23	24	23
12	23	23	22	22	22	10	14	16	22	23	24	24
13	23	23	22	22	22	10	14	16	22	23	24	24
14	23	23	22	21	22	10	14	16	22	23	24	23
15	23	23	22	21	22	10	14	16	22	23	24	24
16	23	23	22	21	22	12	14	16	22	23	24	23
17	23	23	23	21	23	11	14	16	22	23	24	23
18	23	23	23	21	25	11	14	16	21	23	24	23
19	24	23	23	21	25	11	14	16	21	23	24	23
20	23	23	25	21	15	11	14	16	21	23	24	23
21	23	23	24	21	8.4	11	14	16	21	23	24	22
22	23	23	24	21	8.9	11	18	16	22	23	24	22
23	23	23	24	21	14	11	16	18	22	23	24	23
24	23	23	24	21	15	11	16	19	21	23	25	25
25	23	23	24	21	15	11	16	19	21	23	25	27
26	23	23	24	21	15	11	16	19	22	23	25	26
27	23	18	23	21	15	11	16	18	22	23	25	26
28	23	20	23	21	14	11	16	18	22	23	25	26
29	23	29	23	21	---	11	16	18	22	23	25	26
30	23	28	23	21	---	11	16	19	22	23	25	25
31	23	---	24	21	---	11	---	19	---	23	25	---
TOTAL	715	693	741	666	552.3	343.3	409	519	652	711	744	720
MEAN	23.1	23.1	23.9	21.5	19.7	11.1	13.6	16.7	21.7	22.9	24.0	24.0
MAX	26	29	28	24	30	16	18	19	22	23	25	27
MIN	19	18	22	20	8.4	9.4	11	16	21	22	23	22
AC-FT	1420	1370	1470	1320	1100	681	811	1030	1290	1410	1480	1430
a	82090	58880	58160	43960	45270	81670	101000	123000	113200	103200	96060	80640

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

## 11242000 SAN JOAQUIN RIVER ABOVE WILLOW CREEK, NEAR AUBERRY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	19.9	19.9	115	69.2	103	129	396	1585	2069	713	63.9	21.2
MAX	25.9	76.2	3501	679	1255	1456	2739	10410	12700	6141	1343	33.9
(WY)	1990	1983	1956	1980	1986	1983	1951	1969	1983	1983	1983	1952
MIN	8.15	8.55	5.66	3.83	3.37	2.86	3.27	4.76	8.59	13.3	16.5	2.79
(WY)	1983	1985	1966	1965	1966	1968	1955	1971	1971	1979	1984	1951

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1951 - 1994			
ANNUAL TOTAL	309154.9				7465.6							
ANNUAL MEAN	847				20.5				435			
HIGHEST ANNUAL MEAN									2409			
LOWEST ANNUAL MEAN									11.4			
HIGHEST DAILY MEAN	7340				30				47700			
LOWEST DAILY MEAN	5.1				8.4				.00			
ANNUAL SEVEN-DAY MINIMUM	5.1				9.9				.38			
INSTANTANEOUS PEAK FLOW					57				73200			
INSTANTANEOUS PEAK STAGE					4.53				54.20			
ANNUAL RUNOFF (AC-FT)	613200				14810				315200			
TOTAL DIVERSION (AC-FT) a	1749000				987100							
10 PERCENT EXCEEDS	4050				24				978			
50 PERCENT EXCEEDS	24				22				20			
90 PERCENT EXCEEDS	6.2				11				4.7			

a Diversion, in acre-feet, to Big Creek No. 4 Powerplant, provided by Southern California Edison Co.

## 11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA

LOCATION.--Lat 37°23'52", long 119°33'55", in SW 1/4 NE 1/4 sec.21, T.6 S., R.22 E., Madera County, Hydrologic Unit 18040006, on right bank at road bridge 0.6 mi downstream from Soquel Campground, 3.0 mi upstream from Chilkoot Creek, and 4.7 mi southeast of Sugar Pine.

DRAINAGE AREA.--16.9 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1965 to current year.

REVISED RECORDS.--WDR CA-72-2: 1970, 1971. WDR CA-85-3: 1983, 1984(P). WDR CA-93-3: 1992.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,200 ft above sea level, from topographic map.

REMARKS.--Records fair except for period of estimated daily discharge which is poor. No storage upstream from station. Madera Irrigation District has water rights to divert up to 50 ft<sup>3</sup>/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River basin) from October through July each year. See schematic diagram of lower San Joaquin River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft<sup>3</sup>/s, Jan. 13, 1980, gage height, 7.41 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of a step-backwater survey; minimum daily, 0.27 ft<sup>3</sup>/s, Oct. 4, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	unknown	*108	*3.78				

Minimum daily, 1.4 ft<sup>3</sup>/s, several days August and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	4.1	11	5.8	5.8	14	19	e23	e21	e6.1	2.4	1.4
2	4.5	4.0	9.6	5.9	5.5	16	20	e26	e21	e5.6	2.4	1.4
3	4.6	4.1	8.4	6.2	5.6	16	21	e29	e17	e5.1	2.4	1.4
4	4.3	4.0	5.8	7.4	5.5	18	18	e31	e13	e4.9	2.4	1.8
5	4.5	4.0	5.6	11	5.5	24	17	e30	e13	e4.6	2.3	1.7
6	4.9	4.0	5.9	7.1	5.5	21	17	e30	e13	e4.5	2.2	1.6
7	4.7	4.0	5.2	6.3	11	19	15	e31	e13	e4.2	1.8	1.7
8	4.6	3.9	5.1	5.9	9.6	19	16	e30	e14	e4.3	1.7	1.6
9	4.6	3.8	5.1	5.9	8.7	19	19	e32	e14	e4.3	1.6	1.4
10	4.4	3.8	5.1	5.7	8.4	19	17	e36	e14	e4.1	1.7	1.4
11	5.0	4.8	6.5	5.6	7.6	18	16	e37	e14	e4.0	1.7	1.5
12	4.7	5.8	8.4	5.5	7.1	16	16	e36	e13	e4.0	1.6	1.7
13	4.5	5.1	7.0	5.4	7.2	16	17	e35	e12	e3.7	1.5	2.1
14	4.6	5.0	6.5	5.4	7.2	18	21	e32	e13	e3.5	1.4	1.9
15	8.5	4.8	6.1	5.3	6.9	20	27	e27	e11	e3.0	1.4	2.0
16	7.7	4.9	5.8	5.2	6.8	20	26	e23	e9.0	e2.9	1.4	1.8
17	7.7	4.8	5.8	5.1	14	18	34	e23	e8.0	e2.9	1.5	1.7
18	6.7	4.8	5.7	5.3	12	19	35	e24	e7.9	e2.9	1.8	1.5
19	5.9	4.5	5.8	5.3	12	20	41	e24	e8.2	e2.8	1.7	1.6
20	5.6	4.3	5.8	5.0	11	17	40	e23	e8.2	e2.8	1.6	1.7
21	5.4	4.3	6.3	4.8	10	16	35	e22	e8.6	e2.9	1.5	1.7
22	4.9	4.9	5.9	4.7	9.6	15	28	e22	e7.9	e2.7	1.4	1.6
23	4.9	4.5	5.9	8.5	9.5	13	34	e23	e7.5	e2.7	1.9	1.7
24	4.7	4.5	5.8	6.4	10	12	27	e24	e7.2	e2.7	1.9	2.3
25	4.5	4.3	6.0	7.7	11	13	26	e24	e7.0	e2.5	1.9	2.1
26	4.4	4.3	6.4	6.2	11	14	29	e24	e6.9	e2.3	1.9	2.1
27	4.5	4.3	7.0	5.9	12	14	e26	e23	e6.8	2.6	1.8	2.0
28	4.4	4.6	6.3	5.3	12	15	e24	e22	e6.9	2.5	1.8	2.6
29	4.3	8.8	5.9	5.7	---	15	e23	e22	e6.6	2.5	1.4	3.9
30	4.2	17	5.7	5.8	---	16	e23	e27	e6.2	2.5	1.8	3.3
31	4.1	---	5.6	5.9	---	17	---	e23	---	2.5	1.8	---
TOTAL	157.1	150.0	197.0	187.2	248.0	527	727	838	328.9	108.6	55.6	56.2
MEAN	5.07	5.00	6.35	6.04	8.86	17.0	24.2	27.0	11.0	3.50	1.79	1.87
MAX	8.5	17	11	11	14	24	41	37	21	6.1	2.4	3.9
MIN	4.1	3.8	5.1	4.7	5.5	12	15	22	6.2	2.3	1.4	1.4
AC-FT	312	298	391	371	492	1050	1440	1660	652	215	110	111

e Estimated.



## 11242400 NORTH FORK WILLOW CREEK NEAR SUGAR PINE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.60	9.08	13.7	23.9	27.1	36.9	46.8	70.6	46.1	14.3	5.39	4.24
MAX	17.8	43.0	69.2	147	178	151	176	207	214	109	26.9	14.3
(WY)	1983	1984	1984	1980	1986	1986	1982	1969	1983	1983	1983	1978
MIN	.41	1.63	1.20	1.84	2.07	2.04	1.78	2.40	1.84	.99	.66	.38
(WY)	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1965 - 1994			
ANNUAL TOTAL	18077.0				3580.6							
ANNUAL MEAN	49.5				9.81				25.2			
HIGHEST ANNUAL MEAN									82.7			
LOWEST ANNUAL MEAN									1.57			
HIGHEST DAILY MEAN	273				41				1360			
LOWEST DAILY MEAN	3.8				1.4				.27			
ANNUAL SEVEN-DAY MINIMUM	3.9				1.5				.29			
INSTANTANEOUS PEAK FLOW					108				2750			
INSTANTANEOUS PEAK STAGE					3.78				7.41			
ANNUAL RUNOFF (AC-FT)	35860				7100				18250			
10 PERCENT EXCEEDS	149				23				68			
50 PERCENT EXCEEDS	21				5.9				7.3			
90 PERCENT EXCEEDS	4.7				1.8				1.7			

## SAN JOAQUIN RIVER BASIN

## 11243300 BROWNS CREEK CANAL AT BASS LAKE, CA

LOCATION.--Lat 37°17'19", long 119°31'09", in SE 1/4 SW 1/4 sec.25, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 900 ft upstream from Bass Lake, and 3.0 mi southeast of town of Bass Lake.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder and concrete canal. Elevation of gage is 3,440 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Canal diverts from South Fork Willow Creek at diversion dam 1.5 mi upstream from gage, in NW 1/4 NE 1/4 sec.30, T.7 S., R.23 E. Flow enters Bass Lake for power development in San Joaquin River powerplants. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 86 ft<sup>3</sup>/s, Mar. 8, 1989; no flow at times in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.28	7.6	3.1	5.1	42	30	50	14	.46	.00	.00
2	.24	.12	5.0	3.0	4.6	41	32	53	11	1.3	.00	.00
3	.10	.07	3.6	3.0	4.2	38	31	54	9.6	.86	.00	.00
4	.04	.32	3.0	4.4	4.1	39	28	52	8.8	.78	.00	.00
5	.00	.27	2.5	17	4.0	46	25	49	8.2	.87	.00	.00
6	.00	.10	1.8	8.1	3.9	44	24	49	8.0	.61	.00	.00
7	.00	.03	1.7	5.8	14	38	23	56	8.0	.55	.00	.00
8	.00	.00	1.6	4.7	13	41	24	50	7.5	.43	.00	.00
9	.00	.00	1.6	4.1	10	42	29	44	6.7	.26	.00	.00
10	.00	.00	1.5	3.5	10	43	26	39	6.0	.08	.00	.00
11	.00	1.3	3.4	3.8	9.1	38	28	37	5.3	.00	.00	.00
12	.00	5.5	5.5	3.8	7.4	33	28	36	5.0	.00	.00	.00
13	.00	3.6	5.7	2.9	7.7	34	26	33	4.5	.00	.00	.00
14	.06	2.8	6.4	2.6	7.9	41	27	29	3.9	.00	.00	.00
15	1.2	3.1	5.0	2.6	9.2	42	28	25	3.6	.00	.00	.00
16	4.1	3.0	4.1	2.5	8.3	41	29	25	3.0	.00	.00	.00
17	6.0	2.3	4.0	2.4	32	35	28	24	2.9	.00	.00	.00
18	3.9	1.8	3.3	2.4	20	36	29	27	2.7	.00	.00	.00
19	2.3	1.7	3.1	2.3	17	36	29	26	2.3	.00	.00	.00
20	1.6	1.6	3.1	2.3	15	31	29	23	1.7	.00	.00	.00
21	1.3	1.6	3.2	2.1	14	30	28	21	1.5	.00	.00	.00
22	1.2	1.6	3.3	2.0	13	30	25	18	1.1	.00	.00	.00
23	.99	1.9	3.1	6.0	14	25	25	17	.88	.00	.00	.00
24	.96	1.6	3.1	7.2	17	23	31	16	.70	.00	.00	.00
25	.92	1.2	3.3	6.0	22	25	31	15	.54	.00	.00	.00
26	.69	1.2	3.7	6.0	25	24	32	14	.37	.00	.00	.00
27	.75	1.3	4.8	5.6	25	25	31	13	.29	.00	.00	.00
28	.46	1.3	4.7	4.9	28	27	33	12	.38	.00	.00	.00
29	.49	3.6	4.1	4.7	---	27	39	11	.34	.00	.00	.00
30	.45	26	3.6	5.1	---	28	45	11	.21	.00	.00	.00
31	.44	---	3.1	5.4	---	30	---	24	---	.00	.00	---
TOTAL	29.39	69.19	113.5	139.3	364.5	1075	873	953	129.01	6.20	0.00	0.00
MEAN	.95	2.31	3.66	4.49	13.0	34.7	29.1	30.7	4.30	.20	.000	.000
MAX	6.0	26	7.6	17	32	46	45	56	14	1.3	.00	.00
MIN	.00	.00	1.5	2.0	3.9	23	23	11	.21	.00	.00	.00
AC-FT	58	137	225	276	723	2130	1730	1890	256	12	.00	.00

## 11243300 BROWNS CREEK CANAL AT BASS LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.37	3.72	5.22	14.5	22.7	45.0	51.3	34.9	14.5	3.88	.97	.67
MAX	6.53	5.89	11.2	53.5	56.7	72.7	77.2	76.3	52.7	18.8	7.52	2.87
(WY)	1990	1989	1993	1993	1993	1993	1993	1993	1993	1993	1993	1989
MIN	.000	1.74	1.07	3.01	2.87	25.3	29.1	14.1	3.80	.032	.000	.000
(WY)	1989	1991	1991	1991	1991	1991	1994	1987	1987	1987	1987	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	12866.98				3752.09							
ANNUAL MEAN	35.3				10.3				16.6			
HIGHEST ANNUAL MEAN									36.1			
LOWEST ANNUAL MEAN									10.3			
HIGHEST DAILY MEAN	80				56				86			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				.00			
ANNUAL RUNOFF (AC-FT)	25520				7440				12020			
10 PERCENT EXCEEDS	77				32				58			
50 PERCENT EXCEEDS	23				3.1				5.4			
90 PERCENT EXCEEDS	1.2				.00				.00			

## SAN JOAQUIN RIVER BASIN

11243400 BASS LAKE NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'33", long 119°31'43", in SE 1/4 NE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, at outlet tower at dam on North Fork Willow Creek, 2.2 mi southeast of town of Bass Lake, and 5 mi north of North Fork.

DRAINAGE AREA.--50.4 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1911 to September 1982 (monthend contents only), October 1982 to current year. Bass Lake was formerly called Crane Valley Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir formed by earthfill and rockfill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations 3,280.22 ft, invert of outlet conduit No. 3, and 3,376.40 ft, top of spillway gates. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley Powerplant below dam for use in three small powerplants before being discharged into Kerckhoff Reservoir station 11246650) at Wishon Powerplant. Water is diverted from South Fork Willow Creek via Browns Creek ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 ft<sup>3</sup>/s from North Fork Willow Creek through Soquel Ditch into Nelder Creek (Fresno River basin) from October through July each year. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 45,960 acre-ft, June 17, 1923, elevation, 3,376.8 ft; minimum, 35 acre-ft, Nov. 19, 1953, elevation, 3,270.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 40,568 acre-ft, June 20, elevation, 3,372.15 ft; minimum, 22,379 acre-ft, Dec. 23, elevation, 3,353.46 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated March 1937)

3,280	290	3,310	3,404	3,340	13,227	3,370	38,218
3,290	890	3,320	5,584	3,350	19,663	3,376.4	45,410
3,300	1,896	3,330	8,717	3,360	28,121		

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29540	23022	23688	22620	23722	26464	30456	34839	39908	40431	37738	32400
2	29540	23047	23739	22644	23739	26599	30590	35049	39973	40409	37695	32092
3	29531	23047	23748	22661	23765	26752	30696	35270	40006	40398	37662	31816
4	29531	23047	23773	22720	23799	26905	30802	35525	40049	40365	37619	31542
5	29521	23047	23790	22795	23816	27114	30889	35759	40093	40354	37531	31248
6	29521	23056	23807	22829	23841	27324	30986	36027	40126	40344	37368	30967
7	29512	23056	23824	22863	24106	27453	31064	36318	40147	40333	37292	30686
8	29371	23064	23841	22896	24312	27610	31209	36566	40219	40311	37259	30379
9	29089	23064	23858	22921	24372	27758	31395	36793	40267	40289	37226	30072
10	28791	23064	23875	22947	24493	27944	31513	37009	40300	40267	37193	29768
11	28512	23148	24063	22963	24579	28075	31601	37237	40365	40235	37172	29465
12	28290	23199	24097	22980	24587	28186	31689	37455	40420	40203	37139	29173
13	27972	23224	24131	22997	24639	28307	31797	37673	40442	40180	37106	28865
14	27684	23250	24243	23022	24682	28474	31905	37891	40463	40147	37074	28577
15	27425	23241	24287	23047	24725	28623	32023	38044	40474	40126	37042	28279
16	26689	23249	24149	23073	24769	28763	32152	38044	40420	40104	37009	27963
17	26959	23266	23875	23098	25118	28884	32271	38338	40518	40071	36847	27656
18	26671	23283	23603	23115	25294	29005	32410	38534	40551	40038	36534	27351
19	26401	23291	23316	23131	25400	29145	32570	38698	40562	40017	36253	27232
20	26122	23308	23047	23148	25551	29258	32720	38818	40568	39864	35962	27232
21	25827	23316	22762	23164	25631	29361	32860	38916	40564	39570	35652	27205
22	25542	23341	22470	23182	25720	29474	33001	39036	40560	39232	35344	27196
23	25233	23350	22379	23266	25809	29559	33214	39134	40551	38970	35039	27178
24	24961	23367	22395	23442	25872	29654	33387	39243	40551	38654	34724	27169
25	24674	23383	22412	23484	25987	29797	33673	39319	40529	38382	34433	27151
26	24355	23392	22445	23527	26095	29882	33928	39387	40518	38065	34155	27141
27	24071	23417	22478	23569	26257	29968	34093	39450	40507	37913	33867	27132
28	23807	23425	22512	23603	26383	30063	34248	39515	40496	37880	33571	27132
29	23484	23552	22545	23620	---	30158	34443	39581	40474	37847	33265	27169
30	23182	23646	22553	23646	---	30254	34630	39722	40463	37826	32990	27160
31	23047	---	22595	23680	---	30360	---	39831	---	37804	32690	---
MAX	29540	23646	24287	23680	26383	30360	34630	39831	40568	40431	37738	32400
MIN	23047	23022	22379	22620	23722	26464	30456	34839	39908	37804	32690	27132
a	3354.26	3354.97	3353.72	3355.01	3358.10	3362.38	3366.66	3371.48	3372.06	3369.62	3364.76	3358.96
b	-6493	+599	-1051	+1085	+2703	+3977	+4270	+5201	+632	-2659	-5114	-5530

CAL YR 1993 b -4274  
WTR YR 1994 b -2380

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11243500 PACIFIC GAS &amp; ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'21", long 119°31'44", in NE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 1,000 ft downstream from Crane Valley Powerplant and Dam and 2.5 mi southeast of town of Bass Lake.

PERIOD OF RECORD.--October 1940 to current year. Prior to October 1954, published as "near Crane Valley Reservoir."

GAGE.--Water-stage recorder and concrete flume. Elevation of gage is 3,300 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Conduit diverts from Bass Lake in sec.26, T.7 S., R.22 E. Water passes through Crane Valley Powerplant, then to Powerplant No. 3, and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverts to Powerplants No. 2 and No. 1A before it enters San Joaquin River at Kerckhoff Reservoir through San Joaquin Powerplant No. 1. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 167 ft<sup>3</sup>/s, June 23, 24, 1965; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.22	.36	1.0	.80	.94	.60	.99	.85	1.2	19	.03
2	.33	.25	.36	1.0	.93	.89	.60	1.0	.71	.59	3.0	.03
3	.28	.24	.37	1.0	1.2	.80	.60	1.0	.80	.60	.94	.03
4	.24	.38	.41	1.0	.81	.80	.60	1.1	.80	.59	.46	.03
5	.24	.62	.42	1.0	.51	.80	.61	1.1	.80	.59	38	.02
6	.24	.62	.45	.77	.51	.80	.60	1.1	.80	.60	57	.03
7	.69	.60	.43	.36	.52	.63	.60	1.1	.80	.53	17	8.3
8	66	.60	.45	.64	.51	.43	.60	1.1	.80	.51	.70	49
9	149	.60	.49	1.1	.51	.36	.60	1.1	.80	.51	.30	141
10	148	.60	.43	1.0	.51	.24	.60	1.1	.80	.51	.32	143
11	148	.60	.46	1.0	.51	.25	.60	1.1	.80	.51	.36	143
12	148	.60	.43	1.0	.51	.59	.60	1.2	.80	.82	.59	142
13	148	.60	.46	.84	.51	.69	.68	1.2	.80	1.1	1.1	143
14	148	.79	.48	.43	.33	.69	.82	1.2	.80	1.1	1.1	143
15	148	.71	.31	.42	.21	.70	.87	1.1	.80	1.1	.21	143
16	148	.51	63	.43	.21	.68	.87	1.1	.53	1.1	.21	143
17	148	.30	144	.43	1.8	.64	.87	1.1	.24	1.1	72	142
18	148	.29	144	.40	3.8	.51	.91	1.1	.24	1.1	139	142
19	148	.29	144	.41	3.8	.51	.94	1.1	.24	1.1	64	53
20	147	.26	144	.46	3.8	.51	.94	1.1	1.9	74	.12	.00
21	147	.24	144	.62	3.8	.51	.94	1.1	.24	144	.06	.00
22	147	.25	144	.87	3.8	.51	.89	1.1	.63	142	.05	.00
23	147	.17	71	.87	2.1	.51	.84	1.1	1.7	142	.05	.00
24	147	.23	1.3	1.7	.21	.52	.82	.84	1.9	141	.05	.00
25	147	.26	1.3	2.3	.21	.52	.86	.60	2.0	140	.06	.30
26	147	.30	1.3	.30	.47	.75	.90	.60	1.9	140	.06	.85
27	147	.29	1.3	.30	.94	1.1	.94	.60	1.6	60	.06	.61
28	147	.35	.92	.30	.94	1.0	.94	.60	1.6	.30	.06	.36
29	147	1.6	.30	.30	---	1.0	.97	.60	1.6	.30	.06	.36
30	147	.34	.30	.30	---	.92	1.0	.60	1.6	.52	.05	.81
31	82	---	.66	.45	---	.60	---	.63	---	.94	.03	---
TOTAL	3396.38	13.71	1011.69	23.00	34.76	20.40	23.21	30.36	29.68	1000.32	416.00	1538.76
MEAN	110	.46	32.6	.74	1.24	.66	.77	.98	.99	32.3	13.4	51.3
MAX	149	1.6	144	2.3	3.8	1.1	1.0	1.2	2.0	144	139	143
MIN	.24	.17	.30	.30	.21	.24	.60	.60	.24	.30	.03	.00
AC-FT	6740	27	2010	46	69	40	46	60	59	1980	825	3050

## 11243500 PACIFIC GAS &amp; ELECTRIC CO. CONDUIT NO. 3 NEAR BASS LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	62.3	41.1	56.8	61.5	68.2	72.9	62.2	57.9	58.2	81.2	105	89.2
MAX	152	148	157	157	161	162	158	157	160	153	155	154
(WY)	1951	1984	1983	1956	1956	1956	1956	1958	1952	1983	1958	1980
MIN	.000	.000	.042	.19	.079	.12	.12	.090	.060	.52	9.43	.47
(WY)	1988	1968	1954	1954	1977	1947	1947	1977	1942	1977	1977	1987

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1941 - 1994

ANNUAL TOTAL	39332.96	7538.27	
ANNUAL MEAN	108	20.7	68.1
HIGHEST ANNUAL MEAN			128
LOWEST ANNUAL MEAN			14.4
HIGHEST DAILY MEAN	162	May 11	149
LOWEST DAILY MEAN	.00	Sep 24	.00
ANNUAL SEVEN-DAY MINIMUM	.09	Sep 21	.03
ANNUAL RUNOFF (AC-FT)	78020	14950	49310
10 PERCENT EXCEEDS	156	142	151
50 PERCENT EXCEEDS	140	.79	60
90 PERCENT EXCEEDS	.30	.24	.03

## 11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA

LOCATION.--Lat 37°17'20", long 119°31'45", in SE 1/4 SE 1/4 sec.26, T.7 S., R.22 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on right bank 1,500 ft downstream from Bass Lake Spillway and 2.5 mi southeast of town of Bass Lake.

DRAINAGE AREA.--50.8 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1940 to current year. Prior to October 1944, published as Willow Creek below Crane Valley Reservoir. October 1944 to September 1954, published as "below Crane Valley Reservoir."

GAGE.--Water-stage recorder. Broad-crested weir with V-notch Dec. 21, 1961, to Jan. 16, 1969, and since Mar. 26, 1971. Elevation of gage is 3,200 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Bass Lake (station 11243400) 1,500 ft upstream and by diversion into Pacific Gas & Electric Co. Conduit No. 3 near Bass Lake (station 11243500). Soquel ditch diverts up to 50 ft<sup>3</sup>/s from North Fork Willow Creek into Nelder Creek in Fresno River basin. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,100 ft<sup>3</sup>/s, Feb. 19, 1986; minimum daily, 0.01 ft<sup>3</sup>/s, Dec. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 209 ft<sup>3</sup>/s, Aug. 24, gage height, 3.00 ft; minimum daily, 3.4 ft<sup>3</sup>/s, Sept. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	5.0	5.0	4.2	4.5	4.5	4.5	5.0	5.0	5.0	5.0	144
2	5.0	5.0	4.6	4.2	4.5	4.5	4.5	5.0	5.0	5.0	5.0	144
3	5.0	5.0	4.2	4.2	4.5	4.5	4.6	5.0	5.0	5.0	5.0	144
4	5.0	5.0	4.2	4.2	4.5	4.5	4.5	5.3	5.0	5.0	5.0	142
5	5.0	5.0	4.2	4.2	4.5	6.3	4.5	5.5	5.0	5.0	5.0	145
6	5.0	5.0	4.4	4.2	4.5	5.0	4.5	5.5	5.0	5.0	5.0	145
7	5.0	5.0	4.5	4.2	5.8	4.9	4.6	5.3	5.0	5.0	5.0	137
8	4.8	5.0	4.5	4.2	5.3	4.5	4.7	5.0	5.0	5.0	5.0	96
9	4.2	5.0	4.5	4.2	4.9	4.5	4.9	5.0	5.0	5.0	5.0	4.1
10	4.2	5.0	4.5	4.2	4.7	4.8	5.0	5.0	5.0	5.0	5.0	3.9
11	4.2	5.0	4.8	4.2	4.5	4.9	5.6	5.0	5.0	5.0	5.0	3.9
12	4.2	5.1	5.1	4.2	4.5	5.0	5.9	5.0	5.0	5.0	5.0	3.9
13	4.2	5.0	5.0	4.2	4.5	5.0	5.5	5.0	5.0	5.0	5.0	3.9
14	4.2	5.3	5.0	4.2	4.5	5.0	5.5	5.0	5.0	5.0	5.0	3.9
15	4.2	6.1	4.5	4.2	4.5	4.8	5.5	5.0	5.0	5.0	5.0	4.1
16	4.2	5.7	4.3	4.2	5.0	4.5	5.1	5.0	5.0	5.0	5.0	4.2
17	4.2	5.0	4.2	4.2	9.6	4.5	5.0	5.0	5.0	5.0	4.7	4.2
18	4.2	5.0	4.2	4.2	6.0	4.5	5.0	5.0	5.0	5.0	4.5	3.4
19	4.2	5.0	4.2	4.2	6.3	4.5	4.9	5.0	5.0	5.0	67	3.8
20	4.2	5.0	4.5	4.2	7.4	4.5	4.5	5.0	5.0	5.0	152	3.9
21	4.2	4.8	5.0	4.2	6.1	4.5	4.5	5.0	5.0	5.0	149	4.2
22	4.2	4.5	5.0	4.2	5.0	4.5	4.5	5.0	5.0	5.0	150	4.1
23	4.5	4.6	4.5	4.4	5.0	4.5	4.8	5.0	5.0	5.0	149	4.2
24	4.5	4.5	4.2	4.5	5.3	4.7	5.0	5.0	5.0	5.0	151	4.2
25	4.5	4.5	4.2	4.5	5.0	5.0	5.4	5.0	5.0	5.0	148	4.2
26	4.5	4.5	4.2	4.5	4.8	4.5	5.5	5.0	4.1	5.0	148	4.2
27	4.5	4.5	4.2	4.5	4.7	4.5	5.0	5.0	4.7	5.0	148	4.5
28	4.5	4.9	4.2	4.5	4.5	4.5	5.0	5.0	5.0	5.0	149	4.5
29	4.5	5.0	4.2	4.5	---	4.5	5.0	5.0	5.0	5.0	148	4.5
30	4.5	5.0	4.2	4.5	---	4.5	5.0	5.0	5.0	5.0	148	4.5
31	4.7	---	4.2	4.5	---	4.5	---	5.0	---	5.0	148	---
TOTAL	139.3	149.0	138.5	132.8	144.9	145.4	148.5	156.6	148.8	155.0	1944.2	1187.3
MEAN	4.49	4.97	4.47	4.28	5.17	4.69	4.95	5.05	4.96	5.00	62.7	39.6
MAX	5.0	6.1	5.1	4.5	9.6	6.3	5.9	5.5	5.0	5.0	152	145
MIN	4.2	4.5	4.2	4.2	4.5	4.5	4.5	5.0	4.1	5.0	4.5	3.4
AC-FT	276	296	275	263	287	288	295	311	295	307	3860	2360

## 11244000 NORTH FORK WILLOW CREEK NEAR BASS LAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.79	4.03	6.84	16.9	27.4	29.3	20.1	25.7	18.0	3.91	4.06	3.98
MAX	77.8	54.6	106	194	380	297	272	234	189	73.6	66.4	103
(WY)	1949	1958	1947	1956	1986	1983	1982	1967	1983	1983	1963	1963
MIN	.18	.26	.21	.22	.18	.24	.30	.23	.24	.21	.24	.26
(WY)	1981	1992	1987	1991	1991	1977	1977	1977	1977	1977	1977	1976

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1941 - 1994			
ANNUAL TOTAL	13945.74				4590.3							
ANNUAL MEAN	38.2				12.6				13.5			
HIGHEST ANNUAL MEAN									80.8			
LOWEST ANNUAL MEAN									.26			
HIGHEST DAILY MEAN	493				152				2100			
LOWEST DAILY MEAN	.49				3.4				.01			
ANNUAL SEVEN-DAY MINIMUM	.75				3.9				.11			
INSTANTANEOUS PEAK FLOW					209				15700			
INSTANTANEOUS PEAK STAGE					3.00				28.50			
ANNUAL RUNOFF (AC-FT)	27660				9100				9780			
10 PERCENT EXCEEDS	149				5.5				10			
50 PERCENT EXCEEDS	5.0				5.0				.70			
90 PERCENT EXCEEDS	4.2				4.2				.30			



## 11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA

LOCATION.--Lat 37°09'03", long 119°27'34", in SE 1/4 NE 1/4 sec.16, T.9 S., R.23 E., Madera County, Hydrologic Unit 18040006, Sierra National Forest, on left bank 40 ft upstream from bridge, 0.4 mi upstream from mouth, 1.3 mi downstream from Whiskey Creek, and 4.3 mi northeast of Auberry.

DRAINAGE AREA.--130 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1952 to September 1988, October 1989 to current year.

WATER TEMPERATURE: Water years 1961-72.

GAGE.--Water-stage recorder. Concrete control since Oct. 22, 1964. Datum of gage is 1,174.69 ft above sea level (levels by Southern California Edison Co.).

REMARKS.--Flow regulated by Bass Lake (station 11243400) 10 mi upstream. Soquel ditch diverts up to 50 ft<sup>3</sup>/s from North Fork Willow Creek into Nelder Creek in Fresno River basin. Flow diverted out of basin by Pacific Gas & Electric Co. Conduit No. 3. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were collected by Southern California Edison Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 28.5 ft, from floodmarks, from rating curve extended above 4,700 ft<sup>3</sup>/s; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 98 ft<sup>3</sup>/s, Oct. 31, gage height, 6.10 ft; no flow many days during August and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	5.7	7.1	3.6	4.3	15	16	21	7.5	1.3	.03	e.00
2	5.5	3.0	6.0	3.6	4.2	15	16	20	6.1	1.2	.03	e.00
3	4.3	3.6	5.2	3.6	4.1	16	16	20	5.5	1.1	.02	e.00
4	3.8	2.3	3.8	3.8	4.1	16	19	18	5.1	1.1	.00	e.00
5	4.1	2.1	3.7	8.0	4.2	19	18	17	4.9	1.0	.00	e.00
6	1.7	1.9	3.9	6.8	4.1	28	16	17	4.8	1.0	.00	e.00
7	1.7	1.8	3.9	4.9	7.0	19	14	23	4.9	.98	.00	e.00
8	3.2	1.8	3.4	4.3	30	20	15	20	4.7	.88	.00	e.00
9	13	1.9	3.7	4.3	15	19	30	17	4.4	.75	.00	e.00
10	8.4	2.2	3.9	4.3	10	20	17	15	4.1	.59	.00	e.00
11	17	3.2	6.1	4.0	11	19	15	13	3.8	.49	.00	e.00
12	8.4	8.9	9.7	3.9	8.1	18	14	12	3.9	.40	.00	e.00
13	4.1	5.9	5.7	4.4	7.2	17	13	12	3.5	.33	.00	e.00
14	4.5	5.0	8.9	4.4	6.4	20	13	11	3.4	.36	.00	e.00
15	6.4	4.3	7.7	4.4	6.2	20	13	11	3.3	.32	.00	e.00
16	8.8	3.1	5.0	4.3	5.9	20	12	10	3.2	.30	.00	e.00
17	6.1	2.9	4.9	3.8	18	18	11	9.8	3.1	.27	.00	e.00
18	4.0	3.4	12	3.6	33	20	11	12	3.0	.21	.00	e.00
19	4.0	3.4	11	3.5	21	21	10	12	2.9	.21	.00	e.00
20	3.2	3.3	6.5	3.4	39	19	10	11	2.8	.17	.00	e.00
21	3.3	4.3	4.7	3.3	22	17	9.4	9.6	2.6	.18	.00	e.00
22	2.6	4.3	4.3	3.3	15	17	8.9	9.0	2.5	.22	.00	e.00
23	9.1	5.1	4.1	3.4	14	15	8.9	8.1	2.4	.22	.00	e.00
24	10	4.7	3.9	8.2	15	14	14	7.4	2.2	.22	.00	e.00
25	9.4	5.9	3.9	10	16	16	15	6.9	2.1	.17	.00	e.00
26	3.6	9.3	4.0	7.3	16	22	22	6.7	2.0	.14	.00	e.00
27	2.2	6.0	4.1	5.7	17	17	18	6.4	1.9	.09	.00	e.00
28	1.8	4.7	4.2	5.0	16	15	16	6.1	1.7	.08	.00	e6.0
29	2.0	3.6	4.0	4.6	---	15	16	5.7	1.5	.07	.00	e3.0
30	3.2	13	3.8	4.5	---	15	18	5.5	1.4	.06	e.00	e1.0
31	13	---	3.7	4.4	---	16	---	10	---	.05	e.00	---
TOTAL	179.7	130.6	166.8	146.6	373.8	558	445.2	383.2	105.2	14.46	0.08	10.00
MEAN	5.80	4.35	5.38	4.73	13.3	18.0	14.8	12.4	3.51	.47	.003	.33
MAX	17	13	12	10	39	28	30	23	7.5	1.3	.03	6.0
MIN	1.7	1.8	3.4	3.3	4.1	14	8.9	5.5	1.4	.05	.00	.00
AC-FT	356	259	331	291	741	1110	883	760	209	29	.2	20

e Estimated.

## SAN JOAQUIN RIVER BASIN

11246500 WILLOW CREEK AT MOUTH, NEAR AUBERRY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.42	14.5	56.3	105	126	130	140	143	49.2	8.14	2.14	2.70
MAX	24.6	138	652	837	1255	1033	995	747	504	88.8	12.6	28.3
(WY)	1983	1984	1956	1969	1986	1983	1982	1967	1983	1983	1983	1982
MIN	.000	.54	1.13	2.13	1.89	2.63	2.36	3.61	1.93	.000	.000	.000
(WY)	1956	1978	1991	1991	1991	1977	1977	1977	1961	1961	1959	1960

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1952 - 1994			
ANNUAL TOTAL	42489.9				2513.64							
ANNUAL MEAN	116				6.89				62.9			
HIGHEST ANNUAL MEAN									344			
LOWEST ANNUAL MEAN									1.71			
HIGHEST DAILY MEAN	1540				39				7500			
LOWEST DAILY MEAN	1.1				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	1.3				.00				.00			
INSTANTANEOUS PEAK FLOW					98				15700			
INSTANTANEOUS PEAK STAGE					6.10				28.50			
ANNUAL RUNOFF (AC-FT)	84280				4990				45560			
10 PERCENT EXCEEDS	339				17				145			
50 PERCENT EXCEEDS	13				4.3				7.9			
90 PERCENT EXCEEDS	3.1				.00				.23			

## 11246650 KERCKHOFF RESERVOIR NEAR AUBERRY, CA

LOCATION.--Lat 37°07'40", long 119°31'25", in SE 1/4 SW 1/4 sec.24, R.9 S., T.22 E., Fresno County, Hydrologic Unit 18040006, near center of Kerckhoff Dam on San Joaquin River, 2.0 mi downstream from A.G. Wishon Powerplant, and 7.9 mi northwest of Auberry.

DRAINAGE AREA.--1,460 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch dam with spillway completed in 1920. Usable contents, 4,247 acre-ft between elevations 900.14 ft, invert of sluice gates, and 985.68 ft, top of spillway gates. Water is released for use in Kerckhoff Powerplants No. 1 and No. 2 before being discharged into the San Joaquin River above Millerton Lake. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,188 acre-ft, Nov. 16, 1992, elevation, 985.29 ft; minimum, 2,104 acre-ft, Nov. 14-17, 1988, elevation, 970.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,093 acre-ft, July 31, Sept. 18, elevation, 984.69 ft; minimum, 3,077 acre-ft, Oct. 24, elevation, 977.73 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas and Electric Co., dated July 16, 1919)

960	1,090	970	2,092	980	3,387	990	4,964
965	1,549	975	2,703	985	4,140		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3891	3830	3146	3694	3778	3146	4046	3906	3724	3709	3789	3953
2	3644	3561	3258	4030	3738	3860	3664	3784	3922	3561	3875	3906
3	3679	3488	3118	3898	4015	3650	4015	3830	3968	3605	3580	3876
4	3565	3317	3118	3840	3769	3968	3845	3784	3984	3876	3709	3876
5	3754	3344	3202	3710	3906	3679	3891	3860	3754	3937	3815	4015
6	3739	3401	3216	3830	3922	3758	3953	3679	3987	3679	3620	3830
7	3561	3517	3546	3532	3709	3754	3984	3906	3724	3754	3644	3891
8	3650	3460	3561	3906	3620	4030	4015	3906	3590	3664	4015	3724
9	3488	3507	3937	3968	3992	4046	3891	3870	3769	4023	4015	3860
10	3517	3445	3739	3815	3922	3845	3754	3696	3605	4012	3937	3815
11	3769	3330	3815	3754	3922	3953	4015	3502	3694	3845	3709	3800
12	3754	3344	3815	3739	3860	3876	3922	3754	3937	3739	3953	3990
13	3444	3679	3532	3800	3906	4062	3968	3830	3644	3784	4046	4022
14	3664	3430	3620	4015	3867	4023	3890	3754	3444	3815	4046	3845
15	3600	3372	3860	3968	3647	3720	4018	3876	3620	3650	3968	3800
16	3590	3416	3937	3934	4030	4065	3992	3860	3800	3754	3906	4030
17	3459	3272	3800	3576	3709	3984	4042	4062	3709	4046	3992	4030
18	3517	3459	3502	4015	3709	3800	3769	3845	3891	3937	3890	4093
19	3694	3709	3664	3473	3968	3860	3922	3784	3644	3546	3694	3784
20	3620	3724	3605	3620	3992	3860	3984	3984	3860	3820	3987	3968
21	3605	3430	3694	3715	3605	3954	3992	3784	3950	3830	3960	3416
22	3488	3590	3710	3770	3992	4015	3876	3845	3800	4015	3984	3860
23	3664	3401	4030	3800	3922	3784	3922	3605	3953	3992	3984	3876
24	3077	3590	3709	3605	4046	3473	3953	3724	3922	4030	3502	3830
25	3118	3784	3576	3922	3664	3992	3906	3664	3891	4015	3860	3922
26	3287	3644	3937	3620	3876	3992	3770	3644	3815	3891	3488	3860
27	3488	3517	3953	3815	3860	4046	3890	4015	3815	4046	3953	3815
28	3576	3244	3953	3620	3968	3915	3953	3709	3679	3937	3937	3769
29	3694	3146	3830	3968	---	3890	3620	3815	3922	3724	3784	3953
30	3880	3104	3709	3984	---	3650	3784	3709	3992	3891	3710	4062
31	3876	---	3502	3891	---	3891	---	3937	---	4093	3620	---
MAX	3891	3830	4030	4030	4046	4065	4046	4062	3992	4093	4046	4093
MIN	3077	3104	3118	3473	3605	3146	3620	3502	3444	3546	3488	3416
a	983.25	977.93	980.76	983.34	983.86	983.34	982.63	983.65	984.02	984.69	981.55	984.48
b	+286	-772	+398	+389	+77	-77	-107	+153	+55	+101	-473	+442

CAL YR 1993 b -118

WTR YR 1994 b +472

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA

LOCATION.--Lat 37°07'56", long 119°31'50", in NW 1/4 SW 1/4 sec.24, T.9 S., R.22 E., Fresno County, Hydrologic Unit 18040006, on left bank 2,300 ft downstream from Kerckhoff Dam, 2.8 mi northwest of Auberry, and 6.7 mi south of town of North Fork.

DRAINAGE AREA.--1,461 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 870.11 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft<sup>3</sup>/s, Jan. 14, 1993, gage height, 17.74 ft; minimum daily, 16 ft<sup>3</sup>/s, May 9-18, 1987, Sept. 29, 30, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 147 ft<sup>3</sup>/s, Mar. 9, gage height, 5.73 ft; minimum daily, 27 ft<sup>3</sup>/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	28	28	28	27	28	33	33	33	33	44	43
2	28	28	28	28	27	29	33	33	33	33	44	44
3	28	28	28	27	27	27	33	33	33	33	44	44
4	28	28	28	28	27	27	33	33	33	33	44	44
5	28	28	28	28	27	28	33	33	33	33	44	44
6	28	28	28	28	27	27	33	33	33	33	44	44
7	28	28	28	28	27	27	33	33	33	33	44	44
8	28	28	28	28	28	27	33	33	33	33	44	44
9	28	28	28	28	28	35	33	33	33	33	44	44
10	28	28	28	28	28	33	33	33	33	33	44	44
11	28	28	28	28	28	33	33	33	33	33	44	44
12	28	28	28	28	28	33	33	32	33	33	44	44
13	28	28	28	28	28	33	33	31	33	33	44	44
14	28	28	28	28	28	33	33	31	33	34	44	44
15	28	28	28	28	28	33	33	31	33	34	44	44
16	28	28	28	28	28	33	33	31	33	34	44	44
17	28	28	28	28	28	33	33	31	33	35	44	44
18	28	28	28	28	28	33	33	31	33	35	44	44
19	28	28	28	27	28	33	33	31	33	35	44	44
20	28	28	28	28	28	33	33	31	33	34	44	44
21	28	28	28	28	28	33	33	33	33	35	44	44
22	28	28	28	28	28	33	33	33	33	35	44	44
23	28	28	28	27	28	33	33	33	33	35	44	44
24	28	28	28	27	28	33	33	33	33	35	43	44
25	28	28	28	28	28	33	33	33	33	35	43	44
26	28	28	28	27	28	33	33	33	33	34	44	44
27	28	28	28	27	28	33	33	33	33	35	43	44
28	28	28	28	27	28	33	33	33	33	35	44	44
29	28	28	28	28	---	33	33	33	33	37	44	44
30	28	28	28	27	---	33	33	33	33	44	44	44
31	28	---	28	27	---	33	---	33	---	44	44	---
TOTAL	868	840	868	859	777	981	990	1006	990	1074	1361	1319
MEAN	28.0	28.0	28.0	27.7	27.7	31.6	33.0	32.5	33.0	34.6	43.9	44.0
MAX	28	28	28	28	28	35	33	33	33	44	44	44
MIN	28	28	28	27	27	27	33	31	33	33	43	43
AC-FT	1720	1670	1720	1700	1540	1950	1960	2000	1960	2130	2700	2620

## 11246700 SAN JOAQUIN RIVER NEAR AUBERRY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.0	27.6	28.9	97.7	25.6	32.0	27.9	241	237	59.8	30.7	30.4
MAX	35.7	37.4	43.1	603	33.0	70.7	33.0	1746	1719	283	43.9	45.6
(WY)	1990	1990	1991	1993	1990	1993	1993	1993	1993	1993	1994	1993
MIN	17.5	17.4	18.2	18.0	18.0	17.8	19.1	18.7	17.3	17.2	17.3	17.1
(WY)	1988	1988	1988	1989	1988	1988	1988	1988	1987	1987	1988	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	142104				11933							
ANNUAL MEAN	389				32.7				72.3			
HIGHEST ANNUAL MEAN									390			
LOWEST ANNUAL MEAN									18.2			
HIGHEST DAILY MEAN	7190				44				7190			
LOWEST DAILY MEAN	27				27				16			
ANNUAL SEVEN-DAY MINIMUM	27				27				16			
INSTANTANEOUS PEAK FLOW					147				15800			
INSTANTANEOUS PEAK STAGE					5.73				17.74			
ANNUAL RUNOFF (AC-FT)	281900				23670				52390			
10 PERCENT EXCEEDS	1340				44				35			
50 PERCENT EXCEEDS	30				33				28			
90 PERCENT EXCEEDS	28				28				18			

## SAN JOAQUIN RIVER BASIN

## 11249500 MADERA CANAL AT FRIANT, CA

LOCATION.--Lat 37°00'10", long 119°42'21", in NW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Madera County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for October 1943 to September 1948 published in WSP 1315-A. October 1954 to September 1966 published as Friant-Madera Canal at Friant.

REVISED RECORDS.--WSP 1151: 1944-48.

GAGE.--Discharge computed on basis of valve openings in dam and head on valves. Prior to Oct. 1, 1948, water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, water-stage recorder at site 8.8 mi downstream.

REMARKS.--No estimated daily discharges. Canal diverts from Millerton Lake (station 11250100) at right end of Friant Dam for irrigation between San Joaquin and Chowchilla Rivers. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,330 ft<sup>3</sup>/s, July 2, 1983; no flow for many days in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	690	233	.00	.00	.00	.00	.00	.00	395	780	825	708
2	635	221	.00	.00	.00	.00	.00	.00	341	715	850	711
3	640	241	.00	.00	.00	.00	.00	.00	349	667	850	581
4	664	246	.00	.00	.00	.00	.00	.00	360	660	850	508
5	665	242	.00	.00	.00	.00	.00	.00	360	660	818	483
6	687	231	.00	.00	.00	.00	.00	.00	373	628	768	457
7	694	205	.00	.00	.00	.00	.00	.00	367	623	711	289
8	696	195	.00	.00	.00	.00	.00	.00	360	630	658	200
9	685	195	.00	.00	.00	.00	.00	.00	360	662	640	50
10	670	195	.00	.00	.00	.00	.00	.00	360	699	653	.00
11	670	189	.00	.00	.00	.00	.00	438	360	729	660	.00
12	667	47	.00	.00	.00	.00	.00	600	392	740	660	.00
13	640	.00	.00	.00	.00	.00	.00	568	410	740	660	.00
14	594	.00	.00	.00	.00	.00	.00	518	429	740	650	.00
15	543	.00	.00	.00	.00	.00	.00	450	479	740	656	.00
16	513	.00	.00	.00	.00	.00	.00	373	539	740	660	.00
17	507	.00	.00	.00	.00	.00	.00	300	592	727	660	.00
18	508	.00	.00	.00	.00	.00	.00	227	642	714	660	.00
19	508	.00	.00	.00	.00	.00	.00	200	691	723	686	.00
20	527	.00	.00	.00	.00	.00	.00	200	736	743	724	.00
21	538	.00	.00	.00	.00	.00	.00	200	750	737	692	.00
22	540	.00	.00	.00	.00	.00	.00	200	802	711	679	.00
23	517	.00	.00	.00	.00	.00	.00	219	882	700	680	.00
24	474	.00	.00	.00	.00	.00	.00	230	936	681	679	.00
25	417	.00	.00	.00	.00	.00	.00	256	950	657	712	.00
26	270	.00	.00	.00	.00	.00	.00	296	950	689	730	.00
27	201	.00	.00	.00	.00	.00	.00	368	924	781	729	.00
28	217	.00	.00	.00	.00	.00	.00	400	784	820	708	.00
29	227	.00	.00	.00	---	.00	.00	400	817	794	706	.00
30	228	.00	.00	.00	---	.00	.00	426	798	767	712	.00
31	231	---	.00	.00	---	.00	---	453	---	772	707	---
TOTAL	16263	2440.00	0.00	0.00	0.00	0.00	0.00	7322.00	17488	22169	22033	3987.00
MEAN	525	81.3	.000	.000	.000	.000	.000	236	583	715	711	133
MAX	696	246	.00	.00	.00	.00	.00	600	950	820	850	711
MIN	201	.00	.00	.00	.00	.00	.00	.00	341	623	640	.00
AC-FT	32260	4840	.00	.00	.00	.00	.00	14520	34690	43970	43700	7910

## 11249500 MADERA CANAL AT FRIANT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	105	13.7	1.10	20.4	109	291	325	470	779	975	727	333
MAX	599	143	49.0	473	659	1094	1258	1261	1277	1293	1233	1153
(WY)	1984	1987	1970	1974	1986	1980	1980	1982	1978	1973	1967	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	13.8	356	76.7	.000
(WY)	1950	1949	1949	1949	1949	1952	1964	1961	1977	1981	1977	1959

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1949 - 1994
ANNUAL TOTAL	215485.00	91702.00	
ANNUAL MEAN	590	251	347
HIGHEST ANNUAL MEAN			736
LOWEST ANNUAL MEAN			43.8
HIGHEST DAILY MEAN	1250	Jun 16	950
LOWEST DAILY MEAN	.00	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00
INSTANTANEOUS PEAK FLOW			1330
ANNUAL RUNOFF (AC-FT)	427400	181900	251600
10 PERCENT EXCEEDS	1190	718	1070
50 PERCENT EXCEEDS	677	.00	81
90 PERCENT EXCEEDS	.00	.00	.00

## SAN JOAQUIN RIVER BASIN

## 11250000 FRIANT-KERN CANAL AT FRIANT, CA

LOCATION.--Lat 36°59'53", long 119°42'11", in SE 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, at Friant Dam 0.9 mi northeast of Friant.

PERIOD OF RECORD.--March 1949 to current year.

GAGE.--Discharge computed on basis of megawatt meter reading, efficiency of generator coefficient, and net head on turbines. Prior to January 1986, discharge computed on basis of valve openings and head on valves. Prior to July 8, 1949, nonrecording gages at various sites and datums. July 8 to Sept. 30, 1949, water-stage recorder at site 0.2 mi downstream.

REMARKS.--No estimated daily discharges. Canal diverts from Millerton Lake (station 11250100) at left end of Friant Dam for irrigation in upper San Joaquin Valley. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,330 ft<sup>3</sup>/s, June 25, 1982; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1610	517	223	201	219	370	654	288	1120	2280	1660	1220
2	1490	565	141	241	220	370	666	290	1420	2050	1750	1120
3	1530	600	.00	302	221	370	720	292	1500	2020	1750	927
4	1590	574	97	319	221	370	673	294	1490	2200	1750	919
5	1620	523	160	311	223	370	677	356	1530	2470	1750	996
6	1540	482	101	313	223	395	763	353	1830	2580	1840	1080
7	1450	468	.00	284	224	397	780	320	1940	2620	2090	1150
8	1330	628	.00	308	225	362	809	345	1970	2650	2490	1180
9	1240	714	.00	342	226	350	772	420	2090	2740	2800	1050
10	1200	695	.00	318	227	350	730	525	2180	2970	2830	845
11	1180	600	.00	301	228	316	642	615	2150	3240	2780	908
12	1180	425	.00	290	229	260	627	650	2530	3400	2630	955
13	1180	326	.00	251	229	302	683	640	2940	3470	2340	925
14	1120	359	.00	252	327	389	671	708	3040	3520	2250	967
15	1030	352	.00	228	400	460	650	808	3100	3340	2200	970
16	957	344	.00	212	400	477	650	850	3100	2870	2270	846
17	962	338	119	212	318	495	725	850	2900	2730	2320	758
18	981	323	232	264	295	462	847	803	2490	2790	1930	753
19	1010	293	212	300	311	420	909	695	2400	2910	1610	859
20	1010	281	292	300	373	496	912	540	2390	2920	1270	1030
21	1020	272	351	301	410	542	877	470	2420	2700	1340	1050
22	965	275	281	271	451	630	828	566	2430	2270	1400	1050
23	862	265	233	250	480	554	724	749	2530	1940	1390	930
24	984	248	221	251	433	500	685	871	2500	1710	1430	771
25	1080	242	209	105	374	468	588	957	2190	1700	1430	799
26	1170	245	200	.00	364	390	401	1050	1930	1780	1250	887
27	1220	219	218	.00	370	425	302	1060	2040	1710	996	908
28	1060	201	254	145	370	515	282	950	2270	1600	1080	850
29	656	308	272	266	---	615	284	950	2370	1490	1150	688
30	530	359	230	301	---	632	286	1000	2350	1190	1180	580
31	507	---	200	248	---	655	---	962	---	1190	1190	---
TOTAL	35264	12041	4246.00	7687.00	8591	13707	19817	20227	67140	75050	56146	27971
MEAN	1138	401	137	248	307	442	661	652	2238	2421	1811	932
MAX	1620	714	351	342	480	655	912	1060	3100	3520	2830	1220
MIN	507	201	.00	.00	219	260	282	288	1120	1190	996	580
AC-FT	69950	23880	8420	15250	17040	27190	39310	40120	133200	148900	111400	55480



## 11250000 FRIANT-KERN CANAL AT FRIANT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	818	309	64.7	198	1270	1229	1352	1604	2573	2848	2528	1482
MAX	3084	1364	629	1348	4505	3551	4475	4238	4529	4905	4339	4033
(WY)	1979	1979	1970	1966	1965	1965	1962	1993	1993	1993	1967	1967
MIN	.000	.000	.000	.000	.000	5.13	141	87.5	598	262	384	1.33
(WY)	1950	1950	1950	1950	1950	1991	1977	1977	1977	1949	1949	1950

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1949 - 1994
ANNUAL TOTAL	892218.00	347887.00	
ANNUAL MEAN	2444	953	1368
HIGHEST ANNUAL MEAN			2356
LOWEST ANNUAL MEAN			270
HIGHEST DAILY MEAN	5320	Jul 10	5330
LOWEST DAILY MEAN	.00	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00
INSTANTANEOUS PEAK FLOW			5330
ANNUAL RUNOFF (AC-FT)	1770000	690000	990900
10 PERCENT EXCEEDS	4850	2360	3470
50 PERCENT EXCEEDS	1910	673	949
90 PERCENT EXCEEDS	.00	223	.00

## SAN JOAQUIN RIVER BASIN

## 11250100 MILLERTON LAKE AT FRIANT, CA

LOCATION.--Lat 37°00'00", long 119°42'13", in SW 1/4 SW 1/4 sec.5, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040006, near center of Friant Dam on San Joaquin River just upstream from Cottonwood Creek, 0.9 mi northeast of Friant.

DRAINAGE AREA.--1,638 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1941 to current year. Monthend contents only for some periods, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to May 29, 1944, nonrecording gage on left bank at same datum.

REMARKS.--Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 ft, invert of river outlet, and 578.0 ft, top of drum-type spillway gates. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in the Central Valley Project. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of lower San Joaquin River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 528,700 acre-ft, June 12, 1973, elevation, 579.66 ft; minimum since lake first filled, 133,600 acre-ft, Apr. 11, 1969, elevation, 467.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 436,900 acre-ft, June 5, elevation, 560.09 ft; minimum, 152,200 acre-ft, Oct. 14, 15, elevation, 476.02 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by U.S. Bureau of Reclamation, dated 1921)

400	36,400	440	83,300	480	161,700	520	279,400	560	436,500
420	57,000	460	117,500	500	215,000	540	353,000	580	530,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179100	159100	182800	228500	253000	280900	326900	382300	435300	360600	254400	183100
2	177400	160300	184300	229300	254600	281500	328000	387500	435600	357500	252200	181300
3	175100	161000	185900	231100	256000	282600	327400	392300	435900	354800	250100	180000
4	172500	161700	186100	232400	257200	283400	329400	395500	436400	351600	248300	179000
5	169700	162100	186300	234000	257700	284600	331100	398000	436900	348200	246400	178100
6	167200	161800	187900	234800	258400	285200	332100	400400	436400	344900	244500	177500
7	164300	162000	189700	236200	260200	286200	333700	402400	436300	341200	241700	176900
8	161500	162300	191300	236700	262200	286800	335100	404800	435800	337700	237700	175900
9	159200	162500	193000	237400	263100	287500	335800	406800	434600	333400	233200	175400
10	156800	162600	195200	238300	264400	289700	336500	408800	433500	328900	228800	175200
11	154500	163100	197500	239100	265700	291900	337800	409700	432000	324000	224700	175100
12	153100	164000	199400	239800	266700	293600	339400	410200	429500	317200	221100	174900
13	152900	164500	201400	240700	267800	294700	340900	411700	426500	310900	218200	175100
14	152200	165500	203300	241400	268900	297200	342400	413000	423100	304500	215400	175800
15	152200	166500	204300	241400	269000	299000	344300	413700	418700	299700	212200	176100
16	152400	167200	206100	242300	269000	300400	346300	414600	414100	295200	209300	176300
17	152800	168100	208100	243900	270400	302100	347400	415500	409900	291000	206000	177200
18	152800	168600	210100	243800	271500	303800	349300	416900	406600	287700	203900	177700
19	152800	169200	211400	244200	272200	305400	350100	418200	403400	283600	202400	178500
20	153200	169900	212800	244200	273200	306000	351500	420000	399600	278900	201000	178200
21	153800	171000	214400	244500	274500	307500	352900	422300	395900	275500	199900	178800
22	154300	171700	215600	244300	274700	309000	354400	424200	392300	272500	198800	178100
23	154200	172900	216500	244300	275300	311600	355600	425700	388600	270000	197400	178100
24	154500	174100	218700	245300	275900	313900	357400	426600	384900	267800	196600	178500
25	154300	175200	220100	245900	277200	315300	359500	427200	381000	266200	194900	179200
26	154200	176300	221100	247700	277600	316900	361900	428400	377900	264800	193700	179400
27	154200	176900	222200	249300	278200	317900	364100	429200	374500	262600	191800	180100
28	154300	178300	223500	250300	279000	319700	367100	429700	371200	260400	190700	180700
29	155200	179600	224900	250800	---	321700	371900	430500	367300	258700	189100	182400
30	156500	181600	226500	251300	---	324100	377200	431500	363500	257200	187400	183800
31	157800	---	227900	252000	---	325500	---	434300	---	255900	185500	---
MAX	179100	181600	227900	252000	279000	325500	377200	434300	436900	360600	254400	183800
MIN	152200	159100	182800	228500	253000	280900	326900	382300	363500	255900	185500	174900
a	478.47	487.79	504.09	511.77	519.88	532.84	546.06	559.50	542.66	512.98	489.26	488.62
b	-21500	+23800	+46300	+24100	+27000	+46500	+51700	+57100	-70800	-107600	-70400	-1700
c	805	482	196	268	442	792	1379	2054	3302	3140	2423	1399

CAL YR 1993 b +48700

WTR YR 1994 b +4500

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided, not reviewed by U.S. Geological Survey.

## 11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA

LOCATION.--Lat 36°59'04", long 119°43'24", in SW 1/4 SW 1/4 sec.7, T.11 S., R.21 E., Fresno County, Hydrologic Unit 18040001, on left bank 0.5 mi west of Friant, 1.5 mi downstream from Cottonwood Creek, 2 mi downstream from Friant Dam, and at mile 268.1.

DRAINAGE AREA.--1,676 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1907 to current year. Published as "near Pollasky" October 1907 to December 1908, and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

REVISED RECORDS.--WSP 843: 1914(M).

GAGE.--Water-stage recorder. Datum of gage is 294.00 ft above sea level (levels by U.S. Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversion for irrigation to Madera and Friant-Kern Canals (stations 11249500 and 11250000) began in 1943 and 1949, respectively. See schematic diagram of lower San Joaquin River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,200 ft<sup>3</sup>/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum, 38 ft<sup>3</sup>/s, regulated, July 29, 1940. Maximum discharge since construction of Friant Dam in 1941, 15,500 ft<sup>3</sup>/s, Feb. 18, 1986, gage height, 13.41 ft; minimum, 5.5 ft<sup>3</sup>/s, Oct. 20, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 273 ft<sup>3</sup>/s, July 26, gage height, 3.05 ft; minimum daily, 56 ft<sup>3</sup>/s, Dec. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	127	203	78	85	134	144	156	203	244	257	258
2	188	127	204	78	80	134	144	143	201	247	257	257
3	188	127	154	78	106	134	145	132	200	247	256	257
4	188	128	90	79	123	133	144	134	200	247	257	257
5	186	122	90	80	123	133	155	134	200	248	257	257
6	185	107	90	81	122	133	179	134	200	249	257	257
7	181	106	91	82	121	132	177	136	202	247	257	256
8	182	126	94	83	110	132	166	135	202	247	256	247
9	182	144	95	83	88	132	149	132	198	247	251	229
10	181	144	96	65	89	132	149	133	191	247	250	229
11	180	146	98	90	87	132	149	139	180	247	250	227
12	175	115	97	166	87	132	149	152	182	250	250	226
13	160	91	97	165	86	132	149	156	183	250	250	226
14	159	91	84	164	100	145	153	154	182	251	250	225
15	159	90	56	164	128	172	151	168	183	253	250	223
16	159	90	62	164	129	170	151	184	194	252	250	223
17	159	90	75	164	133	169	151	166	214	251	250	223
18	159	91	75	147	135	169	151	155	214	253	250	223
19	158	92	75	114	134	168	152	153	217	253	250	223
20	148	95	75	113	117	169	152	152	217	253	250	226
21	129	97	75	112	83	169	151	152	217	253	250	225
22	129	108	75	95	82	160	161	152	218	253	250	223
23	128	135	75	79	82	137	183	154	217	256	248	223
24	127	136	75	85	99	137	185	166	219	257	248	223
25	126	138	76	89	132	139	175	190	220	257	247	222
26	125	139	77	86	134	141	157	189	220	257	252	220
27	125	140	77	86	133	141	156	189	220	257	263	224
28	125	141	78	87	133	142	155	189	216	257	262	222
29	126	141	78	88	---	143	156	189	227	257	260	226
30	127	167	78	87	---	143	156	186	243	257	256	226
31	127	---	78	87	---	144	---	192	---	257	258	---
TOTAL	4859	3591	2843	3219	3061	4483	4695	4896	6180	7801	7849	6983
MEAN	157	120	91.7	104	109	145	156	158	206	252	253	233
MAX	188	167	204	166	135	172	185	192	243	257	263	258
MIN	125	90	56	65	80	132	144	132	180	244	247	220
AC-FT	9640	7120	5640	6380	6070	8890	9310	9710	12260	15470	15570	13850

## SAN JOAQUIN RIVER BASIN

11251000 SAN JOAQUIN RIVER BELOW FRIANT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1940, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	628	609	868	1276	1704	2246	3805	5876	6085	2765	1166	772
MAX	1678	1317	3589	4507	4391	6854	8010	11170	15870	9635	2312	1361
(WY)	1919	1928	1910	1909	1937	1938	1916	1938	1911	1911	1914	1938
MIN	164	196	301	333	393	419	1262	1703	635	335	264	156
(WY)	1932	1932	1909	1918	1924	1924	1912	1934	1924	1924	1924	1931

## SUMMARY STATISTICS

WATER YEARS 1908 - 1940

ANNUAL TOTAL	
ANNUAL MEAN	2343
HIGHEST ANNUAL MEAN	4961
LOWEST ANNUAL MEAN	698
HIGHEST DAILY MEAN	38800
LOWEST DAILY MEAN	54
ANNUAL SEVEN-DAY MINIMUM	105
INSTANTANEOUS PEAK FLOW	77200
INSTANTANEOUS PEAK STAGE	23.80
ANNUAL RUNOFF (AC-FT)	1698000
10 PERCENT EXCEEDS	6100
50 PERCENT EXCEEDS	1190
90 PERCENT EXCEEDS	394

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	372	273	411	654	998	1170	1709	1853	1700	961	619	488
MAX	1663	1623	3798	5376	7100	7705	7701	9107	9438	5164	2807	2392
(WY)	1946	1983	1983	1956	1969	1969	1983	1941	1941	1941	1945	1948
MIN	47.2	37.3	32.5	30.0	33.9	33.0	43.2	43.9	78.6	101	91.1	67.2
(WY)	1970	1972	1971	1966	1966	1968	1971	1971	1970	1970	1970	1969

## SUMMARY STATISTICS

FOR 1993 CALENDAR YEAR

FOR 1994 WATER YEAR

WATER YEARS 1941 - 1994

ANNUAL TOTAL	161262	60460	
ANNUAL MEAN	442	166	932
HIGHEST ANNUAL MEAN			4385
LOWEST ANNUAL MEAN			66.9
HIGHEST DAILY MEAN	3960	Jun 28	263
LOWEST DAILY MEAN	24	Jan 12	56
ANNUAL SEVEN-DAY MINIMUM	39	Jan 7	70
INSTANTANEOUS PEAK FLOW			273
INSTANTANEOUS PEAK STAGE			3.05
ANNUAL RUNOFF (AC-FT)	319900	119900	675500
10 PERCENT EXCEEDS	1350	252	2810
50 PERCENT EXCEEDS	193	155	144
90 PERCENT EXCEEDS	74	86	51

## 11253310 CANTUA CREEK NEAR CANTUA CREEK, CA

LOCATION.--Lat 36°24'08", long 120°25'57", in SE 1/4 SE 1/4 sec.34, T.17 S., R.14 E., Fresno County, Hydrologic Unit 18030012, on left bank 9.2 mi southwest of town of Cantua Creek and 19 mi north of Coalinga.

DRAINAGE AREA.--46.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1958-65 (annual maximum), October 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft above sea level, from topographic map. Prior to October 1966, crest-stage gage at datum 2.00 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Some small dams for stock use upstream from station. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,420 ft<sup>3</sup>/s, Mar. 1, 1983, gage height, 5.72 ft; maximum gage height, 6.60 ft, Feb. 24, 1969; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*), from floodmarks:

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 19	2400	*19	*2.07				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.11	.57	.57	.98	2.1	.84	.50	.05	.00	.00	.00
2	.00	.10	.57	.57	.98	1.7	.81	.42	.05	.00	.00	.00
3	.00	.11	.57	.57	.89	1.5	.81	.30	.04	.00	.00	.00
4	.00	.12	.57	.57	1.1	1.3	.78	.24	.03	.00	.00	.00
5	.00	.11	.57	.57	1.1	1.1	.71	.25	.02	.00	.00	.00
6	.00	.11	.57	.57	.93	1.0	.74	1.8	.03	.00	.00	.00
7	.01	.14	.57	.57	2.0	.98	.77	3.7	.05	.00	.00	.00
8	.02	.15	.47	.57	8.7	.89	.76	2.1	.04	.00	.00	.00
9	e.04	.13	.42	.57	2.3	.86	.92	1.3	.02	.00	.00	.00
10	e.06	.16	.43	.57	1.5	.99	1.0	.81	.01	.00	.00	.00
11	e.09	.23	.64	.57	1.3	1.1	.78	.48	.00	.00	.00	.00
12	e.11	.28	2.2	.57	1.2	.98	.67	.20	.00	.00	.00	.00
13	e.14	.31	.83	.57	1.1	.98	.54	.10	.00	.00	.00	.00
14	e.17	.26	.84	.57	1.0	.96	.48	.07	.00	.00	.00	.00
15	e.20	.24	1.0	.57	.92	.90	.40	.06	.00	.00	.00	.00
16	e.25	.27	.78	.56	.90	.86	.37	.06	.00	.00	.00	.00
17	.30	.31	.71	.52	e1.1	.91	.40	.05	.00	.00	.00	.00
18	.26	.30	.67	.53	e1.3	.91	.41	.05	.00	.00	.00	.00
19	.25	.26	.67	.56	1.5	.86	.30	.26	.00	.00	.00	.00
20	.22	.26	.67	.50	16	.97	.28	.70	.00	.00	.00	.00
21	.20	.27	.67	.48	5.8	.95	.24	.57	.00	.00	.00	.00
22	.21	.31	.67	.48	3.9	.97	.28	.43	.00	.00	.00	.00
23	.20	.29	.67	3.7	3.4	.98	.36	.33	.00	.00	.00	.00
24	.18	.29	.66	2.8	3.1	1.0	.55	.24	.00	.00	.00	.00
25	.15	.41	.67	4.3	3.1	1.9	.67	.16	.00	.00	.00	.00
26	.13	.48	.67	1.8	3.1	1.4	.74	.12	.00	.00	.00	.00
27	.13	.48	.60	1.3	3.1	1.1	.67	.15	.00	.00	.00	.00
28	.14	.48	.57	1.1	2.7	1.0	1.1	.12	.00	.00	.00	.00
29	.13	.42	.57	1.1	---	.90	.85	.09	.00	.00	.00	.00
30	.12	.37	.57	.98	---	.89	.60	.07	.00	.00	.00	.00
31	.10	---	.57	.98	---	.86	---	.05	---	.00	.00	---
TOTAL	3.81	7.76	21.21	30.24	75.00	33.80	18.83	15.78	0.34	0.00	0.00	0.00
MEAN	.12	.26	.68	.98	2.68	1.09	.63	.51	.011	.000	.000	.000
MAX	.30	.48	2.2	4.3	16	2.1	1.1	3.7	.05	.00	.00	.00
MIN	.00	.10	.42	.48	.89	.86	.24	.05	.00	.00	.00	.00
AC-FT	7.6	15	42	60	149	67	37	31	.7	.00	.00	.00

e Estimated.

## SAN JOAQUIN RIVER BASIN

11253310 CANTUA CREEK NEAR CANTUA CREEK, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.090	.37	1.39	6.19	9.81	11.0	4.42	2.29	.94	.34	.089	.14
MAX	1.40	2.82	11.2	44.0	53.9	87.0	23.2	17.4	7.64	3.83	1.83	1.41
(WY)	1984	1973	1984	1969	1969	1983	1983	1983	1983	1983	1983	1976
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1967	1967	1969	1975	1976	1989	1972	1972	1968	1968	1968	1968

## SUMMARY STATISTICS

FOR 1993 CALENDAR YEAR

FOR 1994 WATER YEAR

WATER YEARS 1967 - 1994

ANNUAL TOTAL	3720.68	206.77	
ANNUAL MEAN	10.2	.57	3.06
HIGHEST ANNUAL MEAN			18.9
LOWEST ANNUAL MEAN			.003
HIGHEST DAILY MEAN	501	Jan 14	671
LOWEST DAILY MEAN	.00	Oct 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 1	.00
INSTANTANEOUS PEAK FLOW			19
INSTANTANEOUS PEAK STAGE			2.07
ANNUAL RUNOFF (AC-FT)	7380	410	2220
10 PERCENT EXCEEDS	22	1.1	5.6
50 PERCENT EXCEEDS	1.2	.26	.04
90 PERCENT EXCEEDS	.07	.00	.00

## 11253500 JAMES BYPASS NEAR SAN JOAQUIN, CA

LOCATION.--Lat 36°39'09", long 120°10'49", in NE 1/4 SW 1/4 sec.1, T.15 S., R.16 E., Fresno County, Hydrologic Unit 18030012, on right bank 3.2 mi north of San Joaquin.

PERIOD OF RECORD.--October 1947 to current year. Published as "Fresno Slough bypass" in WSP 1315-A and 1735. Daily discharge data for period October 1954 to September 1972 are in files of U.S. Bureau of Reclamation. Monthly totals published in WDR CA-72-2.

GAGE.--Water-stage recorder. Elevation of gage is 160 ft above sea level, from topographic map.

REMARKS.--Diversion upstream from station for irrigation. James Bypass carries overflow from Kings River to San Joaquin River.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation; rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,570 ft<sup>3</sup>/s, June 7, 1969; no flow for all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1994 water year.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	68.9	175	262	326	266	586	666	738	475	168	43.1	32.5
MAX	1723	2364	3648	3551	4688	5192	5066	4932	4913	2985	1077	811
(WY)	1984	1984	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1948	1948	1948	1948	1948	1948	1948	1954	1953	1948	1948	1949

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1948 - 1994 a		
ANNUAL MEAN							317		
HIGHEST ANNUAL MEAN							3189		1983
LOWEST ANNUAL MEAN							.000		1954
HIGHEST DAILY MEAN							5360	Mar 3	1983
LOWEST DAILY MEAN	.00	Jan 1		.00	Oct 1		.00	Oct 1	1947
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1		.00	Oct 1		.00	Oct 1	1947
INSTANTANEOUS PEAK FLOW							5570	Jun 7	1969
ANNUAL RUNOFF (AC-FT)							229900		
10 PERCENT EXCEEDS	.00			.00			672		
50 PERCENT EXCEEDS	.00			.00			.00		
90 PERCENT EXCEEDS	.00			.00			.00		

a . Does not include water years 1955 to 1972, (See Period of Record).

LOCATION.--Lat 37°12'56", long 119°59'25", in SE 1/4 SW 1/4 sec.22, T.8 S., R.18 E., Madera County, Hydrologic Unit 18040007, on left bank 1.800 ft downstream from Buchanan Dam and 4.6 mi west of Raymond.

PERIOD OF RECORD.--Water years 1958-65, 1976 to current year.

WATER-DISCHARGE RECORDS: Water years 1922-23, 1931-72, 1976-90.

CHEMICAL DATA: Water years 1958-65. Published as "at Buchanan Damsite."

WATER TEMPERATURE: Water years 1976-94.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1975 to September 1994 (discontinued).

**INSTRUMENTATION.**--Temperature recorder since October 1975.

REMARKS.--Water temperatures since October 1985 for periods when discharge was less than 1 ft<sup>3</sup>/s are not reliable and are not published. Water temperature is affected by regulation from Buchanan Dam.

EXTREMES FOR PERIOD OF DAILY RECORD (Water years 1976-85).--

WATER TEMPERATURE: Maximum recorded, 33.5°C, June 7, 1977; minimum recorded, 0.0°C, Jan. 2, 4, 1976.

EXTREMES FOR PERIOD OF DAILY RECORD (Water years 1986-94).--

WATER TEMPERATURE: Maximum recorded, 29.0°C, May 15, 1987; minimum recorded, 0.5°C, Dec. 25-27, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum recorded, 16.5°C, Aug. 25, 26; minimum recorded, 10.0°C, May 4-8.

[illegible]



11259000 CHOWCHILLA RIVER BELOW BUCHANAN DAM, NEAR RAYMOND, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	11.5	11.0	13.5	13.5	---	---
2	---	---	---	---	---	---	11.5	11.0	14.0	13.5	---	---
3	---	---	---	---	---	---	11.0	11.0	14.0	14.0	---	---
4	---	---	10.5	10.0	---	---	11.5	11.0	14.0	14.0	---	---
5	---	---	10.5	10.0	---	---	11.5	11.0	14.0	14.0	---	---
6	---	---	10.5	10.0	---	---	11.5	11.0	14.0	14.0	---	---
7	---	---	10.5	10.0	---	---	11.5	11.0	14.0	14.0	---	---
8	---	---	11.0	10.0	---	---	11.5	11.0	14.0	14.0	---	---
9	---	---	---	---	---	---	11.5	11.0	14.5	14.0	---	---
10	---	---	---	---	---	---	11.5	11.0	14.5	14.5	---	---
11	---	---	---	---	---	---	11.5	11.0	14.5	14.5	---	---
12	---	---	---	---	---	---	11.5	11.0	14.5	14.5	---	---
13	---	---	---	---	---	---	11.5	11.5	14.5	14.5	---	---
14	---	---	---	---	---	---	11.5	11.5	15.0	14.5	---	---
15	---	---	---	---	---	---	11.5	11.5	15.0	15.0	---	---
16	---	---	---	---	---	---	12.0	11.5	15.0	15.0	---	---
17	---	---	---	---	---	---	11.5	11.5	15.0	15.0	---	---
18	---	---	---	---	---	---	11.5	11.5	15.0	15.0	---	---
19	---	---	---	---	---	---	12.0	11.5	16.0	15.0	---	---
20	---	---	---	---	---	---	12.0	11.5	16.0	16.0	---	---
21	---	---	---	---	11.0	11.0	12.0	11.5	16.0	16.0	---	---
22	---	---	---	---	11.5	11.0	12.0	12.0	16.0	16.0	---	---
23	---	---	---	---	11.5	11.0	12.0	12.0	16.0	16.0	---	---
24	---	---	---	---	11.5	11.0	12.5	12.0	16.0	16.0	---	---
25	---	---	---	---	11.5	11.0	12.5	12.0	16.5	16.0	---	---
26	---	---	---	---	11.5	11.0	13.0	12.5	16.5	16.5	---	---
27	---	---	---	---	11.5	11.0	13.0	13.0	---	---	---	---
28	---	---	---	---	11.5	11.0	13.5	13.0	---	---	---	---
29	---	---	---	---	11.5	11.0	13.5	13.5	---	---	---	---
30	---	---	---	---	11.5	11.0	13.5	13.5	---	---	---	---
31	---	---	---	---	---	---	13.5	13.5	---	---	---	---
MONTH	---	---	---	---	---	---	13.5	11.0	---	---	---	---

## SAN JOAQUIN RIVER BASIN

11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA

LOCATION.--Lat 37°14'52", long 120°51'00", in NE 1/4 SE 1/4 sec.27, T.7 S., R.10 E., Merced County, Hydrologic Unit 18040001, on left bank at bridge on Highway 165 and 2.0 mi south of Stevinson.

DRAINAGE AREA.--7,388 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water year 1989 to current year. 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 June 1985 to September 1988 are available in U.S. Geological Survey Open-File Report 91-74.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 to current year.

CHEMICAL DATA: October 1992 to September 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to current year.

WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1985.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. Maximum and minimum values are affected by upstream regulation of flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 4,040 microsiemens, Sept. 30, 1992; minimum recorded, 61 microsiemens, Nov. 1, 2, 1991.

WATER TEMPERATURE: Maximum recorded, 32.0°C, July 15, 16, 1994; minimum recorded, 3.0°C, Dec. 26, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,950 microsiemens, Oct. 9; minimum recorded, 150 microsiemens, Oct. 21, 22, Feb. 9.

WATER TEMPERATURE: Maximum recorded, 32.0°C, July 15, 16; minimum recorded, 6.5°C, Dec. 26.

## SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1680	1600	260	220	950	920	1240	930	610	570	---	---
2	1710	1650	280	240	960	940	960	940	630	600	---	---
3	1710	1610	270	250	970	930	1020	710	640	620	---	---
4	1670	1610	250	240	990	910	710	680	680	640	---	---
5	1750	1670	260	240	960	910	680	660	740	670	---	---
6	1820	1740	250	190	950	910	690	670	780	720	---	---
7	1920	1810	230	200	940	900	720	690	850	780	---	---
8	1940	1330	280	230	990	940	740	720	1110	840	---	---
9	1950	1410	320	260	1010	990	800	740	1190	150	---	---
10	1470	1400	360	290	1060	1010	830	800	230	170	---	---
11	1480	1450	360	340	1140	1050	870	820	360	200	---	---
12	1570	1470	370	350	1180	1140	960	870	410	360	---	---
13	1600	1560	360	280	1230	1180	990	950	460	410	---	---
14	1640	1410	380	300	1240	1220	1020	980	510	460	---	---
15	1430	1100	410	380	1220	1060	1050	1010	550	510	---	---
16	1170	1020	470	400	1100	960	1080	1040	600	550	---	---
17	1250	840	510	470	1020	880	1110	1080	660	600	---	---
18	890	610	550	460	970	880	1150	940	680	260	---	---
19	640	290	610	520	1040	960	970	950	290	240	---	---
20	290	190	590	530	1010	960	1000	970	360	270	---	---
21	200	150	660	590	1050	1000	1020	990	360	280	---	---
22	170	150	680	640	1070	1050	1050	1020	350	280	---	---
23	220	170	770	680	1080	1060	1090	1030	400	350	---	---
24	230	190	820	770	1090	1060	1170	1070	---	---	---	---
25	190	170	840	790	1090	1080	1160	1090	---	---	---	---
26	180	160	800	770	1110	1080	1090	560	---	---	---	---
27	170	160	800	770	1120	1050	560	290	---	---	---	---
28	200	170	850	800	1120	1090	380	300	---	---	---	---
29	220	200	890	830	1140	1110	450	380	---	---	---	---
30	220	200	920	870	1180	1140	530	450	---	---	---	---
31	220	200	---	---	1240	1170	590	520	---	---	---	---
MONTH	1950	150	920	190	1240	880	1240	290	---	---	---	---

## 11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	900	870	1190	1120	1710	1630	1510	1460	1670	1550
2	---	---	960	900	1200	1150	1690	1630	1530	1500	1600	1530
3	---	---	1000	960	1240	1160	1660	1580	1540	1520	1600	1530
4	---	---	1000	940	1240	1170	1630	1510	1560	1520	1580	1520
5	---	---	1000	960	1230	1180	1600	1490	1580	1550	1570	1520
6	1050	1020	1040	990	1280	1220	1540	1430	1580	1460	1560	1500
7	1090	1030	1080	1020	1300	1260	1470	1280	1510	1420	1610	1550
8	1120	1090	1150	1070	1330	1290	1370	1270	1490	1440	1640	1600
9	1120	1070	1190	1150	1360	1310	1310	1080	1530	1490	1690	1640
10	1100	1070	1220	1180	1470	1360	1270	1170	1540	1030	1750	1690
11	---	---	1270	1200	1560	1470	1380	1270	1030	990	1790	1740
12	---	---	1320	1260	1620	1550	1440	1370	1010	990	1800	1770
13	---	---	1400	1320	1640	1560	1510	1430	1020	1000	1800	1750
14	---	---	1460	1390	1660	1620	1830	1510	1030	1010	1800	1700
15	---	---	1510	1450	1710	1630	1910	1830	1550	1020	1750	1200
16	---	---	1540	1480	1680	1600	1930	1880	1580	1510	1260	1210
17	---	---	1510	1370	1680	1600	1910	1740	1580	1520	1260	1240
18	---	---	1440	1400	1660	1600	1810	1660	1600	1530	1270	1240
19	1480	1430	1510	1390	1660	1420	1710	1620	1600	1530	1300	1260
20	1520	1440	1480	1310	1510	1460	1680	1620	1600	1560	1330	1300
21	1520	1470	1390	1140	1590	1510	1660	1620	1630	1550	1370	1330
22	1530	1440	1210	1120	1890	1460	1650	1620	1640	1570	1460	1360
23	1520	990	1280	1210	1560	1530	1650	1590	1650	1610	1530	1450
24	1000	920	1290	1240	1610	1550	1640	1590	1670	1620	1600	1530
25	920	870	1280	1130	1630	1580	1630	1580	1670	1620	1570	1520
26	920	840	1210	1090	1660	1620	1620	1550	1700	1650	1560	1510
27	920	800	1150	1100	1660	1600	1580	1530	1720	1670	1580	1530
28	900	800	1150	1070	1660	1620	1570	1500	1740	1710	1610	1560
29	900	870	1110	1070	1680	1630	1530	1450	1750	1700	1680	1610
30	890	830	1110	1070	1690	1630	1500	1430	1730	1660	1720	1670
31	---	---	1150	1070	---	---	1490	1450	1730	1610	---	---
MONTH	---	---	1540	870	1890	1120	1930	1080	1750	990	1800	1200

11260815 SAN JOAQUIN RIVER NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	24.0	21.0	17.5	15.5	11.5	10.5	8.5	8.0	9.0	8.0	---	---
2	24.0	21.5	16.5	14.5	11.5	10.5	9.0	8.5	8.5	8.0	---	---
3	23.5	21.0	16.0	14.5	11.5	10.5	9.0	8.5	9.0	7.5	---	---
4	22.1	20.6	16.5	14.0	11.5	10.5	8.5	8.5	9.5	8.5	---	---
5	21.0	20.0	15.5	14.0	11.5	10.5	9.5	8.5	9.5	8.5	---	---
6	21.0	19.0	15.0	13.5	11.5	10.0	9.0	8.0	9.5	9.0	---	---
7	21.5	19.5	15.5	13.0	11.0	10.0	8.5	7.5	10.5	9.5	---	---
8	20.5	19.0	14.5	12.5	11.5	10.0	9.0	7.5	11.0	10.0	---	---
9	20.5	19.0	14.5	13.0	12.5	11.0	9.0	8.0	11.0	10.0	---	---
10	21.0	19.0	15.0	13.0	12.5	11.5	9.0	8.0	12.0	10.5	---	---
11	21.0	19.5	15.0	14.0	12.5	11.5	9.0	7.5	11.5	10.0	---	---
12	21.0	18.5	14.5	13.5	12.0	11.0	9.0	8.0	11.0	9.5	---	---
13	20.5	19.5	14.5	12.5	11.5	11.0	8.5	7.5	10.5	9.0	---	---
14	21.0	19.0	13.0	11.5	11.5	10.5	8.5	8.0	11.0	9.5	---	---
15	21.5	19.0	12.0	11.0	11.5	10.0	9.5	8.0	11.0	9.0	---	---
16	21.0	19.0	11.5	10.5	10.0	10.0	9.0	8.0	11.0	10.0	---	---
17	20.0	18.5	12.0	10.5	10.0	9.5	8.5	8.0	12.0	10.5	---	---
18	19.5	17.5	12.5	11.0	10.0	9.0	9.5	8.0	11.5	10.0	---	---
19	18.5	17.0	13.0	11.0	9.5	9.0	9.0	8.5	10.0	9.0	---	---
20	18.0	16.5	12.0	11.0	9.0	8.5	9.5	8.5	9.5	8.5	---	---
21	18.0	17.0	11.0	10.5	8.5	8.0	9.5	9.0	9.5	9.0	---	---
22	18.5	16.5	12.0	10.5	8.0	7.5	10.5	9.0	10.5	9.5	---	---
23	18.0	16.5	11.5	10.5	7.5	7.0	11.5	9.5	11.0	10.5	---	---
24	18.5	16.5	11.0	9.5	7.0	7.0	11.0	10.0	---	---	---	---
25	18.5	16.0	10.0	9.0	7.0	7.0	10.5	9.5	---	---	---	---
26	18.5	16.5	10.5	8.5	7.5	6.5	11.0	10.0	---	---	---	---
27	17.5	16.0	9.0	8.5	8.0	7.0	11.0	9.5	---	---	---	---
28	17.5	16.0	9.5	8.5	8.0	7.0	10.5	9.0	---	---	---	---
29	17.0	16.0	10.5	9.0	8.0	7.0	9.0	8.5	---	---	---	---
30	17.0	15.5	11.5	10.0	8.0	8.0	9.5	8.5	---	---	---	---
31	17.5	15.5	---	---	8.0	8.0	9.0	8.5	---	---	---	---
MONTH	24.0	15.5	17.5	8.5	12.5	6.5	11.5	7.5	---	---	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	---	---	23.5	20.5	27.5	24.5	27.5	26.0	31.0	28.5	28.0	26.0
2	---	---	25.0	21.5	26.0	24.5	28.0	27.0	30.5	27.5	27.5	25.5
3	---	---	24.5	22.0	26.0	24.0	28.5	27.0	30.5	27.5	27.0	25.0
4	---	---	24.5	23.0	26.0	23.5	28.5	27.0	31.0	28.0	26.5	25.0
5	---	---	25.5	24.0	26.0	23.5	29.0	26.5	31.0	28.0	27.0	25.0
6	21.0	17.5	25.0	23.0	25.5	23.0	29.5	27.5	30.5	28.5	27.0	25.5
7	20.0	17.5	24.5	22.5	24.5	22.5	29.0	27.5	31.5	29.0	27.0	25.5
8	19.0	17.5	24.5	23.0	25.5	23.0	29.0	27.5	31.0	28.5	27.0	25.0
9	19.0	17.0	25.0	23.5	24.5	22.5	29.5	28.0	30.5	28.0	26.0	24.5
10	19.5	17.0	26.0	25.0	25.0	23.5	29.5	28.5	30.0	27.5	26.0	23.5
11	---	---	28.5	25.0	28.5	25.0	29.5	28.5	29.5	27.5	25.0	23.0
12	---	---	28.5	25.0	27.0	25.0	30.5	29.0	30.0	27.0	25.5	23.0
13	---	---	27.5	25.5	27.5	25.0	31.5	29.5	29.5	27.5	24.5	23.0
14	---	---	27.0	25.0	26.5	24.0	31.5	29.0	29.5	28.0	24.5	22.5
15	---	---	26.5	25.0	25.0	23.0	32.0	29.5	30.0	28.0	24.5	23.0
16	---	---	25.0	23.0	25.0	22.5	32.0	29.5	29.5	28.0	24.5	23.5
17	---	---	23.5	22.0	24.0	22.5	31.5	29.5	30.5	28.0	25.0	23.0
18	---	---	22.5	21.5	24.0	22.0	31.5	29.5	29.5	28.0	25.0	23.0
19	24.5	22.0	23.5	21.5	24.0	22.5	31.0	29.0	30.0	28.0	25.0	23.5
20	24.5	21.5	23.0	21.0	24.0	23.0	31.0	28.5	29.5	28.0	25.5	23.0
21	24.0	21.5	22.5	21.0	24.0	23.0	30.5	28.5	29.5	27.5	25.5	23.5
22	24.5	21.0	24.0	22.0	24.5	23.0	30.0	27.5	29.0	27.0	26.0	23.5
23	23.0	20.0	25.0	22.5	24.5	23.0	31.0	28.0	29.0	27.0	25.0	23.0
24	20.5	18.5	25.0	23.5	27.0	23.0	30.0	27.5	28.5	27.0	25.0	22.5
25	20.5	18.5	28.0	24.0	28.0	23.5	29.5	27.5	29.0	27.0	25.5	22.5
26	20.5	18.0	27.5	24.5	26.5	23.5	29.5	28.0	29.0	26.5	25.5	23.0
27	19.5	18.0	26.5	24.0	25.5	24.5	30.0	28.5	29.0	26.5	25.0	23.0
28	19.5	18.0	25.0	23.5	27.0	25.0	30.0	28.0	29.0	26.5	24.5	22.5
29	21.5	19.0	26.0	24.5	27.5	26.0	30.0	28.5	28.5	26.5	24.0	22.0
30	23.0	19.5	27.0	24.5	27.5	25.5	31.0	28.5	27.5	26.0	23.5	21.5
31	---	---	26.0	24.5	---	---	31.0	28.5	28.0	26.0	---	---
MONTH	---	---	28.5	20.5	28.5	22.0	32.0	26.0	31.5	26.0	28.0	21.5

## 11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA

LOCATION.--Lat 37°14'52", long 120°51'04", in SE 1/4 SE 1/4, sec.10, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, on right bank at bridge on Highway 165 and 5.5 mi south of Stevinson.  
DRAINAGE AREA.--Indeterminate.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to September 1994 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level.

REMARKS.--No estimated daily discharges. Records good. During major storm events record can be affected by backwater from the San Joaquin River. Discharge is affected by irrigation return and drainage from Kesterson Wildlife Refuge.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 810 ft<sup>3</sup>/s, Feb. 20, 1986; minimum daily, 24 ft<sup>3</sup>/s, Sept. 6, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 518 ft<sup>3</sup>/s, Feb. 22, elevation, 68.00 ft; minimum daily, 72 ft<sup>3</sup>/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	171	182	172	219	431	290	179	178	168	255	129
2	121	164	182	165	223	476	316	189	145	160	268	153
3	119	183	178	160	226	471	319	144	121	152	209	150
4	131	197	180	165	230	443	309	121	138	164	164	144
5	136	191	172	173	241	412	296	117	141	176	141	159
6	129	217	178	170	252	367	270	117	122	162	163	176
7	116	221	182	168	256	355	241	150	125	164	172	165
8	110	202	179	158	302	366	215	242	139	157	181	152
9	114	189	176	157	348	363	198	232	134	148	186	142
10	113	198	188	160	347	310	189	187	117	152	176	144
11	110	215	213	153	304	293	185	169	119	168	130	138
12	125	230	247	136	275	298	184	174	125	178	137	137
13	143	250	269	126	270	303	199	149	141	156	138	113
14	174	245	287	123	270	311	187	132	140	158	146	108
15	160	234	347	124	273	326	175	113	131	158	161	103
16	164	237	382	127	282	303	176	110	141	159	156	115
17	195	248	381	141	276	308	188	124	163	195	140	112
18	184	241	352	146	323	337	199	154	164	198	120	100
19	203	238	309	155	325	327	193	181	160	208	151	103
20	232	228	278	162	381	346	168	203	178	212	150	78
21	215	211	247	167	470	379	179	221	181	206	144	81
22	185	199	223	164	511	408	177	214	175	185	151	89
23	181	201	202	187	479	402	183	211	163	200	181	89
24	191	194	191	258	442	392	186	187	145	203	177	82
25	190	194	186	283	435	373	196	148	149	203	145	82
26	194	198	178	268	398	353	180	139	166	237	133	75
27	206	202	186	241	382	337	172	136	171	218	165	72
28	193	205	190	228	393	313	178	161	174	176	181	82
29	181	204	182	229	---	294	180	181	167	185	161	100
30	182	194	171	223	---	275	166	166	173	190	156	112
31	186	---	168	215	---	286	---	171	---	207	124	---
TOTAL	4998	6301	6986	5504	9133	10958	6294	5122	4486	5603	5062	3485
MEAN	161	210	225	178	326	353	210	165	150	181	163	116
MAX	232	250	382	283	511	476	319	242	181	237	268	176
MIN	110	164	168	123	219	275	166	110	117	148	120	72
AC-FT	9910	12500	13860	10920	18120	21740	12480	10160	8900	11110	10040	6910

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

MEAN	161	172	128	134	224	330	268	222	222	242	258	179
MAX	255	273	225	178	326	466	419	355	339	376	411	289
(WY)	1990	1990	1994	1994	1994	1987	1986	1987	1987	1986	1986	1986
MIN	41.3	65.2	63.4	60.6	83.4	231	165	75.2	72.0	61.7	57.1	39.4
(WY)	1993	1993	1991	1991	1991	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1986 - 1994		
ANNUAL TOTAL	77903			73932					
ANNUAL MEAN	213			203			211		
HIGHEST ANNUAL MEAN							273		
LOWEST ANNUAL MEAN							96.6		
HIGHEST DAILY MEAN	426			Mar 29			810		
LOWEST DAILY MEAN	56			Jan 1			24		
ANNUAL SEVEN-DAY MINIMUM	64			Jan 1			31		
INSTANTANEOUS PEAK FLOW							unknown		
INSTANTANEOUS PEAK STAGE							unknown		
ANNUAL RUNOFF (AC-FT)	154500			146600			153200		
10 PERCENT EXCEEDS	296						362		
50 PERCENT EXCEEDS	207						198		
90 PERCENT EXCEEDS	134						72		

## SAN JOAQUIN RIVER BASIN

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989 to current year. 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 U.S. Geological Survey Open File Report 91-74.

CHEMICAL DATA: October 1992 to September 1994 (discontinued).

SPECIFIC CONDUCTANCE: Water year 1989 to September 1994 (discontinued).

WATER TEMPERATURE: Water year 1989 to September 1994 (discontinued).

SEDIMENT DATA: January 1993 to September 1994 (discontinued).

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to September 1994 (discontinued).

WATER TEMPERATURE: October 1988 to September 1994 (discontinued).

INSTRUMENTATION.--Water-quality monitor from October 1985 to September 1994 (discontinued).

REMARKS.--Interruptions in record were due to malfunction of recording instruments.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 4,330 microsiemens, Jan. 16, 1991; minimum recorded, 911 microsiemens, June 1, 1993.

WATER TEMPERATURE: Maximum recorded, 32.5°C, July 15, 1992; minimum recorded, 0.5°C, Dec. 23, 1990.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 3,830 microsiemens, May 15; minimum recorded, 879 microsiemens, Oct. 5.

WATER TEMPERATURE: Maximum recorded, 30.5°C, July 1, 8-10; minimum recorded, 5.0°C, Dec. 24, 25.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
27...	0850	207	1860	7.7	16.5	764	8.4	86	410	99	40
NOV											
17...	0810	249	1440	7.8	9.0	763	10.6	92	310	72	32
DEC											
28...	1145	190	2320	7.3	8.0	771	9.4	79	510	120	51
FEB											
03...	1125	227	2590	7.7	8.5	766	9.6	82	550	130	54
MAR											
01...	1205	432	2630	7.8	16.0	765	7.9	81	620	150	59
24...	1145	392	2660	8.0	14.0	752	8.6	85	650	160	62
APR											
28...	0945	178	2920	7.7	16.0	765	8.0	81	650	160	62
MAY											
25...	1200	145	3240	7.9	23.5	755	7.2	87	740	180	70
JUL											
01...	1135	168	2820	7.7	26.5	762	7.0	88	610	150	58
26...	0945	241	2160	7.9	24.5	759	6.1	74	460	110	44
AUG											
23...	0915	181	2320	7.8	22.0	758	6.6	77	500	120	49
SEP											
28...	1340	81	2650	8.1	22.0	761	9.4	109	510	120	52

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 27...	240	56	5	4.3	230	--	0	--	189	--	430
NOV 17...	180	55	4	4.2	187	--	0	--	153	--	280
DEC 28...	290	55	6	7.4	272	--	0	--	223	--	500
FEB 03...	330	57	6	4.7	234	--	0	--	192	--	590
MAR 01...	370	56	6	4.9	209	--	0	--	171	--	620
24...	380	56	6	4.7	--	--	--	--	--	--	660
APR 28...	390	56	7	4.7	--	228	--	0	--	187	700
MAY 25...	460	57	7	5.2	--	240	--	0	--	197	850
JUL 01...	390	58	7	5.0	--	209	--	0	--	171	720
26...	280	57	6	5.1	--	166	--	0	--	136	490
AUG 23...	310	57	6	4.4	--	183	--	0	--	150	550
SEP 28...	340	59	7	4.1	--	215	--	0	--	176	530

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 27...	240	0.30	18	1220	1200	1.66	0.210	1.90	0.040	0.90	0.50
NOV 17...	200	0.30	17	914	900	1.24	0.030	1.80	0.080	0.60	0.50
DEC 28...	350	0.20	18	1550	1500	2.11	0.030	4.80	1.60	3.4	2.2
FEB 03...	350	0.20	13	1670	1620	2.27	0.060	7.20	0.120	1.0	0.70
MAR 01...	350	0.30	17	1740	1710	2.37	0.100	8.00	0.140	0.90	0.80
24...	380	0.30	17	1830	1810	2.49	0.120	8.10	0.100	1.1	0.80
APR 28...	430	0.30	19	2020	1920	2.75	0.060	7.90	0.110	0.90	0.70
MAY 25...	470	0.30	16	2340	2210	3.18	0.100	7.80	0.050	1.0	0.60
JUL 01...	380	0.30	18	1970	1870	2.68	0.130	8.60	0.050	1.3	0.70
26...	290	0.30	17	1430	1350	1.94	0.090	6.40	0.020	1.3	0.60
AUG 23...	330	0.40	16	1590	1500	2.16	0.040	5.40	0.030	1.6	0.60
SEP 28...	380	0.30	17	1610	1570	2.19	0.040	4.30	0.030	0.70	0.40

## SAN JOAQUIN RIVER BASIN

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT 27...	0.310	0.100	0.100	2200	8	150	--	--	34	1.8
NOV 17...	0.180	0.090	0.090	14000	18	130	2	5	9.9	0.8
DEC 28...	0.440	0.210	0.210	2300	16	370	7	11	25	1.8
FEB 03...	0.180	0.100	0.070	3000	4	260	8	24	3.6	1.5
MAR 01...	0.150	0.110	0.040	2700	19	180	9	21	4.1	1.2
24...	0.210	0.110	0.100	3000	<9	210	9	25	8.0	1.1
APR 28...	0.190	0.080	0.090	3000	10	350	9	26	5.4	0.9
MAY 25...	0.190	0.100	0.100	3800	<9	290	13	26	7.8	1.6
JUL 01...	0.320	0.090	0.080	3400	<9	70	13	37	6.6	2.8
26...	0.340	0.130	0.100	2400	20	50	15	17	5.2	2.2
AUG 23...	0.450	0.060	0.060	2700	<9	29	10	22	5.1	2.8
SEP 28...	0.140	0.030	0.030	2500	22	240	11	17	3.4	1.4

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 27...N	0850	207	16.5	131	73
NOV 17...N	0810	249	9.0	72	48
DEC 28...N	1145	190	8.0	44	23
FEB 03...N	1125	227	8.5	70	43
MAR 01...N	1205	432	16.0	63	73
24...N	1145	392	14.0	56	59
APR 28...N	0945	178	16.0	60	29
MAY 25...N	1200	145	23.5	123	48
JUL 01...N	1135	168	26.5	187	85
26...N	0945	241	24.5	153	100
AUG 23...N	0915	181	22.0	226	110
SEP 28...N	1340	81	22.0	119	26



11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1090	946	1830	173	1920	1810	2470	2400	2710	2650	2740	2500
2	967	935	1800	1660	2010	1910	2670	2470	2650	2500	2520	2420
3	1000	964	1690	1480	2020	1960	2690	2630	2620	2550	2670	2410
4	---	---	1620	1480	2010	1950	2690	2620	2680	2580	2660	2470
5	997	879	1750	1580	2050	1950	2650	2350	2660	2500	2590	2270
6	1070	997	1950	1430	2040	1980	2510	2100	2530	2420	2320	2270
7	1130	1040	1630	1490	2110	2000	2520	2460	2570	2530	2320	2200
8	1180	1130	1660	1580	2120	1630	2500	2460	2540	2320	2600	2250
9	1170	1130	1660	1620	2020	1610	2530	2450	2320	2220	2620	2530
10	1160	1120	1660	1590	2070	2020	2470	2400	2410	2240	2530	2380
11	1200	1160	---	---	2040	1820	2560	2470	2630	2410	2490	2450
12	1210	1120	1600	1520	1820	1740	2760	2540	2680	2630	2460	2420
13	1170	1120	1560	1500	1810	1730	2930	2760	2700	2580	2550	2410
14	1150	1110	1570	1550	1820	1750	2970	2900	2610	2450	2530	2430
15	1230	1150	1550	1490	1940	1690	3010	2930	2510	2420	2500	2420
16	1280	1230	1570	1510	1790	1730	2930	2870	2690	2510	2570	2500
17	1500	1230	1510	1450	1810	1770	2880	2760	2810	2560	2590	2500
18	1460	1220	1580	1500	1860	1790	2900	2750	2560	2130	2510	2460
19	1520	1450	1670	1550	---	---	2950	2800	2620	2400	2530	2470
20	1490	1400	1740	1590	---	---	2820	2760	2610	2250	2530	2490
21	1600	1380	1780	1710	---	---	2800	2660	2330	2230	2700	2480
22	1820	1600	1880	1780	---	---	2890	2670	2300	2160	2750	2660
23	1780	1690	1900	1840	---	---	2780	2540	2610	2250	2750	2660
24	1830	1640	1920	1850	---	---	2540	2060	2640	2590	2670	2640
25	1670	1630	1920	1820	---	---	2360	2160	2850	2640	2650	2610
26	1780	1640	1900	1830	2370	2250	2410	2310	2970	2840	2640	2580
27	1920	1330	1910	1860	2440	2350	2530	2410	2920	2840	2680	2600
28	1670	1310	1960	1860	2410	2350	2540	2410	2840	2680	2720	2630
29	1770	1670	1890	1850	2400	2380	2490	2400	---	---	2770	2620
30	1670	1530	1880	1860	2520	2380	2570	2440	---	---	2780	2670
31	1810	1620	---	---	2560	2460	2660	2560	---	---	2690	2250
MONTH	---	---	---	---	---	---	3010	2060	2970	2130	2780	2200
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	2350	2260	3030	2500	2590	2480	2820	2770	2110	1960	2780	2370
2	2430	2340	2510	2430	2970	2500	2810	2690	1960	1920	2600	2340
3	2570	2410	2880	2470	3140	2970	2940	2730	2520	1960	2490	2400
4	2610	2490	3130	2880	3120	2810	2730	2520	2590	2370	2500	2290
5	2840	2610	3100	2810	3140	2780	2700	2600	2840	2520	2290	2030
6	2820	2620	3130	2990	3290	3010	2800	2590	2740	2280	2060	1960
7	2860	2610	3210	2820	3210	2870	2810	2590	2610	2250	2040	1960
8	3070	2830	3110	2250	3050	2820	2890	2620	2410	2270	2120	2020
9	3390	3070	2460	2290	3160	2800	3150	2890	2520	2300	2170	2090
10	3370	3300	2620	2430	3210	3080	3100	2920	2540	2420	2300	2170
11	3340	3150	2780	2620	3160	2870	2950	2640	2860	2350	2260	1890
12	3230	2990	2870	2690	3020	2860	2810	2460	2860	2530	2580	2100
13	2990	2750	3350	2870	2920	2630	3000	2780	2730	2470	2330	2170
14	2850	2750	3550	3160	2980	2640	2850	2640	2600	2500	2630	2200
15	2900	2650	3830	3550	3060	2760	2800	2660	2500	2270	2720	2460
16	2920	2760	3770	3590	2990	2830	2860	2480	2720	2270	2770	2720
17	2920	2690	3730	3470	2840	2700	2480	2010	2790	2530	2730	2670
18	2810	2580	3470	3110	2740	2500	2310	2060	2720	2470	2720	2660
19	2790	2710	3180	2640	2770	2680	2270	2070	2730	2430	2840	2620
20	2950	2750	2790	2500	2810	2670	2310	2090	2520	2440	2620	2530
21	2860	2620	2700	2400	2730	2470	2300	2170	2590	2470	2600	2540
22	2810	2680	2550	2230	2690	2560	2390	2270	2660	2480	2630	2580
23	2850	2620	2640	2520	2940	2660	2370	2220	2530	2360	2620	2600
24	2830	2630	3030	2640	3090	2930	2420	2200	2580	2390	2640	2610
25	2830	2700	3310	2890	3070	2920	2450	2200	2680	2510	2650	2610
26	2890	2770	3040	2290	2920	2730	2200	1890	2630	2480	2640	2530
27	2980	2890	3180	2930	2830	2680	2280	1850	2490	2210	2610	2530
28	2920	2820	3180	2910	2800	2720	2410	2080	2360	2140	2650	2600
29	3010	2810	2910	2550	2940	2720	2530	2340	2430	2260	2620	2470
30	3100	2960	2780	2550	2840	2670	2570	2330	2590	2080	2470	2300
31	---	---	2710	2460	---	---	2580	2070	2780	2590	---	---
MONTH	3390	2260	3830	2230	3290	2470	3150	1850	2860	1920	2840	1890

11261100 SALT SLOUGH AT HIGHWAY 165, NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.0	21.0	17.5	16.0	12.5	10.5	9.0	8.5	9.0	8.0	17.0	14.5
2	25.0	21.0	17.0	14.5	12.0	11.0	9.5	9.0	9.0	8.0	17.5	15.0
3	24.0	21.0	16.5	14.0	12.0	10.5	10.0	9.5	9.5	8.0	18.0	16.0
4	23.5	20.5	16.0	14.0	12.0	10.0	9.5	8.5	11.5	9.5	18.5	16.0
5	22.0	18.5	16.0	13.5	11.5	10.0	10.5	9.0	11.5	10.0	18.0	17.0
6	21.5	17.5	15.5	13.0	11.0	9.5	9.5	8.0	11.0	10.5	17.5	16.0
7	21.5	18.0	15.0	13.0	11.0	9.5	9.0	7.5	12.0	11.0	17.0	15.0
8	20.5	18.0	15.0	13.0	12.0	10.5	9.5	7.5	12.0	11.5	18.0	15.5
9	20.5	18.0	15.0	13.0	13.0	11.5	9.5	8.5	12.0	10.0	18.0	16.0
10	21.0	18.0	15.5	13.5	13.0	11.5	9.5	8.0	12.0	10.5	18.5	15.5
11	21.5	19.0	16.0	14.0	13.0	11.5	9.5	7.5	11.5	10.5	17.0	15.0
12	22.0	18.0	15.0	13.0	11.5	10.5	9.5	8.0	11.5	9.5	16.5	13.5
13	21.0	19.0	13.0	12.0	11.0	10.0	9.5	8.0	11.5	9.5	17.0	14.0
14	20.5	18.0	12.0	10.0	10.5	10.0	9.5	8.5	12.0	9.5	18.5	15.0
15	21.0	18.5	11.0	9.0	10.5	9.5	10.5	8.0	11.5	10.0	18.5	16.5
16	20.5	18.0	10.5	8.5	10.0	9.0	10.5	8.5	12.0	10.0	17.5	16.0
17	19.5	17.5	11.0	9.0	9.0	9.0	10.5	8.5	12.5	11.0	16.5	14.5
18	19.0	16.5	12.5	10.0	9.0	8.5	11.0	8.5	11.5	10.5	18.0	15.0
19	19.0	16.0	12.5	10.5	8.5	7.0	11.0	9.0	10.5	9.0	17.5	16.0
20	19.0	16.5	12.0	10.0	7.5	6.5	11.5	9.5	11.0	8.5	18.0	15.0
21	19.0	17.0	11.5	10.5	7.5	6.0	12.0	10.0	10.5	9.5	18.0	15.0
22	19.5	16.5	12.5	11.0	7.0	6.0	12.0	10.0	11.5	9.5	17.0	14.5
23	19.0	16.5	12.0	10.5	7.0	5.5	13.5	12.0	12.0	10.0	15.0	13.0
24	19.0	17.0	10.5	9.0	6.5	5.0	12.5	11.5	13.0	10.5	14.0	12.5
25	19.0	17.0	9.5	7.5	6.5	5.0	11.5	11.0	14.0	12.0	14.5	12.5
26	19.0	16.5	9.0	7.5	7.0	6.0	11.5	10.5	15.0	13.5	16.0	13.5
27	18.5	16.0	9.0	8.0	8.5	6.5	11.5	10.0	15.5	14.0	17.5	14.5
28	18.0	16.0	10.5	8.5	9.0	7.0	10.5	9.5	16.0	14.0	18.5	16.0
29	18.0	15.5	12.0	10.0	8.5	8.0	9.5	8.0	---	---	17.5	16.0
30	18.0	15.5	13.0	11.5	9.0	8.5	9.0	8.0	---	---	19.0	16.0
31	18.0	16.5	---	---	8.5	8.5	9.0	8.0	---	---	18.5	16.0
MONTH	25.0	15.5	17.5	7.5	13.0	5.0	13.5	7.5	16.0	8.0	19.0	12.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19.0	16.0	21.5	18.0	25.0	21.5	30.5	25.5	26.0	23.0	26.0	21.5
2	19.0	16.5	21.5	18.0	26.5	22.0	29.5	25.5	26.5	23.0	24.5	21.0
3	19.0	16.5	23.5	18.5	26.5	21.5	29.5	25.0	27.5	23.5	24.0	20.0
4	18.0	16.0	23.5	19.5	25.5	21.0	28.0	24.0	28.5	24.0	25.5	21.0
5	18.5	15.5	22.5	19.5	25.0	22.0	27.0	23.0	29.0	24.0	26.0	22.5
6	19.0	16.0	20.5	18.5	24.5	20.5	28.0	23.0	29.0	24.5	26.5	23.0
7	19.0	16.0	20.5	17.5	24.5	20.0	29.5	24.5	29.5	26.0	26.5	23.0
8	17.5	16.0	21.0	18.5	24.5	19.5	30.5	25.0	28.0	24.5	25.0	22.5
9	18.0	15.0	23.5	19.5	27.0	21.0	30.5	26.0	27.5	24.5	23.5	21.5
10	18.0	14.5	25.5	21.5	29.0	23.0	30.5	25.5	27.5	24.0	23.5	20.0
11	19.5	15.0	26.0	22.5	30.0	25.0	29.5	25.0	28.0	24.0	23.5	19.5
12	21.5	17.0	24.5	21.5	27.5	23.5	29.5	25.5	27.5	24.0	22.5	19.5
13	22.0	18.0	24.0	20.5	26.5	23.0	30.0	25.5	28.5	24.0	23.0	19.0
14	22.0	18.5	25.0	20.0	25.0	21.5	29.5	25.0	28.5	25.0	23.5	19.0
15	23.5	19.0	22.5	19.5	24.5	20.0	29.5	25.0	28.5	24.5	25.0	19.5
16	22.5	20.5	20.0	18.0	24.5	19.5	28.5	24.0	28.5	24.5	24.5	21.5
17	23.0	19.0	19.0	16.5	24.5	20.0	29.0	25.5	28.5	25.0	25.5	21.5
18	23.5	20.0	19.0	16.5	25.0	20.5	28.5	25.5	28.0	23.5	24.5	21.0
19	23.5	20.5	20.0	17.0	26.5	21.5	27.5	24.5	27.5	24.5	25.0	21.5
20	23.0	19.0	22.0	17.5	26.5	22.5	27.0	24.5	27.5	23.5	26.5	21.5
21	22.0	19.0	23.5	19.5	27.5	21.5	26.5	24.0	27.0	23.0	26.0	21.5
22	22.0	18.0	23.5	20.5	28.0	23.0	27.5	23.0	26.0	22.0	25.5	21.5
23	19.0	16.0	24.5	21.0	28.0	23.0	27.0	24.0	26.0	22.0	24.0	21.0
24	16.5	15.0	26.0	22.0	28.0	23.5	26.0	23.0	27.0	23.0	24.5	19.0
25	16.5	14.5	26.5	22.5	28.0	23.5	27.0	23.0	27.5	23.0	25.5	20.5
26	18.0	15.0	24.0	20.5	27.0	23.0	28.0	24.5	27.0	23.0	26.0	21.0
27	17.0	15.5	23.5	18.0	29.5	24.0	28.5	25.5	27.0	23.5	25.0	21.5
28	19.5	15.0	25.0	20.0	30.0	26.0	29.0	25.0	26.5	23.0	23.5	21.5
29	21.5	17.5	26.5	21.5	30.0	26.0	28.5	25.0	26.0	23.0	23.5	19.5
30	22.5	18.0	26.0	23.0	29.5	25.5	28.0	24.5	27.0	23.0	22.5	19.5
31	---	---	25.0	21.0	---	---	26.5	23.0	27.0	23.0	---	---
MONTH	23.5	14.5	26.5	16.5	30.0	19.5	30.5	23.0	29.5	22.0	26.5	19.0

## 11262900 MUD SLOUGH NEAR GUSTINE, CA

LOCATION.--Lat 37°15'45", long 120°54'20", in SE 1/4 SE 1/4 sec.6, T.8 S., R.10 E., Merced County, Hydrologic Unit 18040001, Kesterson National Wildlife Refuge, on right bank at footbridge 400 ft northwest of terminus of San Luis Drain and 5.2 mi east of Gustine.

DRAINAGE AREA.--Indeterminate.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 70 ft above sea level, from topographic map.

REMARKS.--Records fair except for periods of estimated discharge and those less than 1.0 ft<sup>3</sup>/s, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 570 ft<sup>3</sup>/s, Mar. 16, 1986; minimum daily, 0.01 ft<sup>3</sup>/s, Sept. 24, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 188 ft<sup>3</sup>/s, Oct. 25, gage height, 6.88 ft; minimum daily, 0.42 ft<sup>3</sup>/s, Sept. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	74	95	77	110	140	20	6.1	e3.3	8.0	3.5	.92
2	5.4	69	106	74	102	100	22	5.2	e3.1	6.5	7.7	.91
3	4.8	68	91	76	102	64	28	5.4	e2.8	10	15	.84
4	6.6	68	93	75	93	74	27	4.8	e2.6	23	8.5	2.3
5	7.7	70	88	80	68	111	25	4.0	e2.3	13	7.3	7.1
6	5.7	80	83	82	67	120	27	5.4	e2.1	22	4.8	3.4
7	7.6	82	91	80	72	143	27	5.5	e2.1	21	2.5	1.7
8	11	81	104	81	93	110	27	6.5	e4.5	16	1.6	.81
9	14	80	93	78	110	87	31	13	e10	10	2.6	.62
10	16	79	84	76	109	72	33	13	e10	8.5	2.5	4.4
11	17	92	75	72	123	61	26	8.8	e9.8	5.8	2.3	7.8
12	19	100	85	71	157	56	23	8.2	e3.3	4.2	4.7	6.0
13	25	114	84	71	137	51	21	11	e3.3	3.3	2.9	2.1
14	30	121	103	72	123	47	23	6.9	e3.1	2.3	2.0	.64
15	33	121	130	84	125	49	24	6.6	e2.8	1.8	2.3	.78
16	56	124	148	82	120	48	20	8.2	e2.6	2.1	2.8	.69
17	103	122	139	84	123	45	18	7.7	e2.3	4.2	2.7	.49
18	132	104	136	112	126	42	18	5.8	e2.1	3.4	1.9	.42
19	80	97	140	138	125	42	16	5.8	e2.1	2.8	1.9	31
20	69	100	144	124	144	42	13	6.9	e1.9	2.7	3.5	95
21	66	101	154	125	151	39	9.5	7.0	e2.8	2.3	4.7	39
22	76	100	157	109	137	41	8.5	e5.7	6.4	4.7	4.1	18
23	110	95	135	123	154	40	9.7	e5.4	2.4	5.0	2.6	20
24	154	92	129	144	172	39	12	e5.1	1.6	5.6	1.8	25
25	167	90	125	161	159	37	15	e5.1	1.6	9.5	1.6	14
26	125	89	122	161	180	37	15	e4.8	2.9	8.6	1.3	5.7
27	133	86	111	155	157	33	12	e4.5	3.6	6.7	1.3	1.9
28	129	86	100	154	150	22	13	e4.2	4.4	5.3	1.0	1.6
29	108	86	86	139	---	20	10	e3.9	5.0	4.7	.74	.94
30	92	90	76	124	---	21	7.7	e3.6	7.0	3.6	.97	.91
31	82	---	77	119	---	21	---	e3.6	---	3.5	1.2	---
TOTAL	1890.5	2761	3384	3203	3489	1854	581.4	197.7	113.8	230.1	104.31	294.97
MEAN	61.0	92.0	109	103	125	59.8	19.4	6.38	3.79	7.42	3.36	9.83
MAX	167	124	157	161	180	143	33	13	10	23	15	95
MIN	4.8	68	75	71	67	20	7.7	3.6	1.6	1.8	.74	.42
AC-FT	3750	5480	6710	6350	6920	3680	1150	392	226	456	207	585

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994
MEAN	27.2	36.7	48.8	74.2	94.2	101	63.9	27.1	34.3
MAX	61.0	92.0	111	210	177	335	229	109	130
(WY)	1986	1987	1988	1989	1990	1991	1992	1993	1994
MIN	3.35	7.53	5.86	6.17	6.96	28.0	19.2	1.76	3.79
(WY)	1986	1987	1988	1989	1990	1991	1992	1993	1994

## SUMMARY STATISTICS FOR 1993 CALENDAR YEAR FOR 1994 WATER YEAR WATER YEARS 1986 - 1994

	1993	1994	1986	1987	1988	1989	1990	1991	1992	1993	1994
ANNUAL TOTAL	26771.3	18103.78									
ANNUAL MEAN	73.3	49.6									
HIGHEST ANNUAL MEAN			48.1								
LOWEST ANNUAL MEAN			120								
HIGHEST DAILY MEAN	475	180	17.6								
LOWEST DAILY MEAN	1.3	.42	570								
ANNUAL SEVEN-DAY MINIMUM	2.4	.94	.01								
INSTANTANEOUS PEAK FLOW		188	.12								
INSTANTANEOUS PEAK STAGE		6.88	unknown								
ANNUAL RUNOFF (AC-FT)	53100	35910	unknown								
10 PERCENT EXCEEDS	186	125	34870								
50 PERCENT EXCEEDS	31	23	122								
90 PERCENT EXCEEDS	4.8	2.1	25								

11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989 to September 1994 (discontinued). 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 U.S. Geological Survey Open-File Report 91-74.  
 CHEMICAL DATA: October 1992 to September 1994 (discontinued).  
 SPECIFIC CONDUCTANCE: Water year 1989 to current year.  
 WATER TEMPERATURE: Water year 1989 to current year.  
 SEDIMENT DATA: Water year 1988 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--  
 SPECIFIC CONDUCTANCE: October 1988 to current year.  
 WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1985.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. Maximum and minimum values are affected by the drainage of holding ponds located immediately upstream from the station.

EXTREMES FOR PERIOD OF DAILY RECORD.--  
 SPECIFIC CONDUCTANCE: Maximum recorded, 15,900 microsiemens, Feb. 25, 1991; minimum recorded, 560 microsiemens, Oct. 5, 6, 1990.  
 WATER TEMPERATURE: Maximum recorded, 34.5°C, Aug. 6, 1990; minimum recorded, 2.5°C, Dec. 24, 1990.

EXTREMES FOR CURRENT YEAR.--  
 SPECIFIC CONDUCTANCE: Maximum recorded, 7,400 microsiemens, June 20; minimum recorded, 610 microsiemens, Oct. 18, 24.  
 WATER TEMPERATURE: Maximum recorded, 32.0°C, July 15; minimum recorded, 5.5°C, Dec. 23, 24.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
28...	0945	132	791	7.4	17.5	762	4.0	42	180	36	22
NOV											
18...	1020	108	1060	7.6	11.0	769	9.0	81	210	41	27
DEC											
28...	0950	102	1420	7.9	7.0	772	11.2	91	260	48	34
FEB											
03...	0940	101	1880	8.0	7.5	764	10.8	90	320	55	44
MAR											
01...	1000	147	1600	7.9	15.0	766	8.6	85	280	51	37
24...	0950	40	2680	8.0	14.0	755	9.8	97	460	77	64
APR											
28...	1145	14	3290	8.4	20.0	774	9.6	105	520	81	78
MAY											
25...	1330	5.1	5280	8.1	26.0	754	9.1	115	900	130	140
JUL											
01...	0940	7.9	4750	7.6	23.0	762	6.4	76	860	130	130
26...	1145	8.8	13330	8.2	25.5	760	6.7	83	560	84	85
AUG											
23...	1105	2.6	2790	8.0	22.5	760	5.1	60	450	72	66
SEP											
28...	1510	1.7	2000	8.1	22.5	761	8.0	93	330	53	48

## 11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 28...	93	52	3	4.6	204	--	0	--	168	--	95
NOV 18...	140	58	4	5.3	237	--	0	--	194	--	140
DEC 28...	200	62	5	3.6	265	--	0	--	217	--	220
FEB 03...	290	66	7	5.1	342	--	0	--	280	--	310
MAR 01...	240	65	6	5.1	258	--	0	--	211	--	260
24...	420	66	9	5.4	388	--	0	--	318	--	500
APR 28...	540	69	10	5.8	--	465	--	2	--	384	630
MAY 25...	920	69	13	4.2	--	403	--	0	--	330	1300
JUL 01...	770	66	11	4.3	--	303	--	0	--	249	1200
26...	520	67	10	4.2	--	268	--	0	--	220	730
AUG 23...	420	67	9	3.2	--	261	--	0	--	214	570
SEP 28...	270	64	6	3.9	--	168	--	0	--	138	360
DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS, (MG/L AS N)
OCT 28...	89	0.30	23	484	466	0.66	0.010	0.210	0.080	1.1	0.80
NOV 18...	140	0.30	16	610	628	0.83	0.020	0.140	0.090	1.1	1.0
DEC 28...	200	0.20	8.2	878	847	1.19	0.010	0.310	0.090	1.0	0.80
FEB 03...	280	0.30	8.0	1190	1160	1.62	0.050	0.230	0.120	1.1	0.90
MAR 01...	230	0.20	10	986	966	1.34	0.030	0.740	0.090	1.4	0.90
24...	400	0.30	13	1710	1680	2.33	0.050	0.760	0.070	1.4	1.0
APR 28...	500	0.40	8.4	2180	2080	2.96	0.010	<0.050	0.080	1.8	1.7
MAY 25...	900	0.30	19	3780	3620	5.14	<0.010	0.085	0.060	0.70	0.60
JUL 01...	810	0.20	18	3340	3220	4.54	<0.010	<0.050	0.040	0.60	0.40
26...	510	0.20	17	2160	2090	2.94	<0.010	<0.050	0.030	0.70	0.50
AUG 23...	420	0.30	15	1790	1700	2.43	<0.010	<0.050	0.010	0.50	0.40
SEP 28...	320	0.20	14	1190	1150	1.62	0.010	0.200	0.120	0.40	0.40

## SAN JOAQUIN RIVER BASIN

11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT 28...	0.520	0.400	0.390	560	94	120	3	<1	52	0.8
NOV 18...	0.290	0.230	0.220	740	93	96	<1	<1	10	0.8
DEC 28...	0.200	0.130	0.120	1000	35	120	4	<1	12	0.6
FEB 03...	0.300	0.210	0.200	1600	26	180	6	<1	17	2.5
MAR 01...	0.480	0.230	0.210	1300	27	150	5	<1	12	1.9
24...	0.450	0.340	0.310	2500	13	370	7	2	12	2.1
APR 28...	0.290	0.180	0.130	2900	26	530	10	<1	15	1.6
MAY 25...	0.170	0.120	0.120	4200	<9	1200	20	<1	5.7	1.0
JUL 01...	0.140	0.120	0.090	3200	<12	660	12	<1	6.1	0.8
26...	0.190	0.140	0.110	2100	4	660	17	<1	5.3	1.0
AUG 23...	0.150	0.100	0.100	1900	<9	300	10	<1	9.0	0.6
SEP 28...	0.090	0.080	0.070	1100	<3	480	5	<1	3.4	1.4

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 28...N	0945	132	17.5	23	8.2
NOV 18...N	1020	108	11.0	25	7.3
DEC 28...N	0950	102	7.0	25	6.9
FEB 03...N	0940	101	7.5	40	11
MAR 01...N	1000	147	15.0	151	60
24...N	0950	40	14.0	57	6.2
APR 28...N	1145	14	20.0	40	1.5
MAY 25...N	1330	55.1	26.0	37	0.51
JUL 01...N	0940	7.9	23.0	13	0.28
26...N	1145	8.8	25.5	20	0.48
AUG 23...N	1105	2.6	22.5	10	0.07
SEP 28...N	1510	1.7	22.5	84	0.39

## 11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	2110	1800	1020	960	1250	1140	1700	1590	1950	1890	1820	1590
2	2240	2040	1040	1020	1270	1160	1700	1620	1910	1870	2540	1820
3	2660	2130	1050	1030	1270	1220	1730	1630	1940	1860	2550	2300
4	2340	1300	1050	1040	1270	1210	1750	1720	2230	1930	2330	1930
5	2070	1160	1050	1030	1280	1210	1750	1730	2250	2220	2920	1900
6	2070	1880	1030	960	1360	1260	1770	1730	2220	2170	3030	2740
7	1880	1520	1010	960	1340	1150	1780	1720	2300	2190	2800	2730
8	1520	1350	1020	1000	1280	1190	1770	1740	2270	1940	2740	2240
9	1350	1150	1090	990	1410	1150	1790	1750	2080	1940	2260	2210
10	1250	1120	1090	1000	1530	1310	1830	1770	1970	1930	2630	2240
11	1320	1210	1020	990	1560	1460	1890	1830	2000	1760	2650	2390
12	1370	1310	1040	1010	1490	1410	1890	1870	1820	1760	2630	2510
13	1330	1220	1010	980	1430	1300	1940	1880	1950	1810	2840	2550
14	1220	1030	1040	980	1360	1240	1970	1650	1940	1860	2720	2540
15	1060	910	1030	1000	1270	1230	1730	1640	1940	1880	2590	2500
16	910	740	1000	980	1230	1110	1750	1720	1960	1900	2740	2580
17	750	620	1030	990	1280	1220	1790	1650	2020	1930	2840	2680
18	800	610	1100	1030	1260	1230	1680	1410	1990	1930	2860	2770
19	840	780	1100	1060	1250	1220	1550	1390	2090	1990	2850	2790
20	860	830	1070	1060	1250	1210	1600	1500	2070	1870	2810	2740
21	860	840	1080	1060	1230	1180	1680	1500	1950	1850	2850	2780
22	840	780	1100	1080	1260	1180	1740	1640	2000	1920	2780	2520
23	780	660	1150	1100	1340	1260	1830	1660	1980	1530	2750	2580
24	680	610	1160	1140	1350	1310	1660	1510	1690	1530	2700	2460
25	820	620	1170	1150	1500	1330	1650	1460	1710	1510	2820	2690
26	830	790	1190	1160	1750	1430	1780	1650	1650	1560	2890	2750
27	900	790	1200	1180	1610	1380	1820	1690	1650	1620	3390	2890
28	910	790	1210	1200	1510	1420	1800	1710	1640	1550	3600	3390
29	890	840	1230	1190	1610	1500	1850	1710	---	---	3950	3410
30	980	880	1230	1190	1690	1590	1890	1820	---	---	3870	3640
31	970	920	---	---	1670	1610	1930	1870	---	---	3920	3680
MONTH	2660	610	1230	960	1750	1110	1970	1390	2300	1510	3950	1590

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	4000	3860	5420	4980	5230	4900	5070	4640	---	---	3140	2940
2	4050	3500	5480	5260	5070	4810	5760	4720	---	---	3080	2880
3	3540	3230	5760	5310	5120	4790	6190	4260	---	---	2930	2810
4	3550	3280	5690	5280	5120	3590	4260	1900	---	---	2850	2600
5	3550	3360	5840	5350	3770	3290	3900	2260	---	---	2810	1340
6	3510	3210	5930	4370	3890	3560	4150	1940	3370	2450	1840	1250
7	3560	3230	5330	4370	4810	3830	2380	2070	3720	2740	1840	1670
8	3700	3390	5190	3810	5180	4470	2240	2050	4920	3170	2530	1810
9	3740	3270	3810	2760	4840	2850	2670	2200	5090	3020	2960	2500
10	3270	3010	4350	2750	2980	2700	2890	2590	3130	2790	2740	1290
11	3160	3060	4500	3830	3920	2570	3250	2710	3350	2940	1290	970
12	3530	3110	4770	3220	5390	3920	3780	2810	3740	2290	1230	960
13	3740	3290	4660	2620	5610	5070	3970	2990	2860	2300	1380	1120
14	3790	3160	4950	4430	5710	5250	4410	2930	3530	2860	2290	1380
15	3190	2970	5220	4820	6030	5250	5500	3450	3670	3070	2450	2290
16	3710	3140	5210	3590	6070	5390	5030	4510	3100	2810	2430	2200
17	3730	3330	4780	3510	6560	5390	5790	4890	3620	2730	2200	1980
18	3440	3280	5010	4780	6690	5460	5620	4970	4110	2390	2510	2120
19	3420	3150	5320	4890	6430	5050	5380	3660	4120	2690	2580	---
20	4080	3420	5320	4660	7400	5660	5280	3550	3700	2680	---	---
21	4310	4020	5280	4930	5990	5380	5310	4130	2970	2560	---	---
22	4510	3880	5240	4110	5920	5200	4150	2630	2790	2490	---	---
23	4510	3270	4280	2820	5370	4940	5940	2030	3010	2690	---	---
24	3470	3150	5290	3460	5530	5100	3280	1340	3220	2980	---	---
25	3150	2890	5330	5130	5790	5430	1720	1190	3300	3160	---	---
26	3240	2910	5470	5160	5690	4720	3470	1550	3370	3090	---	---
27	4050	3140	5420	5020	5300	4860	2120	1420	3400	3230	---	---
28	4060	3200	5700	5150	5460	5020	---	---	3430	3270	2450	1610
29	4460	3500	5510	5040	5860	5170	---	---	3490	3340	2610	1770
30	4980	4300	5040	4060	5630	4700	---	---	3480	3390	2440	2230
31	---	---	5120	4590	---	---	---	---	3430	3110	---	---
MONTH	4980	2890	5930	2620	7400	2570	---	---	---	---	---	---

## SAN JOAQUIN RIVER BASIN

11262900 MUD SLOUGH NEAR GUSTINE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	27.0	19.0	18.0	16.0	12.5	10.0	9.0	8.0	9.0	7.5	19.0	14.0
2	27.0	19.0	18.0	14.5	12.5	10.0	10.0	9.0	9.5	7.0	20.0	15.0
3	25.5	18.5	18.0	14.0	12.0	9.5	9.5	9.0	10.0	7.5	20.0	15.5
4	23.0	18.0	17.5	14.5	12.5	9.5	9.5	9.0	12.0	9.0	20.5	15.5
5	23.0	16.5	17.0	14.0	12.0	9.5	10.0	9.0	11.5	9.5	19.0	17.0
6	23.0	15.5	17.0	13.5	12.0	9.0	10.0	7.0	11.0	10.0	18.0	15.0
7	24.0	16.0	17.0	13.5	11.5	9.5	9.5	7.0	12.5	10.5	18.5	14.5
8	22.0	16.5	17.0	13.5	12.5	10.5	10.0	7.5	12.5	11.0	20.0	14.5
9	21.5	17.0	16.5	13.5	13.5	12.0	10.5	8.5	13.0	9.5	20.5	15.5
10	22.0	17.5	16.5	14.0	14.0	11.5	10.5	7.5	13.5	10.5	20.5	15.5
11	22.0	18.5	16.5	14.5	13.0	11.0	10.0	7.5	12.0	9.5	18.5	14.5
12	23.0	17.5	14.5	13.0	11.5	9.5	10.0	7.0	12.0	7.5	17.5	12.0
13	20.5	19.0	14.5	11.5	11.5	9.5	10.5	7.0	12.5	8.5	19.5	13.0
14	21.0	17.5	13.0	9.5	11.0	10.0	10.0	8.0	13.5	9.0	20.5	15.0
15	21.5	18.5	11.5	8.0	11.0	9.0	10.5	7.5	12.5	9.5	20.5	16.5
16	21.0	18.0	11.0	8.5	10.0	9.0	11.0	7.5	12.5	11.0	18.5	16.5
17	20.0	17.5	12.0	9.5	9.5	8.5	11.5	8.0	12.5	11.0	18.0	14.0
18	19.5	16.5	13.0	10.5	9.5	8.0	11.5	8.5	11.5	9.5	20.0	15.0
19	20.0	16.5	13.0	10.0	8.5	7.5	12.0	9.0	10.5	8.5	20.0	16.0
20	20.5	16.5	13.0	10.0	7.5	7.5	12.0	9.0	11.5	7.5	19.5	14.5
21	20.0	18.0	11.5	10.0	7.5	6.5	12.5	10.0	11.5	8.5	20.0	15.5
22	20.5	16.5	13.5	10.5	6.5	6.0	12.5	10.0	13.0	9.0	17.5	15.0
23	20.5	16.5	12.0	9.5	6.5	5.5	14.0	11.5	13.0	9.5	16.0	13.0
24	20.0	17.5	9.5	7.5	6.0	5.5	13.0	11.0	15.0	10.0	15.0	13.0
25	20.5	17.0	9.5	6.5	---	---	11.5	10.0	16.0	11.5	17.0	12.5
26	20.0	17.0	10.0	7.0	---	---	12.0	10.0	15.5	13.5	19.5	14.5
27	20.0	14.0	9.0	8.0	---	---	12.0	9.5	17.0	13.0	21.0	15.0
28	19.5	14.0	11.0	8.0	9.0	6.5	10.0	8.5	17.5	13.0	22.0	15.5
29	19.5	16.5	12.5	9.5	8.5	7.5	10.0	7.5	---	---	20.5	15.5
30	20.0	14.0	13.0	11.0	8.5	8.0	9.5	8.0	---	---	22.5	15.5
31	19.5	17.0	---	---	8.5	7.5	9.0	8.0	---	---	21.5	14.5
MONTH	27.0	14.0	18.0	6.5	---	---	14.0	7.0	17.5	7.0	22.5	12.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	22.5	14.5	26.5	15.5	27.5	17.5	29.5	21.5	28.5	21.5	27.0	19.5
2	22.0	15.5	27.0	16.5	28.5	17.5	30.0	22.0	28.0	21.0	26.5	19.0
3	22.0	17.0	27.5	17.0	27.0	16.5	31.0	22.5	27.5	21.5	25.5	18.5
4	21.0	16.0	25.5	16.5	27.0	16.5	30.0	22.0	30.0	22.0	27.5	19.0
5	21.5	14.5	25.0	18.5	26.5	18.0	29.0	22.0	29.5	21.5	27.0	21.5
6	21.5	16.0	23.5	17.0	27.0	16.5	29.0	21.5	30.0	22.0	28.0	21.0
7	21.5	15.0	25.0	17.0	25.0	16.0	29.5	22.5	30.0	22.5	28.0	20.5
8	18.0	16.0	26.5	18.0	26.5	16.0	30.0	22.0	29.0	21.5	26.0	19.0
9	20.0	15.0	27.0	18.5	27.5	17.5	29.5	23.0	28.5	20.5	23.5	18.0
10	20.5	14.5	28.0	20.5	30.0	20.0	30.5	22.5	28.0	20.0	24.5	17.5
11	23.0	14.5	28.5	19.5	31.5	22.0	31.0	23.0	28.0	21.0	23.5	17.5
12	24.5	16.5	28.0	17.0	28.0	20.5	30.5	23.0	28.0	21.5	24.0	17.5
13	24.5	16.5	26.5	20.0	28.0	20.0	31.0	22.5	28.0	21.0	24.5	17.5
14	24.5	17.0	28.5	16.5	26.0	18.0	31.0	22.0	28.5	21.5	24.5	17.0
15	26.5	18.0	24.0	16.5	26.5	16.5	32.0	22.0	29.0	21.5	26.0	18.0
16	25.0	19.0	21.0	15.0	27.0	16.5	30.5	21.5	28.5	21.0	25.5	19.0
17	26.0	17.5	19.5	15.5	27.5	17.0	30.0	22.5	28.5	21.5	26.0	20.0
18	27.0	18.0	21.5	15.0	27.5	17.5	29.5	22.5	28.0	20.5	24.5	19.0
19	26.0	18.5	24.5	15.0	28.5	18.5	30.0	22.5	28.5	21.0	26.0	20.0
20	25.5	16.5	26.5	14.5	28.5	20.0	28.5	22.5	27.5	20.0	25.0	22.0
21	25.0	16.0	27.5	15.5	28.5	18.5	27.5	22.0	27.5	20.5	26.5	22.0
22	25.5	15.5	27.0	15.5	28.5	19.5	29.5	21.5	27.5	20.0	26.5	21.0
23	19.5	16.0	27.0	17.0	28.0	19.0	29.5	22.0	27.5	20.0	24.0	20.5
24	18.5	14.0	29.0	17.5	27.5	19.0	28.0	21.0	27.5	20.0	25.5	19.5
25	18.5	13.5	28.5	17.5	28.5	19.0	28.5	21.5	28.0	20.5	27.0	20.0
26	20.5	14.5	26.5	17.0	27.5	19.0	29.0	23.0	27.0	20.5	27.5	19.0
27	19.0	14.5	28.0	15.5	31.0	21.0	29.0	22.5	27.5	20.5	26.0	20.5
28	24.0	14.5	29.0	17.5	30.0	22.0	29.5	22.0	26.0	19.5	23.0	20.0
29	25.5	17.0	29.0	17.5	29.5	22.0	29.0	23.0	25.5	19.0	25.0	17.5
30	26.5	16.5	26.5	19.5	29.0	21.5	29.0	22.0	27.0	19.5	24.5	17.0
31	---	---	28.0	17.0	---	---	28.0	21.0	27.5	20.0	---	---
MONTH	27.0	13.5	29.0	14.5	31.5	16.0	32.0	21.0	30.0	19.0	28.0	17.0



11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA  
(Hydrologic Benchmark Station)

LOCATION.--Lat 37°43'54", long 119°33'28", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on right bank 10 ft downstream from footbridge at Happy Isles, 0.4 mi downstream from Illilouette Creek, and 2.0 mi southeast of Yosemite National Park Headquarters.

DRAINAGE AREA.--181 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1915 to current year.

REVISED RECORDS.--WSP 1215: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 4,016.58 ft above sea level. Prior to Nov. 2, 1916, nonrecording gage at datum 0.55 ft lower.

REMARKS.--Records good except for discharges below 10 ft<sup>3</sup>/s, which are fair. Up to 5 ft<sup>3</sup>/s can be diverted upstream from station for Yosemite Valley water supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 12.73 ft, from rating curve extended above 4,000 ft<sup>3</sup>/s on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum daily, 1.5 ft<sup>3</sup>/s, Sept. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 31	0330	*1,870	*5.88				

Minimum daily, 4.0 ft<sup>3</sup>/s, Sept. 16-19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	14	17	17	20	e64	e230	285	994	165	30	6.6
2	14	13	14	17	20	e80	e285	339	844	151	29	6.4
3	13	12	14	17	20	e92	e275	451	903	132	28	6.3
4	13	12	14	18	21	e100	e268	667	761	118	27	6.1
5	14	13	13	24	20	e110	e248	811	669	106	25	6.0
6	14	12	14	18	19	e120	220	764	617	97	24	5.7
7	12	12	13	20	23	e112	192	612	505	91	22	5.3
8	12	12	14	18	25	e110	192	505	460	86	21	4.6
9	13	12	14	18	23	e113	191	533	509	82	20	4.6
10	13	12	15	16	26	e118	168	728	561	78	18	4.5
11	15	13	15	16	24	117	156	1090	594	76	18	4.4
12	15	15	18	16	22	104	179	1410	586	73	17	4.4
13	15	15	23	16	25	103	243	1430	492	70	17	4.9
14	15	14	24	15	25	e145	376	1390	460	66	16	5.0
15	19	12	20	15	26	e172	514	1290	451	64	15	4.4
16	25	13	20	15	27	e178	671	822	338	62	14	4.0
17	27	13	21	16	e28	e144	740	572	255	59	14	4.0
18	24	13	20	16	e35	e150	842	510	222	58	14	4.0
19	23	13	20	17	e32	e147	985	456	216	58	13	4.0
20	22	12	20	17	e30	e133	1080	420	225	57	13	4.1
21	21	13	21	18	e33	e135	1100	436	238	54	12	4.1
22	21	14	21	18	e32	e153	927	447	229	55	11	4.2
23	20	13	21	20	e37	119	715	498	213	56	11	4.1
24	19	11	22	20	e42	110	511	688	199	53	9.9	4.4
25	19	9.4	22	21	e48	107	416	798	189	48	9.1	5.0
26	17	8.7	23	23	e52	107	356	824	179	43	8.5	4.9
27	15	9.8	24	22	e56	112	312	943	172	39	8.3	4.6
28	15	9.9	24	18	e60	e145	277	842	173	36	7.9	5.1
29	15	12	23	19	---	e170	272	831	180	35	7.5	7.7
30	15	19	23	21	---	e190	285	930	175	34	7.2	10
31	15	---	18	20	---	e210	---	1580	---	32	6.9	---
TOTAL	525	376.8	585	562	851	3970	13226	23902	12609	2234	494.3	153.4
MEAN	16.9	12.6	18.9	18.1	30.4	128	441	771	420	72.1	15.9	5.11
MAX	27	19	24	24	60	210	1100	1580	994	165	30	10
MIN	12	8.7	13	15	19	64	156	285	172	32	6.9	4.0
AC-FT	1040	747	1160	1110	1690	7870	26230	47410	25010	4430	980	304

e Estimated.

## SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37.1	61.2	84.1	78.0	103	182	534	1247	1203	447	106	42.1
MAX	267	818	736	366	401	575	1007	2675	3317	2101	775	360
(WY)	1919	1951	1965	1980	1986	1986	1926	1969	1983	1983	1983	1978
MIN	2.58	4.89	4.49	6.56	8.89	25.2	173	231	120	28.6	7.79	3.18
(WY)	1956	1933	1977	1991	1991	1977	1975	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1916 - 1994		
ANNUAL TOTAL	192428.8			59488.5					
ANNUAL MEAN	527			163			344		
HIGHEST ANNUAL MEAN							802		
LOWEST ANNUAL MEAN							84.9		
HIGHEST DAILY MEAN	2730			May 25			7480		
LOWEST DAILY MEAN	8.7			Nov 26			1.5		
ANNUAL SEVEN-DAY MINIMUM	11			Nov 23			1.9		
INSTANTANEOUS PEAK FLOW							1870		
INSTANTANEOUS PEAK STAGE							5.88		
ANNUAL RUNOFF (AC-FT)	381700			118000			249400		
10 PERCENT EXCEEDS	1720			565			1100		
50 PERCENT EXCEEDS	148			24			96		
90 PERCENT EXCEEDS	14			8.9			11		

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples were obtained 1.0 mi downstream of the gage at or below Clarks Bridge.

DATE	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 17...	11	1.0	4.4	0.10	10	25	30	0.03	0.020	<0.050
JAN 13...	9	0.70	5.8	<0.10	9.8	26	30	0.03	0.010	0.068
MAY 19...	4	0.60	0.90	<0.10	4.7	12	11	0.02	0.020	<0.050
JUL 13...	5	0.60	2.4	<0.10	3.5	17	12	0.02	<0.010	<0.050
SEP 13...	--	--	--	--	--	--	--	--	<0.010	0.054

## SAN JOAQUIN RIVER BASIN

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 17...	<0.010	<0.20	--	<0.010	<0.010	<0.010	<10	4	<3	23
JAN 13...	0.020	<0.20	--	0.010	<0.010	<0.010	<10	3	<3	40
MAY 19...	0.040	<0.20	--	0.020	<0.010	<0.010	40	<2	<3	22
JUL 13...	<0.010	<0.20	--	<0.010	<0.010	<0.010	10	<2	<3	43
SEP 13...	<0.010	<0.20	<0.20	<0.010	0.010	<0.010	--	--	--	--

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 17...	6	1	<10	<1	<1	<1.0	59	<6	--	--
JAN 13...	11	<1	<10	<1	<1	<1.0	64	<6	0.06	1.1
MAY 19...	<4	1	<10	<1	<1	<1.0	11	<6	--	--
JUL 13...	<4	<1	<10	<1	<1	<1.0	23	<6	0.05	0.34
SEP 13...	--	--	--	--	--	--	--	--	--	--

## CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDIMENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV											
17...	1305	0.70	14.5	41	7.1	3.5	660	11.6	101	2	--
17...	1307	0.90	22.0	40	7.1	3.5	660	11.6	100	0	--
17...	1309	0.90	28.0	40	7.1	3.0	660	11.6	100	1	--
17...	1311	0.70	34.5	40	7.1	3.0	660	11.6	100	1	--
17...	1313	0.90	40.0	40	7.0	3.0	660	11.6	100	1	--
MAY											
19...	1150	2.50	63.0	10	7.2	7.0	658	10.6	101	8	66
19...	1155	3.30	51.0	10	7.1	7.0	658	10.8	103	6	52
19...	1201	3.30	39.0	14	7.1	7.0	658	10.8	103	10	32
19...	1205	3.30	27.0	14	7.1	7.0	658	10.8	103	4	62
19...	1210	3.20	17.0	10	7.2	7.0	658	10.7	102	6	64

\* Instantaneous streamflow at the time of cross-sectional measurements: Nov. 17, 12 ft<sup>3</sup>/s; May 19, 441 ft<sup>3</sup>/s.

11264500 MERCED RIVER AT HAPPY ISLES BRIDGE, NEAR YOSEMITE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 17...	1310	12	3.0	1	0.03	--
JAN 13...	1030	14	2.5	1	0.03	100
MAY 19...	1200	441	7.0	7	8.3	55
JUL 13...	1115	70	17.0	4	0.76	86

## SAN JOAQUIN RIVER BASIN

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA

LOCATION.--Lat 37°43'01", long 119°39'55", unsurveyed, Mariposa County, Hydrologic Unit 18040008, Yosemite National Park, on left bank 150 ft upstream from Pohono Bridge, 0.4 mi upstream from Artist Creek, and 4.8 mi southwest of Yosemite National Park Headquarters.

DRAINAGE AREA.--321 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 3,861.66 ft above sea level. Prior to Sept. 5, 1918, at datum 1.8 ft higher. Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. No diversions between stations at Happy Isles Bridge and Pohono Bridge.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 21.52 ft, from floodmarks in well, from rating curve extended above 17,000 ft<sup>3</sup>/s on basis of computation of flow over diversion dam for Yosemite Powerplant 1 mi downstream at gage heights 20.1 and 21.98 ft, present datum; minimum daily 5.4 ft<sup>3</sup>/s, Oct. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 31	0630	*2,640	*6.75				

Minimum daily, 10 ft<sup>3</sup>/s, Sept. 20-23, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	28	36	36	39	131	503	595	1470	200	49	14
2	30	27	33	36	38	154	577	655	1190	185	45	14
3	30	27	31	36	38	186	634	796	1210	168	42	13
4	29	27	30	36	38	213	501	1040	1030	151	40	13
5	29	27	29	43	38	250	443	1270	911	138	38	13
6	30	26	29	42	37	239	456	1260	846	127	35	13
7	29	26	29	40	49	216	403	1090	713	120	33	12
8	29	26	29	40	51	216	398	965	634	113	31	12
9	28	25	30	38	47	242	402	995	659	106	30	12
10	28	25	30	36	50	266	358	1210	700	103	29	12
11	29	26	34	35	50	254	334	1630	724	102	28	12
12	30	31	34	34	45	220	371	1950	708	98	27	12
13	30	29	37	35	48	214	449	1980	612	94	26	12
14	31	28	41	34	48	292	645	1910	558	90	26	12
15	36	26	37	34	50	383	863	1830	543	87	25	12
16	45	26	35	33	51	397	1110	1310	433	85	23	11
17	48	26	35	32	77	310	1220	972	346	83	23	11
18	45	27	35	33	68	312	1380	919	308	81	22	11
19	42	26	35	34	60	334	1600	845	292	80	22	11
20	39	26	35	35	67	306	1720	782	290	80	21	10
21	37	26	35	36	66	331	1740	830	297	78	20	10
22	36	27	35	36	69	337	1490	841	289	77	20	10
23	35	27	35	40	73	268	1210	850	271	78	19	10
24	34	26	36	42	79	252	932	1040	255	76	19	11
25	34	24	36	42	91	234	780	1150	241	71	18	11
26	32	25	38	43	109	230	692	1180	228	67	17	11
27	31	25	41	43	118	241	628	1300	217	62	17	10
28	31	26	40	39	119	301	575	1190	212	57	17	12
29	30	28	38	38	---	333	587	1130	216	54	16	15
30	29	40	37	39	---	374	604	1210	214	52	15	16
31	29	---	37	39	---	455	---	2110	---	51	15	---
TOTAL	1026	809	1072	1159	1713	8491	23605	36835	16617	3014	808	358
MEAN	33.1	27.0	34.6	37.4	61.2	274	787	1188	554	97.2	26.1	11.9
MAX	48	40	41	43	119	455	1740	2110	1470	200	49	16
MIN	28	24	29	32	37	131	334	595	212	51	15	10
AC-FT	2040	1600	2130	2300	3400	16840	46820	73060	32960	5980	1600	710

## 11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	64.2	122	185	173	235	400	1084	2297	1875	601	141	63.1
MAX	436	1587	1666	967	1035	1459	2136	5305	6279	3460	1045	426
(WY)	1983	1951	1951	1980	1986	1986	1982	1969	1983	1983	1983	1978
MIN	5.89	13.9	15.1	17.3	21.0	51.5	343	379	148	47.2	14.7	7.38
(WY)	1978	1930	1977	1977	1991	1977	1977	1977	1924	1931	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1917 - 1994			
ANNUAL TOTAL	328490				95507							
ANNUAL MEAN	900				262				604			
HIGHEST ANNUAL MEAN									1466			
LOWEST ANNUAL MEAN									127			
HIGHEST DAILY MEAN	5010				May 19				18000			
LOWEST DAILY MEAN	24				Nov 25				5.4			
ANNUAL SEVEN-DAY MINIMUM	26				Nov 21				5.6			
INSTANTANEOUS PEAK FLOW					2640				May 31			
INSTANTANEOUS PEAK STAGE					6.75				May 31			
ANNUAL RUNOFF (AC-FT)	651600				189400				437600			
10 PERCENT EXCEEDS	3090				914				1850			
50 PERCENT EXCEEDS	256				43				176			
90 PERCENT EXCEEDS	29				18				25			

## SAN JOAQUIN RIVER BASIN

11266500 MERCED RIVER AT POHONO BRIDGE, NEAR YOSEMITE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1971-72, 1981-82, and September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
SEP 14...	1130	12	46	7.5	14.0	670	8.8 98	
DATE		NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 14...		<0.010	<0.050	<0.010	<0.20	<0.20	0.010	<0.010 0.010



## 11267350 BIG CREEK DIVERSION NEAR FISH CAMP, CA

LOCATION.--Lat 37°28'10", long 119°36'51", in SE 1/4 NE 1/4 sec.25, T.5 S., R.21 E., Mariposa County, Hydrologic Unit 18040008, Sierra National Forest, on right bank 0.5 mi downstream from diversion weir, 0.5 mi upstream from Rainier Creek, and 1.2 mi southeast of Fish Camp.

PERIOD OF RECORD.--October 1969 to June 1977, April 1987 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 5,400 ft above sea level, from topographic map.

REMARKS.--Records fair. Flow is diverted from the left bank of Big Creek, a tributary to South Fork of the Merced River, to Lewis Fork of the Fresno River. Flow is used for domestic and irrigation purposes.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft<sup>3</sup>/s, June 1, 2, 1975; no flow for several days in summer months of most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.17	6.7	3.0	3.3	7.9	20	26	11	2.2	.45	.35
2	.36	.18	5.5	3.0	3.3	8.8	22	29	9.9	2.0	.44	.40
3	.36	.19	5.1	3.0	3.3	9.8	22	32	9.1	1.9	.46	.39
4	.35	.21	4.9	3.6	3.2	10	20	36	8.4	1.9	.46	.36
5	.30	.22	4.7	5.6	3.2	13	18	36	8.0	1.8	.52	.36
6	.22	.22	4.5	4.4	3.1	12	18	36	7.8	1.7	.48	.37
7	.23	.22	4.5	5.4	3.9	11	17	35	7.7	1.6	.48	.37
8	.22	.22	4.1	5.0	3.3	13	17	34	7.6	1.5	.44	.35
9	.23	1.2	4.2	2.5	3.7	14	16	34	7.1	1.5	.41	.35
10	.24	2.2	4.2	2.8	3.9	14	16	36	6.7	1.5	.40	.35
11	.22	2.6	3.5	2.5	3.7	13	16	39	6.2	1.4	.40	.38
12	.18	3.2	4.4	2.4	4.2	12	17	36	5.9	1.4	.39	.36
13	.18	3.0	5.3	2.8	4.3	14	18	33	5.8	1.3	.39	.33
14	.21	3.1	4.6	2.8	4.3	16	21	31	5.5	1.2	.40	.35
15	.20	3.7	5.4	2.9	4.2	17	24	27	5.3	.79	.40	.35
16	.12	4.6	5.4	2.9	3.7	17	26	23	5.1	.61	.39	.36
17	.09	5.0	4.8	2.8	5.2	17	27	22	4.8	.53	.39	.35
18	.10	4.8	4.7	2.8	4.4	18	28	21	4.7	.50	.38	.35
19	.10	4.7	4.5	2.9	5.3	17	29	20	4.5	.50	.38	.33
20	.11	4.7	4.3	2.8	4.8	14	28	19	4.1	.50	.38	.34
21	.11	4.6	4.7	2.7	5.1	14	25	18	4.0	.50	.38	.38
22	.11	4.8	4.7	2.7	4.8	14	22	18	3.8	.50	.38	.40
23	.11	4.6	4.6	4.6	4.4	11	21	17	3.5	.50	.38	.37
24	.11	5.2	4.6	3.2	5.7	11	20	16	3.2	.50	.38	.37
25	.14	5.2	5.3	3.4	6.1	11	18	15	3.0	.50	.38	.37
26	.14	5.5	6.2	3.5	6.5	12	18	15	2.8	.54	.37	.38
27	.12	5.0	7.4	3.1	6.9	13	18	13	2.6	.46	.37	.37
28	.12	4.5	6.5	3.2	7.5	14	19	12	2.5	.45	.37	.29
29	.12	9.0	5.0	3.2	---	15	20	11	2.4	.49	.37	.11
30	.12	11	3.2	3.3	---	17	23	12	2.4	.54	.37	.09
31	.14	---	3.1	3.3	---	19	---	16	---	.49	.36	---
TOTAL	5.72	103.83	150.6	102.1	125.3	419.5	624	768	165.4	31.80	12.55	10.28
MEAN	.18	3.46	4.86	3.29	4.47	13.5	20.8	24.8	5.51	1.03	.40	.34
MAX	.36	11	7.4	5.6	7.5	19	29	39	11	2.2	.52	.40
MIN	.09	.17	3.1	2.4	3.1	7.9	16	11	2.4	.45	.36	.09
AC-FT	11	206	299	203	249	832	1240	1520	328	63	25	20

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1994, BY WATER YEAR (WY)

	MEAN	1.71	3.45	5.16	7.89	9.27	17.7	22.7	27.3	16.1	3.52	1.10	.82
MAX	7.61	7.65	13.1	35.8	32.7	37.3	43.3	56.2	46.1	11.2	3.14	2.08	
(WY)	1970	1970	1970	1970	1970	1972	1993	1975	1975	1993	1973	1971	
MIN	.026	1.10	.75	.82	.71	.38	3.44	6.07	1.96	.90	.025	.000	
(WY)	1989	1991	1991	1974	1974	1974	1974	1977	1987	1987	1988	1987	

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1970 - 1994
ANNUAL TOTAL	7081.04	2519.08	
ANNUAL MEAN	19.4	6.90	10.5
HIGHEST ANNUAL MEAN			19.3
LOWEST ANNUAL MEAN			5.34
HIGHEST DAILY MEAN	55	39	66
LOWEST DAILY MEAN	.09	.09	.00
ANNUAL SEVEN-DAY MINIMUM	.10	.10	.00
ANNUAL RUNOFF (AC-FT)	14050	5000	7580
10 PERCENT EXCEEDS	47	19	32
50 PERCENT EXCEEDS	15	3.7	4.0
90 PERCENT EXCEEDS	.30	.27	.32

## 11269500 LAKE MCCLURE AT EXCHEQUER, CA

LOCATION.--Lat 37°35'02", long 120°16'09", in NW 1/4 SE 1/4 sec.13, T.4 S., R.15 E., Mariposa County, Hydrologic Unit 18040008, on left end of New Exchequer Dam on Merced River, 0.9 mi east of Exchequer, and 5.5 mi northeast of Merced Falls.

DRAINAGE AREA.--1,037 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to current year.

REVISED RECORDS.--WSP 881: 1926-32 (yearly summaries only). WSP 1345: 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Merced Irrigation District). Prior to Oct. 1, 1964, indicator in powerplant at same datum. Oct. 1, 1964, to July 31, 1966, nonrecording gage at center of upstream face of dam at same datum.

REMARKS.--Reservoir is formed by a rockfill dam with a reinforced concrete face completed in March 1967. Dam is downstream from and connected to the original concrete arch and gravity-type dam which was completed in April 1926. Usable capacity, 1,024,000 acre-ft between elevations 440.0 ft, invert entrance to outlet tunnel, and 867.0 ft, top of spillway gates. Dead storage, 300 acre-ft. Water is released through a series of powerplants down the Merced River to a diversion dam for Merced Irrigation District's main canal.

COOPERATION.--Records were provided by Pacific Gas and Electric Company under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,026,000 acre-ft, July 14, 15, 1969, elevation, 867.2 ft; practically no storage at times in 1926, 1930-31, 1964-65 when reservoir was drained for inspection or construction. Minimum since construction of New Exchequer Dam in 1966 and since lake first filled, 66,100 acre-ft, Feb. 28, 1991, elevation, 588.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 746,400 acre-ft, Oct. 1, elevation, 822.75 ft; minimum, 307,700 acre-ft, Sept. 30, elevation, 716.50 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Merced Irrigation District, dated June 1966)

590	67,900	640	137,800	720	317,800	840	845,800
600	79,900	660	173,500	750	415,900	860	975,700
610	92,800	680	215,200	780	534,500	870	1,046,000
620	106,700	700	263,000	820	729,600		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	746400	659000	649900	642800	636800	650200	634700	636700	668100	604300	471000	366500
2	743800	658400	649900	642500	636400	651300	634100	637200	668700	601300	467500	363500
3	741500	657900	649200	642300	636700	650400	634000	638000	666700	598200	464100	361500
4	739000	657600	648600	642100	636300	649900	633000	638200	666300	586200	460700	358800
5	736600	657500	648400	642200	636100	649200	632100	638800	665700	583200	457100	356300
6	733700	657400	648000	641900	635900	648300	631400	639600	664300	579700	453800	353900
7	730100	657400	647500	641600	637900	648100	630400	639600	662900	576600	450300	351700
8	726900	656900	647300	641300	641600	648500	629500	639800	661400	573400	446900	349200
9	722600	656500	647000	641500	642400	647900	628600	640200	659800	569800	443500	347200
10	717200	656500	646700	641600	642900	648700	627800	642100	658600	566600	440100	344900
11	713100	656200	646800	641400	643400	649300	626600	645100	656800	562900	436400	342800
12	708300	656000	646800	640600	643800	650000	626000	649000	655100	559000	432900	340800
13	702800	655600	647200	640000	644200	650500	625500	653100	653300	555100	429400	338600
14	695400	655300	647800	639700	644500	651200	625600	656200	650900	552200	425800	336400
15	690800	654900	648200	639700	644700	650500	625500	659400	648400	548500	422300	334400
16	685600	654400	647200	639100	642700	650300	626400	660500	645900	544000	418500	332600
17	682200	654100	647100	639000	643100	649700	627800	661400	643700	539000	414800	330300
18	680200	653600	646700	638600	645100	649100	629000	662300	641100	533800	411000	328500
19	677700	653600	646300	638100	645700	648600	631500	663400	638600	528400	407600	325900
20	676300	653700	646300	637700	646700	647900	634100	663300	636300	523000	403700	324000
21	674600	652600	645300	637700	647500	646900	636400	663800	633500	517600	400300	322000
22	672900	652100	645400	637600	647600	645800	636600	664100	631200	511700	396500	320300
23	671300	651500	645100	638000	647900	644800	637100	663800	628600	506000	392600	318500
24	670100	651000	645400	638000	648300	643700	635900	664200	625600	500800	390200	316900
25	668300	651000	644700	638200	648900	642400	634900	664900	623000	495900	386000	315200
26	666500	650500	644400	638000	648500	641100	634300	664700	620400	492000	382500	313600
27	664900	649700	644200	638000	649200	640000	634700	665100	617400	487800	379600	312100
28	663500	649300	644000	637500	649700	638900	635200	665100	614500	485000	376800	310900
29	661800	649400	643800	637400	---	637600	635500	664800	611400	481500	374300	309200
30	660200	649500	643600	637200	---	636700	635800	665300	608200	477800	371500	307700
31	659600	---	642700	636900	---	635600	---	667100	---	474400	369100	---
MAX	746400	659000	649900	642800	649700	651300	637100	667100	668700	604300	471000	366500
MIN	659600	649300	642700	636900	635900	635600	625500	636700	608200	474400	369100	307700
a	806.77	804.90	803.35	802.18	804.74	801.90	801.94	808.19	796.14	764.91	736.29	716.50
b	-87700	-10100	-6800	-5800	+12800	-14000	+200	+31300	-58900	-133800	-105300	-61400

CAL YR 1993 b +526500

WTR YR 1994 b -439600

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11270800 NORTHSIDE CANAL AT MERCED FALLS, CA

LOCATION.--Lat 37°31'22", long 120°20'00", in SE 1/4 SW 1/4 sec.4, T.5 S., R.15 E., Merced County, Hydrologic Unit 18040008, on left bank 1,200 ft downstream from Merced Falls Dam, 0.2 mi west of Merced Falls, and 5.8 mi east of Snelling.

PERIOD OF RECORD.--October 1986 to September 1994 (discontinued).

GAGE.--Water-stage recorder and sharp-crested rectangular weir. Elevation of gage is 340 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow diverted at Merced Falls Dam for irrigation of 4,100 acres below gage. Flow regulated by three powerplants and Lake McClure (station 11269500) and McSwain Reservoir, combined capacity, 1,035,000 acre-ft.

COOPERATION.--Records were provided by Merced Irrigation District under general supervision of the

U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 72 ft<sup>3</sup>/s, July 21, 1987; no flow for many days in 1988, several days in February 1992, and Nov. 6-8, 1993.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	6.5	4.8	5.0	1.3	1.3	36	22	43	54	69	49
2	40	6.0	5.7	5.0	1.3	1.1	38	31	49	54	66	47
3	36	4.9	5.3	5.0	1.6	1.1	42	38	51	54	61	47
4	33	4.2	5.3	4.0	1.6	1.1	43	37	54	54	62	47
5	30	1.9	5.3	2.5	1.6	.99	43	35	55	62	60	46
6	28	.00	5.3	1.8	1.6	.90	43	35	54	67	55	46
7	25	.00	5.3	2.0	1.6	.83	44	29	54	68	55	48
8	24	.00	5.3	2.0	1.6	.79	44	26	54	68	57	51
9	24	4.8	5.3	1.9	1.4	.70	42	26	54	69	58	51
10	26	5.7	5.3	2.1	1.3	6.2	39	31	54	69	57	51
11	29	7.7	5.3	2.0	1.3	11	39	34	54	69	55	46
12	27	7.7	5.3	2.1	1.3	11	39	38	52	70	55	43
13	22	7.7	5.0	2.0	1.2	11	44	43	50	67	55	40
14	19	7.8	4.9	2.0	1.2	11	51	44	50	66	58	41
15	17	6.4	4.9	1.8	1.3	15	54	45	51	66	59	45
16	18	5.0	5.0	1.8	1.2	21	54	47	52	66	60	43
17	20	5.0	5.0	1.8	1.2	22	49	48	52	66	62	43
18	18	4.9	5.0	1.8	1.3	23	43	41	54	66	62	44
19	15	3.8	5.0	1.8	1.3	22	42	36	57	66	59	44
20	14	2.8	5.0	1.8	1.3	23	41	36	57	66	58	43
21	18	2.6	5.0	1.8	1.3	27	43	36	57	64	56	37
22	20	2.6	5.0	1.8	1.3	32	43	36	57	62	55	34
23	23	2.6	5.0	1.6	1.3	35	43	38	57	60	55	33
24	30	2.6	5.0	1.5	1.3	34	43	43	57	59	51	32
25	34	2.6	5.0	1.6	1.3	34	39	45	56	59	48	32
26	34	2.6	5.0	1.5	1.3	32	24	46	54	58	48	30
27	31	2.6	5.0	1.6	1.3	30	20	42	54	62	49	28
28	30	2.6	5.0	1.6	1.3	35	18	40	51	67	45	24
29	25	3.1	5.0	1.4	---	38	13	40	53	67	44	20
30	24	3.8	5.0	1.3	---	38	14	42	55	67	46	13
31	19	---	5.0	1.3	---	38	---	44	---	67	50	---
TOTAL	789	120.50	158.3	67.2	37.9	558.01	1170	1174	1602	1979	1730	1198
MEAN	25.5	4.02	5.11	2.17	1.35	18.0	39.0	37.9	53.4	63.8	55.8	39.9
MAX	40	7.8	5.7	5.0	1.6	38	54	48	57	70	69	51
MIN	14	.00	4.8	1.3	1.2	.70	13	22	43	54	44	13
AC-FT	1560	239	314	133	75	1110	2320	2330	3180	3930	3430	2380

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1987	1988	1989	1990	1991	1992	1993	1994
MEAN	12.7	4.37	3.96	2.49	2.04	8.71	34.3	51.2	55.1	61.2	53.9	31.4				
MAX	25.5	8.16	5.52	4.84	4.66	31.4	48.5	67.0	67.7	70.1	64.0	48.9				
(WY)	1994	1989	1993	1991	1990	1988	1987	1987	1987	1987	1987	1987				
MIN	4.93	.98	1.32	.000	.000	.53	12.0	37.9	47.0	50.6	43.7	12.6				
(WY)	1990	1992	1989	1988	1993	1992	1991	1994	1993	1992	1990	1990				

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	9044.00	10583.91	
ANNUAL MEAN	24.8	29.0	26.9
HIGHEST ANNUAL MEAN			33.6
LOWEST ANNUAL MEAN			23.2
HIGHEST DAILY MEAN	69	70	72
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.92	.00
ANNUAL RUNOFF (AC-FT)	17940	20990	19500
10 PERCENT EXCEEDS	57	58	62
50 PERCENT EXCEEDS	24	31	12
90 PERCENT EXCEEDS	.00	1.4	1.1

## 11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA

LOCATION.--Lat 37°31'18", long 120°19'53", in SE 1/4 SW 1/4 sec.4, T.5 S., R.15 E., Merced County, Hydrologic Unit 18040008, on right bank 0.1 mi south of Merced Falls, 0.2 mi downstream from Merced Falls Dam, and 5.8 mi east of Snelling.

DRAINAGE AREA.--1,061 mi<sup>2</sup>.

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. Records at present site are about equivalent when adjusted for diversion to Northside Canal (station 11270800) and change in contents in Lake McClure (station 11269500) and McSwain Reservoir.

REVISED RECORDS.--WSP 1315-A: 1901-9, 1911(M). 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 sea level. See WSP 1930 for history of changes prior to Oct. 1, 1964.

REMARKS.--No estimated daily discharges. Merced Falls Dam diverts water to Northside Canal for irrigation downstream from station. Flow regulated by Exchequer, McSwain, and Merced Falls powerplants, Lake McClure since 1926, enlarged 1967, and McSwain Reservoir since 1966, capacity, 9,200 acre-ft.

COOPERATION.--Records were provided by Pacific Gas and Electric Company, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD (water years 1901-13, 1916-94).--Maximum discharge observed, 47,700 ft<sup>3</sup>/s, Jan. 31, 1911, gage height, 23.3 ft, site and datum then in use; no flow for part of Nov. 21, 1901. Maximum discharge since construction of Exchequer Dam in 1926, 46,200 ft<sup>3</sup>/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<sup>3</sup>/s on basis of computation of peak flow over dam; minimum daily, 3.4 ft<sup>3</sup>/s, Mar. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,210 ft<sup>3</sup>/s, July 19, gage height, 8.44 ft; minimum daily, 192 ft<sup>3</sup>/s, Nov. 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	213	215	227	228	227	1260	751	1630	1750	1700	1260
2	1180	215	213	227	228	225	1280	751	1600	1780	1700	1240
3	1180	215	212	227	227	231	1280	791	1590	1770	1700	1220
4	1200	215	213	227	229	227	1240	1340	1600	1770	1700	1210
5	1520	215	212	227	229	227	1190	1690	1610	1770	1670	1170
6	1710	212	219	227	227	227	1190	1740	1610	1770	1650	1100
7	1740	205	227	227	256	227	1190	1660	1610	1770	1650	1080
8	1730	195	226	225	368	509	1190	1560	1610	1770	1630	1020
9	2210	195	227	224	223	729	1150	1300	1620	1770	1620	998
10	2730	192	227	224	222	782	1130	978	1660	1780	1640	997
11	2620	192	232	224	229	827	1060	909	1680	1780	1640	1000
12	2610	201	227	225	226	805	990	931	1700	1780	1640	954
13	2620	212	227	233	224	786	979	1040	1700	1760	1640	923
14	2610	212	227	231	224	822	1040	1160	1690	1760	1640	921
15	2590	212	227	229	224	876	1120	1230	1680	1760	1650	910
16	2560	212	227	227	224	880	1150	1230	1680	2100	1620	912
17	2070	212	227	227	239	874	1150	1150	1680	2470	1610	925
18	1300	211	227	227	225	907	1180	1010	1680	2510	1630	937
19	1120	209	227	227	224	932	1210	957	1690	2530	1640	923
20	1120	211	227	227	238	976	1230	1010	1640	2620	1600	892
21	1000	213	227	227	224	1060	1610	1020	1660	2690	1580	879
22	881	214	233	227	227	1100	2060	1060	1710	2680	1540	834
23	866	215	228	230	227	1070	2030	1140	1710	2650	1530	813
24	866	215	227	233	227	1050	1960	1320	1710	2640	1500	805
25	866	215	227	233	227	1060	1780	1460	1720	2610	1470	774
26	866	215	227	225	227	1060	1340	1420	1710	2370	1450	711
27	863	215	227	227	227	1060	929	1400	1730	1920	1390	690
28	860	220	227	227	227	1060	811	1530	1780	1740	1330	698
29	860	215	227	227	---	1140	802	1620	1840	1730	1290	685
30	860	215	227	228	---	1210	770	1630	1760	1700	1280	668
31	608	---	227	227	---	1250	---	1630	---	1700	1300	---
TOTAL	46996	6308	6970	7050	6527	24416	37301	38418	50290	63200	48630	28149
MEAN	1516	210	225	227	233	788	1243	1239	1676	2039	1569	938
MAX	2730	220	233	233	368	1250	2060	1740	1840	2690	1700	1260
MIN	608	192	212	224	222	225	770	751	1590	1700	1280	668
AC-FT	93220	12510	13820	13980	12950	48430	73990	76200	99750	125400	96460	55830

## 11270900 MERCED RIVER BELOW MERCED FALLS DAM, NEAR SNELLING, CA--Continued

## 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	1095	1290	2102	2644	4362	3719	1261	306	144
MAX	1522	531	1676	4409	3232	6995	5749	6768	8225	5867	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	1478	212	61.3	29.9	20.5
(WY)	1914	1922	1906	1918	1913	1924	1912	1924	1924	1924	1924	1924

## SUMMARY STATISTICS WATER YEARS 1901 - 1925

ANNUAL MEAN	1443
HIGHEST ANNUAL MEAN	2937
LOWEST ANNUAL MEAN	348
HIGHEST DAILY MEAN	37200
LOWEST DAILY MEAN	1.0
ANNUAL SEVEN-DAY MINIMUM	20
INSTANTANEOUS PEAK FLOW	47700
INSTANTANEOUS PEAK STAGE	23.30
ANNUAL RUNOFF (AC-FT)	1045000
10 PERCENT EXCEEDS	4340
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	1059	1892	3143	2737	1739	1400	884
MAX	638	385	4698	3869	3155	5375	3876	7249	7426	2384	1713	1313
(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	1049	1090	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	1210
HIGHEST ANNUAL MEAN	2738
LOWEST ANNUAL MEAN	360
HIGHEST DAILY MEAN	24000
LOWEST DAILY MEAN	4.5
ANNUAL SEVEN-DAY MINIMUM	8.7
INSTANTANEOUS PEAK FLOW	46200
INSTANTANEOUS PEAK STAGE	22.60
ANNUAL RUNOFF (AC-FT)	876500
10 PERCENT EXCEEDS	2510
50 PERCENT EXCEEDS	1150
90 PERCENT EXCEEDS	38

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	795	397	538	616	807	1177	1729	2161	2234	1998	1713	1351
MAX	3143	1396	2451	2936	4247	4680	5278	5701	6975	5177	2761	3049
(WY)	1984	1970	1983	1984	1983	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

## SUMMARY STATISTICS FOR 1993 CALENDAR YEAR FOR 1994 WATER YEAR WATER YEARS 1968 - 1994

ANNUAL TOTAL	439423	364255	
ANNUAL MEAN	1204	998	1295
ANNUAL MEAN <sup>a</sup>	1956	420	1296
HIGHEST ANNUAL MEAN			3779
LOWEST ANNUAL MEAN			363
HIGHEST DAILY MEAN	2780	May 9	7860
LOWEST DAILY MEAN	192	Nov 10	46
ANNUAL SEVEN-DAY MINIMUM	199	Nov 6	74
INSTANTANEOUS PEAK FLOW			9360
INSTANTANEOUS PEAK STAGE		8.44	12.40
ANNUAL RUNOFF (AC-FT)	871600	722500	938300
ANNUAL RUNOFF (AC-FT) <sup>a</sup>	1416000	303800	939000
10 PERCENT EXCEEDS	2300	1770	2590
50 PERCENT EXCEEDS	1300	997	1120
90 PERCENT EXCEEDS	215	221	176

<sup>a</sup> Adjusted for diversion to Northside Canal and change in contents in Lake McClure and McSwain Reservoir.

LOCATION.--Lat 37°27'15", long 120°36'28", in NW 1/4 SW 1/4 sec.36, T.5 S., R.12 E., Merced County, Hydrologic Unit 18040002, near center of span on downstream side of county road bridge, 0.6 mi upstream from Dry Creek, and 4.0 mi northeast of Cressey.

PERIOD OF RECORD.--October 1965 to current year (low flow only).

GAGE.--Water-stage recorder. Datum of gage is 116.79 ft above sea level.

REMARKS.--No estimated daily discharges. Most water released from Lake McClure (station 11269500) is diverted upstream into the main canal of Merced Irrigation District. Flow past station consists of releases from diversion dam, irrigation return flow, and tributary inflow. No records computed above 200 ft<sup>3</sup>/s.

COOPERATION.--Records were provided by Pacific Gas and Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

[illegible]

## 11272500 MERCED RIVER NEAR STEVINSON, CA

LOCATION.--Lat 37°22'15", long 120°55'46", in SW 1/4 NE 1/4 sec.36, T.6 S., R.9 E., Merced County, Hydrologic Unit 18040002, on right bank 4.4 mi upstream from mouth and 5.3 mi northwest of Stevinson.

DRAINAGE AREA.--1,273 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. October 1940 to Aug. 15, 1955, at datum 55.74 ft higher; Aug. 16, 1955, to Sept. 30, 1959, at datum 54.74 ft higher.

REMARKS.--Records good. Practically entire flow is diverted upstream from station for irrigation of 120,000 acres during low runoff years. Some return flow enters upstream from station. Flow regulated by three reservoirs, combined capacity, 1,035,000 acre-ft, the largest of which is Lake McClure (station 11269500).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft<sup>3</sup>/s, Dec. 5, 1950, elevation, 73.79 ft, present datum; no flow July 19 to Aug. 21, 1961, result of temporary dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft<sup>3</sup>/s, Oct. 18, elevation, 62.87 ft; minimum daily, 24 ft<sup>3</sup>/s, July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	406	394	221	230	236	253	256	382	272	88	242	84
2	390	368	220	231	234	247	242	346	282	75	186	68
3	409	306	216	232	e230	240	245	325	277	79	169	57
4	427	295	215	232	e225	235	273	294	253	100	152	98
5	454	279	214	233	e230	234	264	305	228	114	138	98
6	479	269	213	234	e210	233	265	621	218	123	130	90
7	685	266	214	234	e220	231	242	808	218	123	119	84
8	777	261	214	234	e290	228	231	882	227	117	99	81
9	822	257	214	232	e800	224	246	898	216	100	91	75
10	923	251	216	232	e600	220	271	850	206	80	72	64
11	1420	257	221	232	e450	219	272	603	185	71	63	39
12	1620	249	226	231	e370	220	276	423	176	65	74	43
13	1690	243	233	231	e330	244	271	368	175	58	50	74
14	1720	230	235	231	e300	283	258	323	167	55	40	68
15	1750	223	235	232	e288	286	255	309	156	40	45	85
16	1770	222	235	232	284	283	252	324	144	37	56	64
17	1790	227	235	230	281	280	256	326	134	24	51	60
18	1710	227	232	229	332	271	254	358	132	173	64	58
19	1150	222	231	230	392	260	256	417	128	450	41	55
20	810	222	230	229	340	256	243	411	137	549	49	62
21	672	224	229	228	390	249	243	379	148	635	53	67
22	613	223	228	224	340	246	241	344	136	740	82	75
23	507	217	231	239	300	241	494	349	129	765	100	70
24	450	212	231	262	292	232	682	324	130	797	105	84
25	426	210	231	293	283	241	761	302	137	872	92	82
26	411	214	233	286	275	235	837	292	132	866	69	116
27	391	216	234	274	267	241	883	287	143	819	52	117
28	369	218	233	264	259	256	682	279	144	653	49	115
29	382	220	232	254	---	252	505	269	138	406	86	122
30	382	222	235	245	---	261	414	292	119	299	125	126
31	368	---	232	240	---	270	---	280	---	247	121	---
TOTAL	26173	7444	7019	7440	9048	7671	10870	12970	5287	9620	2865	2381
MEAN	844	248	226	240	323	247	362	418	176	310	92.4	79.4
MAX	1790	394	235	293	800	286	883	898	282	872	242	126
MIN	368	210	213	224	210	219	231	269	119	24	40	39
AC-FT	51910	14770	13920	14760	17950	15220	21560	25730	10490	19080	5680	4720

e Estimated.

## SAN JOAQUIN RIVER BASIN

11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	360	298	521	715	848	1008	1000	1255	1043	355	220	299
MAX	2739	1314	4718	4568	4695	5478	4949	5792	4545	3593	1192	1716
(WY)	1984	1970	1951	1956	1983	1983	1983	1952	1983	1983	1983	1983
MIN	11.4	69.9	105	109	69.2	94.4	59.7	65.1	19.2	6.18	8.91	11.3
(WY)	1978	1962	1962	1962	1991	1977	1961	1977	1977	1991	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1941 - 1994		
ANNUAL TOTAL	204245			108788					
ANNUAL MEAN	560			298			659		
HIGHEST ANNUAL MEAN							3155		
LOWEST ANNUAL MEAN							78.8		
HIGHEST DAILY MEAN	1790			Oct 17			12000		
LOWEST DAILY MEAN	207			Jan 2			.00		
ANNUAL SEVEN-DAY MINIMUM	214			Dec 3			.00		
INSTANTANEOUS PEAK FLOW							13600		
INSTANTANEOUS PEAK STAGE							62.87		
ANNUAL RUNOFF (AC-FT)	405100			215800			73.79		
10 PERCENT EXCEEDS	1210			601			477300		
50 PERCENT EXCEEDS	436			234			1720		
90 PERCENT EXCEEDS	231			75			230		
							99		



11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989 to current year. 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 U.S. Geological Survey Open-File Report 91-74.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 to current year.

CHEMICAL DATA: Water year 1993 to current year.

SEDIMENT DATA: Water year 1993 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to current year.

WATER TEMPERATURES: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1985.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. Specific-conductance and water-temperature values are affected by irrigation return flow. The specific-conductance and water-temperature gage was relocated 3 mi downstream to an old bridge near George J. Hatfield State Park and operation began Apr. 15, 1992.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,270 microsiemens, July 19, 1991; minimum recorded, 30 microsiemens, Oct. 14, 1993.

WATER TEMPERATURE: Maximum recorded, 34.0°C, July 17, 1991; minimum recorded, 3.0°C, several days in December 1990.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 661 microsiemens, July 13; minimum recorded, 30 microsiemens, Oct. 14.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 15; minimum recorded, 6.5°C, Dec. 25, 26.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
27...	1105	397	129	7.3	16.5	767	8.8	89	35	9.2	2.8
NOV											
17...	1010	227	180	7.7	12.0	765	9.4	87	46	12	3.9
DEC											
27...	1300	234	126	7.1	8.5	766	11.3	97	35	9.0	3.0
JAN											
04...	1210	232	128	7.1	9.0	765	10.5	91	36	9.5	3.1
11...	1230	232	144	6.9	9.0	770	10.6	91	38	10	3.2
18...	1230	229	122	7.3	11.0	766	10.7	96	38	9.8	3.2
FEB											
01...	1115	236	154	7.8	8.5	771	10.5	88	42	11	3.5
16...	1245	283	168	6.8	11.5	762	11.0	101	45	11	4.2
23...	1345	298	157	7.4	12.0	769	10.5	97	45	11	4.3
MAR											
01...	1100	255	160	7.4	14.5	768	9.8	95	48	12	4.3
23...	1115	244	127	7.3	15.5	765	10.1	101	39	9.5	3.6
APR											
29...	1010	512	82	7.1	17.0	766	7.2	74	24	6.3	2.1
MAY											
24...	1400	312	132	7.6	24.0	756	8.2	98	34	8.7	2.9
JUL											
01...	1345	88	549	7.6	26.5	762	7.7	96	140	35	12
26...	1330	862	43	7.3	22.0	759	9.9	114	18	4.5	1.6
AUG											
23...	1255	104	166	7.4	25.5	759	8.3	102	46	12	3.9
SEP											
20...	1130	61	355	8.0	22.5	761	9.4	108	--	--	--
28...	1150	114	228	7.7	21.5	761	7.6	86	58	15	5.0

## SAN JOAQUIN RIVER BASIN

11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT											
27...	10	38	0.7	1.0	46	--	0	--	38	--	6.1
NOV											
17...	16	42	1	1.5	51	--	0	--	42	--	8.4
DEC											
27...	9.0	35	0.7	0.60	48	--	0	--	39	--	6.5
JAN											
04...	9.6	36	0.7	0.90	46	--	0	--	38	--	6.5
11...	12	40	0.8	0.90	52	--	0	--	43	--	7.5
18...	11	39	0.8	1.1	47	--	0	--	38	--	6.4
FEB											
01...	12	37	0.8	2.0	41	--	0	--	34	--	7.8
16...	13	37	0.8	3.4	67	--	0	--	55	--	8.5
23...	11	32	0.7	4.3	56	--	0	--	46	--	8.1
MAR											
01...	13	36	0.8	1.6	69	--	0	--	57	--	9.3
23...	9.1	33	0.6	1.1	51	--	0	--	42	--	7.0
APR											
29...	5.6	32	0.5	1.0	--	--	--	0	27	--	4.0
MAY											
24...	8.8	35	0.7	1.1	--	42	--	0	--	34	6.1
JUL											
01...	57	47	2	2.5	--	176	--	0	--	145	29
26...	2.3	21	0.2	0.70	--	27	--	0	--	22	2.3
AUG											
23...	13	37	0.8	1.5	--	53	--	0	--	44	8.6
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--
28...	19	41	1	1.9	--	68	--	0	--	56	11

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT											
27...	10	0.20	11	85	77	0.12	0.010	0.810	0.060	0.20	<0.20
NOV											
17...	15	0.10	10	95	98	0.13	0.020	1.20	0.060	0.20	<0.20
DEC											
27...	8.3	<0.10	9.8	72	74	0.10	0.010	0.940	0.090	0.20	<0.20
JAN											
04...	8.7	<0.10	9.6	77	75	0.10	0.020	0.960	0.080	<0.20	<0.20
11...	12	<0.10	10	85	86	0.12	0.030	1.10	0.080	<0.20	<0.20
18...	8.3	<0.10	8.9	74	76	0.10	0.020	0.930	0.080	<0.20	<0.20
FEB											
01...	12	<0.10	9.1	86	83	0.12	0.030	1.10	0.120	0.30	0.20
16...	12	<0.10	12	105	104	0.14	0.070	1.30	0.620	1.3	0.90
23...	12	<0.10	12	107	97	0.15	0.040	1.30	0.310	1.0	0.70
MAR											
01...	13	<0.10	9.6	99	101	0.13	0.020	0.950	0.060	0.40	0.30
23...	8.8	<0.10	8.5	75	76	0.10	0.030	0.660	0.090	0.30	0.20
APR											
29...	6.0	<0.10	8.6	46	51	0.06	<0.010	0.130	0.030	<0.20	<0.20
MAY											
24...	8.6	<0.10	8.1	73	69	0.10	0.010	0.730	0.040	0.20	<0.20
JUL											
01...	61	0.10	20	322	316	0.44	0.050	2.70	0.090	0.50	0.30
26...	1.6	<0.10	7.0	33	34	0.05	<0.010	0.100	0.030	0.20	<0.20
AUG											
23...	11	0.20	11	103	93	0.14	0.030	1.10	0.060	0.30	0.30
SEP											
20...	--	--	--	--	--	--	0.020	3.10	0.030	<0.20	<0.20
28...	18	<0.10	13	130	125	0.18	0.020	1.80	0.050	0.30	0.20

11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
OCT										
27...	0.060	0.030	0.020	20	140	41	--	--	8.7	0.2
NOV										
17...	0.050	0.020	0.020	20	160	49	<1	<1	5.3	0.3
DEC										
27...	0.040	<0.010	0.020	20	120	40	<1	<1	2.8	0.3
JAN										
04...	0.040	0.030	0.020	30	140	35	<1	<1	3.0	0.4
11...	0.030	0.020	0.020	20	140	37	<1	<1	38	0.3
18...	0.020	0.020	0.020	20	100	31	<1	<1	4.8	0.2
FEB										
01...	0.080	0.060	0.040	20	85	31	<1	<1	20	0.9
16...	0.210	0.110	0.110	20	56	35	1	<1	5.1	1.1
23...	0.290	0.170	0.170	30	180	29	<1	<1	9.0	1.2
MAR										
01...	0.080	0.030	0.020	20	140	31	<1	<1	3.3	0.8
23...	0.070	0.030	0.020	10	150	27	<1	<1	2.7	0.6
APR										
29...	0.020	0.010	0.010	10	100	15	<1	<1	2.5	0.7
MAY										
24...	0.050	0.040	0.040	10	120	14	<1	<1	--	--
JUL										
01...	0.070	0.060	0.050	70	80	230	13	<1	2.5	0.4
26...	0.060	0.030	0.010	20	140	20	<1	<1	2.2	0.5
AUG										
23...	0.070	0.050	0.060	30	97	50	1	<1	2.8	0.4
SEP										
20...	0.040	0.040	0.040	--	--	--	--	--	--	--
28...	0.060	0.050	0.050	30	79	50	<1	<1	2.3	0.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT					
27...N	1105	397	16.5	24	26
NOV					
17...N	1010	227	12.0	8	4.9
DEC					
27...N	1300	234	8.5	4	2.5
JAN					
04...N	1210	232	9.0	7	4.4
11...N	1230	232	9.0	5	3.1
18...N	1230	229	11.0	4	2.5
FEB					
01...N	1115	236	8.5	29	18
16...N	1245	283	11.5	28	21
23...N	1345	298	12.0	67	54
MAR					
01...N	1100	255	14.5	41	28
23...N	1115	244	15.5	17	11
APR					
29...N	1010	512	17.0	26	36
MAY					
24...N	1400	312	24.0	11	9.3
JUL					
01...N	1345	88	26.5	16	3.8
26...N	1330	862	22.0	30	70
AUG					
23...N	1255	104	25.5	10	2.8
SEP					
28...N	1150	114	21.5	21	6.5

## 11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	132	108	117	99	165	147	124	118	153	149	175	149
2	145	101	133	106	177	156	120	119	155	149	159	150
3	123	101	168	133	182	156	120	119	154	149	158	149
4	121	77	170	153	179	159	147	119	151	148	161	148
5	128	76	153	96	179	156	144	137	153	148	161	150
6	107	67	169	117	181	150	137	135	152	148	159	150
7	73	43	173	157	175	152	137	125	178	151	157	146
8	55	38	171	151	179	143	133	124	159	142	157	138
9	53	34	174	161	162	141	127	121	143	73	161	144
10	50	34	180	174	155	140	138	122	107	85	163	135
11	58	36	186	160	168	153	165	124	110	102	135	123
12	41	32	164	152	165	140	180	126	124	108	132	125
13	45	32	199	156	147	130	148	144	166	122	132	105
14	47	30	210	199	161	144	150	126	156	135	114	99
15	47	32	214	199	157	131	126	111	158	144	107	100
16	57	32	203	191	132	118	112	110	179	156	118	107
17	57	33	193	164	122	119	115	112	166	153	133	116
18	37	34	186	170	123	120	132	114	153	81	140	131
19	52	36	196	169	128	123	140	132	118	81	161	131
20	73	49	190	174	132	128	153	140	125	113	152	129
21	73	53	188	181	132	130	156	149	132	101	137	133
22	61	51	186	163	130	126	157	150	158	106	137	130
23	92	61	175	160	126	122	156	139	159	153	141	126
24	118	82	175	154	122	117	142	110	159	154	138	127
25	---	---	189	144	122	120	122	101	159	147	128	117
26	---	---	188	175	139	121	148	109	156	144	137	121
27	---	---	192	182	137	120	159	138	150	143	154	133
28	---	---	190	177	126	119	155	148	153	149	152	140
29	---	---	189	166	119	115	150	144	---	---	141	135
30	---	---	193	157	124	114	153	150	---	---	142	131
31	127	105	---	---	130	121	154	149	---	---	133	128
MONTH	---	---	214	96	182	114	180	101	179	73	175	99
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	155	131	131	100	119	101	550	473	151	115	394	259
2	159	144	158	105	112	99	655	306	148	120	405	345
3	158	100	150	108	149	104	436	266	194	125	495	396
4	108	91	133	114	205	134	452	268	228	156	399	258
5	157	100	163	122	294	190	317	220	240	201	306	270
6	189	155	126	57	---	---	256	191	249	214	301	263
7	188	162	73	51	247	159	285	193	270	225	282	193
8	231	185	66	50	165	121	325	264	353	268	351	279
9	210	149	67	49	211	127	428	325	322	282	382	331
10	184	135	75	51	---	---	537	428	384	320	412	316
11	187	119	72	51	290	183	514	466	403	380	437	384
12	154	118	86	63	284	226	557	483	409	333	518	422
13	148	116	142	86	283	199	661	534	480	402	502	243
14	208	135	149	107	241	195	576	435	542	475	322	239
15	186	133	170	119	302	237	469	353	550	465	369	310
16	157	131	146	93	302	256	524	273	518	363	422	369
17	169	136	146	108	321	265	563	409	466	323	439	389
18	165	129	144	93	319	234	569	83	345	295	472	384
19	155	129	109	73	421	276	92	53	417	342	624	435
20	201	140	99	77	420	315	70	38	470	363	450	345
21	227	160	111	85	384	198	50	34	462	318	355	318
22	209	165	159	99	288	195	46	33	339	170	342	306
23	212	84	159	101	377	238	48	33	202	163	429	342
24	89	71	144	107	377	194	48	35	257	179	364	306
25	85	62	174	121	335	195	50	36	257	231	418	288
26	72	58	207	143	279	224	55	41	371	252	442	233
27	73	57	180	150	224	172	62	40	398	363	277	181
28	84	61	171	138	244	153	67	48	386	350	240	181
29	94	76	---	---	325	231	99	49	365	187	269	206
30	122	85	162	98	473	325	147	81	223	185	216	181
31	---	---	167	95	---	---	138	104	268	200	---	---
MONTH	231	57	---	---	---	---	661	33	550	115	624	181

## 11272500 MERCED RIVER NEAR STEVINSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	22.0	19.5	16.5	15.0	11.0	9.5	9.0	8.5	9.5	8.5	17.0	13.5
2	22.0	19.0	16.5	14.5	11.5	9.5	10.0	9.0	10.0	8.5	18.0	14.0
3	22.0	19.0	16.0	14.0	11.5	9.5	9.5	9.0	11.0	9.0	17.5	15.0
4	20.5	18.5	16.0	14.0	11.5	9.5	9.5	9.0	12.5	10.0	18.5	15.0
5	19.5	18.0	15.5	14.5	11.0	9.5	10.5	9.5	11.0	9.5	18.0	16.5
6	19.5	17.0	15.5	13.5	11.0	9.5	10.0	8.0	11.0	10.0	18.0	15.0
7	18.5	17.0	15.5	13.0	11.0	9.5	9.0	7.5	12.5	11.0	18.5	15.0
8	17.5	16.0	15.0	13.0	12.0	11.0	9.5	7.5	12.5	11.0	19.0	15.5
9	16.5	16.0	15.0	13.0	13.0	12.0	10.0	9.0	11.0	10.5	19.0	15.5
10	17.0	16.0	15.5	13.5	12.5	11.0	9.5	8.0	12.0	10.5	19.0	15.5
11	16.0	15.0	15.5	14.0	12.0	11.0	9.5	7.5	11.5	10.0	18.5	15.5
12	15.5	14.5	14.5	13.0	11.0	9.5	9.5	8.0	11.5	9.5	18.5	14.5
13	15.0	14.5	14.0	12.0	11.0	9.5	10.0	8.0	12.0	9.5	19.0	15.0
14	15.0	14.0	12.5	11.0	11.0	10.5	9.5	8.5	12.5	9.5	19.5	15.5
15	15.0	14.0	12.5	10.5	11.0	10.0	10.5	8.0	11.5	9.5	19.0	16.5
16	15.0	14.0	12.5	10.5	10.0	9.5	10.5	8.5	12.0	10.5	17.5	16.5
17	15.0	14.0	12.0	11.0	10.0	9.5	10.5	8.5	12.5	11.0	18.0	14.5
18	14.5	14.0	13.0	11.0	10.0	9.0	11.0	8.5	11.5	10.0	19.5	15.5
19	15.0	13.5	12.5	10.5	9.0	8.0	11.0	9.0	10.5	9.5	19.0	16.5
20	15.5	14.0	11.5	10.0	8.5	8.0	11.5	9.0	11.5	9.0	19.0	15.0
21	16.0	15.0	11.0	10.0	8.0	7.5	12.0	10.0	11.0	10.0	19.0	15.5
22	16.5	15.0	12.5	11.0	7.5	7.5	12.0	10.0	12.0	9.5	17.5	15.0
23	17.0	15.0	11.5	10.0	7.5	7.0	13.5	11.5	12.5	10.0	16.5	13.5
24	17.5	15.0	10.0	8.5	7.0	7.0	12.5	11.0	13.5	10.0	15.5	13.5
25	17.5	15.0	10.0	8.0	7.0	6.5	11.5	10.5	14.5	11.5	17.5	13.5
26	17.5	15.0	10.0	8.0	7.5	6.5	12.0	11.0	14.5	13.0	18.5	14.5
27	17.5	15.0	9.5	9.0	8.5	7.0	12.5	10.5	16.0	13.0	19.0	14.5
28	17.0	15.0	10.5	9.0	8.5	7.0	11.5	10.0	16.5	13.5	19.0	15.5
29	17.0	15.0	11.5	9.5	8.0	7.0	11.0	9.0	---	---	18.5	15.5
30	17.0	15.0	12.5	11.0	8.5	8.0	10.5	9.0	---	---	20.0	15.5
31	17.0	15.5	---	---	8.5	8.0	10.0	9.0	---	---	19.5	15.5
MONTH	22.0	13.5	16.5	8.0	13.0	6.5	13.5	7.5	16.5	8.5	20.0	13.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	20.0	15.5	21.0	17.0	26.0	21.5	29.0	21.0	27.0	22.5	26.5	20.5
2	20.5	17.0	22.0	17.5	26.0	21.5	29.0	22.0	27.5	22.0	25.5	19.5
3	21.5	17.5	22.5	18.5	25.5	21.0	30.0	23.5	27.5	22.0	25.0	18.0
4	20.5	17.5	22.0	19.0	25.5	20.5	29.5	23.5	28.5	22.5	26.0	20.0
5	20.5	16.5	22.0	19.0	24.5	21.0	28.5	23.0	28.0	22.0	26.5	21.0
6	20.0	17.0	20.5	19.0	24.5	20.0	29.5	23.5	29.0	23.5	27.0	21.5
7	20.0	16.5	19.0	17.0	24.0	19.0	29.5	24.0	30.0	23.5	26.5	21.5
8	18.5	17.0	18.0	16.0	24.5	20.0	30.5	24.0	29.0	23.0	25.5	20.5
9	19.5	15.5	19.0	16.0	26.0	20.5	30.5	23.5	28.0	22.0	24.0	19.5
10	19.5	15.5	20.0	17.5	28.5	22.5	31.0	22.5	28.0	21.5	24.0	18.5
11	21.0	16.0	21.5	18.5	29.5	23.5	31.0	23.0	28.0	21.0	24.0	18.0
12	21.5	17.0	22.5	19.0	28.0	23.5	30.5	22.5	28.0	21.0	24.0	18.0
13	22.0	17.5	23.5	19.5	27.0	22.0	30.0	22.0	28.0	21.0	24.0	18.5
14	22.5	17.5	24.0	20.0	26.0	21.5	30.5	22.0	28.5	21.5	24.5	18.5
15	23.5	19.0	22.5	20.0	26.0	19.5	31.5	23.0	28.5	22.0	25.0	19.5
16	23.0	20.0	20.5	18.0	26.0	19.5	30.0	22.5	28.5	21.5	25.5	20.5
17	23.5	19.0	20.0	18.5	26.5	19.5	31.0	22.5	29.0	22.0	26.0	21.0
18	24.0	19.5	20.0	17.5	26.5	20.0	30.0	22.5	28.5	22.0	25.5	20.0
19	24.0	20.0	20.0	17.5	27.0	21.0	29.0	26.0	28.5	21.5	26.0	21.0
20	23.5	18.5	21.0	17.0	27.0	21.5	26.5	23.5	27.0	20.5	26.0	20.5
21	23.0	18.5	22.5	18.5	27.0	21.0	23.5	21.5	27.0	21.0	26.0	21.5
22	23.0	18.5	22.5	18.5	27.5	21.0	22.5	20.0	27.0	21.5	26.0	22.0
23	21.0	17.5	24.0	19.0	27.0	21.0	22.5	20.0	27.0	22.0	24.0	21.0
24	17.5	15.5	25.0	20.0	26.5	21.0	22.0	19.5	27.0	21.5	24.5	19.5
25	15.5	14.5	25.5	21.0	27.0	21.0	22.5	20.0	27.5	22.0	25.5	21.0
26	15.5	14.0	25.5	21.0	27.0	21.0	22.5	20.5	26.5	21.5	25.5	21.0
27	15.0	14.0	25.5	20.5	29.0	22.5	22.5	20.0	27.5	21.5	24.5	22.0
28	17.5	14.0	26.5	21.5	29.0	23.5	23.0	20.5	26.5	20.0	23.5	21.5
29	19.0	15.5	26.5	21.5	29.0	23.0	25.5	21.5	26.0	20.5	23.5	20.0
30	20.5	16.0	25.5	22.5	28.5	22.5	27.0	22.0	26.0	20.5	23.5	19.5
31	---	---	26.0	21.5	---	---	27.0	22.5	26.5	21.5	---	---
MONTH	24.0	14.0	26.5	16.0	29.5	19.0	31.5	19.5	30.0	20.0	27.0	18.0

## SAN JOAQUIN RIVER BASIN

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.--Lat 37°21'02", long 120°58'34", in NW 1/4 SW 1/4 sec.3, T.7 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from bridge on Hills Ferry Road, 650 ft downstream from Merced River, and 3.5 mi northeast of Newman.

DRAINAGE AREA.--9,520 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1912 to current year. Water years 1938 to 1943 include flows through Merced River Slough.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar. 3, 1931, gage at various sites within 240 ft of bridge. Mar. 3, 1931, to Sept. 30, 1959, water-stage recorder within 300 ft of bridge, at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, water-stage recorder at site 70 ft upstream, at present datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river only), 30,700 ft<sup>3</sup>/s, Mar. 4, 1983, elevation, 65.78 ft; minimum daily, 15 ft<sup>3</sup>/s, Aug. 9, 10, 1924. Maximum discharge (including flow in Merced River Slough in water years 1938-43), 33,000 ft<sup>3</sup>/s, Mar. 7, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 2, 1868, reached a stage of 69.0 ft from floodmarks; flood of February 1886 reached a stage of 67.1 ft from floodmarks; and flood of 1911 reached a stage of 66.3 ft from floodmarks. All stages referred to current datum. Discharges unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,160 ft<sup>3</sup>/s, Oct. 18, elevation, 53.05 ft; minimum daily, 208 ft<sup>3</sup>/s, Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	622	858	630	600	716	965	708	692	458	266	466	251
2	614	838	623	600	705	951	697	653	465	263	451	242
3	630	774	617	604	695	929	716	613	455	267	436	240
4	645	759	604	687	680	894	737	531	405	278	395	248
5	664	733	597	740	672	886	708	500	386	296	353	261
6	690	734	597	722	663	888	689	736	384	320	324	261
7	843	744	594	701	684	884	630	959	379	311	320	259
8	968	721	594	675	757	884	576	1080	384	296	310	247
9	1030	699	600	646	1610	859	572	1140	375	260	312	245
10	1090	674	597	627	1660	825	590	1130	368	239	290	246
11	1480	681	613	616	1530	785	574	931	340	235	272	234
12	1760	696	630	602	1220	748	570	724	334	238	262	227
13	1850	694	670	587	1060	756	578	637	330	236	234	229
14	1950	700	691	575	978	805	574	547	329	227	233	222
15	2020	693	708	572	924	838	555	498	311	238	245	220
16	2050	691	751	572	878	845	546	489	296	230	260	225
17	2110	695	784	586	871	828	532	502	296	235	245	229
18	2130	696	795	605	941	798	546	511	305	287	241	226
19	1750	691	791	626	1180	807	556	564	290	522	222	214
20	1340	691	773	653	1310	798	512	617	315	648	246	208
21	1170	680	744	656	1380	790	488	641	344	745	240	213
22	1080	660	722	655	1470	793	503	626	333	834	255	219
23	952	640	712	671	1430	784	639	617	318	867	279	218
24	882	630	698	726	1290	775	904	592	315	907	290	222
25	884	623	684	840	1170	780	991	533	308	991	283	229
26	884	623	680	875	1070	739	1060	490	307	1020	251	240
27	864	623	670	878	1030	746	1120	463	337	1030	230	249
28	853	630	660	833	985	748	1000	446	337	908	244	243
29	848	630	650	789	---	728	847	447	320	673	280	239
30	850	636	640	752	---	717	734	479	289	543	296	252
31	835	---	610	725	---	721	---	474	---	463	294	---
TOTAL	36338	20837	20729	20996	29559	25294	20452	19862	10413	14873	9059	7058
MEAN	1172	695	669	677	1056	816	682	641	347	480	292	235
MAX	2130	858	795	878	1660	965	1120	1140	465	1030	466	261
MIN	614	623	594	572	663	717	488	446	289	227	222	208
AC-FT	72080	41330	41120	41650	58630	50170	40570	39400	20650	29500	17970	14000

## 11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1937, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	290	362	796	1857	3623	3223	3395	5010	5490	1888	328	209
MAX	1422	1233	2907	8356	11840	13000	11780	14210	15700	8803	1370	442
(WY)	1919	1928	1923	1914	1916	1916	1916	1916	1922	1914	1914	1936
MIN	55.0	85.5	136	228	278	233	122	115	92.5	29.1	21.3	26.7
(WY)	1914	1932	1913	1918	1913	1913	1931	1931	1924	1924	1924	1924

## SUMMARY STATISTICS

## WATER YEARS 1912 - 1937

ANNUAL MEAN	2208
HIGHEST ANNUAL MEAN	6585
LOWEST ANNUAL MEAN	196
HIGHEST DAILY MEAN	20700
LOWEST DAILY MEAN	15
ANNUAL SEVEN-DAY MINIMUM	17
INSTANTANEOUS PEAK FLOW	20700
INSTANTANEOUS PEAK STAGE	65.30
ANNUAL RUNOFF (AC-FT)	1599000
10 PERCENT EXCEEDS	7040
50 PERCENT EXCEEDS	590
90 PERCENT EXCEEDS	112

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1943, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	447	494	1558	3378	7512	10070	7308	8025	9334	3383	686	482
MAX	708	1065	2832	5111	14350	23500	11480	15310	21010	8625	1745	768
(WY)	1939	1939	1938	1942	1938	1938	1938	1938	1938	1938	1938	1938
MIN	226	190	423	1967	2442	679	959	627	333	234	225	278
(WY)	1940	1940	1940	1939	1939	1939	1939	1939	1939	1939	1939	1939

## SUMMARY STATISTICS

## WATER YEARS 1938 - 1943

ANNUAL MEAN	4366
HIGHEST ANNUAL MEAN	8643
LOWEST ANNUAL MEAN	904
HIGHEST DAILY MEAN	33000
LOWEST DAILY MEAN	170
ANNUAL SEVEN-DAY MINIMUM	171
INSTANTANEOUS PEAK FLOW	33000
INSTANTANEOUS PEAK STAGE	65.81
ANNUAL RUNOFF (AC-FT)	3163000
10 PERCENT EXCEEDS	11900
50 PERCENT EXCEEDS	1580
90 PERCENT EXCEEDS	291

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	658	650	1191	2027	2743	2841	2738	2573	2058	820	481	600
MAX	5831	4039	10880	12490	21100	24170	18860	14050	15280	11320	2683	3786
(WY)	1984	1984	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
MIN	25.2	122	202	230	180	212	159	141	48.7	45.9	80.4	41.2
(WY)	1978	1978	1950	1991	1991	1948	1977	1977	1977	1977	1977	1977

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1944 - 1994

ANNUAL TOTAL	430718	235470	
ANNUAL MEAN	1180	645	1608
HIGHEST ANNUAL MEAN			11620
LOWEST ANNUAL MEAN			200
HIGHEST DAILY MEAN	4790	Jan 19	2130
LOWEST DAILY MEAN	332	Jan 1	208
ANNUAL SEVEN-DAY MINIMUM	478	Jan 1	217
INSTANTANEOUS PEAK FLOW			2160
INSTANTANEOUS PEAK STAGE			53.05
ANNUAL RUNOFF (AC-FT)	854300	467100	1165000
10 PERCENT EXCEEDS	2120	995	3590
50 PERCENT EXCEEDS	905	630	562
90 PERCENT EXCEEDS	623	245	211

## 11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989, July 1992 to current year. Data for the period March 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 U.S. Geological Survey Open-File Report 91-74.

CHEMICAL DATA: Water year 1993.

SPECIFIC CONDUCTANCE: Water year 1989, 1992 to current year.

TEMPERATURE: Water year 1989, 1992 to current year.

SEDIMENT DATA: Water year 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Water year 1989, July 1992 to current year.

WATER TEMPERATURE: Water year 1989, July 1992 to current year.

INSTRUMENTATION.--Water-quality monitor October 1988 to September 1989 and since July 1992.

REMARKS.--The water-quality monitor for this site is located 1.2 mi downstream from the gage. Specific-conductance and water-temperature values are affected by an irrigation-return-flow canal upstream or by a pump located by monitor electrodes. Interruptions in record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 3,000 microsiemens, July 10, 1994; minimum recorded, 136 microsiemens, Jan. 10, 1993.

WATER TEMPERATURE: Maximum recorded, 32.0°C, July 14, 1992; minimum recorded, 4.5°C, January 3, 1993.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 3,000 microsiemens, July 10; minimum recorded, 201 microsiemens, Oct. 14.

WATER TEMPERATURE: Maximum recorded, 30.5°C, June 11, July 15; minimum recorded, 6.0°C, Dec. 25, 26.

## SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	772	673	794	762	1200	1180	1450	1430	1710	1640	---	---
2	772	635	839	776	1200	1170	1430	1390	1740	1700	---	---
3	---	---	907	839	1250	1200	1520	1410	1720	1670	---	---
4	---	---	896	863	1270	1250	1520	1300	1740	1700	---	---
5	---	---	905	855	1270	1260	1300	1280	1790	1720	---	---
6	---	---	937	889	1290	1250	1310	1250	1800	1720	---	---
7	---	---	991	889	1290	1280	1360	1210	1720	1660	---	---
8	---	---	982	919	1290	1280	1420	1350	1750	1540	---	---
9	372	355	1020	968	1280	1160	1450	1410	1540	776	---	---
10	355	305	1040	1000	1270	1140	1480	1450	1080	617	---	---
11	305	210	1050	1010	1290	1260	1510	1460	1160	786	---	---
12	214	206	1050	1010	1290	1210	1530	1490	1350	1160	---	---
13	217	206	1060	1020	1210	1160	1580	1530	1430	1350	---	---
14	230	201	1050	1010	1180	1160	1640	1570	1470	1430	---	---
15	228	203	1090	1050	1180	1150	1650	1600	1480	1460	---	---
16	254	227	1070	1040	1190	1130	1620	1600	1570	1470	---	---
17	283	248	1050	1040	1150	1110	1670	1600	1660	1570	---	---
18	351	269	1050	1020	1140	1130	1650	1590	1680	1320	---	---
19	471	350	1090	1050	1150	1130	1610	1580	1320	1090	---	---
20	542	471	1120	1070	1200	1130	1610	1570	1220	1080	---	---
21	573	529	1150	1100	1240	1190	1620	1580	1250	1090	---	---
22	583	524	1180	1150	1280	1240	1620	1570	1090	1040	---	---
23	724	579	1210	1180	1290	1270	1640	1570	---	---	---	---
24	773	710	1230	1200	1300	1280	1620	1480	---	---	---	---
25	789	752	1220	1200	1310	1290	1490	1310	---	---	---	---
26	789	751	1220	1190	1310	1300	1400	1340	---	---	---	---
27	826	766	1210	1190	1330	1300	1450	1400	---	---	---	---
28	871	795	1220	1200	1360	1330	1500	1450	---	---	---	---
29	796	734	1220	1200	1370	1340	1500	1480	---	---	---	---
30	854	793	1210	1190	1390	1360	1590	1490	---	---	---	---
31	843	777	---	---	1450	1390	1650	1590	---	---	---	---
MONTH	---	---	1230	762	1450	1110	1670	1210	---	---	---	---



## 11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	1580	1400	1640	1480	2510	2290	1710	1600	2160	1880
2	---	---	1520	1430	1560	1480	2520	2230	1700	1600	2270	1970
3	---	---	1450	1360	1730	1490	2350	2180	1660	1590	2280	2050
4	---	---	1590	1450	1950	1720	2350	2160	1930	1630	2160	1960
5	1860	1750	1700	1580	1980	1880	2220	1870	1950	1870	2010	1900
6	1940	1800	1630	999	1990	1740	2080	1940	2150	1950	2000	1810
7	2000	1920	999	913	1940	1840	2190	1970	2180	1980	1890	1730
8	2100	1930	1120	938	1910	1740	2300	2180	2130	1930	1890	1700
9	2090	2010	1120	837	1970	1780	2700	2290	2060	1870	1920	1750
10	2120	1930	944	854	2000	1810	3000	2620	2240	2050	1940	1810
11	2140	2010	1100	944	2140	1980	2990	2810	2270	2160	2120	1940
12	2230	1950	1390	1100	2060	1920	2950	2630	2500	2010	2080	1700
13	2220	1850	1410	1330	2050	1890	2770	2510	2590	2430	2040	1700
14	1870	1780	1690	1410	2020	1900	2960	2710	2500	2340	1910	1840
15	1860	1820	1690	1520	2170	1970	2710	2570	2340	2230	2050	1800
16	1860	1730	1880	1590	2350	2130	2790	2630	2280	2080	2140	1910
17	1890	1790	1700	1570	2380	2260	2900	2600	2280	2080	2280	1800
18	1880	1780	1710	1550	2330	2130	2610	1510	2320	2190	1910	1810
19	1860	1660	1610	1350	2340	2190	1510	1300	2420	2230	2150	1880
20	1920	1860	1420	1300	2330	1860	1320	1120	2350	2030	2240	1920
21	1970	1870	1440	1230	2140	1960	1220	1060	2190	2050	1920	1740
22	1960	1700	1460	1360	2160	1880	1090	1010	2090	1930	1860	1760
23	1780	1130	1450	1380	2160	1970	1070	999	2060	1950	1860	1770
24	1130	1030	1540	1430	2160	1990	1060	996	2030	1880	1780	1560
25	1050	989	1590	1530	2220	2040	1020	925	2070	1920	1590	1500
26	1050	950	1760	1590	2250	2100	1070	998	2310	2070	1560	1370
27	986	933	1670	1440	2110	1950	1050	931	2340	2100	1380	1130
28	1180	981	1840	1640	2060	1790	1120	922	2110	1930	1570	1200
29	1310	1180	1850	1720	2160	2040	1420	1120	1930	1690	1680	1500
30	1450	1300	1740	1470	2410	2150	1650	1420	1790	1700	1590	1370
31	---	---	1680	1480	---	---	1710	1560	1880	1590	---	---
MONTH	---	---	1880	837	2410	1480	3000	922	2590	1590	2280	1130

## SAN JOAQUIN RIVER BASIN

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	23.0	20.5	17.0	16.0	12.0	10.5	9.0	8.5	9.0	8.0	---	---
2	23.0	20.5	16.5	15.0	12.0	10.5	10.0	9.0	9.5	8.0	---	---
3	22.5	20.0	16.0	14.5	12.0	10.5	10.0	9.5	10.0	8.5	---	---
4	21.5	20.0	16.0	14.5	12.0	10.5	9.5	9.0	12.0	9.5	---	---
5	20.5	18.5	15.5	14.5	11.5	10.0	10.0	9.0	11.0	10.0	---	---
6	20.0	17.5	15.0	13.5	11.0	10.0	9.5	8.0	11.0	10.0	---	---
7	19.5	17.5	15.0	13.5	11.5	10.0	9.0	7.5	12.5	10.5	---	---
8	18.5	17.5	14.5	13.0	12.5	11.0	9.0	7.5	12.5	11.5	---	---
9	18.0	17.0	15.0	13.5	13.0	12.0	10.0	9.0	11.5	10.5	---	---
10	18.0	17.0	16.0	14.5	13.0	12.0	9.5	8.0	12.0	10.5	---	---
11	17.5	16.0	16.0	15.0	12.5	11.5	9.5	7.5	11.5	10.5	---	---
12	16.5	15.5	15.5	14.0	11.5	10.0	9.0	8.0	11.5	9.5	---	---
13	16.5	15.5	14.0	12.5	11.0	10.0	9.5	8.0	11.5	9.5	---	---
14	16.5	15.5	13.0	11.0	11.0	10.5	9.5	8.5	12.0	9.5	---	---
15	16.5	15.5	11.5	10.0	11.0	9.5	10.0	8.0	11.5	10.0	---	---
16	17.0	15.5	11.5	10.0	10.0	9.5	10.0	8.5	12.0	11.0	---	---
17	17.0	15.5	12.0	10.5	10.0	9.0	10.0	8.5	12.5	11.0	---	---
18	16.5	15.0	12.5	11.0	9.5	9.0	10.5	8.5	11.5	10.5	---	---
19	17.0	15.0	12.0	11.0	9.0	8.0	11.0	9.0	10.5	9.5	---	---
20	17.5	15.5	12.0	10.5	8.0	7.5	11.0	9.0	11.0	9.0	---	---
21	18.0	17.0	11.5	10.5	7.5	7.5	11.5	10.0	10.5	9.5	---	---
22	18.0	16.5	12.5	11.0	7.5	7.0	11.5	10.0	11.0	9.5	---	---
23	18.0	16.5	12.0	11.0	7.0	6.5	13.0	11.5	---	---	---	---
24	18.0	17.0	11.0	8.5	6.5	6.5	12.5	11.0	---	---	---	---
25	18.0	17.0	9.5	8.0	6.5	6.0	11.5	10.5	---	---	---	---
26	18.0	17.0	9.5	8.0	7.0	6.0	12.0	10.5	---	---	---	---
27	18.0	16.5	9.5	8.5	8.5	7.0	11.5	10.0	---	---	---	---
28	18.0	16.5	10.0	8.5	8.5	7.0	10.5	9.5	---	---	---	---
29	17.5	16.0	11.5	9.5	8.5	7.5	10.0	8.0	---	---	---	---
30	17.5	16.0	12.5	11.5	8.5	8.0	9.5	8.5	---	---	---	---
31	17.5	17.0	---	---	8.5	8.0	9.5	8.5	---	---	---	---
MONTH	23.0	15.0	17.0	8.0	13.0	6.0	13.0	7.5	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	---	---	22.0	13.0	27.0	22.0	29.0	23.0	28.0	23.0	27.5	22.0
2	---	---	23.0	18.0	27.0	22.0	29.5	23.5	28.0	22.5	27.0	21.5
3	---	---	23.0	19.0	26.0	21.0	29.5	23.5	28.0	22.5	26.0	20.5
4	---	---	23.0	19.0	26.5	20.5	29.0	23.5	28.5	23.5	27.0	21.0
5	19.5	15.5	23.0	19.5	25.5	21.5	28.5	23.0	28.5	23.5	27.5	22.5
6	19.5	16.5	21.5	18.5	25.0	20.0	28.5	23.0	30.0	24.0	28.0	23.0
7	19.5	16.0	19.5	17.5	24.5	19.5	29.0	23.0	29.5	24.5	27.5	22.5
8	18.0	16.5	20.0	17.0	25.0	20.0	29.5	23.0	29.5	24.0	26.0	21.5
9	18.5	15.5	21.0	17.5	27.0	21.0	29.0	23.5	28.5	23.0	24.5	21.0
10	18.5	15.0	22.0	19.0	29.5	23.0	29.5	23.0	28.5	22.5	25.0	19.5
11	21.0	15.5	24.0	20.0	30.5	24.5	29.5	23.5	28.0	23.0	25.0	19.0
12	21.5	12.5	24.5	20.0	28.5	24.5	29.0	23.5	28.5	22.5	25.0	19.0
13	22.0	12.5	24.5	20.5	28.0	23.0	29.0	23.0	29.0	23.0	24.5	19.0
14	22.5	18.0	25.0	20.0	26.0	21.5	30.0	22.5	29.0	24.0	25.0	19.0
15	24.0	18.5	23.0	20.0	26.0	20.0	30.5	24.5	29.0	24.0	26.0	20.0
16	23.0	20.0	20.0	13.0	26.5	20.0	30.0	24.0	29.0	23.0	25.5	21.0
17	24.0	19.0	19.5	18.0	27.0	20.5	29.5	24.0	30.0	24.0	26.5	21.5
18	24.5	19.5	20.5	17.5	27.0	21.0	29.5	24.0	29.0	23.5	25.5	20.5
19	24.0	19.5	20.5	17.5	28.0	21.5	29.5	25.0	29.0	23.0	27.0	21.5
20	23.0	18.5	22.0	17.5	28.0	22.5	27.0	23.5	28.0	22.5	27.0	21.5
21	22.5	18.5	23.5	18.5	28.0	22.0	25.0	22.5	28.5	23.0	27.0	21.5
22	22.5	18.0	23.5	19.5	28.0	22.0	25.0	21.5	28.0	23.0	27.0	22.0
23	20.5	13.0	24.5	20.0	27.5	21.5	24.5	21.5	27.5	22.5	24.5	21.5
24	17.5	16.0	26.0	21.0	26.5	21.5	24.0	20.5	27.5	22.0	25.5	19.5
25	16.0	14.5	26.5	21.5	27.5	21.5	24.0	21.5	28.0	23.0	26.0	21.0
26	16.5	14.0	26.0	21.5	26.5	21.0	24.5	21.5	27.5	22.5	26.5	21.0
27	16.0	14.5	26.0	20.5	29.0	22.5	24.5	21.5	28.0	23.0	25.0	22.0
28	18.5	14.0	26.5	21.5	29.0	23.5	25.5	21.5	27.0	22.0	24.0	21.5
29	20.0	16.0	27.0	21.5	29.0	23.5	28.0	22.5	26.5	21.5	24.5	20.0
30	21.5	17.0	26.0	23.0	28.5	23.0	28.5	23.5	27.0	21.5	23.5	19.0
31	---	---	27.0	22.0	---	---	28.0	23.0	28.0	23.0	---	---
MONTH	---	---	27.0	13.0	30.5	19.5	30.5	20.5	30.0	21.5	28.0	19.0

## 11274500 ORESTIMBA CREEK NEAR NEWMAN, CA

LOCATION.--Lat 37°18'56", long 121°07'27", in NE 1/4 NE 1/4 sec.19, T.7 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 20 ft downstream from bridge at California Aqueduct Siphon, 3 mi downstream from Oso Creek, and 5.5 mi west of Newman.

DRAINAGE AREA.--134 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1932 to current year.

REVISED RECORDS.--WSP 1445: 1932(M), 1938(P), 1940-41(M), 1945, 1951(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.01 ft above sea level. Prior to Oct. 1, 1958, at site 1,080 ft downstream at datum 24.14 ft lower. Oct. 1, 1958, to Aug. 13, 1969, at site 960 ft downstream at datum 27.14 ft lower. Aug. 13, 1969, to Feb. 6, 1984, at site 240 ft upstream, present datum.

REMARKS.--No estimated daily discharges. Records good except for discharges below 1 ft<sup>3</sup>/s, which are fair. No storage or diversion upstream from station except for minor stock ponds.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft<sup>3</sup>/s, Apr. 2, 1958, gage height, 6.57 ft, site and datum then in use, from rating curve extended above 5,000 ft<sup>3</sup>/s; maximum gage height, 7.96 ft, Jan. 13, 1993; no flow for all or parts of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	1430	*12	*2.61				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	3.7	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	6.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.23	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	3.7	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	13	.00	.00	.00	.00	.00	.00	.00

## 11274500 ORESTIMBA CREEK NEAR NEWMAN, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.000	1.01	11.1	39.8	75.7	44.5	22.3	3.03	.63	.11	.001	.000
MAX	.000	31.0	181	264	482	335	362	46.9	15.1	5.32	.045	.000
(WY)	1933	1951	1956	1983	1980	1983	1958	1983	1941	1941	1958	1932
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1933	1933	1933	1936	1935	1933	1933	1933	1932	1932	1932	1932

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1932 - 1994	
ANNUAL TOTAL	16596.69		6.43			
ANNUAL MEAN	45.5		.018		16.2	
HIGHEST ANNUAL MEAN					89.4	
LOWEST ANNUAL MEAN					.000	
HIGHEST DAILY MEAN	1990	Jan 13	3.7	Feb 20	3170	Dec 23 1955
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	May 9 1932
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 22	.00	Oct 1	.00	May 9 1932
INSTANTANEOUS PEAK FLOW			12	Feb 20	10200	Apr 2 1958
INSTANTANEOUS PEAK STAGE			2.61	Feb 20	7.96	Jan 13 1993
ANNUAL RUNOFF (AC-FT)	32920		13		11750	
10 PERCENT EXCEEDS	106		.00		17	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

## 11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA

LOCATION.--Lat 37°24'49", long 121°00'54", in Orestimba Grant, Stanislaus County, Hydrologic Unit 18040002, on right bank at downstream side of River Road Bridge, 0.8 mi upstream of mouth, and 3.4 mi northeast of Crows Landing.

DRAINAGE AREA.--Not determined.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 65 ft above sea level, from topographic map.

REMARKS.--Records fair. Flows during summer and fall consist mainly of return water from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft<sup>3</sup>/s, Jan. 13, 1993, gage height 11.37 ft, from rating curve extended above 1,600 ft<sup>3</sup>/s; no flow for many days during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85 ft<sup>3</sup>/s, Sept. 12, gage height, 6.64 ft; no flow, Oct. 31, Nov. 1, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	.00	31	8.0	21	15	10	2.6	8.6	12	12	22
2	50	1.1	40	6.6	17	24	10	6.0	9.3	13	15	8.9
3	14	13	42	4.8	21	32	5.7	2.2	11	16	23	22
4	8.7	11	43	e1.0	17	18	6.6	3.5	9.7	13	12	45
5	6.8	13	45	e.50	15	e5.8	7.3	6.3	9.3	13	14	12
6	53	4.0	51	e.50	19	e3.0	8.1	11	8.5	24	15	4.8
7	36	3.0	36	e4.4	52	e1.0	21	32	11	12	19	4.4
8	12	14	34	5.5	49	e7.0	35	34	12	14	17	11
9	.24	7.9	30	e3.5	28	41	26	21	10	18	26	15
10	21	2.8	30	4.4	23	11	21	13	8.0	14	24	11
11	44	4.1	44	4.0	13	e3.0	7.1	5.5	8.0	12	21	19
12	47	21	46	e3.6	11	e1.0	24	8.5	6.9	12	15	23
13	39	14	31	3.4	11	e2.5	7.3	12	4.6	10	17	3.3
14	23	8.6	24	3.3	8.7	11	21	12	6.8	17	21	6.1
15	16	42	25	3.6	7.1	10	10	7.1	4.3	19	31	7.6
16	24	45	38	4.3	6.4	e5.5	8.5	11	6.7	17	22	18
17	28	42	36	4.4	8.9	6.2	11	25	15	16	15	19
18	26	26	24	4.6	5.7	8.3	13	35	10	19	16	9.2
19	12	11	16	5.0	e8.3	12	7.9	9.1	14	31	31	7.6
20	10	e1.0	15	4.7	50	32	5.9	12	14	16	24	12
21	15	e.00	22	e3.7	41	45	5.0	10	7.1	15	16	9.5
22	1.4	e5.0	26	e3.0	30	13	5.8	4.1	10	14	19	9.9
23	1.3	16	26	4.6	31	4.6	5.0	21	8.0	17	14	8.6
24	.15	5.1	29	19	25	27	6.5	11	11	17	14	21
25	.08	e1.0	25	57	19	20	5.5	6.1	15	17	12	25
26	8.0	e10	15	55	e9.0	2.9	16	7.6	9.9	19	8.0	42
27	22	32	12	39	12	3.3	23	5.8	14	16	12	22
28	28	37	9.6	29	21	4.9	13	7.2	11	15	9.1	21
29	9.7	51	6.5	20	---	5.5	6.2	4.9	9.8	12	9.8	6.4
30	.35	38	4.1	19	---	5.6	13	6.8	11	11	8.0	6.1
31	.00	---	3.2	25	---	6.0	---	9.2	---	12	6.3	---
TOTAL	593.72	479.60	859.4	354.40	580.1	387.1	365.4	362.5	294.5	483	518.2	452.4
MEAN	19.2	16.0	27.7	11.4	20.7	12.5	12.2	11.7	9.82	15.6	16.7	15.1
MAX	53	51	51	57	52	45	35	35	15	31	31	45
MIN	.00	.00	3.2	.50	5.7	1.0	5.0	2.2	4.3	10	6.3	3.3
AC-FT	1180	951	1700	703	1150	768	725	719	584	958	1030	897

e Estimated.

## 11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.0	16.9	17.8	93.0	122	51.5	22.7	15.7	12.7	19.9	24.7	13.4
MAX	19.2	17.8	27.7	175	223	90.4	33.2	23.2	20.9	30.1	46.1	21.1
(WY)	1994	1993	1994	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	4.76	16.0	7.84	11.4	20.7	12.5	12.2	11.7	7.38	14.1	11.2	4.04
(WY)	1993	1994	1993	1994	1994	1994	1994	1994	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1992 - 1994			
ANNUAL TOTAL	21725.15				5730.32							
ANNUAL MEAN	59.5				15.7				36.2			
HIGHEST ANNUAL MEAN									56.8			
LOWEST ANNUAL MEAN									15.7			
HIGHEST DAILY MEAN	1420				57				1420			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.71				2.8				.00			
INSTANTANEOUS PEAK FLOW					85				2300			
INSTANTANEOUS PEAK STAGE					6.64				11.37			
ANNUAL RUNOFF (AC-FT)	43090				11370				26250			
10 PERCENT EXCEEDS	104				34				50			
50 PERCENT EXCEEDS	27				12				13			
90 PERCENT EXCEEDS	2.6				3.9				2.0			

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1992 to current year.

CHEMICAL DATA: April 1992 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

SEDIMENT DATA: April 1992 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1992.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments and days where no flow occurred. Specific-conductance, water-temperature, and chemical values are affected by irrigation-return flow from a drainage pipe located 30 ft upstream from gage.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,890 microsiemens, Sept. 13, 1992; minimum recorded, 103 microsiemens, Jan. 7, 1993.

WATER TEMPERATURE: Maximum recorded, 30.0°C, June 3, July 27, 1992, July 29, Aug. 1, 2, 1993; minimum recorded, 4.0°C, Dec. 28, 1992.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,330 microsiemens, Apr. 20; minimum recorded, 291 microsiemens, Oct. 10.

WATER TEMPERATURE: Maximum recorded, 29.5°C, July 15, Aug. 31; minimum recorded, 4.5°C, Jan. 8, 10, 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)
OCT											
27...	1330	21	541	8.0	16.5	766	9.9	101	160	35	18
NOV											
17...	1150	41	496	7.9	10.0	765	11.9	105	120	27	13
DEC											
29...	1000	6.7	673	7.8	6.0	770	12.0	96	150	33	16
FEB											
02...	0900	18	659	7.8	6.0	765	12.3	98	150	33	17
MAR											
01...	1200	11	766	8.2	15.0	769	11.0	108	180	39	20
22...	1215	8.6	860	8.1	14.5	762	8.9	88	200	44	22
APR											
26...	1430	12	1070	8.0	16.0	760	9.6	98	330	70	37
MAY											
24...	1245	13	897	8.1	21.0	757	8.2	93	270	58	31
JUN											
30...	1200	15	1100	7.7	23.0	761	7.0	82	380	84	42
JUL											
26...	1430	16	841	8.0	27.0	760	10.3	130	260	56	28
AUG											
24...	1015	7.1	1030	8.1	20.0	760	8.3	92	370	80	41
SEP											
27...	1240	30	944	8.2	22.0	762	7.2	82	260	54	30

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 27...	43	36	1	3.2	168	--	0	--	138	--	71
NOV 17...	55	49	2	3.0	67	--	0	--	55	--	70
DEC 29...	70	50	3	3.5	121	--	0	--	99	--	85
FEB 02...	75	51	3	2.9	110	--	0	--	90	--	100
MAR 01...	88	51	3	4.5	98	--	5	--	88	--	120
MAR 22...	94	50	3	4.1	115	--	0	--	94	--	130
APR 26...	90	37	2	4.9	--	190	--	0	--	156	200
MAY 24...	74	37	2	3.7	--	165	--	0	--	135	160
JUN 30...	85	32	2	5.1	--	259	--	0	--	212	170
JUL 26...	80	40	2	4.8	--	161	--	0	--	132	120
AUG 24...	77	31	2	4.0	--	248	--	0	--	203	140
SEP 27...	79	39	2	4.0	--	190	--	0	--	156	90

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 27...	52	0.20	14	323	330	0.44	0.020	2.30	0.110	0.40	0.30
NOV 17...	69	0.20	14	293	289	0.40	0.020	0.870	0.050	0.30	0.20
DEC 29...	94	<0.10	9.5	388	377	0.53	0.020	1.10	0.430	1.2	0.70
FEB 02...	90	<0.10	6.7	396	382	0.54	0.040	0.630	0.030	0.40	0.20
MAR 01...	99	<0.10	6.2	452	436	0.61	0.050	1.10	0.050	0.60	0.50
MAR 22...	110	0.10	13	518	489	0.70	0.090	3.00	0.390	1.1	0.80
APR 26...	100	0.20	16	680	639	0.92	0.070	6.00	0.120	1.2	0.60
MAY 24...	96	0.20	14	556	537	0.76	0.030	4.20	0.040	0.50	0.40
JUN 30...	100	0.30	17	704	700	0.96	0.530	15.0	1.60	2.8	2.0
JUL 26...	110	0.20	15	535	517	0.73	0.170	5.10	0.090	1.0	0.50
AUG 24...	110	0.30	16	661	625	0.90	0.060	7.70	0.050	0.70	0.50
SEP 27...	120	0.10	17	526	505	0.72	0.040	3.90	0.070	0.50	0.30



11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT 27...	0.130	0.100	0.090	220	26	8	--	--	35	1.1
NOV 17...	0.100	0.060	0.070	280	8	5	<1	1	14	0.6
DEC 29...	0.260	0.170	0.170	370	17	7	1	1	6.2	1.0
FEB 02...	0.080	0.040	0.020	430	11	4	2	2	6.1	1.0
MAR 01...	0.160	0.110	0.080	500	14	8	2	1	4.9	0.7
22...	0.230	0.160	0.160	530	17	9	2	2	--	--
APR 26...	0.390	0.210	0.200	450	20	10	2	3	4.0	1.6
MAY 24...	0.140	0.110	0.120	360	5	9	<1	3	--	--
JUN 30...	0.380	0.120	0.120	380	5	9	1	2	3.6	2.9
JUL 26...	0.320	0.150	0.140	350	7	5	3	1	3.4	6.6
AUG 24...	0.250	0.140	0.130	330	6	11	1	2	2.8	1.7
SEP 27...	0.180	0.080	0.080	290	4	7	1	1	3.4	1.2

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 27...N	1330	21	16.5	50	2.8
NOV 17...N	1150	41	10.0	59	6.5
DEC 29...N	1000	6.7	6.0	18	0.33
FEB 02...N	0900	18	6.0	47	2.3
MAR 01...N	1200	11	15.0	27	0.80
22...N	1215	8.6	14.5	112	2.6
APR 26...N	1430	12	16.0	202	6.5
MAY 24...N	1245	13	21.0	187	6.6
JUN 22...N	1645	9.6	--	315	8.2
30...N	1200	15	23.0	321	13
JUL 26...N	1430	16	27.0	1120	48
AUG 24...N	1015	7.1	20.0	251	4.8
SEP 27...N	1240	30	22.0	145	12

11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	455	383	---	---	586	552	712	618	671	641	768	710
2	461	386	540	511	605	563	704	623	681	640	768	738
3	418	386	593	494	606	577	704	653	681	654	770	694
4	435	376	530	499	634	561	---	---	668	654	714	668
5	625	406	596	503	639	580	---	---	678	663	---	---
6	494	401	589	572	646	618	---	---	679	669	---	---
7	454	394	612	571	646	600	---	---	728	619	---	---
8	512	393	612	494	621	604	717	696	645	604	---	---
9	788	467	527	498	615	600	---	---	659	597	690	638
10	777	291	553	522	615	572	699	605	676	570	823	690
11	424	348	577	475	588	567	879	635	829	644	---	---
12	439	359	655	510	604	577	---	---	791	714	---	---
13	444	381	606	508	608	601	1040	1020	786	661	---	---
14	446	409	591	526	605	588	1040	892	717	684	858	769
15	492	440	557	457	612	581	1040	872	710	696	860	745
16	454	381	522	452	629	592	1050	1030	714	699	---	---
17	381	337	522	470	611	597	1060	1020	---	---	966	854
18	364	341	516	464	643	603	1050	867	704	693	1110	956
19	446	355	464	454	617	604	1100	940	---	---	1090	1010
20	465	417	---	---	658	617	1150	1090	625	487	1010	898
21	417	401	---	---	653	637	---	---	638	535	698	506
22	411	404	---	---	647	590	---	---	670	633	930	502
23	420	402	703	565	614	589	1070	872	696	670	1160	866
24	427	395	567	560	623	614	1210	775	753	696	1140	812
25	433	411	---	---	628	615	822	601	752	740	904	821
26	630	433	---	---	640	622	642	605	---	---	904	878
27	541	485	585	560	642	631	652	595	765	741	1000	877
28	490	469	585	557	654	642	615	599	760	738	1160	943
29	533	485	574	550	709	654	626	612	---	---	1040	944
30	542	521	566	550	687	630	634	626	---	---	1090	944
31	---	---	---	---	630	617	668	633	---	---	1200	995
MONTH	---	---	---	---	709	552	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	1150	1050	948	930	1180	1040	1300	1150	911	889	1180	998
2	1170	964	987	935	1270	1040	1180	1090	899	878	1110	1020
3	1020	931	998	951	1150	1030	1120	998	900	880	1070	992
4	1090	874	1070	990	1070	980	1040	953	893	879	993	892
5	1070	1000	1030	922	997	874	995	921	898	882	900	865
6	1120	1010	1040	860	1020	832	995	844	898	873	1060	850
7	1050	936	884	658	1110	970	966	836	887	872	1080	843
8	1010	927	707	623	1070	1000	951	860	894	879	1110	906
9	976	904	694	660	1030	951	932	879	900	873	1050	974
10	951	871	789	672	1060	885	944	896	876	846	1010	903
11	1110	906	1020	752	1260	998	998	937	874	846	938	792
12	1100	817	1090	999	1220	972	970	921	899	861	894	845
13	1010	866	1090	939	1230	1030	991	926	934	892	914	843
14	1070	954	960	903	1190	1050	944	903	923	891	1040	905
15	1080	950	963	913	1250	1050	939	885	927	896	1130	1020
16	1100	995	1080	958	1280	1050	927	884	931	903	1100	1020
17	1040	954	1000	759	1080	932	903	870	938	904	1070	912
18	1010	918	804	722	1000	854	906	881	964	934	996	919
19	1090	986	937	749	1130	945	892	848	970	940	1020	945
20	1330	1020	984	879	1130	860	889	833	943	908	1000	903
21	1250	975	936	863	1200	891	897	869	956	927	969	879
22	1220	951	1010	891	1170	970	909	887	985	939	887	831
23	1280	906	1040	841	1240	1060	890	866	1030	974	890	844
24	1260	916	952	875	1170	1070	869	841	1070	1000	898	786
25	967	826	1110	896	1120	976	863	841	1070	933	794	773
26	1100	901	1130	996	1030	957	850	825	1040	950	849	785
27	961	801	1060	935	1050	933	838	817	990	867	945	849
28	885	832	1150	966	1000	923	859	825	969	782	964	895
29	1080	884	1210	1100	1040	982	886	851	892	806	935	903
30	1030	944	1290	1130	1320	1030	906	877	946	828	917	895
31	---	---	1180	1080	---	---	905	887	1030	871	---	---
MONTH	1330	801	1290	623	1320	832	1300	817	1070	782	1180	773

## 11274538 ORESTIMBA CREEK AT RIVER ROAD, NEAR CROWS LANDING, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	25.5	22.5	---	---	10.5	9.0	8.0	7.0	8.5	7.0	17.5	13.5
2	25.5	23.0	19.5	13.5	11.0	9.5	8.5	8.0	8.0	6.0	18.5	14.5
3	25.0	22.5	15.0	13.0	11.0	9.5	8.5	8.5	9.0	7.0	19.0	15.5
4	22.5	20.5	15.0	13.0	11.0	9.5	---	---	11.0	8.5	19.0	15.5
5	20.5	18.5	15.0	13.5	10.5	9.0	---	---	10.0	8.0	---	---
6	22.0	20.0	14.0	11.5	10.5	9.0	---	---	10.0	8.5	---	---
7	22.0	19.5	13.5	11.0	11.0	9.0	---	---	11.5	10.0	---	---
8	21.5	19.0	14.0	11.5	11.5	10.5	10.5	4.5	11.5	10.5	---	---
9	21.0	17.5	13.5	12.5	12.5	11.0	---	---	11.5	9.0	19.0	16.0
10	21.5	15.5	14.0	12.0	12.5	10.0	10.5	4.5	12.5	10.0	19.0	15.5
11	21.5	20.0	14.0	13.0	12.0	11.0	9.5	4.5	11.5	9.0	---	---
12	22.0	19.5	14.0	12.5	11.0	9.5	---	---	10.0	7.5	---	---
13	22.0	20.0	12.5	11.0	11.0	9.5	10.5	6.5	10.5	7.5	---	---
14	21.0	19.0	12.0	10.0	10.5	10.0	11.0	8.0	11.0	8.0	20.0	12.5
15	21.0	19.5	10.5	9.0	10.0	9.0	12.0	8.5	10.5	8.0	19.5	14.5
16	20.5	18.5	11.0	9.0	9.5	9.0	14.0	9.0	11.5	9.5	---	---
17	20.0	18.5	11.0	9.5	9.0	9.0	14.5	10.5	12.0	10.5	18.5	11.0
18	19.5	17.5	11.5	10.5	9.0	8.0	14.0	10.0	11.0	9.5	20.5	14.0
19	18.5	16.5	11.0	9.5	8.0	7.0	11.5	8.5	---	---	21.0	14.5
20	18.5	16.5	---	---	7.5	7.0	12.0	9.0	10.5	7.5	19.0	13.5
21	19.0	17.5	---	---	7.0	6.5	---	---	11.0	8.5	19.5	15.5
22	18.5	16.0	---	---	6.5	6.0	---	---	11.5	9.0	16.0	11.5
23	17.5	15.0	10.0	8.5	6.5	5.5	13.0	12.0	12.0	9.5	18.0	8.5
24	20.0	15.0	8.5	6.5	6.0	5.5	12.5	10.5	13.5	10.0	14.5	9.5
25	18.0	14.5	---	---	5.5	5.0	11.5	11.0	14.5	11.5	16.5	13.0
26	17.5	14.0	---	---	6.0	5.0	11.5	10.0	---	---	18.5	13.0
27	18.5	15.5	8.5	7.0	6.5	5.5	11.5	10.0	16.0	13.0	18.0	12.5
28	18.5	16.0	9.0	7.5	7.0	5.5	10.0	9.0	16.5	13.5	18.5	13.5
29	17.5	15.5	10.5	8.5	7.0	6.0	9.0	7.0	---	---	17.5	14.5
30	17.5	14.5	11.0	10.0	7.0	6.5	9.0	7.5	---	---	19.0	14.5
31	---	---	---	---	7.0	6.5	9.0	7.5	---	---	19.0	13.0
MONTH	---	---	---	---	12.5	5.0	---	---	---	---	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	18.5	12.5	20.5	15.5	26.5	18.0	28.0	22.0	26.5	20.0	25.0	19.5
2	19.5	14.5	20.5	16.0	24.5	19.5	28.5	22.0	26.0	19.5	25.0	18.0
3	22.0	15.5	21.5	17.0	24.5	18.5	28.0	22.0	27.5	20.5	23.0	18.5
4	19.5	14.5	23.5	17.5	25.0	18.5	27.0	22.5	25.5	21.5	24.0	20.5
5	19.0	13.5	22.5	16.5	22.5	17.5	28.0	22.5	27.5	21.0	25.5	20.5
6	19.0	14.5	20.0	16.5	22.0	17.5	26.5	22.0	28.0	22.5	24.0	20.5
7	19.0	13.5	20.5	16.5	22.0	16.5	26.5	23.0	27.5	22.5	23.0	19.5
8	17.5	16.0	22.0	18.0	24.0	18.5	27.0	22.5	27.5	21.0	25.0	17.0
9	18.0	14.0	24.0	18.5	24.0	19.0	28.0	22.0	25.5	21.0	22.5	18.0
10	18.5	14.5	26.0	19.0	28.0	20.0	28.0	22.0	27.5	20.5	25.5	16.0
11	20.5	13.5	24.5	19.5	27.5	22.5	29.0	22.5	27.0	21.0	21.5	17.0
12	20.5	16.5	23.5	18.0	26.5	22.0	28.0	22.5	27.0	21.0	21.5	19.5
13	21.5	15.5	24.0	18.5	25.0	20.5	28.5	23.0	27.0	21.5	21.0	17.0
14	21.5	16.5	23.5	18.0	23.0	19.5	28.5	22.5	27.5	22.0	23.0	17.0
15	24.5	16.5	20.0	16.5	23.0	18.0	29.5	23.0	28.0	23.0	23.5	17.0
16	23.0	16.0	17.5	15.0	24.0	17.5	28.0	23.0	28.0	21.5	22.5	18.0
17	23.5	15.5	18.5	15.5	24.0	18.0	28.0	22.5	28.0	21.5	24.5	19.5
18	22.5	19.0	18.5	16.5	25.5	18.0	28.5	22.5	27.5	22.0	25.5	17.5
19	22.0	18.5	18.5	16.0	25.5	20.0	28.5	23.0	26.5	21.5	27.5	19.0
20	20.5	17.0	20.0	16.0	24.5	20.5	27.0	22.0	26.5	21.0	23.0	19.0
21	20.0	16.0	21.0	17.5	24.0	20.5	26.5	22.0	25.5	22.0	22.5	20.5
22	19.0	15.0	21.5	16.5	24.5	20.5	28.5	21.0	26.5	20.5	24.5	20.0
23	18.0	14.5	23.5	19.0	24.5	21.0	27.0	21.0	27.0	20.5	21.5	20.0
24	16.0	13.5	24.5	19.0	24.5	19.5	26.0	19.5	27.0	19.5	22.5	19.0
25	16.0	13.5	25.5	19.5	26.0	19.5	28.0	21.0	27.0	20.0	23.5	20.0
26	18.0	14.0	24.0	19.0	25.5	19.0	27.5	21.5	26.5	19.5	24.0	21.0
27	18.0	15.0	24.0	19.0	28.5	21.0	28.0	21.5	24.0	21.0	23.0	21.0
28	19.5	15.0	25.5	20.0	28.5	22.5	28.0	21.5	22.5	20.0	22.5	21.0
29	20.0	17.0	24.5	20.0	28.5	23.0	26.5	21.5	25.0	19.5	21.5	19.0
30	20.0	16.5	25.0	20.5	27.0	22.5	28.0	22.0	27.5	19.5	21.0	17.0
31	---	---	28.0	19.5	---	---	26.5	21.5	29.5	18.5	---	---
MONTH	24.5	12.5	28.0	15.0	28.5	16.5	29.5	19.5	29.5	18.5	27.5	16.0

## 11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA

LOCATION.--Lat 37°26'09", long 121°01'57", in NW 1/4 NW 1/4 sec.19, T.6 S, R. 9 E, Stanislaus County, Hydrologic Unit 18040002, on right bank 3.0 mi northeast of Crows Landing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above sea level, from topographic map.

REMARKS.--Records fair except flows above 50 ft<sup>3</sup>/s, which are poor. Flows during summer and fall consist mainly of irrigation-return water. The drain overflows its banks at about 9.35 ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138 ft<sup>3</sup>/s, Aug. 9, 1994, gage height, 9.87 ft, from rating curve extended above 29.6 ft<sup>3</sup>/s; minimum daily, no flow, Nov. 15, 16, 27, 28, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 138 ft<sup>3</sup>/s, Aug. 9, gage height, 9.87 ft, from rating curve extended above 29.6 ft<sup>3</sup>/s; minimum daily, no flow, Nov. 15, 16, 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	.45	.12	.19	e.41	1.1	18	e24	21	19	38	14
2	2.8	.05	.55	.19	.41	1.5	18	e22	19	12	27	29
3	3.1	.20	.03	.19	.38	.91	23	21	21	16	29	34
4	2.3	.20	.09	.19	.32	.82	23	24	21	22	29	33
5	2.7	.36	.08	.20	.32	2.0	22	23	19	24	33	25
6	3.5	.13	.17	.21	.34	1.4	27	26	15	25	23	27
7	5.3	.09	e.13	.21	.91	.83	24	20	16	19	27	27
8	4.8	.06	e.19	.21	2.3	1.1	27	21	23	19	32	28
9	4.0	.17	e.24	.21	.91	4.6	27	19	19	18	36	32
10	4.6	.21	e.27	.20	.91	6.6	28	18	20	14	32	26
11	3.6	.05	e.30	.37	.79	5.2	33	14	19	25	31	25
12	2.5	.05	e.32	.37	1.2	1.7	34	12	19	30	37	25
13	1.8	.03	e.29	.24	2.2	3.1	28	15	18	26	34	23
14	1.5	.07	e.34	.50	1.6	3.6	27	17	20	24	29	27
15	3.3	e.00	e.34	.31	.99	3.8	19	16	19	22	33	18
16	2.1	e.00	e.35	.30	.95	3.2	23	14	20	28	29	12
17	1.7	e.07	e.26	.79	1.4	2.6	e23	16	16	34	28	17
18	2.3	e.04	e.27	.80	.87	3.8	e23	19	22	34	25	18
19	.52	e.05	e.25	.32	6.3	9.9	e23	16	18	32	28	14
20	.48	e.01	e.20	.31	21	8.6	e23	19	15	37	29	15
21	.58	e.03	.19	.31	1.9	7.0	e18	23	23	34	25	13
22	.19	e.03	.19	.34	1.4	10	e20	17	26	37	25	11
23	.65	e.03	.19	.67	1.4	7.5	e20	17	29	31	26	13
24	1.5	.02	.17	.31	1.2	7.4	e20	17	25	29	21	13
25	.97	.02	.19	.31	1.2	13	e20	15	21	26	25	8.4
26	2.7	.03	.19	e.39	1.2	13	e20	21	18	20	27	8.2
27	3.5	.00	.36	e.36	1.0	6.7	e23	23	17	28	24	6.4
28	.62	.00	.41	e.35	1.0	16	e30	26	16	35	25	6.4
29	1.3	.03	.40	e.39	---	18	e21	22	17	30	20	7.9
30	.88	.20	.65	e.35	---	16	e20	23	21	28	17	8.5
31	.42	---	.21	e.40	---	18	---	23	---	40	18	---
TOTAL	69.81	2.68	7.94	10.49	54.81	198.96	705	603	593	818	862	564.8
MEAN	2.25	.089	.26	.34	1.96	6.42	23.5	19.5	19.8	26.4	27.8	18.8
MAX	5.3	.45	.65	.80	21	18	34	26	29	40	38	34
MIN	.19	.00	.03	.19	.32	.82	18	12	15	12	17	6.4
AC-FT	138	5.3	16	21	109	395	1400	1200	1180	1620	1710	1120

e Estimated.

## 11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.25	.089	.26	.34	1.96	6.42	23.5	23.1	19.6	21.0	20.5	13.5
MAX	2.25	.089	.26	.34	1.96	6.42	23.5	26.7	19.8	26.4	27.8	18.8
(WY)	1994	1994	1994	1994	1994	1994	1994	1993	1994	1994	1994	1994
MIN	2.25	.089	.26	.34	1.96	6.42	23.5	19.5	19.5	15.7	13.2	8.08
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1993	1993	1993	1993

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

## WATER YEARS 1993 - 1994

ANNUAL TOTAL	4490.49		
ANNUAL MEAN	12.3	12.3	
HIGHEST ANNUAL MEAN		12.3	1994
LOWEST ANNUAL MEAN		12.3	1994
HIGHEST DAILY MEAN	40	Jul 31	40 Jul 31 1994
LOWEST DAILY MEAN	.00	Nov 15	.00 Nov 15 1993
ANNUAL SEVEN-DAY MINIMUM	.02	Nov 22	.02 Nov 22 1993
INSTANTANEOUS PEAK FLOW	138	Aug 9	138 Aug 9 1994
INSTANTANEOUS PEAK STAGE	9.87	Aug 9	9.87 Aug 9 1994
ANNUAL RUNOFF (AC-FT)	8910		8910
10 PERCENT EXCEEDS	28		28
50 PERCENT EXCEEDS	12		14
90 PERCENT EXCEEDS	.19		.23

11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1992 to current year.  
 CHEMICAL DATA: October 1992 to current year.  
 SPECIFIC CONDUCTANCE: April 1993 to current year.  
 WATER TEMPERATURE: April 1993 to current year.  
 SEDIMENT DATA: October 1992 to current year.

PERIOD OF DAILY RECORD.--  
 SPECIFIC CONDUCTANCE: April 1993 to current year.  
 WATER TEMPERATURE: April 1993 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1993.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. Flow consists of return water from irrigation areas.

EXTREMES FOR PERIOD OF RECORD.--  
 SPECIFIC CONDUCTANCE: Maximum recorded, 3,640 microsiemens, Mar. 1, 2, 1994, minimum recorded, 413 microsiemens, Feb. 8, 1994.  
 WATER TEMPERATURE: Maximum recorded, 32.0°C, July 7, 1993 and July 12, 1994; minimum recorded, 6.5°C, Feb. 20, 1994.

EXTREMES FOR CURRENT YEAR.--  
 SPECIFIC CONDUCTANCE: Maximum recorded, 3,640 microsiemens, Mar. 1, 2, minimum recorded, 413 microsiemens, Feb. 8.  
 WATER TEMPERATURE: Maximum recorded, 32.0°C, July 12; minimum recorded, 6.5°C, Feb. 20.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)
OCT											
28...	1200	0.62	593	7.7	15.5	762	9.6	97	150	33	17
NOV											
18...	1300	e0.04	1560	8.0	16.0	768	8.3	84	380	82	43
DEC											
29...	1130	0.41	1650	7.9	15.5	770	8.5	85	580	120	68
FEB											
02...	1025	0.41	1250	8.6	10.0	765	8.4	75	360	80	38
MAR											
02...	1010	1.0	3640	8.0	13.5	767	9.8	95	1200	270	130
22...	1330	18	1090	8.1	16.5	762	9.2	94	320	67	38
APR											
29...	1140	e8.2	1020	7.9	17.5	769	9.3	97	250	56	27
MAY											
27...	1200	19	1370	7.8	21.0	759	8.0	91	350	77	39
JUN											
30...	1430	15	1320	7.9	28.0	761	5.5	71	340	73	39
JUL											
27...	1130	17	994	7.7	23.0	760	7.9	93	250	55	28
AUG											
24...	1215	16	1180	7.9	25.5	760	7.2	88	350	76	38
SEP											
29...	1110	11	1070	8.0	19.0	764	8.4	91	250	48	31

e Estimated.

11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 28...	57	44	2	3.7	107	--	0	--	88	--	99
NOV 18...	160	48	4	2.2	234	--	0	--	191	--	290
DEC 29...	130	33	2	1.8	363	--	0	--	297	--	370
FEB 02...	130	44	3	4.5	199	--	2	--	166	--	240
MAR 02...	420	43	5	0.90	439	--	0	--	360	--	820
MAR 22...	110	42	3	3.5	159	--	0	--	130	--	230
APR 29...	110	48	3	3.0	--	156	--	0	--	128	170
MAY 27...	150	47	3	6.3	--	204	--	0	--	167	290
JUN 30...	140	46	3	7.1	--	212	--	0	--	174	240
JUL 27...	100	46	3	3.8	--	156	--	0	--	128	170
AUG 24...	110	40	3	4.4	--	227	--	0	--	186	210
SEP 29...	110	49	3	5.0	--	171	--	0	--	140	200

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 28...	58	0.20	16	357	349	0.49	0.040	2.60	0.020	0.70	0.30
NOV 18...	190	0.40	22	980	959	1.33	0.030	12.0	0.070	0.50	0.30
DEC 29...	140	0.20	24	1130	1080	1.54	<0.010	11.0	0.030	<0.20	<0.20
FEB 02...	170	0.20	15	814	818	1.11	0.040	9.00	0.060	0.70	0.50
MAR 02...	500	0.30	33	2630	2610	3.58	0.020	50.0	0.060	0.60	0.40
MAR 22...	110	0.20	17	712	679	0.97	0.050	5.40	0.120	0.80	0.50
APR 29...	130	0.20	14	628	608	0.85	0.030	4.50	0.050	0.80	0.40
MAY 27...	170	0.30	18	904	873	1.23	0.170	4.60	0.170	1.5	1.0
JUN 30...	150	0.60	15	800	796	1.09	0.210	5.20	1.70	5.0	4.7
JUL 27...	120	0.20	16	628	598	0.85	0.080	5.90	0.590	2.0	1.4
AUG 24...	130	0.40	19	756	729	1.03	0.130	6.20	0.400	1.7	1.2
SEP 29...	130	0.20	17	668	641	0.91	0.100	3.20	0.100	1.3	0.70

## SAN JOAQUIN RIVER BASIN

11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C)
OCT 28...	0.320	0.170	0.160	230	18	9	2	1	--	1.4
NOV 18...	0.200	0.150	0.130	900	5	6	<1	2	--	--
DEC 29...	0.060	0.040	<0.010	810	<3	27	<1	3	2.4	0.2
FEB 02...	0.140	0.130	0.080	590	5	30	1	1	4.8	1.4
MAR 02...	0.110	0.040	0.030	1600	10	53	1	2	4.0	0.6
MAR 22...	0.200	0.100	0.110	520	14	9	2	4	--	--
APR 29...	0.270	0.120	0.120	590	7	13	4	3	4.2	1.6
MAY 27...	0.400	0.310	0.320	850	14	11	2	6	7.2	1.6
JUN 30...	0.340	0.210	0.190	780	12	32	4	4	8.2	3.9
JUL 27...	0.400	0.170	0.160	530	9	10	2	4	5.4	5.9
AUG 24...	0.380	0.190	0.180	570	6	12	2	4	5.2	5.8
SEP 29...	0.310	0.200	0.200	450	28	38	2	4	6.2	2.7

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT 28...N	1200	0.62	15.5	122	0.20
NOV 18...N	1300	e0.04	16.0	57	0.01
DEC 29...N	1130	0.41	15.5	30	0.03
FEB 02...N	1025	0.41	10.0	60	0.07
MAR 02...N	1010	1.0	13.5	119	0.32
MAR 22...N	1330	18	16.5	177	8.6
APR 29...N	1140	e8.2	17.5	200	4.4
MAY 27...N	1200	19	21.0	184	9.4
JUN 22...N	2100	27	--	1650	120
JUN 30...N	1430	15	28.0	368	15
JUL 27...N	1130	17	23.0	964	44
AUG 24...N	1215	16	25.5	1040	45
SEP 29...N	1110	11	19.0	322	9.6

e Estimated.



## 11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	583	562	---	---	914	840	1660	1640	---	---	3640	3590
2	615	581	---	---	906	830	1650	1620	1400	1080	3640	3560
3	612	595	---	---	---	---	1620	1600	1650	1400	3560	3380
4	605	582	---	---	---	---	1620	1560	1980	1650	3380	2960
5	585	558	---	---	---	---	1600	1570	2380	1980	2980	1880
6	569	556	---	---	---	---	1610	1580	2390	2130	2010	1860
7	597	569	---	---	---	---	1590	1550	2260	550	2260	2010
8	622	597	---	---	---	---	1590	1530	786	413	2300	1710
9	636	619	---	---	---	---	1600	1540	1020	595	1720	1100
10	648	634	---	---	---	---	1630	1500	1160	932	1110	908
11	658	630	---	---	---	---	1640	1230	2280	1090	1180	911
12	650	630	---	---	---	---	1280	1220	1260	987	1070	893
13	---	---	---	---	---	---	1510	1260	1050	966	1340	893
14	---	---	---	---	---	---	2140	1020	1390	966	1210	863
15	710	662	---	---	---	---	2190	1090	2260	1390	1320	1140
16	674	614	---	---	---	---	2400	2190	2790	1980	1340	1170
17	618	566	---	---	---	---	2440	869	2620	1400	1320	942
18	571	464	---	---	---	---	1220	792	3140	1700	1500	1000
19	---	---	---	---	---	---	1790	977	3860	1080	1090	808
20	---	---	---	---	---	---	1990	1790	1410	1010	1090	889
21	---	---	---	---	1660	1360	2010	1910	1820	1180	1340	769
22	---	---	---	---	1720	1660	1950	1890	1950	1820	1230	877
23	---	---	---	---	1710	1660	2040	946	2080	1950	1310	963
24	---	---	---	---	1680	1640	---	---	2360	2080	1360	1010
25	---	---	---	---	1680	1640	---	---	2930	2360	1180	848
26	---	---	---	---	1660	1640	---	---	3390	2930	1230	909
27	---	---	---	---	1860	1470	---	---	3530	3390	1230	934
28	---	---	---	---	1740	1650	---	---	3590	3530	1490	1010
29	642	636	---	---	1660	1640	---	---	---	---	1510	1150
30	639	626	1030	914	1660	1640	---	---	---	---	1460	1120
31	643	632	---	---	1670	1640	---	---	---	---	1420	1110
MONTH	---	---	---	---	---	---	---	---	---	---	3640	769
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1380	1230	1290	1250	1250	1160	1410	1290	1160	878	1230	1110
2	1280	1250	1310	1260	1220	1160	1420	1290	941	853	1190	1120
3	1270	1240	1450	1290	1230	1160	1440	1290	927	869	1180	1160
4	1260	1210	1330	1170	1230	1160	1380	1240	925	867	1180	1150
5	1330	1240	1280	1110	1180	1140	1290	1200	933	892	1180	1120
6	1390	1330	1280	1120	1260	1160	1200	1120	970	896	1190	1110
7	1600	1350	1260	1050	1240	1150	1200	1110	992	930	1200	1110
8	1640	1390	1050	909	1310	1240	1150	1040	994	937	1200	1160
9	1440	1360	959	881	1290	1210	1070	1020	1020	980	1180	1140
10	1520	1430	959	889	1390	1250	1080	1060	1080	1010	1230	1150
11	1520	1470	973	883	1350	1250	1060	1010	1130	1040	1200	1170
12	1490	1460	1030	945	1280	1120	1040	989	1100	1050	1170	1100
13	1480	1440	1110	1010	1220	1130	1090	1030	1100	1050	1180	1120
14	1470	1440	1140	1040	1230	1170	1090	1060	1130	1060	1250	1170
15	1470	1360	1170	1070	1220	1140	1100	1050	1120	1060	1240	1210
16	1370	1290	1220	1120	1200	1160	1120	1060	1150	1060	1250	1230
17	1380	1310	1210	1110	1270	1160	1100	1050	1130	1090	1260	1240
18	1380	1320	1220	1090	1330	1260	1070	1000	1180	1080	1240	1180
19	1360	1290	1320	1210	1360	1290	1090	1060	1170	1100	1180	1150
20	1390	1350	1320	1190	1470	1350	1060	1030	1150	1100	1350	1010
21	1380	1250	1230	1140	1470	1430	1050	1020	1200	1120	1590	1000
22	1290	1240	1250	1100	1500	1400	1040	1000	1170	1110	1490	934
23	1280	1190	1310	1200	1400	1220	1010	964	1170	1130	1210	1110
24	1190	1100	1320	1240	1250	1190	988	939	1330	1140	1240	1030
25	1100	1030	1330	1280	1230	1190	979	934	1590	1180	1240	996
26	1120	1030	1370	1310	1190	1060	998	958	1330	1150	1170	1020
27	1130	1090	1380	1050	1060	982	1010	980	1290	1150	1170	1130
28	1090	1030	1210	1070	1180	945	1020	989	1290	1190	1130	1080
29	1270	1010	1370	1160	1220	1090	1040	982	1240	1140	1090	1050
30	1280	1160	1380	1220	1380	1220	1070	1020	1240	1140	1050	975
31	---	---	1370	1220	---	---	1080	1040	1190	1120	---	---
MONTH	1640	1010	1450	881	1500	945	1440	934	1590	853	1590	934

## SAN JOAQUIN RIVER BASIN

11274554 SPANISH GRANT COMBINED DRAIN NEAR PATTERSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	20.5	---	---	---	---	12.0	11.0	---	---	15.0	13.0
2	22.5	20.5	---	---	---	---	12.5	11.5	10.5	9.0	15.0	12.5
3	22.0	20.5	---	---	---	---	12.0	11.0	11.5	9.5	15.0	13.0
4	21.5	20.0	---	---	---	---	11.5	11.0	12.5	9.5	15.0	12.5
5	20.5	19.5	---	---	---	---	12.5	10.5	12.0	9.5	17.0	13.0
6	20.0	18.5	---	---	---	---	12.5	9.5	11.0	10.0	15.5	13.5
7	20.0	19.0	---	---	---	---	12.5	9.0	11.5	10.5	15.5	13.0
8	20.0	18.5	---	---	---	---	12.5	9.0	10.5	10.0	16.0	13.5
9	19.0	18.5	---	---	---	---	12.5	9.5	11.5	10.0	20.5	13.5
10	20.0	18.5	---	---	---	---	12.5	9.0	11.5	10.0	21.5	13.0
11	20.0	19.0	---	---	---	---	12.5	8.5	11.5	10.5	17.0	15.5
12	20.5	18.5	---	---	---	---	10.0	8.5	12.5	10.5	15.5	14.5
13	20.0	18.5	---	---	---	---	11.5	8.0	11.5	9.0	16.5	14.5
14	20.5	18.5	---	---	---	---	11.5	9.0	11.0	9.5	18.0	15.0
15	20.0	18.5	---	---	---	---	11.5	9.0	12.5	10.5	17.0	15.5
16	19.5	18.0	---	---	---	---	11.5	9.5	11.5	11.0	16.5	15.5
17	19.0	17.5	---	---	---	---	12.5	9.5	11.5	10.5	16.0	14.5
18	18.5	16.5	---	---	---	---	11.0	9.5	12.0	10.5	17.5	14.5
19	18.0	16.0	---	---	---	---	12.5	10.0	12.0	7.5	19.0	15.0
20	17.0	15.5	---	---	---	---	12.5	10.0	10.5	6.5	19.5	12.0
21	17.5	16.0	---	---	10.0	9.5	13.0	10.5	10.5	9.0	18.5	13.0
22	17.0	15.5	---	---	10.5	10.0	13.0	10.5	11.0	10.0	17.0	13.0
23	16.5	15.5	---	---	11.5	10.0	12.0	11.0	11.5	10.5	16.0	10.5
24	16.5	15.5	---	---	11.0	10.0	---	---	12.5	11.0	15.5	11.0
25	---	---	---	---	11.0	10.0	---	---	13.0	11.5	17.5	11.5
26	---	---	---	---	12.0	10.5	---	---	13.5	12.5	17.5	13.5
27	---	---	---	---	15.5	10.0	---	---	14.0	12.5	18.0	14.0
28	---	---	---	---	16.0	14.5	---	---	14.5	13.0	20.0	14.5
29	---	---	---	---	15.5	15.0	---	---	---	---	19.0	14.5
30	---	---	---	---	17.5	15.5	---	---	---	---	21.0	14.0
31	---	---	---	---	16.5	11.5	---	---	---	---	19.5	13.0
MONTH	---	---	---	---	---	---	---	---	---	---	21.5	10.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	20.0	13.0	24.5	15.5	26.0	19.0	29.5	21.0	29.0	20.0	28.0	19.0
2	20.0	13.5	25.5	16.5	25.5	18.5	29.5	21.0	29.0	20.5	27.0	18.5
3	23.0	15.5	26.0	17.5	26.5	18.0	30.0	21.5	28.5	20.0	26.5	18.0
4	21.0	15.0	24.5	17.0	26.5	18.5	30.0	22.0	29.5	21.0	27.0	20.0
5	21.0	13.0	24.5	18.0	25.5	19.0	29.5	21.5	29.5	20.5	27.0	19.5
6	21.0	15.0	21.0	17.0	24.5	18.0	29.0	21.5	29.5	21.0	28.0	20.0
7	19.5	15.0	23.0	16.5	25.0	16.0	29.5	21.0	29.5	21.5	28.0	19.0
8	17.5	15.0	24.0	18.0	26.5	17.0	31.0	21.0	30.0	21.0	26.0	19.0
9	20.0	13.5	26.0	17.5	27.5	18.0	29.5	21.5	28.5	20.0	24.0	18.0
10	20.0	13.0	27.0	19.0	30.0	19.5	30.0	21.5	27.0	19.5	25.0	17.0
11	22.0	13.5	25.5	20.0	31.0	21.0	31.5	21.5	26.0	21.0	24.5	18.0
12	22.5	15.5	26.0	18.5	28.0	21.5	32.0	21.5	28.5	21.0	25.0	17.5
13	21.5	15.5	25.5	18.5	26.5	20.0	31.0	21.0	29.0	20.0	24.5	17.5
14	21.5	16.5	26.5	17.5	24.5	18.5	29.5	20.5	29.0	21.0	25.0	18.0
15	23.5	17.5	22.5	17.0	26.0	17.0	31.0	22.0	29.0	21.0	24.5	19.0
16	23.0	18.0	20.5	15.5	26.0	17.0	30.0	21.0	28.5	20.5	23.5	19.5
17	24.5	16.5	21.0	16.0	26.5	17.5	29.5	21.5	30.0	21.0	25.0	20.5
18	24.5	17.5	21.0	16.5	27.0	18.5	30.0	21.5	29.0	21.5	24.5	19.5
19	23.5	17.5	22.5	17.0	28.0	19.0	29.5	21.0	29.0	21.0	26.0	20.0
20	23.0	16.0	25.5	15.5	27.0	19.0	28.0	21.0	29.0	19.5	26.5	19.5
21	22.0	16.0	25.5	16.5	28.0	18.0	26.5	20.5	29.0	20.5	26.0	19.5
22	22.5	15.5	25.5	17.0	28.0	18.0	29.0	20.5	28.0	20.0	26.0	20.0
23	18.0	15.5	26.5	17.5	27.5	18.0	28.0	20.5	28.0	20.0	23.0	20.0
24	18.0	13.5	26.5	18.5	27.0	18.5	26.5	19.5	28.0	19.0	26.5	19.0
25	18.0	13.0	25.5	18.5	28.5	18.5	28.0	20.0	28.0	19.5	26.0	20.0
26	19.5	14.0	26.5	19.5	26.5	19.0	28.5	21.0	27.0	20.0	26.0	19.5
27	19.0	13.0	26.5	18.5	30.0	20.5	28.0	21.0	26.5	20.0	24.0	21.0
28	23.0	14.0	27.5	20.0	29.0	21.0	29.5	20.5	26.5	19.0	22.5	20.5
29	23.5	15.0	27.0	19.0	28.5	20.5	29.5	20.0	26.5	19.0	24.5	18.5
30	24.0	14.5	25.5	19.5	28.5	20.5	30.0	21.0	28.0	18.5	23.5	18.0
31	---	---	27.5	20.0	---	---	29.5	20.0	26.5	20.0	---	---
MONTH	24.5	13.0	27.5	15.5	31.0	16.0	32.0	19.5	30.0	18.5	28.0	17.0

## 11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA

LOCATION.--Lat 37°27'52", long 121°01'52", in SE 1/4 SE 1/4 sec.25, T.5 S, R.8 E., Stanislaus County, Hydrologic Unit 18040002, on right bank at upstream side of abandoned bridge upstream of bridge crossing on Carpenter Road, and 7.2 mi east of Patterson.  
DRAINAGE AREA.--Not determined.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flows consist mainly of return water from irrigation areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197 ft<sup>3</sup>/s, Jan. 18, 1993, gage height, 2.99 ft; minimum daily, 11 ft<sup>3</sup>/s, Dec. 25, 1992, Jan. 22, Mar. 16, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 159 ft<sup>3</sup>/s, Apr. 3, gage height, 2.75 ft; minimum daily, 11 ft<sup>3</sup>/s, Jan. 22, Mar. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	61	34	22	22	30	76	55	38	41	59	52
2	56	59	35	16	21	25	91	60	49	57	46	66
3	83	54	36	18	20	20	98	59	62	44	63	67
4	80	53	25	20	19	21	48	29	42	64	49	70
5	76	44	20	21	19	29	46	33	44	68	66	60
6	66	45	18	26	18	36	59	71	57	51	57	42
7	61	46	15	25	33	26	58	67	47	52	60	50
8	61	52	21	23	36	25	72	78	60	54	51	56
9	68	53	27	20	27	27	78	62	63	36	61	29
10	69	49	29	23	24	24	64	51	75	44	29	62
11	94	58	32	20	26	19	67	66	55	43	43	68
12	64	53	34	21	23	16	57	69	58	47	38	53
13	60	52	31	15	23	21	57	37	64	33	44	65
14	83	45	36	17	25	18	51	50	41	41	38	62
15	66	39	36	16	22	13	55	63	48	36	53	52
16	91	36	37	13	23	11	59	47	47	27	56	60
17	83	46	28	13	34	47	48	34	73	32	41	81
18	106	43	29	15	36	52	58	41	56	52	43	59
19	97	44	27	14	33	54	45	61	34	54	62	53
20	75	40	27	14	37	49	58	71	40	54	55	36
21	73	42	27	13	26	22	91	52	66	47	55	53
22	81	42	27	11	23	26	86	42	58	44	45	51
23	67	42	28	25	31	15	49	34	76	57	48	60
24	83	40	26	36	29	13	79	49	56	61	48	60
25	76	34	25	25	27	26	97	28	52	58	55	55
26	53	31	25	20	29	26	77	63	36	58	69	56
27	55	32	26	17	26	42	89	52	54	55	46	56
28	72	30	28	16	26	50	77	55	52	49	55	60
29	104	33	26	20	---	37	66	75	24	63	65	73
30	69	40	26	16	---	46	48	54	25	44	45	62
31	59	---	25	21	---	61	---	29	---	62	42	---
TOTAL	2297	1338	866	592	738	927	2004	1637	1552	1528	1587	1729
MEAN	74.1	44.6	27.9	19.1	26.4	29.9	66.8	52.8	51.7	49.3	51.2	57.6
MAX	106	61	37	36	37	61	98	78	76	68	69	81
MIN	53	30	15	11	18	11	45	28	24	27	29	29
AC-FT	4560	2650	1720	1170	1460	1840	3970	3250	3080	3030	3150	3430

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	1992	1993	1994	1993	1994	1993	1994	1993	1994	1993	1994	1993	1994
MEAN	52.0	30.9	21.8	28.2	37.9	49.6	63.0	53.5	52.3	50.5	56.1	55.5	
MAX	74.1	44.6	27.9	37.4	49.4	69.4	66.8	54.3	61.6	59.5	70.5	69.4	
(WY)	1994	1994	1994	1993	1993	1993	1994	1993	1993	1993	1993	1993	
MIN	29.9	17.2	15.7	19.1	26.4	29.9	59.2	52.8	43.6	42.7	46.8	39.4	
(WY)	1993	1993	1993	1994	1994	1994	1993	1994	1992	1992	1992	1992	

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1992 - 1994
ANNUAL TOTAL	20612	16795	
ANNUAL MEAN	56.5	46.0	47.7
HIGHEST ANNUAL MEAN			49.4
LOWEST ANNUAL MEAN			46.0
HIGHEST DAILY MEAN	146	Jan 18	146
LOWEST DAILY MEAN	12	Jan 3	11
ANNUAL SEVEN-DAY MINIMUM	16	Jan 1	13
INSTANTANEOUS PEAK FLOW		159	Apr 3
INSTANTANEOUS PEAK STAGE		2.75	Apr 3
ANNUAL RUNOFF (AC-FT)	40880	33310	34570
10 PERCENT EXCEEDS	81	71	73
50 PERCENT EXCEEDS	58	47	47
90 PERCENT EXCEEDS	28	21	19

11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1992 to current year.

CHEMICAL DATA: April 1992 to current year.

SPECIFIC CONDUCTANCE: April 1992 to current year.

WATER TEMPERATURE: April 1992 to current year.

SEDIMENT DATA: April 1992 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1992 to current year.

WATER TEMPERATURE: May 1992 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1992.

REMARKS.--Flows consist mainly of return water from irrigation areas.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,900 microsiemens, Jan. 2, 1993; minimum recorded, 240 microsiemens, Oct. 19, 1992.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 2, 1994; minimum recorded, 7.0°C, Jan. 3, 1993.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,780 microsiemens, Jan. 1; minimum recorded, 204 microsiemens, May 29.

WATER TEMPERATURE: Maximum recorded, 31.5°C, July 2; minimum recorded, 8.5°C, Dec. 27, 28.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD) UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
28...	1350	87	323	7.5	17.5	761	8.3	87	74	20	5.9
NOV											
18...	1450	44	1070	7.9	16.0	768	9.8	99	250	70	19
DEC											
29...	1205	24	1160	7.7	--	770	7.1	67	230	66	16
FEB											
02...	1145	18	1290	7.6	12.0	766	7.7	71	220	62	15
MAR											
02...	1205	22	1340	7.8	20.0	769	8.0	87	240	69	17
22...	1030	28	710	7.8	14.0	762	7.1	69	120	33	9.9
APR											
26...	1300	109	243	7.5	16.5	760	8.4	87	51	14	3.9
MAY											
27...	1030	69	506	7.8	18.5	763	8.3	88	110	31	8.3
JUN											
28...	1015	64	645	7.6	22.0	760	6.8	78	130	35	9.6
JUL											
27...	1030	80	394	7.6	22.0	759	7.9	91	80	22	6.0
AUG											
24...	0850	53	541	7.4	20.5	760	5.6	62	100	29	7.6
SEP											
28...	1015	64	487	7.6	20.0	760	4.9	54	97	27	7.1

11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT											
28...	32	47	2	3.0	106	--	0	--	87	--	13
NOV											
18...	120	50	3	6.7	317	--	0	--	260	--	38
DEC											
29...	130	53	4	12	373	--	0	--	306	--	41
FEB											
02...	150	58	4	15	382	--	0	--	313	--	42
MAR											
02...	180	60	5	11	373	--	0	--	306	--	46
22...	76	52	3	21	225	--	0	--	184	--	21
APR											
26...	26	51	2	2.7	--	76	--	0	--	62	9.3
MAY											
27...	57	51	2	6.2	--	186	--	0	--	152	20
JUN											
28...	74	55	3	4.7	--	123	--	0	--	101	23
JUL											
27...	44	54	2	2.7	--	100	--	0	--	82	14
AUG											
24...	62	55	3	5.6	--	136	--	0	--	111	19
SEP											
28...	53	53	2	4.5	--	151	--	0	--	124	17
DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT											
28...	26	0.20	19	193	190	0.26	0.180	3.70	0.990	1.6	1.3
NOV											
18...	130	0.20	50	604	659	0.82	0.790	13.0	3.60	4.3	4.3
DEC											
29...	140	0.20	48	670	695	0.91	0.280	8.80	7.40	10	8.0
FEB											
02...	190	0.10	49	716	783	0.97	0.410	7.20	18.0	19	19
MAR											
02...	190	0.20	46	756	802	1.03	0.470	8.70	8.00	11	11
22...	87	0.10	22	391	412	0.53	0.220	3.10	9.00	15	10
APR											
26...	24	<0.10	13	142	141	0.19	0.250	1.90	0.640	1.4	1.1
MAY											
27...	46	0.10	29	311	320	0.42	0.540	5.30	2.30	4.1	3.4
JUN											
28...	81	0.20	28	331	343	0.45	0.350	4.80	1.70	3.5	3.0
JUL											
27...	53	<0.10	19	235	226	0.32	0.210	3.00	0.490	1.1	0.90
AUG											
24...	73	0.30	24	316	309	0.43	0.500	3.50	2.30	3.6	3.2
SEP											
28...	51	0.10	24	277	280	0.38	0.500	4.20	1.60	2.5	2.3

## SAN JOAQUIN RIVER BASIN

11274560 TURLOCK IRRIGATION LATERAL NO. 5 NEAR PATTERSON, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT 28...	0.520	0.450	0.430	50	18	11	<1	<1	10	1.0
NOV 18...	2.60	2.30	2.30	130	6	24	<1	<1	--	--
DEC 29...	3.70	3.40	3.10	180	15	69	4	<1	13	1.5
FEB 02...	5.80	5.20	5.30	170	24	140	3	<1	12	2.5
MAR 02...	3.90	3.80	3.30	180	12	180	5	<1	6.5	1.4
22...	3.20	2.20	2.00	110	44	120	2	<1	--	--
APR 26...	0.780	0.690	0.610	20	51	23	1	<1	3.5	1.4
MAY 27...	1.50	1.30	1.30	70	25	25	<1	<1	3.9	1.0
JUN 28...	1.20	1.00	0.990	90	29	67	2	<1	21	2.1
JUL 27...	0.600	0.530	0.540	50	35	31	2	<1	2.9	1.1
AUG 24...	1.10	1.00	1.10	90	29	36	2	<1	4.4	0.9
SEP 28...	0.400	0.350	0.340	70	34	32	2	<1	4.7	1.0

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 28...N	1350	87	17.5	21	4.9
NOV 18...N	1450	44	16.0	7	0.83
DEC 29...N	1205	24	--	4	0.26
FEB 02...N	1145	18	12.0	18	0.87
MAR 02...N	1205	22	20.0	21	1.2
22...N	1030	28	14.0	54	4.1
APR 26...N	1300	109	16.5	105	31
MAY 27...N	1030	69	18.5	68	13
JUN 28...N	1015	64	22.0	53	9.2
JUL 27...N	1030	80	22.0	35	7.6
AUG 24...N	0850	53	20.5	12	1.7
SEP 28...N	1015	64	20.0	23	4.0

## 11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	586	468	1180	772	1170	1110	1780	1130	1410	1260	1420	1320
2	902	482	990	869	1160	1140	1300	1130	1310	1240	1370	1230
3	682	275	1020	924	1190	1050	1300	1090	1280	1210	1270	1220
4	347	314	1010	925	1580	1040	1390	1100	1240	1150	1380	1270
5	358	331	1010	974	1210	1030	1440	1230	1200	1130	1370	1310
6	373	357	1030	895	1110	1010	1430	1290	1190	1140	1340	1210
7	389	350	1030	908	1130	1010	1450	1220	1200	974	1270	1230
8	392	323	1010	908	1370	1100	1370	1170	984	932	1300	1260
9	396	257	973	931	1270	1140	1410	1300	970	940	1300	1260
10	370	332	1040	963	1260	1160	1350	1200	1070	970	1340	1270
11	362	340	1060	777	1510	1010	1380	1210	1130	1070	1340	1300
12	340	307	1050	860	1530	1000	1310	1170	1210	1120	1320	1230
13	317	308	962	886	1200	1050	1170	1080	1210	1180	1340	1220
14	319	308	1010	942	1180	962	1130	916	1220	1190	1370	1320
15	313	304	1070	918	1100	949	1070	888	1230	1190	1370	1300
16	926	304	1210	883	1070	931	1080	953	1210	1190	1380	1330
17	861	553	1060	1000	1230	1030	1320	1010	1210	1170	1330	973
18	633	499	1080	1020	1300	1160	1340	1030	1170	1120	987	283
19	814	552	1080	1020	1280	1170	1160	1010	1120	1080	606	358
20	1010	587	1080	1020	1330	1160	1180	1110	1080	1050	632	413
21	1010	597	1110	1030	1280	1170	1230	1140	1060	1030	863	516
22	733	380	1100	1040	1240	1170	1310	1170	1250	1050	796	667
23	721	460	1250	1060	1240	1170	1170	607	1250	1170	831	755
24	694	367	1250	1050	1260	1130	733	566	1220	1160	997	831
25	827	383	1360	1180	1420	1180	873	696	1260	1220	1010	814
26	857	529	1270	1170	1280	1210	961	700	1250	1200	1090	923
27	753	375	1360	1170	1370	1160	1160	939	1240	1210	1100	759
28	773	316	1300	1180	1450	1180	1020	958	1360	1210	759	567
29	550	295	1250	1130	1250	1110	1200	1020	---	---	612	480
30	722	504	1250	992	1220	1110	1350	1190	---	---	667	502
31	847	613	---	---	1200	1130	1380	1220	---	---	583	433
MONTH	1010	257	1360	772	1580	931	1780	566	1410	932	1420	283
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	472	343	811	452	676	583	1190	503	839	390	763	563
2	410	316	667	327	689	558	1020	283	850	427	1010	498
3	424	288	754	444	580	382	803	300	721	478	878	491
4	584	376	972	519	585	391	790	489	766	499	805	381
5	646	527	1180	471	603	397	750	519	699	398	861	546
6	578	314	798	372	626	353	850	448	818	476	912	466
7	579	400	643	376	685	367	933	470	800	468	760	539
8	570	354	708	282	600	461	764	552	775	464	742	420
9	554	313	792	512	653	448	933	619	921	481	890	687
10	653	447	853	523	688	492	965	661	1110	833	866	469
11	471	301	924	412	719	386	1200	424	1090	562	838	380
12	453	363	924	416	657	337	898	439	935	489	837	521
13	448	305	777	685	567	310	878	539	942	534	837	386
14	492	391	803	348	596	423	834	358	878	664	693	452
15	771	340	498	323	612	402	875	478	761	620	765	499
16	928	483	680	423	659	482	1130	523	727	639	1020	476
17	765	340	800	581	576	338	857	547	762	624	769	360
18	964	334	737	437	672	393	772	438	807	651	584	381
19	838	581	746	474	889	499	866	537	861	558	665	406
20	953	511	619	402	829	577	806	543	662	640	813	541
21	718	379	516	351	693	404	920	407	640	526	892	457
22	996	273	633	376	703	414	722	497	633	538	1100	518
23	843	560	627	488	731	411	692	481	660	527	841	408
24	644	327	738	429	635	498	576	376	766	478	780	446
25	581	269	736	469	857	336	682	380	888	545	775	434
26	824	237	748	396	983	416	631	337	674	438	1100	517
27	766	365	780	482	837	429	689	344	878	528	1100	504
28	589	475	775	553	861	506	701	366	769	381	815	487
29	716	418	704	204	1240	681	545	376	789	432	765	364
30	1050	621	638	333	1160	567	739	496	781	517	704	370
31	---	---	698	615	---	---	612	412	783	448	---	---
MONTH	1050	237	1180	204	1240	310	1200	283	1110	381	1100	360

## 11274560 TURLOCK IRRIGATION DISTRICT LATERAL NO. 5 NEAR PATTERSON, CA--Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	24.0	20.0	18.5	16.0	15.5	12.5	11.0	10.0	13.5	10.5	22.0	15.0
2	24.0	19.5	19.0	15.5	15.0	13.0	11.0	10.0	14.5	11.0	23.0	15.5
3	22.5	19.5	19.0	15.5	15.5	13.0	13.5	10.5	15.5	11.5	22.0	15.5
4	22.0	19.5	18.5	15.5	15.0	12.5	13.5	12.5	17.0	13.0	23.0	15.0
5	21.0	18.5	18.0	15.5	15.0	11.5	14.0	12.0	15.0	12.0	20.0	17.0
6	21.5	18.0	18.0	15.0	14.5	11.5	13.5	10.5	14.0	12.5	20.5	15.5
7	22.0	18.5	18.0	15.5	14.5	11.5	14.0	11.0	16.0	13.0	21.0	14.5
8	21.0	18.5	18.0	15.0	15.0	13.0	14.0	12.5	14.5	13.0	21.5	15.0
9	20.5	18.5	18.0	15.5	17.0	14.5	14.0	12.5	16.5	11.0	22.0	15.0
10	20.5	18.5	18.5	16.0	16.5	13.5	14.5	11.0	16.0	12.0	22.5	15.0
11	20.5	19.0	18.0	16.5	16.0	13.5	13.0	10.5	14.5	10.5	20.0	14.0
12	21.5	18.0	17.0	15.5	14.5	12.0	14.0	11.5	16.5	10.0	21.0	12.5
13	20.5	19.0	16.5	14.5	14.5	12.5	13.5	11.0	16.5	10.5	22.5	12.5
14	20.5	18.0	16.0	12.5	14.5	13.0	13.5	11.5	17.0	11.0	23.0	13.5
15	21.0	18.5	15.5	12.5	14.5	13.0	13.5	11.5	16.5	11.0	22.0	15.0
16	20.5	18.0	15.5	12.0	13.5	12.5	13.5	10.5	16.0	13.0	18.5	14.5
17	20.5	17.5	16.5	14.5	14.0	12.5	13.5	10.0	16.0	12.5	20.0	14.0
18	20.0	17.0	16.5	15.0	14.0	12.5	14.5	11.0	15.0	11.5	20.0	15.0
19	20.0	17.0	16.0	14.0	12.5	11.5	14.5	11.0	13.5	10.5	21.5	15.5
20	20.5	17.5	16.5	14.0	12.0	11.5	15.0	11.5	15.5	10.5	21.5	13.5
21	20.0	18.0	15.5	14.0	12.0	11.5	16.0	12.5	15.5	10.5	21.5	12.0
22	20.5	17.5	16.5	15.0	12.0	11.5	15.0	12.0	17.0	11.0	17.0	13.0
23	20.0	17.5	15.0	13.0	12.0	11.0	16.0	14.0	17.5	11.5	17.0	9.5
24	20.0	17.0	13.0	11.0	11.5	11.0	14.0	12.0	19.5	12.5	16.0	10.0
25	20.0	16.5	14.0	10.5	11.5	10.5	13.0	11.0	20.0	13.0	21.5	12.5
26	20.0	17.0	14.5	11.0	12.5	11.0	14.5	11.5	18.5	15.5	22.0	13.5
27	20.5	16.5	13.5	12.0	11.5	8.5	14.0	11.0	19.5	15.0	23.0	14.0
28	19.0	16.5	14.5	12.5	12.0	8.5	12.5	10.5	21.0	13.5	20.5	14.5
29	18.5	15.5	15.5	13.5	11.0	9.5	14.0	10.0	---	---	19.5	14.5
30	19.0	16.5	15.5	14.0	11.0	10.0	12.5	10.5	---	---	22.0	14.5
31	19.0	17.0	---	---	11.0	10.0	13.5	10.5	---	---	21.0	14.0
MONTH	24.0	15.5	19.0	10.5	17.0	8.5	16.0	10.0	21.0	10.0	23.0	9.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	21.0	14.5	24.0	17.5	26.0	19.5	29.0	19.5	28.0	20.0	25.5	20.0
2	20.0	15.5	24.5	18.0	25.0	19.5	31.5	20.5	27.5	19.5	24.5	19.5
3	21.0	16.0	24.5	18.0	24.5	19.0	30.0	20.5	28.0	19.5	24.0	19.0
4	21.0	15.5	24.5	18.5	25.0	19.0	27.0	20.0	28.0	20.5	25.0	19.5
5	21.5	14.5	24.0	19.0	24.0	19.0	27.0	20.0	27.5	20.5	26.5	20.0
6	20.5	16.0	20.0	18.0	24.5	18.5	28.5	20.5	28.5	21.0	26.0	20.5
7	20.0	14.5	22.5	17.5	24.5	18.5	30.0	20.0	28.5	21.5	25.5	20.5
8	17.0	15.5	23.5	18.5	25.5	18.5	28.0	20.0	28.0	21.0	24.5	19.5
9	20.0	14.5	25.5	19.0	25.5	19.5	30.0	20.5	27.0	20.0	23.5	19.0
10	21.0	15.0	26.5	20.5	26.5	20.5	30.0	20.0	28.5	19.5	23.0	18.5
11	23.5	15.5	26.5	21.0	28.0	21.0	29.5	20.5	27.0	20.0	23.0	17.5
12	23.0	16.5	25.0	20.0	26.0	21.5	28.5	21.0	28.5	20.0	23.0	18.0
13	25.0	17.0	25.5	19.5	25.5	19.5	30.5	20.5	28.0	20.5	22.5	18.5
14	24.0	16.5	25.5	20.0	24.0	18.5	29.0	20.5	28.5	21.0	24.0	18.0
15	26.0	17.5	22.5	19.0	24.5	18.5	31.0	21.0	28.0	21.0	25.0	18.5
16	23.5	18.5	20.0	17.0	25.5	17.5	31.0	20.5	28.5	20.5	24.0	19.5
17	25.0	17.5	20.5	17.5	25.0	18.5	29.5	19.5	29.0	21.0	23.5	20.0
18	26.5	18.0	21.5	17.5	26.5	18.5	28.5	20.5	28.5	21.5	23.5	19.0
19	24.5	18.0	22.5	17.5	27.0	18.5	28.5	20.5	28.0	21.0	24.0	19.5
20	23.5	17.0	23.5	17.5	26.5	19.5	26.5	20.5	27.0	20.0	25.5	19.5
21	23.5	17.0	24.5	19.0	25.0	19.0	26.0	20.0	27.0	20.0	26.0	20.0
22	23.5	17.0	25.0	18.5	25.5	18.5	28.0	19.5	27.5	20.0	24.5	20.0
23	18.5	16.0	25.5	19.0	25.0	18.5	27.0	20.5	26.5	21.0	23.0	20.0
24	18.5	15.0	26.5	19.5	26.0	18.5	27.0	19.5	27.5	20.5	22.5	18.0
25	19.5	15.5	27.5	19.5	26.0	19.5	28.0	20.0	27.0	21.0	24.0	19.0
26	20.0	16.0	25.5	19.5	28.5	18.0	27.5	21.0	26.0	20.5	24.0	19.0
27	19.5	16.0	26.0	19.5	28.5	19.5	28.0	20.5	27.5	21.0	23.0	19.5
28	23.0	16.5	27.0	20.5	26.5	20.0	28.5	20.5	26.0	19.5	21.5	19.5
29	23.0	18.0	27.5	20.0	27.5	19.5	27.0	20.5	25.0	19.0	22.0	18.0
30	24.5	17.5	24.5	21.0	29.0	19.5	28.5	20.5	27.0	20.0	22.5	18.0
31	---	---	27.0	19.5	---	---	26.5	20.0	28.0	20.5	---	---
MONTH	26.5	14.5	27.5	17.0	29.0	17.5	31.5	19.5	29.0	19.0	26.5	17.5



11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA

## WATER-QUALITY RECORDS

LOCATION.--Lat 37°29'54", long 121°04'54", in SW 1/4 SW 1/4 sec.15, T.5 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.2 mi below bridge on Palm Avenue, 2.3 mi northeast of Patterson.

DRAINAGE AREA.--9,760 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1988 to September 1989, January 1990 to current year. 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 U.S. Geological Survey Open-File Report 91-74.

SPECIFIC CONDUCTANCE: October 1988 to September 1989, January 1990 to current year.

WATER TEMPERATURE: October 1988 to September 1989, January 1990 to current year.

CHEMICAL DATA: October 1992 to current year.

SEDIMENT DATA: October 1992 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to September 1989, January 1990 to current year.

WATER TEMPERATURE: October 1988 to September 1989, January 1990 to current year.

INSTRUMENTATION.--Water-quality monitor October 1985 to September 1989 and since January 1990.

REMARKS.--Operation of pumping station and canal outlet located just downstream from the gage may affect specific conductance and water temperature during low-flow periods.

COOPERATION.--Discharge provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,660 microsiemens, Apr. 15, 1991; minimum recorded, 230 microsiemens, Oct. 12, 13, 1993.

WATER TEMPERATURE: Maximum recorded, 36.0°C, July 18, 1992; minimum recorded, 2.0°C, Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,160 microsiemens, July 11, 12; minimum recorded, 230 microsiemens, Oct. 12, 13.

WATER TEMPERATURE: Maximum recorded, 28.5°C, June 11, July 10-13, 15; minimum recorded, 6.5°C, Dec. 24-26.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
26...	1000	1120	765	7.6	17.5	766	--	--	160	37	17
NOV											
16...	0940	864	1110	7.8	10.0	767	10.6	94	230	52	25
DEC											
28...	1410	646	1430	7.8	9.0	771	10.9	94	290	64	31
FEB											
03...	1330	687	1720	7.8	11.0	765	8.0	73	340	74	37
MAR											
01...	1415	1140	1670	7.8	17.0	765	8.3	86	360	82	37
24...	1340	1340	1830	7.8	16.0	754	8.0	82	400	91	42
APR											
28...	1400	1240	829	7.6	17.0	776	8.8	90	170	38	18
MAY											
25...	0945	673	1390	8.0	22.5	756	7.4	86	300	70	31
JUN											
28...	0830	430	1850	8.0	24.5	760	7.1	86	400	92	41
JUL											
27...	1300	1150	1721	8.0	24.0	758	8.9	106	150	35	15
AUG											
24...	1430	372	1590	8.2	26.0	760	10.6	132	340	78	35
SEP											
08...	1015	372	1490	7.9	21.5	763	7.7	88	--	--	--
27...	1000	412	1240	7.8	22.0	762	7.0	81	250	54	27

## SAN JOAQUIN RIVER BASIN

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 26...	90	54	3	2.6	130	--	0	--	106	--	110
NOV 16...	140	56	4	3.3	168	--	0	--	138	--	170
DEC 28...	170	56	4	2.7	185	--	0	--	151	--	240
FEB 03...	230	59	5	4.5	200	--	0	--	164	--	330
MAR 01...	230	58	5	5.2	195	--	0	--	160	--	330
24...	240	56	5	4.2	251	--	0	--	206	--	370
APR 28...	99	56	3	2.3	--	105	--	0	--	86	140
MAY 25...	170	55	4	3.3	--	162	--	0	--	133	270
JUN 28...	250	57	5	4.8	--	--	--	--	--	<sup>1</sup> 214	370
JUL 27...	79	53	3	2.0	--	78	--	0	--	64	130
AUG 24...	190	54	4	5.2	--	234	--	0	--	191	290
SEP 08...	--	--	--	--	--	--	--	--	--	--	--
27...	140	55	4	4.0	--	205	--	0	--	168	160

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 26...	93	0.20	17	453	438	0.62	0.060	1.30	0.330	0.70	0.50
NOV 16...	150	0.20	18	652	650	0.89	0.070	1.70	0.330	0.80	0.70
DEC 28...	220	0.10	14	884	845	1.20	0.040	2.20	0.420	1.1	0.80
FEB 03...	250	0.10	13	1090	1050	1.48	0.070	3.30	0.650	1.5	1.2
MAR 01...	230	0.20	15	1050	1050	1.43	0.070	4.00	0.450	1.7	1.2
24...	260	0.20	13	1180	1160	1.60	0.060	4.10	0.090	1.2	0.60
APR 28...	110	0.10	12	483	482	0.66	0.040	2.10	0.110	0.60	0.30
MAY 25...	190	0.20	14	896	842	1.22	0.060	2.80	0.060	0.70	0.40
JUN 28...	260	0.30	18	1140	1190	1.55	0.130	4.50	0.540	1.7	1.1
JUL 27...	85	0.10	9.8	434	404	0.59	0.040	1.90	0.040	0.70	0.30
AUG 24...	210	0.30	16	994	958	1.35	0.730	3.80	0.120	1.5	0.60
SEP 08...	--	--	--	--	--	--	0.130	3.30	0.120	1.3	0.60
27...	180	0.10	19	704	698	0.96	0.090	2.60	0.190	1.0	0.50

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
OCT										
26...	0.310	0.270	0.270	500	28	46	3	1	--	--
NOV										
16...	0.250	0.170	0.180	760	21	86	2	2	6.8	0.2
DEC										
28...	0.290	0.180	0.190	1000	8	120	4	3	6.4	0.7
FEB										
03...	0.390	0.290	0.260	1500	13	110	5	7	6.4	1.4
MAR										
01...	0.430	0.250	0.230	1400	15	70	5	7	3.9	1.9
24...	0.290	0.140	0.140	1700	4	58	6	10	--	--
APR										
28...	0.250	0.150	0.140	560	24	30	2	3	3.6	1.1
MAY										
25...	0.210	0.130	0.140	1100	13	61	3	6	4.2	0.8
JUN										
28...	0.410	0.190	0.190	1600	13	69	8	10	5.6	2.6
JUL										
27...	0.200	0.100	0.090	600	28	18	3	4	3.5	0.6
AUG										
24...	0.440	0.220	0.190	1200	11	63	6	6	4.0	6.1
SEP										
08...	0.490	0.300	0.290	--	--	--	--	--	--	--
27...	0.260	0.140	0.140	560	15	41	5	2	3.5	3.4

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT					
26...N	1000	1120	17.5	110	333
NOV					
16...N	0940	864	10.0	32	75
DEC					
28...N	1410	646	9.0	56	98
FEB					
03...N	1330	687	11.0	42	78
MAR					
01...N	1415	1140	17.0	85	262
24...N	1340	1340	16.0	74	268
APR					
28...N	1400	1240	17.0	82	275
MAY					
25...N	0945	673	22.5	60	109
JUN					
28...N	0830	430	24.5	140	163
JUL					
27...N	1300	1150	24.0	64	199
AUG					
24...N	1430	372	26.0	108	108
SEP					
27...N	1000	412	22.0	111	123

## SAN JOAQUIN RIVER BASIN

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	820	770	840	800	1280	1250	1590	1530	1640	1570	1730	1680
2	810	790	860	830	1270	1250	1580	1520	1690	1630	1720	1690
3	790	710	920	840	1290	1250	1530	1490	1720	1680	1710	1670
4	720	650	940	920	1350	1290	1620	1520	1700	1660	1790	1680
5	690	660	950	930	1360	1330	1530	1290	1730	1690	1870	1790
6	680	620	980	950	1340	1310	1320	1280	1780	1720	1840	1790
7	640	550	990	940	1370	1310	1320	1280	1780	1580	1820	1780
8	550	450	1070	960	1370	1350	1390	1260	1580	1510	1810	1780
9	510	440	1040	980	1370	1350	1440	1390	1580	780	1780	1740
10	490	410	1100	1030	1350	1230	1480	1350	960	670	1910	1750
11	480	280	1110	1080	1330	1230	1520	1480	890	640	1920	1710
12	280	230	1110	1060	1350	1290	1540	1490	1150	890	1830	1710
13	260	230	1100	1070	1340	1250	1580	1530	1280	1150	1800	1750
14	260	240	1110	1090	1250	1220	1610	1570	1340	1260	1760	1630
15	250	240	1110	1090	1240	1210	1670	1610	1380	1330	1820	1640
16	280	240	1110	1090	1230	1160	1670	1640	1410	1380	1810	1610
17	290	270	1090	1080	1220	1160	1670	1630	1500	1410	1660	1620
18	300	290	1080	1070	1200	1160	1680	1650	1580	1490	1740	1620
19	400	290	1120	1070	1230	1190	1660	1610	1570	1140	1720	1650
20	530	400	1150	1110	1250	1210	1620	1600	1140	1020	1670	1600
21	570	530	1200	1150	1290	1250	1620	1580	1170	1040	1710	1620
22	580	550	1220	1170	1340	1290	1620	1600	1160	1000	1740	1690
23	650	560	1250	1220	1380	1340	1610	1520	1110	1000	1770	1720
24	740	650	1320	1250	1390	1360	1550	1400	1310	1110	1830	1750
25	790	720	1340	1310	1420	1370	1470	1150	1410	1310	1790	1720
26	790	750	1340	1310	1430	1390	1280	1230	1560	1410	1790	1710
27	800	760	1320	1270	1430	1390	1370	1280	1630	1560	1800	1680
28	860	790	1280	1270	1460	1410	1430	1370	1690	1630	1730	1650
29	860	670	1270	1250	1470	1450	1480	1430	---	---	1710	1630
30	840	700	1260	1240	1490	1450	1510	1480	---	---	1760	1650
31	830	810	---	---	1530	1460	1580	1500	---	---	1710	1630
MONTH	860	230	1340	800	1530	1160	1680	1150	1780	640	1920	1600
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1690	1610	1240	1120	1560	1450	1900	1710	1250	1140	1390	1260
2	1660	1570	1320	1180	1490	1440	1930	1570	1250	1180	1660	1380
3	1650	1420	1330	1220	1450	1370	1930	1710	1310	1170	---	---
4	1580	1520	1360	1200	1550	1390	1810	1600	1350	1240	---	---
5	1590	1540	1410	1360	1700	1550	1800	1540	1530	1270	1640	1430
6	1640	1570	1450	1090	1710	1510	1810	1600	1560	1400	1680	1530
7	1670	1610	1090	810	1720	1500	1810	1630	1580	1430	1680	1400
8	1700	1530	810	760	1670	1550	1820	1670	1590	1490	1590	1360
9	1670	1590	870	730	1620	1510	1880	1770	1550	1460	1600	1490
10	1750	1630	790	720	1570	1500	1980	1800	1690	1530	1600	1320
11	1920	1620	860	720	1690	1480	2160	1980	1750	1590	1560	1330
12	1940	1640	1040	860	1750	1640	2160	1910	---	---	1610	1490
13	1750	1650	1410	1040	1720	1560	2110	1980	---	---	1670	1400
14	1690	1570	1460	1250	1710	1610	2010	1610	---	---	1570	1400
15	1620	1480	1760	1370	1730	1630	1930	1650	---	---	1630	1460
16	1610	1440	1700	1450	1740	1640	1860	1780	---	---	1660	1460
17	1540	1430	1580	1460	1760	1610	1900	1760	---	---	1640	1320
18	1550	1390	1640	1400	1860	1700	1860	1600	---	---	1620	1390
19	1550	1450	1450	1360	2110	1720	1730	1040	---	---	1560	1420
20	1520	1390	1360	1190	1840	1710	1040	840	---	---	1800	1450
21	1560	1390	1220	1140	1740	1540	840	670	---	---	1820	1590
22	1580	1340	1400	1140	1690	1550	760	630	---	---	1820	1480
23	1500	1350	1390	1240	1710	1460	630	580	---	---	1590	1420
24	1350	900	1310	1250	1840	1710	610	570	---	---	1540	1420
25	910	820	1410	1280	1920	1660	640	550	---	---	1480	1380
26	850	810	1620	1360	1920	1730	630	560	1630	1460	1450	1320
27	820	750	1650	1370	1950	1780	650	590	1700	1500	1370	1230
28	830	750	1590	1360	1850	1710	600	560	1720	1490	1280	1110
29	990	830	1630	1280	1830	1690	770	600	1650	1390	1220	1150
30	1140	990	1700	1570	1810	1660	1140	770	1410	1290	1310	1220
31	---	---	1570	1430	---	---	1180	1060	1420	1320	---	---
MONTH	1940	750	1760	720	2110	1370	2160	550	---	---	---	---

11274570 SAN JOAQUIN RIVER AT PATTERSON BRIDGE, NEAR PATTERSON, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	23.0	21.0	17.0	16.0	12.0	10.5	9.5	9.0	9.0	8.5	17.0	14.5
2	23.0	21.0	16.5	15.0	12.0	10.5	10.0	9.5	9.5	8.0	17.5	15.0
3	22.5	21.0	16.5	15.0	12.0	10.5	10.0	10.0	10.0	8.5	18.0	16.0
4	21.5	20.0	16.0	14.5	12.0	10.5	10.0	9.5	11.5	10.0	18.5	16.0
5	20.0	18.5	16.0	14.5	11.5	10.5	10.0	9.5	11.5	10.5	18.0	17.0
6	20.0	18.5	15.5	14.0	11.0	9.5	10.0	8.5	11.0	10.5	18.0	16.0
7	20.5	18.5	15.5	14.0	11.5	10.0	9.5	8.0	12.0	11.0	18.0	16.0
8	19.5	18.5	15.0	13.5	12.0	11.0	9.5	8.0	12.5	11.5	18.0	16.0
9	18.5	18.0	15.0	13.5	13.0	12.0	10.0	9.0	12.0	10.5	18.5	16.0
10	19.0	17.5	15.5	14.0	13.0	12.0	10.0	8.0	11.5	10.5	18.5	16.5
11	18.5	17.5	16.0	14.5	12.5	11.5	9.5	8.5	11.5	10.5	17.5	16.0
12	17.5	16.5	15.0	14.0	11.5	10.5	9.5	8.5	11.0	10.0	17.0	14.5
13	17.5	16.5	14.0	13.0	11.5	10.5	9.5	8.0	11.0	9.5	18.0	15.0
14	16.5	16.0	13.0	11.0	11.0	10.5	9.5	9.0	11.5	10.0	18.5	15.5
15	17.0	16.0	11.5	10.5	11.0	10.0	10.0	8.5	11.5	10.0	18.5	16.5
16	17.0	16.0	11.5	10.0	10.5	10.0	10.5	9.0	12.0	10.5	17.5	16.5
17	16.5	16.0	12.0	10.5	10.0	9.0	10.5	9.0	12.0	11.0	17.5	15.5
18	16.5	15.5	12.5	11.0	9.5	9.0	11.0	9.0	11.5	11.0	18.5	16.0
19	16.5	15.5	12.5	11.0	9.0	8.5	11.0	9.5	11.0	9.5	18.5	16.5
20	17.0	15.5	12.5	11.0	8.5	8.0	11.0	9.5	10.5	9.0	18.5	16.0
21	17.5	16.5	11.5	11.0	8.0	7.5	11.5	10.0	10.5	10.0	18.5	16.0
22	18.0	16.5	12.5	11.0	7.5	7.0	11.5	10.0	11.0	10.0	17.0	15.0
23	18.0	16.5	12.0	10.5	7.5	7.0	12.5	11.5	11.5	10.0	15.5	13.5
24	18.5	17.0	10.5	9.0	7.0	6.5	12.5	11.5	12.5	10.5	15.0	13.5
25	18.5	17.0	10.0	8.5	6.5	6.5	11.5	11.0	13.5	11.5	16.0	13.5
26	18.5	17.0	10.0	8.5	7.0	6.5	11.5	10.5	14.0	13.0	17.5	14.5
27	18.0	17.0	9.5	8.5	8.5	7.0	11.5	10.5	15.0	13.5	18.0	15.0
28	18.0	16.5	10.0	9.0	9.0	7.5	10.5	9.5	16.0	14.0	18.5	16.0
29	17.5	16.0	11.0	9.5	8.5	8.0	10.5	9.0	---	---	18.0	16.5
30	18.0	16.0	12.0	11.0	9.0	8.5	9.5	9.0	---	---	19.0	16.5
31	18.0	16.5	---	---	9.0	8.5	9.5	8.5	---	---	18.5	16.0
MONTH	23.0	15.5	17.0	8.5	13.0	6.5	12.5	8.0	16.0	8.0	19.0	13.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	19.0	16.0	21.5	18.0	25.0	22.0	27.5	23.5	26.0	23.0	26.0	22.5
2	19.0	17.0	22.0	19.0	25.0	22.0	27.5	23.5	26.0	23.0	25.0	22.0
3	20.5	17.5	22.5	19.5	24.5	21.5	28.0	24.0	26.0	23.0	23.0	20.5
4	19.5	18.0	22.5	20.0	24.5	21.0	27.5	24.5	27.0	23.5	24.0	18.5
5	19.0	16.5	22.5	20.0	24.0	21.5	27.5	24.0	27.0	23.5	25.5	22.5
6	19.5	17.0	21.0	19.0	23.5	20.5	27.0	24.0	27.5	24.0	26.0	23.0
7	19.0	16.5	20.5	18.5	23.5	20.0	27.5	24.0	28.0	25.0	25.5	22.5
8	17.5	16.5	20.5	18.5	24.0	20.0	28.0	24.0	27.5	24.0	24.5	22.0
9	18.0	15.5	21.5	19.0	25.0	21.5	28.0	24.5	26.0	23.5	23.0	21.5
10	18.5	15.5	22.5	20.0	27.0	23.0	28.5	24.5	26.0	22.5	23.0	20.0
11	20.0	16.0	23.0	21.0	28.5	24.5	28.5	24.5	26.0	23.0	22.5	19.5
12	21.0	18.0	23.5	21.0	27.0	24.5	28.5	25.0	24.5	21.5	23.0	20.0
13	21.5	18.0	24.0	21.0	26.0	23.5	28.5	24.0	27.0	17.0	23.0	20.0
14	21.5	18.5	24.0	21.0	24.5	21.5	28.0	24.0	26.0	19.0	23.0	20.0
15	23.0	19.0	22.0	20.0	24.5	20.5	28.5	24.5	27.0	19.5	24.0	20.5
16	22.5	20.5	20.0	18.5	24.0	20.5	28.0	24.5	26.0	18.0	24.0	21.5
17	23.0	20.0	19.5	18.0	24.5	21.0	27.5	24.0	27.0	19.0	24.0	22.0
18	23.5	20.0	20.0	18.0	25.0	21.0	27.5	24.0	24.5	18.5	23.5	21.0
19	23.0	20.5	21.0	18.0	26.0	22.0	27.5	24.0	24.5	17.5	24.5	21.5
20	22.5	19.5	21.5	18.0	25.5	22.5	26.5	24.5	26.5	16.0	25.0	21.5
21	22.0	19.0	23.0	19.5	26.0	22.0	26.0	23.5	26.5	17.0	25.0	22.0
22	21.5	18.5	23.0	20.0	25.5	22.5	25.0	22.0	24.0	18.0	25.0	22.5
23	19.5	17.5	24.0	20.5	25.5	22.0	24.5	22.5	23.0	18.5	23.5	21.5
24	17.5	16.5	25.0	21.5	25.0	22.0	24.0	21.5	23.5	19.0	23.5	20.0
25	17.0	15.5	26.0	22.5	25.5	22.0	24.5	22.0	26.0	21.0	24.0	21.5
26	17.0	15.0	25.5	23.0	25.5	22.0	24.5	22.5	25.5	22.5	24.5	21.5
27	17.0	15.5	25.0	22.0	27.5	23.0	24.5	22.5	25.5	22.5	24.0	22.0
28	18.0	15.5	26.0	22.0	28.0	24.0	25.0	22.5	25.0	22.0	23.0	21.5
29	20.0	17.0	25.5	22.5	28.0	24.0	25.0	23.0	24.5	22.0	23.0	20.5
30	21.0	18.0	25.5	23.0	27.5	24.0	27.0	23.5	25.5	22.0	22.5	20.0
31	---	---	25.5	22.5	---	---	26.5	23.5	26.0	22.5	---	---
MONTH	23.5	15.0	26.0	18.0	28.5	20.0	28.5	21.5	28.0	16.0	26.0	18.5

## SAN JOAQUIN RIVER BASIN

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA

LOCATION.--Lat 37°29'12", long 121°12'29", in SE 1/4 NW 1/4 sec.21, T.5 S., R.7 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 1.0 mi upstream from California Aqueduct crossing and 4.4 mi west of Patterson.

DRAINAGE AREA.--72.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1958 to May 1965 (maximums only), June 1965 to current year.

REVISED RECORDS.--WSP 1930: 1959-60(M), drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 200 ft above sea level, from topographic map. Prior to June 1965, crest-stage gage at site 1.0 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair except those below 0.1 ft<sup>3</sup>/s, which are poor. Some stock ponds and small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft<sup>3</sup>/s, Feb. 16, 1959, gage height, 14.68 ft, site and datum then in use, from rating curve extended above 690 ft<sup>3</sup>/s; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	0100	*39	*2.13				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.32	1.3	1.3	1.8	3.0	1.0	.98	.12	.00	.00	.00
2	.00	.33	1.2	1.3	1.8	2.6	.94	.80	.08	.00	.00	.00
3	.00	.32	1.1	1.3	1.8	2.5	1.0	.63	.06	.00	.00	.00
4	.00	.36	1.2	1.3	1.6	2.6	.93	.54	.05	.00	.00	.00
5	.00	.34	1.1	1.4	1.6	3.0	.91	.48	.06	.00	.00	.00
6	.00	.32	1.1	1.3	1.8	2.9	.89	1.4	.06	.00	.00	.00
7	.00	.34	1.1	1.3	7.0	2.5	.91	2.3	.04	.00	.00	.00
8	.00	.36	1.1	1.3	11	2.2	.91	2.2	.03	.00	.00	.00
9	.00	.42	1.1	1.3	6.2	2.1	1.2	1.8	.02	.00	.00	.00
10	.00	.55	1.2	1.3	4.3	2.0	1.2	1.4	.01	.00	.00	.00
11	.00	1.2	1.6	1.3	3.5	2.0	1.0	1.0	.00	.00	.00	.00
12	.00	1.1	3.4	1.3	3.0	1.9	.89	.79	.00	.00	.00	.00
13	.00	1.0	2.2	1.2	2.7	1.8	.92	.61	.00	.00	.00	.00
14	.00	.95	2.1	1.3	2.4	1.7	.84	.45	.00	.00	.00	.00
15	.00	.83	2.4	1.3	2.2	1.8	.68	.40	.00	.00	.00	.00
16	.00	.83	1.9	1.2	2.0	1.8	.68	.41	.00	.00	.00	.00
17	.00	.83	1.6	1.0	3.2	1.9	.64	.52	.00	.00	.00	.00
18	.00	.83	1.4	.83	6.8	1.9	.54	.55	.00	.00	.00	.00
19	.00	.83	1.3	.79	13	2.1	.46	.56	.00	.00	.00	.00
20	.01	.79	1.1	.83	29	2.2	.43	.58	.00	.00	.00	.00
21	.22	.87	1.3	.83	17	2.2	.35	.52	.00	.00	.00	.00
22	.31	.97	1.1	.84	10	2.0	.31	.43	.00	.00	.00	.00
23	.33	.94	1.1	1.4	7.0	2.1	.41	.30	.00	.00	.00	.00
24	.31	.88	1.1	2.0	5.4	1.8	.71	.28	.00	.00	.00	.00
25	.29	.90	1.1	3.9	4.5	1.7	.89	.26	.00	.00	.00	.00
26	.26	.93	1.2	3.3	4.5	1.7	1.0	.23	.00	.00	.00	.00
27	.26	1.0	1.3	2.8	4.0	1.4	1.2	.22	.00	.00	.00	.00
28	.26	1.0	1.3	2.4	3.4	1.2	1.4	.20	.00	.00	.00	.00
29	.32	1.2	1.2	2.0	---	1.1	1.5	.17	.00	.00	.00	.00
30	.29	1.4	1.3	1.9	---	1.1	1.1	.15	.00	.00	.00	.00
31	.31	---	1.3	1.8	---	1.0	---	.14	---	.00	.00	---
TOTAL	3.17	22.94	43.8	47.32	162.5	61.8	25.84	21.30	0.53	0.00	0.00	0.00
MEAN	.10	.76	1.41	1.53	5.80	1.99	.86	.69	.018	.000	.000	.000
MAX	.33	1.4	3.4	3.9	29	3.0	1.5	2.3	.12	.00	.00	.00
MIN	.00	.32	1.1	.79	1.6	1.0	.31	.14	.00	.00	.00	.00
AC-FT	6.3	46	87	94	322	123	51	42	1.1	.00	.00	.00

11274630 DEL PUERTO CREEK NEAR PATTERSON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.10	.99	3.12	14.7	25.8	21.7	8.53	3.55	1.77	.26	.070	.19
MAX	2.15	9.38	31.8	99.6	122	218	54.1	31.5	31.3	5.56	2.06	4.48
(WY)	1984	1983	1984	1983	1986	1983	1983	1983	1983	1983	1983	1990
MIN	.000	.000	.000	.000	.000	.062	.002	.000	.000	.000	.000	.000
(WY)	1966	1967	1969	1977	1977	1977	1980	1992	1966	1965	1965	1965

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1965 - 1994
ANNUAL TOTAL	6616.64	389.20	
ANNUAL MEAN	18.1	1.07	6.63
HIGHEST ANNUAL MEAN			47.7
LOWEST ANNUAL MEAN			.030
HIGHEST DAILY MEAN	590	Jan 13	973
LOWEST DAILY MEAN	.00	Aug 19	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 19	.00
INSTANTANEOUS PEAK FLOW		39	1800
INSTANTANEOUS PEAK STAGE		2.13	14.68
ANNUAL RUNOFF (AC-FT)	13120	772	4810
10 PERCENT EXCEEDS	38	2.2	11
50 PERCENT EXCEEDS	1.4	.52	.05
90 PERCENT EXCEEDS	.00	.00	.00

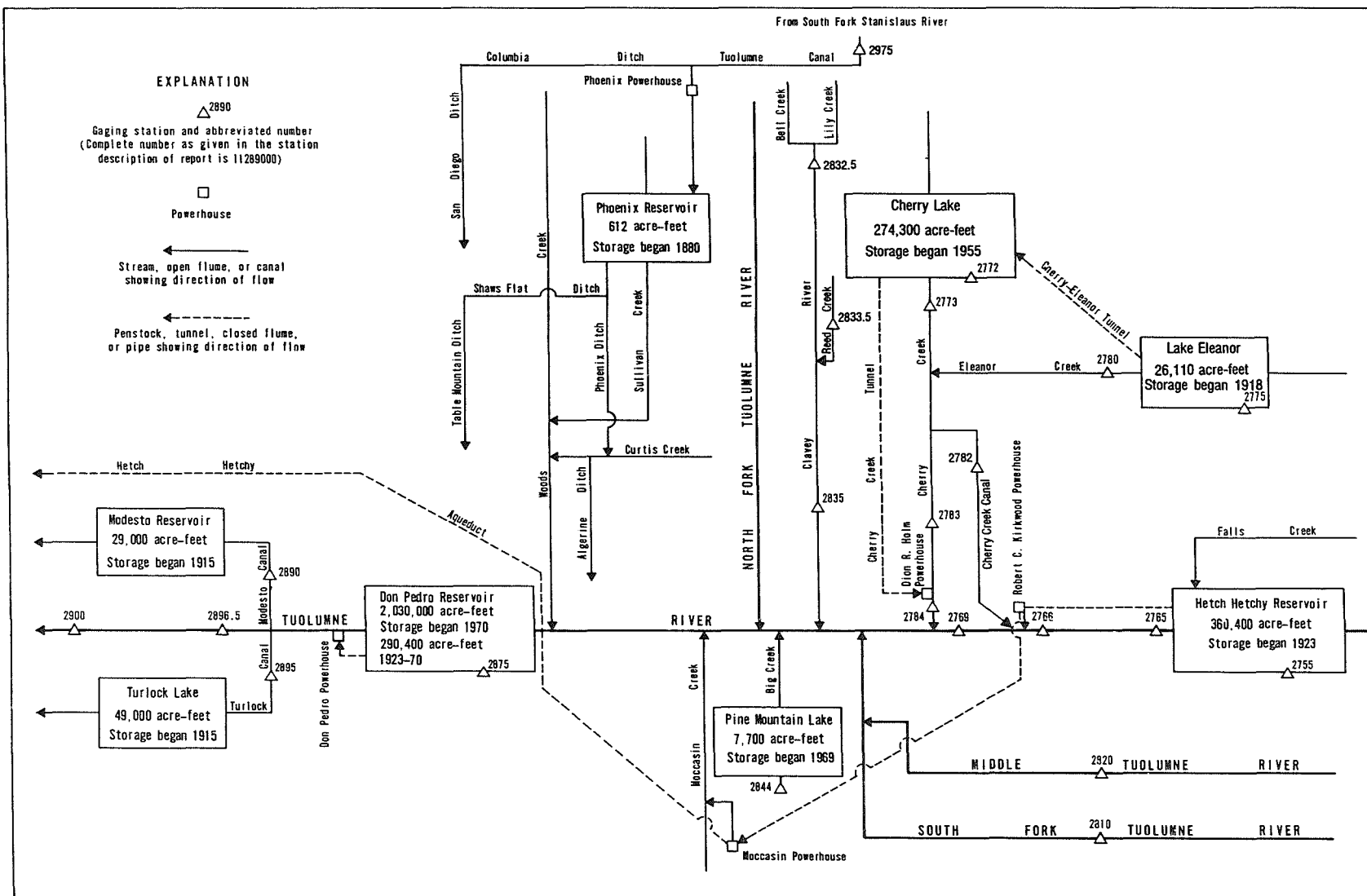


Figure 33. Diversions and storage in Tuolumne River basin.



## 11275500 HETCH HETCHY RESERVOIR AT HETCH HETCHY, CA

LOCATION.--Lat 37°56'52", long 119°47'13", in NW 1/4 NW 1/4 sec.16, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy, 1.5 mi downstream from Falls Creek.

DRAINAGE AREA.--455 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1923 to current year. Prior to October 1930 monthend contents published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 1.84 ft above sea level. Prior to Oct. 1, 1927, nonrecording gage at same site and datum. Oct. 1, 1927, to July 9, 1972, water-stage recorder at same site and datum. Prior to October 1974, datum published as at mean sea level.

REMARKS.--Reservoir is formed by concrete gravity-type dam, completed to crest gage height 3,726.5 ft in 1923 and raised to 3,812.0 ft in 1937. Storage began Apr. 6, 1923. Ten-foot drum gates were installed on spillway in 1949. Capacity, 360,400 acre-ft between gage heights 3,512.0 ft, bottom outlet, and 3,806.0 ft, top of drum-type spillway gates. Water is diverted from reservoir through tunnel to Robert C. Kirkwood Powerplant 15 mi downstream. Flow is diverted from powerplant tailrace in a closed conduit through Hetch Hetchy Aqueduct to Moccasin Powerplant with flows in excess of aqueduct capacity being spilled to the river. At Moccasin Creek Diversion Dam, water re-enters Hetch Hetchy Aqueduct and flows into Crystal Springs Reservoir, which supplies city of San Francisco. Surplus water is spilled into Don Pedro Reservoir (station 11287500) at Red Mountain Bar. Flow downriver is for State Department of Fish and Game and Raker Act requirements. Hetch Hetchy Reservoir is the main storage unit of Hetch Hetchy water-supply system for San Francisco. See schematic diagram of Tuolumne River basin. Records, including extremes, represent contents at 0800 hours.

COOPERATION.--Records were provided by city and county of San Francisco.

EXTREMES (AT 0800) FOR PERIOD OF RECORD.--Maximum contents, 369,100 acre-ft, Dec. 3, 1950, gage height, 3,810.4 ft; no contents at times in 1929-31.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 357,400 acre-ft, June 16, gage height, 3,804.5 ft; minimum, 199,500 acre-ft, Apr. 1, gage height, 3,715.9 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on table provided by San Francisco Public Utilities Commission, dated May 20, 1971)

3,512	0	3,530	3,300	3,600	57,400	3,680	146,200	3,760	273,700
3,513	51	3,540	8,700	3,620	76,500	3,700	175,000	3,780	310,400
3,515	154	3,560	22,900	3,640	97,000	3,720	206,000	3,800	348,600
3,520	410	3,580	39,500	3,660	119,900	3,740	238,900	3,810.4	369,100

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	313600	288400	268400	258000	248300	239900	199500	235700	338100	354300	329300	296800
2	312800	287400	268000	257800	248100	239700	200200	235000	342000	353700	328300	295900
3	312100	286700	267500	257700	247800	239600	200800	235200	346100	353100	327200	295000
4	310900	286300	266800	257300	247300	238600	201300	235700	349200	352500	326400	294000
5	309600	285600	266400	257100	246400	237900	201900	237700	350500	351900	325500	292900
6	308700	284700	266200	256800	245700	237700	201900	239700	351700	351100	324500	291800
7	307900	284200	265700	255900	245400	237500	201900	241300	352300	350500	323600	290400
8	307000	283400	265000	255000	245000	236900	201600	242600	352300	349800	322600	289300
9	306100	282700	264800	253700	244700	235900	201600	243300	352500	349200	321700	288400
10	305300	282200	264700	253500	244200	234800	201600	245200	352900	348600	320400	286700
11	304600	281600	264300	253300	243800	233200	201600	249900	353300	348000	319400	285600
12	303800	281300	264100	253100	243300	231500	200900	255900	354900	346800	318300	284700
13	302900	281100	264000	253000	243000	229800	200800	262900	356200	346100	317000	283800
14	302200	280900	263800	252800	242500	227700	200900	269400	356400	345300	315800	282500
15	301400	280500	263400	252300	242100	225800	201600	276000	357000	344100	314900	281400
16	300700	280000	263300	251800	241800	224700	203200	280900	357400	343400	313600	280700
17	299900	279600	263100	251600	241400	223400	206300	283600	357200	342600	312100	279800
18	299200	279300	262900	251400	241100	221500	207000	285400	357000	341800	310800	278700
19	298500	278900	262700	251200	240900	219900	214200	287400	356800	341200	309400	277300
20	297900	278500	262000	250900	240900	218300	219100	289100	356400	340100	308300	275700
21	297400	277300	261300	250700	240800	216600	224500	291800	356400	339300	307400	274800
22	296800	274100	260600	250400	240400	214800	228800	293700	356400	338500	306500	273700
23	296100	272500	260300	249900	240300	212700	232200	296400	356400	337500	305200	272800
24	295500	271200	260500	249700	239900	211100	234700	299900	356400	336800	303800	271700
25	294200	271200	260100	249500	239700	209200	236000	303700	356400	336000	303100	270900
26	292900	270100	259900	249300	239900	207300	237400	307800	356200	334900	302400	270000
27	292400	269800	259600	249200	239900	205500	237900	312200	356000	333900	301400	268400
28	291800	269400	259200	249000	240100	203800	237400	317000	355800	332900	300300	267000
29	291100	269100	258900	248800	---	201900	236500	320700	355000	332200	299400	266600
30	290200	268700	258500	248600	---	200300	235900	325500	354700	331200	298700	265500
31	289300	---	258400	248500	---	199700	---	331800	---	330300	297700	---
MAX	313600	288400	268400	258000	248300	239900	237900	331800	357400	354300	329300	296800
MIN	289300	268700	258400	248500	239700	199700	199500	235000	338100	330300	297700	265500
a	3768.6	3757.2	3751.3	3745.6	3740.7	3716.0	3738.2	3791.3	3803.1	3790.5	3773.2	3755.4
b'	-24800	-20600	-10300	-9900	-8400	-40400	+36200	+95900	+22900	-24400	-32600	-32200

CAL YR 1993 b +140100

WTR YR 1994 b -48600

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°56'15", long 119°47'50", in SW 1/4 SE 1/4 sec.17, T.1 N., R.20 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on left bank 0.9 mi downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 mi downstream from Falls Creek.

DRAINAGE AREA.--457 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910-14 and as "below Hetch Hetchy damsite, near Sequoia" 1915-18.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage with concrete control since May 5, 1970. Elevation of gage is 3,480 ft above sea level, from topographic map. Prior to Jan. 1, 1915, water-stage recorder at site 1 mi upstream, at damsite, at different datum. Jan. 1, 1915, to Sept. 30, 1968, water-stage recorder, at same site and datum. Oct. 1, 1968, to May 4, 1970, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 0.9 mi upstream beginning in April 1923. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct beginning Apr. 26, 1967. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft<sup>3</sup>/s, June 1, 1943, gage height, 13.90 ft; no flow at times in 1968-70.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft<sup>3</sup>/s, July 14, gage height, 6.96 ft; minimum daily, 32 ft<sup>3</sup>/s, Mar. 8, Apr. 2, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	46	63	39	36	35	36	44	65	77	76	76
2	45	53	63	38	34	33	32	51	78	76	76	76
3	45	61	63	42	34	34	36	51	85	76	77	76
4	45	60	63	40	34	35	35	50	75	77	77	76
5	45	58	60	40	34	38	34	51	73	76	75	75
6	46	57	59	40	34	39	34	52	82	77	74	75
7	46	58	60	40	37	35	34	52	75	79	75	75
8	46	60	62	40	37	32	34	52	77	80	76	75
9	46	60	61	40	37	44	37	52	78	77	76	75
10	46	60	59	40	36	36	37	53	78	73	76	75
11	48	60	61	40	36	34	36	55	79	74	76	75
12	48	56	61	40	34	34	36	47	75	76	75	75
13	47	54	60	40	33	34	36	50	76	74	75	75
14	46	53	55	40	34	34	36	51	77	113	76	75
15	48	53	50	40	34	34	36	51	77	78	76	62
16	49	53	52	40	33	33	36	52	78	73	75	54
17	49	53	52	40	35	36	36	52	77	73	76	54
18	48	51	52	40	35	36	36	51	77	74	75	54
19	48	48	52	40	34	36	36	52	76	76	76	54
20	46	48	51	40	34	40	38	51	75	75	76	54
21	44	48	50	40	34	34	40	48	82	75	75	54
22	44	48	50	40	34	34	37	50	76	75	76	54
23	44	48	50	41	34	34	37	50	76	76	76	52
24	44	48	49	39	34	33	37	50	75	76	77	49
25	46	48	49	38	34	33	37	50	75	78	77	50
26	47	48	47	40	35	33	37	51	76	76	75	50
27	46	50	47	40	36	34	40	51	76	74	75	50
28	46	58	49	40	36	34	39	51	75	73	75	50
29	46	61	49	40	---	34	32	51	75	74	76	51
30	46	62	49	40	---	34	39	50	77	74	76	52
31	46	---	49	40	---	34	---	50	---	74	76	---
TOTAL	1437	1621	1697	1237	972	1083	1086	1572	2296	2379	2348	1898
MEAN	46.4	54.0	54.7	39.9	34.7	34.9	36.2	50.7	76.5	76.7	75.7	63.3
MAX	51	62	63	42	37	44	40	55	85	113	77	76
MIN	44	46	47	38	33	32	32	44	65	73	74	49
AC-FT	2850	3220	3370	2450	1930	2150	2150	3120	4550	4720	4660	3760

## 11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1966, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	534	516	544	528	519	620	971	2005	3149	1396	636	548
MAX	813	780	2281	1221	1556	1078	2803	5336	7859	4624	1320	1143
(WY)	1949	1939	1951	1965	1965	1916	1952	1919	1911	1911	1939	1939
MIN	13.8	1.52	1.83	2.51	34.2	11.2	507	493	480	279	27.1	5.83
(WY)	1925	1924	1924	1924	1924	1925	1937	1961	1924	1919	1924	1923

## SUMMARY STATISTICS

## WATER YEARS 1911 - 1966

ANNUAL MEAN	997	
HIGHEST ANNUAL MEAN	1724	1911
LOWEST ANNUAL MEAN	516	1924
HIGHEST DAILY MEAN	11400	Jun 18 1911
LOWEST DAILY MEAN	1.3	Nov 2 1923
ANNUAL SEVEN-DAY MINIMUM	1.4	Nov 1 1923
INSTANTANEOUS PEAK FLOW	12900	Jun 1 1943
INSTANTANEOUS PEAK STAGE	13.90	Jun 1 1943
ANNUAL RUNOFF (AC-FT)	722600	
10 PERCENT EXCEEDS	2230	
50 PERCENT EXCEEDS	721	
90 PERCENT EXCEEDS	115	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.2	64.1	63.7	60.9	64.0	68.5	243	968	1711	733	157	72.5
MAX	164	561	555	319	305	489	1371	3327	5885	5149	1263	125
(WY)	1987	1987	1983	1974	1974	1983	1986	1969	1983	1983	1983	1989
MIN	31.1	33.6	34.1	33.5	31.7	29.9	33.6	49.0	71.2	68.2	66.7	31.6
(WY)	1969	1991	1991	1977	1971	1974	1981	1990	1977	1968	1974	1970

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1968 - 1994

ANNUAL TOTAL	139102	19626	
ANNUAL MEAN	381	53.8	355
HIGHEST ANNUAL MEAN			1433
LOWEST ANNUAL MEAN			49.5
HIGHEST DAILY MEAN	3430	Jun 29	113
LOWEST DAILY MEAN	42	Jan 5	32
ANNUAL SEVEN-DAY MINIMUM	45	Oct 20	34
INSTANTANEOUS PEAK FLOW			1040
INSTANTANEOUS PEAK STAGE			6.96
ANNUAL RUNOFF (AC-FT)	275900	38930	257100
10 PERCENT EXCEEDS	1500	76	858
50 PERCENT EXCEEDS	82	50	59
90 PERCENT EXCEEDS	47	34	35

11276500 TUOLUMNE RIVER NEAR HETCH HETCHY, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.--Temperature recorder since August 1987.

REMARKS.--Temperature recorder installed Aug. 13, 1987, located 0.6 mi upstream from gaging station on left bank at road bridge. Interruption in record was due to malfunction of the recording instrument. Water temperature can be affected by releases from O'Shaughnessy Dam.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 16.5°C, July 9, 1994; minimum recorded, 4.0°C, Mar. 25, 1991.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 16.5°C, July 9; minimum recorded, 6.5°C, Feb. 23, 24, Mar. 8.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.5	9.5	11.5	10.0	11.5	9.5	10.0	9.0	9.0	7.5	9.0	7.0
2	12.0	10.5	11.5	10.0	11.5	10.0	10.5	9.0	9.0	7.5	9.0	7.0
3	11.5	10.5	11.5	10.0	11.5	10.0	10.5	9.0	9.0	7.5	9.0	7.0
4	12.0	10.0	11.5	10.0	11.0	10.0	10.5	9.5	9.5	7.5	9.0	7.0
5	11.5	10.5	11.5	10.0	11.0	9.5	10.0	8.5	9.0	7.0	8.5	7.5
6	11.5	10.5	11.5	10.0	11.5	9.5	10.0	8.5	9.0	7.5	9.0	7.0
7	12.0	10.0	11.5	10.0	11.5	9.5	10.0	9.0	9.0	7.5	9.0	7.0
8	11.5	10.0	11.5	9.5	11.0	10.0	10.0	8.5	9.5	7.5	9.5	6.5
9	11.5	10.0	11.5	10.0	12.0	10.0	10.0	8.5	9.0	7.5	9.0	7.0
10	11.5	10.0	11.5	9.5	11.5	10.0	10.0	8.5	9.0	7.5	9.5	8.0
11	12.0	10.0	11.5	10.5	11.0	9.5	9.5	8.5	8.5	7.0	9.0	7.5
12	12.0	10.0	11.0	9.5	10.5	9.5	10.0	8.5	9.0	7.0	10.0	7.5
13	11.5	10.0	11.0	9.5	11.0	10.0	10.0	9.0	9.0	7.5	10.0	7.5
14	12.0	10.0	10.5	9.5	10.5	9.5	10.0	9.0	9.0	7.0	9.0	7.5
15	11.5	10.5	11.5	9.0	10.5	9.5	10.0	8.5	9.0	7.0	9.5	7.5
16	11.5	10.5	11.0	9.5	10.5	9.5	10.0	8.0	9.0	7.5	9.0	8.0
17	11.5	10.0	11.5	9.5	10.5	9.0	10.0	8.5	8.5	7.0	9.5	7.5
18	11.5	9.5	11.5	10.0	10.5	9.0	10.0	8.5	8.0	7.0	9.0	8.0
19	11.5	9.5	12.0	10.5	10.5	9.0	10.0	8.5	8.0	7.0	9.5	8.0
20	11.0	10.5	11.5	10.5	10.5	9.0	10.0	8.0	8.0	7.0	10.0	7.5
21	12.0	10.5	12.0	10.5	10.0	9.0	10.0	8.0	8.0	7.0	10.0	7.5
22	11.5	10.0	11.5	10.5	10.5	9.0	9.5	8.0	8.5	7.0	9.0	7.0
23	11.5	10.0	11.5	10.5	10.5	9.0	9.5	8.5	9.0	6.5	9.5	7.0
24	11.5	9.5	11.5	10.0	10.0	9.0	9.0	8.0	9.0	6.5	9.0	7.5
25	11.5	10.5	11.0	10.5	10.5	9.0	9.5	8.0	9.0	7.0	9.0	7.5
26	11.5	10.5	11.0	10.0	10.5	9.0	9.5	8.0	8.5	7.0	10.0	7.5
27	11.5	10.5	11.5	10.0	10.5	9.5	9.0	8.0	9.0	7.5	10.0	7.5
28	11.5	9.5	11.5	10.5	10.5	9.0	9.0	8.0	9.0	7.0	10.0	8.0
29	11.5	10.5	12.0	11.0	10.0	8.5	9.0	8.0	---	---	10.0	7.5
30	11.5	10.5	11.5	10.0	10.5	9.0	9.5	8.0	---	---	10.0	8.0
31	12.0	10.0	---	---	10.0	8.5	9.5	8.0	---	---	10.0	8.0
MONTH	12.0	9.5	12.0	9.0	12.0	8.5	10.5	8.0	9.5	6.5	10.0	6.5

11276500 TUOLUMNE RIVER NEAR HETCH-HETCHY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	8.0	10.5	8.5	11.0	8.5	---	---	11.5	10.0	11.5	9.5
2	10.0	7.5	10.5	8.0	11.0	9.0	---	---	11.5	10.0	11.5	10.0
3	9.5	7.5	10.5	8.0	11.5	9.0	---	---	11.5	10.0	11.0	9.5
4	10.0	7.5	10.5	8.5	12.0	9.5	---	---	12.0	10.0	11.5	9.5
5	9.5	7.5	10.5	8.5	13.0	10.5	---	---	12.0	10.0	11.5	10.0
6	9.0	7.5	9.5	8.5	12.5	10.0	---	---	11.5	9.5	11.5	10.0
7	10.0	7.5	10.0	8.5	12.5	9.5	---	---	11.5	9.5	11.5	10.0
8	8.5	7.5	11.0	9.0	---	---	---	---	11.5	10.0	11.5	9.5
9	9.5	7.0	11.0	8.5	---	---	16.5	12.0	12.0	10.0	11.0	9.5
10	9.5	7.0	11.0	8.5	---	---	---	12.5	12.0	10.0	11.0	9.5
11	9.5	7.0	11.0	9.0	---	---	13.5	12.0	12.0	10.0	11.0	9.5
12	10.0	7.5	11.0	8.5	---	---	13.5	11.5	12.0	10.0	11.0	9.5
13	10.0	7.5	10.5	8.5	---	---	13.5	11.5	12.0	10.0	11.0	9.5
14	10.5	8.0	10.5	8.5	---	---	12.5	11.0	12.0	10.5	11.0	9.5
15	10.0	8.0	10.0	8.5	---	---	13.0	11.0	12.0	10.0	12.0	10.0
16	10.0	8.5	9.0	7.5	---	---	13.0	11.0	12.0	10.0	12.0	10.0
17	10.0	8.0	9.0	7.5	---	---	12.5	10.5	11.5	10.0	12.0	10.0
18	10.5	8.5	9.0	7.5	---	---	12.5	11.0	12.0	10.0	11.5	10.0
19	11.0	8.5	9.0	7.5	---	---	12.5	10.5	11.5	10.0	11.5	10.0
20	10.0	8.5	10.5	7.5	---	---	12.5	10.5	11.5	10.0	11.5	10.0
21	10.5	8.5	10.5	8.0	---	---	11.5	10.5	11.5	10.0	11.5	10.0
22	10.5	8.0	11.0	8.0	---	---	12.0	10.5	11.5	10.0	12.0	10.0
23	8.5	7.5	10.5	8.0	---	---	12.0	10.0	11.5	10.0	11.5	10.0
24	9.5	7.5	10.5	8.5	---	---	11.5	9.5	11.5	10.0	12.0	10.0
25	9.0	7.5	11.5	8.5	---	---	11.5	10.0	11.5	10.0	11.5	10.0
26	9.5	7.5	11.5	8.5	---	---	11.5	10.0	11.5	9.5	12.0	10.5
27	10.0	7.5	11.5	8.5	---	---	12.0	10.0	11.5	10.0	11.5	10.0
28	10.0	8.0	11.0	8.5	---	---	12.0	10.0	11.5	10.0	11.0	10.0
29	10.5	8.5	10.5	8.5	---	---	12.0	10.0	11.5	10.0	11.5	10.0
30	10.5	8.0	11.0	9.0	---	---	11.5	10.0	11.5	10.0	11.5	9.5
31	---	---	11.5	9.0	---	---	12.0	10.0	11.5	9.5	---	---
MONTH	11.0	7.0	11.5	7.5	---	---	---	---	12.0	9.5	12.0	9.5

## SAN JOAQUIN RIVER BASIN

## 11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'46", long 119°56'46", in SE 1/4 SW 1/4 sec.1, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.5 mi upstream from Early Intake, 2.4 mi upstream from Cherry Creek, and 5.0 mi west of Mather.

DRAINAGE AREA.--484 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,420 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 12 mi upstream. Flow diverted upstream from station through tunnel to Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft<sup>3</sup>/s, July 7, 1983, gage height, 21.38 ft; minimum daily, 25 ft<sup>3</sup>/s, Oct. 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943, reached a stage of 22.1 ft, discharge, 12,900 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft<sup>3</sup>/s, July 14, gage height, 13.21 ft; minimum daily, 38 ft<sup>3</sup>/s, Jan. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	46	62	49	44	57	40	45	55	79	81	84
2	49	46	61	38	40	53	42	54	80	79	86	84
3	46	58	62	41	39	53	40	58	89	78	81	84
4	46	61	62	42	40	53	42	58	87	80	89	84
5	47	59	61	41	40	67	40	58	75	79	82	84
6	46	58	58	41	40	86	40	59	90	78	83	80
7	45	57	60	40	58	66	40	61	81	83	83	82
8	45	60	60	40	76	58	41	62	83	83	83	83
9	47	61	61	41	58	54	48	61	84	81	83	82
10	47	61	58	41	50	63	45	61	82	75	83	82
11	52	64	66	40	55	52	43	61	83	74	85	83
12	49	61	68	40	50	49	42	59	84	78	84	83
13	48	53	60	40	47	46	41	54	79	76	84	83
14	49	52	64	40	45	45	40	56	81	103	84	83
15	54	52	55	40	45	45	40	56	81	99	84	82
16	59	52	54	41	44	44	40	57	83	83	83	63
17	53	51	54	41	67	43	40	57	83	80	82	59
18	50	51	54	42	83	48	40	61	81	79	83	59
19	49	48	53	42	64	48	40	66	80	84	83	59
20	48	45	53	42	63	51	40	66	79	83	83	59
21	47	46	51	42	61	48	42	59	82	82	83	59
22	45	46	50	42	57	44	43	58	83	84	83	58
23	45	46	51	47	57	43	42	58	80	83	83	58
24	45	45	51	49	57	42	46	58	80	83	82	56
25	45	46	48	49	59	42	46	56	79	86	82	55
26	47	46	49	46	60	42	53	56	79	87	82	55
27	46	46	49	46	66	43	49	57	79	82	82	55
28	46	51	50	45	62	43	52	57	78	81	82	56
29	46	61	50	44	---	42	46	56	77	81	84	59
30	46	64	50	45	---	41	42	55	80	81	84	55
31	46	---	49	44	---	41	---	55	---	81	84	---
TOTAL	1497	1593	1734	1321	1527	1552	1285	1795	2417	2545	2580	2108
MEAN	48.3	53.1	55.9	42.6	54.5	50.1	42.8	57.9	80.6	82.1	83.2	70.3
MAX	64	64	68	49	83	86	53	66	90	103	89	84
MIN	45	45	48	38	39	41	40	45	55	74	81	55
AC-FT	2970	3160	3440	2620	3030	3080	2550	3560	4790	5050	5120	4180

## 11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	51.4	77.6	92.7	105	127	142	292	939	1679	728	169	80.9
MAX	142	552	708	376	341	814	1564	3339	6142	5282	1319	132
(WY)	1987	1987	1983	1974	1974	1983	1983	1982	1983	1983	1983	1989
MIN	33.3	36.6	38.7	39.7	38.5	38.5	39.7	55.8	78.0	74.3	73.7	56.7
(WY)	1989	1991	1991	1977	1977	1977	1977	1992	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1971 - 1994			
ANNUAL TOTAL	152252				21954							
ANNUAL MEAN	417				60.1				374			
HIGHEST ANNUAL MEAN									1584			
LOWEST ANNUAL MEAN									53.5			
HIGHEST DAILY MEAN	3490				Jul 3				9810			
LOWEST DAILY MEAN	45				Oct 7				25			
ANNUAL SEVEN-DAY MINIMUM	46				Oct 22				27			
INSTANTANEOUS PEAK FLOW					229				Jul 14			
INSTANTANEOUS PEAK STAGE					13.21				Jul 14			
ANNUAL RUNOFF (AC-FT)	302000				43550				21.38			
10 PERCENT EXCEEDS	1480				83				270800			
50 PERCENT EXCEEDS	155				57				880			
90 PERCENT EXCEEDS	49				42				80			

11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1987 to current year.

INSTRUMENTATION.--Temperature recorder since Aug. 12, 1987.

REMARKS.--Temperature recorder located 600 ft upstream from gaging station on right bank. Water temperature is affected by regulation from O'Shaughnessy Dam. Interruptions in record were due to malfunction of recording instrument.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 25.5°C, June 1, 1992; minimum recorded, 0.0°C, Dec. 24, 25, 1990.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 24.5°C, several days during June and July; minimum recorded, 3.0°C, Dec. 23, Jan. 13.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	15.0	12.5	11.0	9.0	8.0	7.0	6.0	6.0	4.5	11.5	8.0
2	18.0	15.0	12.0	10.0	8.5	8.0	6.5	6.0	6.0	4.0	11.5	8.5
3	18.0	15.5	11.5	10.0	8.5	7.5	6.5	5.5	6.5	5.0	12.0	9.0
4	18.0	15.5	11.5	10.0	8.0	7.5	7.5	6.0	6.5	5.0	12.0	9.5
5	17.0	15.5	11.0	10.0	7.5	7.0	7.5	7.0	7.0	5.0	11.5	10.0
6	16.5	14.5	11.0	10.0	7.5	7.0	7.0	6.0	7.0	5.5	12.0	9.5
7	16.5	14.0	11.0	9.5	8.0	6.5	6.5	5.0	7.0	5.5	12.5	9.5
8	16.0	14.0	10.5	9.0	8.5	7.5	6.5	5.0	6.5	6.0	12.5	9.5
9	15.5	14.0	10.5	9.0	9.0	8.0	6.0	5.5	7.5	5.5	13.0	9.5
10	16.0	13.5	10.5	9.0	8.5	7.5	5.5	4.5	7.5	6.5	12.5	10.5
11	15.5	14.5	10.5	10.0	8.5	7.5	5.0	4.0	7.0	5.0	13.5	10.0
12	15.5	13.5	10.0	9.0	8.0	7.0	4.5	3.5	7.0	4.0	13.0	9.5
13	15.0	13.5	9.5	8.5	7.5	6.5	4.5	3.0	7.0	5.0	13.5	10.0
14	15.0	14.0	9.0	7.5	7.0	6.0	5.5	4.0	7.0	5.0	14.0	10.5
15	14.5	14.0	8.0	7.0	6.5	6.0	5.5	4.5	7.0	5.0	14.0	10.5
16	14.0	13.0	7.5	6.5	6.0	5.0	5.5	4.5	7.5	5.5	13.0	11.0
17	14.0	12.5	7.5	6.5	5.5	4.5	5.5	4.5	7.5	6.5	13.5	10.0
18	13.5	11.5	7.5	6.5	5.0	4.5	6.0	5.0	7.0	6.0	14.0	11.0
19	13.0	11.0	7.0	6.0	4.5	4.0	6.0	5.0	6.5	5.5	13.5	11.5
20	13.5	11.5	7.0	6.0	4.5	4.0	6.0	5.0	7.0	5.5	13.5	11.0
21	13.5	12.0	8.0	6.5	4.0	3.5	6.5	5.5	6.0	5.0	14.0	11.0
22	13.5	11.5	9.0	7.5	4.0	3.5	6.5	5.0	7.5	5.0	13.0	10.5
23	13.0	11.5	8.0	7.0	4.0	3.0	7.0	5.0	7.5	5.5	12.5	9.5
24	13.5	11.5	7.0	6.5	4.0	3.5	7.0	5.0	8.5	6.0	12.5	10.0
25	13.5	12.0	6.5	5.5	5.0	3.5	6.5	5.0	9.0	6.5	12.0	10.0
26	13.0	12.0	6.5	5.5	6.0	4.5	6.5	5.5	9.0	7.5	13.5	9.5
27	13.0	11.0	7.5	5.5	7.0	6.0	6.0	5.5	10.5	8.0	14.0	10.0
28	13.0	11.0	8.0	7.5	6.5	5.5	6.0	4.5	10.5	7.5	14.0	10.5
29	13.0	11.5	9.0	7.5	6.5	5.5	5.5	4.5	---	---	14.0	11.0
30	13.0	11.0	9.5	8.5	6.5	6.0	5.5	4.5	---	---	15.5	11.5
31	13.0	11.5	---	---	7.0	5.5	5.5	4.0	---	---	16.0	12.0
MONTH	18.0	11.0	12.5	5.5	9.0	3.0	7.5	3.0	10.5	4.0	16.0	8.0



11276600 TUOLUMNE RIVER ABOVE EARLY INTAKE, NEAR MATHER, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.0	11.5	17.5	13.0	22.5	18.0	24.0	20.5	---	---	20.5	16.5
2	16.5	12.5	18.5	14.0	22.0	18.0	24.0	19.0	---	---	20.0	16.5
3	17.0	13.5	19.0	14.5	21.0	17.5	24.0	20.0	---	---	19.5	16.5
4	16.0	12.5	18.5	15.5	20.0	17.0	24.0	20.0	---	---	19.5	16.0
5	16.0	12.0	17.5	15.5	20.0	17.0	23.5	20.0	---	---	19.0	15.5
6	14.5	13.0	16.0	14.0	19.5	16.0	24.0	20.0	---	---	20.0	16.0
7	15.5	12.0	15.0	13.5	18.0	16.0	24.0	20.0	---	---	20.0	16.5
8	13.5	12.0	16.5	12.5	20.0	16.0	24.5	20.5	---	---	20.0	16.0
9	13.5	11.5	18.5	13.5	21.0	16.0	24.5	20.5	---	---	18.5	16.0
10	15.0	10.5	20.0	15.0	22.0	18.0	24.5	20.5	---	---	18.5	16.0
11	15.5	11.0	21.0	15.5	22.5	18.0	24.5	20.5	---	---	18.0	15.5
12	16.0	12.0	21.0	16.5	22.0	18.5	24.5	20.0	---	---	16.5	14.5
13	16.5	12.0	22.0	17.0	22.5	18.0	24.5	20.0	---	---	17.0	13.5
14	17.5	13.0	22.0	17.5	22.5	18.0	24.5	20.0	---	---	17.5	14.0
15	18.5	13.5	19.0	16.5	21.5	17.5	---	---	---	---	---	---
16	18.5	15.0	17.5	15.5	21.0	17.0	---	---	---	---	17.5	14.0
17	20.0	15.0	16.0	13.5	20.5	17.0	---	---	---	---	18.5	15.0
18	20.0	15.0	14.5	13.0	21.0	16.5	---	---	---	---	18.0	15.5
19	21.0	15.5	14.0	12.0	21.0	16.5	---	---	---	---	18.0	16.0
20	20.0	16.0	16.0	11.5	21.5	17.5	---	---	---	---	18.5	15.5
21	20.0	16.0	18.0	12.5	22.5	17.0	---	---	---	---	18.5	16.0
22	19.5	16.0	18.5	13.5	23.0	18.0	---	---	---	---	19.0	15.5
23	16.5	14.0	20.0	13.0	23.0	18.0	---	---	---	---	17.5	16.0
24	16.0	13.5	21.0	16.0	22.5	18.0	---	---	21.0	17.0	19.0	15.5
25	14.0	12.0	22.0	17.0	23.0	18.0	---	---	21.0	17.0	19.0	16.0
26	14.5	11.5	21.5	17.5	23.0	18.0	---	---	21.0	17.0	19.5	16.0
27	12.5	12.0	22.0	17.5	23.5	18.5	---	---	21.0	17.0	18.5	16.5
28	15.5	11.0	22.0	17.5	24.0	19.0	---	---	21.0	17.0	17.5	16.5
29	16.0	11.5	22.5	18.0	24.5	20.5	---	---	20.5	17.0	18.0	16.0
30	17.5	12.5	21.5	18.5	24.5	20.5	---	---	20.5	16.5	17.5	14.5
31	---	---	22.0	17.5	---	---	---	---	20.5	17.0	---	---
MONTH	21.0	10.5	22.5	11.5	24.5	16.0	---	---	---	---	---	---

## 11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA

LOCATION.--Lat 37°52'54", long 119°58'09", in NW 1/4 SW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 0.6 mi upstream from Cherry Creek, 0.7 mi downstream from Robert C. Kirkwood Powerplant and Hetch Hetchy Aqueduct, and 6.3 mi west of Mather.

DRAINAGE AREA.--487 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,200 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hetch Hetchy Reservoir (station 11275500) 13 mi upstream and Robert C. Kirkwood Powerplant beginning Apr. 26, 1967. Water is diverted to Hetch Hetchy Aqueduct from the tailrace of the powerplant through a closed conduit. Flow in excess of aqueduct capacity is diverted to river. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft<sup>3</sup>/s, June 4, 1969, gage height, 9.82 ft; minimum daily, 12 ft<sup>3</sup>/s, Nov. 28-30, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 836 ft<sup>3</sup>/s, Mar. 10, June 6, 7, gage height, 5.13 ft; minimum daily, 38 ft<sup>3</sup>/s, Feb. 3-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	45	60	49	42	57	56	520	75	76	72	77
2	59	45	63	46	41	55	56	693	136	74	76	77
3	54	49	62	39	38	53	51	723	231	74	73	76
4	50	55	62	41	38	212	49	729	615	75	79	76
5	49	56	61	41	38	246	47	736	816	75	74	77
6	48	56	60	41	38	239	45	703	830	74	73	75
7	47	56	59	41	43	247	43	605	809	77	73	76
8	46	57	60	40	58	226	45	609	811	77	74	76
9	45	58	61	40	59	243	50	700	722	77	75	79
10	45	59	61	40	54	770	55	139	426	73	74	76
11	47	60	65	40	52	803	56	91	426	72	76	76
12	48	62	69	40	50	741	55	78	410	74	77	77
13	47	60	62	40	47	769	53	67	355	74	76	82
14	47	58	64	40	44	774	49	60	521	95	75	79
15	49	55	62	40	43	766	50	58	143	91	75	82
16	53	54	57	40	42	765	48	57	81	74	75	71
17	53	53	56	40	47	783	43	57	86	71	74	64
18	52	53	54	40	70	781	42	59	77	70	75	62
19	50	57	54	40	61	780	42	64	76	73	75	60
20	48	56	53	40	59	766	42	66	76	73	76	59
21	47	52	53	40	58	788	42	63	77	72	75	58
22	47	50	51	40	57	766	44	60	154	73	79	57
23	46	50	50	43	55	751	45	59	75	73	76	56
24	45	50	50	45	54	751	48	64	75	73	75	56
25	45	49	49	47	54	747	49	60	75	75	75	55
26	45	48	48	46	55	751	51	57	75	76	75	54
27	45	48	48	45	57	734	491	56	75	73	75	55
28	45	48	48	44	58	732	758	57	86	71	74	54
29	45	53	48	43	---	735	736	57	73	71	76	55
30	46	58	49	43	---	746	727	57	90	71	77	58
31	50	---	49	42	---	85	---	126	---	71	77	---
TOTAL	1507	1610	1748	1296	1412	17662	3968	7530	8577	2318	2331	2035
MEAN	48.6	53.7	56.4	41.8	50.4	570	132	243	286	74.8	75.2	67.8
MAX	64	62	69	49	70	803	758	736	830	95	79	82
MIN	45	45	48	39	38	53	42	56	73	70	72	54
AC-FT	2990	3190	3470	2570	2800	35030	7870	14940	17010	4600	4620	4040

## 11276900 TUOLUMNE RIVER BELOW EARLY INTAKE, NEAR MATHER, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	87.9	113	138	169	202	275	418	1133	1877	845	225	126
MAX	247	313	876	462	616	964	1694	3727	6260	5530	1726	370
(WY)	1984	1984	1983	1969	1969	1983	1983	1986	1983	1983	1983	1983
MIN	30.0	34.8	29.4	31.1	34.8	37.5	33.7	52.0	36.9	29.9	31.1	28.7
(WY)	1989	1988	1977	1977	1977	1977	1977	1992	1976	1976	1976	1976

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1968 - 1994			
ANNUAL TOTAL	234260				51994							
ANNUAL MEAN	642				142				468			
HIGHEST ANNUAL MEAN									1778			
LOWEST ANNUAL MEAN									49.2			
HIGHEST DAILY MEAN	3890				Jun 29				10600			
LOWEST DAILY MEAN	45				Oct 9				12			
ANNUAL SEVEN-DAY MINIMUM	45				Oct 23				13			
INSTANTANEOUS PEAK FLOW					836				Mar 10			
INSTANTANEOUS PEAK STAGE					5.13				Jun 6			
ANNUAL RUNOFF (AC-FT)	464700				103100				338700			
10 PERCENT EXCEEDS	2100				611				1100			
50 PERCENT EXCEEDS	291				60				129			
90 PERCENT EXCEEDS	50				43				43			

## 11277200 CHERRY LAKE NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'33", long 119°54'47", in SE 1/4 NW 1/4 sec.5, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 mi upstream from Eleanor Creek, 7 mi north of Early Intake, and 7.3 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--117 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1956 to current year. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

GAGE.--Water-stage recorder. Datum of gage is 2.42 ft above sea level. Prior to October 1974, datum published as at mean sea level.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1956. Storage began in December 1955. Capacity, 274,300 acre-ft between gage heights 4,430 ft, bottom of sluice gates, and 4,703 ft, top of flashboard gates on concrete spillway. No dead storage. Installation of flashboard gates on top of concrete spillway completed in 1979. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor (station 11277500) into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Dion R. Holm Powerplant near mouth of Cherry Creek began Aug. 1, 1960. See schematic diagram of Tuolumne River basin. Records, including extremes, represent contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 274,300 acre-ft, June 25-28, 1986, gage height, 4,703.0 ft; minimum since reservoir first filled, 7,660 acre-ft, Jan. 24, 1960, gage height, 4,502.1 ft. Reservoir drained for inspection in 1961, 1964, and 1989.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 270,300 acre-ft, June 21, 22, gage height, 4,700.80 ft; minimum, 234,100 acre-ft, Sept. 28, 29, gage height, 4,680.03 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on table provided by San Francisco Public Utilities Commission, dated May 15, 1971)

4,440	0	4,490	3,020	4,560	60,800	4,660	201,100
4,450	75	4,500	6,030	4,580	85,100	4,680	234,100
4,460	250	4,510	11,700	4,600	111,800	4,700	268,800
4,470	675	4,520	19,700	4,620	139,900	4,705	277,900
4,480	1,530	4,540	38,900	4,640	169,700		

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255600	257300	257900	263400	263600	265400	245600	e255200	265100	267800	257100	239100
2	255600	257300	257900	263500	263200	265000	245700	e255000	265100	267800	256700	238700
3	255500	257300	257900	263600	262900	264100	245700	e255000	264700	267800	256400	238400
4	255500	257300	258000	263700	262500	263300	245700	e255200	264200	267800	255900	238100
5	255500	257300	258000	263900	262000	262800	246200	e255400	263600	267700	255200	237800
6	255400	257300	258100	263900	261900	262100	245600	e255700	263100	267600	254700	237300
7	255300	257300	258100	264000	261900	261500	244700	e255800	263300	267500	254600	237000
8	255300	257300	258200	264100	261600	260600	244100	e255700	263900	267400	254000	236500
9	255300	257300	258300	264200	261500	259900	243900	e255900	264700	267400	253300	236000
10	255300	257200	258200	264200	261900	259200	243700	256600	265500	267400	252600	235600
11	255200	257300	e258400	264200	262100	258400	243100	258400	266400	267600	251900	235500
12	255300	257300	e259000	264300	262200	257400	242800	260200	267100	267400	251400	235400
13	255300	257400	e259000	264300	262400	256700	243200	261500	267700	266800	250800	235300
14	255200	257400	e259100	264500	262600	256200	244000	262600	268200	266200	250600	235200
15	255900	257300	e259700	264500	262700	255800	245400	263400	268700	265600	249800	235100
16	256500	257300	260400	264600	263100	255400	247600	263400	269000	265200	248800	235100
17	256700	257200	261100	264700	263500	254600	250300	263000	269200	264900	247800	235000
18	256800	257200	261500	264800	264100	254100	252700	262900	269400	264100	247300	234900
19	256900	257200	262000	264900	264900	253400	254300	262800	270000	263600	246800	234900
20	257000	257200	262300	264900	265500	252700	255600	262300	270100	262900	246300	234800
21	257000	257200	262400	264700	266200	252000	256800	262200	270300	262100	245900	234800
22	257100	257300	262500	264500	266700	251300	257400	262100	269800	261600	244900	234700
23	257200	257300	262600	264400	266500	250400	257700	261900	269500	261000	244000	234600
24	257200	257300	262600	264400	266100	249400	257700	261900	269500	260700	243000	234600
25	257200	257300	262700	264400	265900	248300	257800	262500	269700	259900	242500	234600
26	257300	257300	262900	264400	265600	247300	257300	262800	270100	259200	241700	234400
27	257300	257300	263000	264300	265700	246600	e256800	263300	e270100	258500	241200	234300
28	257300	257400	263100	264100	265600	245900	e256400	263600	269000	257800	241000	234100
29	257300	257500	263200	264100	---	245400	e256000	263700	268800	257500	240400	234200
30	257300	257700	263300	264100	---	245100	e255600	263800	268100	257400	240000	234200
31	257300	---	263300	264000	---	245100	---	264800	---	257400	239500	---
MAX	257300	257700	263300	264900	266700	265400	257800	264800	270300	267800	257100	239100
MIN	255200	257200	257900	263400	261500	245100	242800	255000	263100	257400	239500	234100
a	4693.45	4693.69	4696.88	4697.26	4698.18	4686.42	4692.50	4697.74	4699.60	4693.50	4683.18	4680.05
b	+1700	+400	+5600	+700	+1600	-20500	+10500	+9200	+3300	-10700	-17900	-5300

CAL YR 1993 b +191300  
WTR YR 1994 b -21400

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## 11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'04", long 119°54'59", in SE 1/4 SW 1/4 sec.5, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 0.7 mi downstream from Cherry Valley Dam, 3.5 mi upstream from Eleanor Creek, 6.7 mi north of Early Intake, and 7.2 mi west of Hetch Hetchy.

DRAINAGE AREA.--118 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,337.08 ft above sea level (levels by city and county of San Francisco).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Cherry Lake (station 11277200) 0.7 mi upstream. Diversion between Lake Eleanor (station 11277500) and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Dion R. Holm Powerplant began Aug. 1, 1960. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,210 ft<sup>3</sup>/s, July 10, 1974, gage height, 10.53 ft; minimum daily, 0.77 ft<sup>3</sup>/s, Dec. 1-4, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17 ft<sup>3</sup>/s, Oct. 1, Sept. 28, gage height, 3.72 ft and 3.66 ft, respectively; maximum gage height, 4.48 ft, July 30 (caused by swimmers dam); minimum daily, 4.6 ft<sup>3</sup>/s, several days in November and March.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	5.8	5.2	5.2	4.9	5.1	5.2	5.2	4.9	10	15	16
2	6.2	5.1	5.0	5.2	4.9	4.9	5.2	5.1	4.9	12	15	16
3	6.2	4.6	4.9	5.2	4.9	4.9	5.2	4.9	4.9	12	15	16
4	5.9	4.6	4.9	5.2	4.9	4.9	5.2	4.9	4.9	12	15	16
5	5.6	4.6	4.9	5.2	4.9	5.8	4.9	4.9	4.9	12	15	16
6	5.8	4.6	4.9	5.2	4.9	5.5	4.9	4.9	4.9	12	15	16
7	6.1	4.7	4.9	5.2	7.0	5.2	4.9	4.9	4.9	12	15	16
8	6.1	4.7	4.9	5.2	6.5	4.9	5.0	4.9	4.9	12	15	16
9	6.1	4.6	5.0	5.2	5.9	4.9	5.5	4.9	4.9	12	15	16
10	6.1	4.7	4.9	5.2	5.9	4.7	5.2	4.9	4.9	12	15	16
11	6.0	4.9	5.3	5.2	5.6	5.0	5.1	4.9	4.9	12	15	16
12	5.8	4.9	5.2	5.2	5.5	5.2	4.9	4.9	4.9	12	15	16
13	5.8	4.9	5.2	5.2	5.4	5.2	4.9	4.9	4.9	12	15	16
14	5.8	4.9	5.3	5.2	5.2	5.2	4.9	4.9	4.9	12	15	16
15	6.3	4.9	5.1	5.2	5.2	5.2	4.9	4.9	4.9	12	15	16
16	6.2	4.9	5.0	5.2	5.2	4.9	4.9	4.9	4.9	12	15	16
17	6.0	4.9	4.9	5.2	6.8	4.7	4.9	5.0	4.8	12	15	16
18	5.8	4.9	4.9	5.2	6.1	4.6	4.9	5.3	4.8	12	16	16
19	5.8	4.9	5.0	5.2	5.8	4.8	4.9	5.2	4.8	12	16	16
20	5.8	4.9	5.0	5.2	5.8	4.6	4.9	5.1	4.8	13	16	16
21	5.8	4.9	5.0	5.2	5.7	4.6	4.9	5.0	4.8	14	16	16
22	5.8	5.1	5.0	5.2	5.6	5.0	4.9	5.1	4.8	14	16	16
23	5.8	5.0	5.0	5.5	5.8	5.4	5.1	5.0	4.8	14	16	16
24	5.8	4.9	5.0	5.4	5.9	5.3	5.0	4.9	4.8	14	16	16
25	5.8	5.0	5.0	5.4	5.4	5.3	5.4	4.9	4.8	14	16	16
26	5.8	4.9	5.0	5.3	4.8	5.2	5.5	4.9	4.8	14	15	16
27	5.8	4.9	5.2	5.2	5.2	5.2	5.3	4.9	4.8	14	16	16
28	5.8	4.9	5.2	5.2	5.1	5.2	5.2	4.9	4.8	14	16	16
29	5.8	5.3	5.2	5.2	---	5.2	5.2	4.9	4.8	15	16	16
30	5.8	5.3	5.2	4.9	---	5.2	5.2	5.0	4.7	15	16	16
31	5.8	---	5.2	4.9	---	5.2	---	4.9	---	15	16	---
TOTAL	189.2	147.2	156.4	161.4	154.8	157.0	152.1	153.9	145.5	396	478	480
MEAN	6.10	4.91	5.05	5.21	5.53	5.06	5.07	4.96	4.85	12.8	15.4	16.0
MAX	12	5.8	5.3	5.5	7.0	5.8	5.5	5.3	4.9	15	16	16
MIN	5.6	4.6	4.9	4.9	4.8	4.6	4.9	4.9	4.7	10	15	16
AC-FT	375	292	310	320	307	311	302	305	289	785	948	952

## 11277300 CHERRY CREEK BELOW CHERRY VALLEY DAM, NEAR HETCH HETCHY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.7	13.2	12.0	12.1	11.9	16.3	14.8	35.3	128	82.6	30.0	22.9
MAX	166	135	155	155	134	171	167	359	1198	993	176	139
(WY)	1978	1977	1977	1977	1977	1969	1969	1978	1983	1983	1977	1977
MIN	4.61	3.99	4.82	4.71	4.51	4.45	4.58	4.40	4.46	10.9	12.0	10.6
(WY)	1973	1970	1970	1961	1961	1972	1990	1973	1973	1978	1961	1976

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	3449.3				2771.5							
ANNUAL MEAN	9.45				7.59				32.5			
HIGHEST ANNUAL MEAN									195			
LOWEST ANNUAL MEAN									7.08			
HIGHEST DAILY MEAN	35 Jan 22				16 Aug 18				2640 Jul 5 1983			
LOWEST DAILY MEAN	4.6 Nov 3				4.6 Nov 3				.77 Dec 1 1988			
ANNUAL SEVEN-DAY MINIMUM	4.6 Nov 3				4.6 Nov 3				.79 Nov 28 1988			
INSTANTANEOUS PEAK FLOW					17 Oct 1				4210 Jul 10 1974			
INSTANTANEOUS PEAK STAGE					4.48 Jul 30				10.53 Jul 10 1974			
ANNUAL RUNOFF (AC-FT)	6840				5500				23570			
10 PERCENT EXCEEDS	17				16				17			
50 PERCENT EXCEEDS	7.0				5.2				7.2			
90 PERCENT EXCEEDS	4.9				4.9				5.0			

## 11277500 LAKE ELEANOR NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'27", long 119°52'48", in SE 1/4 NW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, 710 ft from left bank on upstream side of dam on Eleanor Creek, 1.7 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--78.1 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1918 to current year. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia" 1919-20.

REVISED RECORDS.--WSP 1445: 1938(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.39 ft above sea level. Prior to Oct. 1, 1927, nonrecording gage on upstream side of dam at same site and datum.

REMARKS.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Capacity, 26,110 acre-ft between gage heights 4,620.9 ft, natural outlet of old lake, and 4,660.0 ft, top of 5-ft flashboards. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of Tuolumne River basin.

COOPERATION.--Periodic observations of gage height were provided by city and county of San Francisco.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,000 acre-ft, Dec. 11, 1937, from capacity table then in use, gage height, 4,663.4 ft; no usable contents at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,400 acre-ft, May 12, 13, gage height, 4,659.23 ft; minimum, 0 acre-ft, gage height, 4,605.00 ft., several days in September.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on table provided by San Francisco Public Utilities Commission, dated May 1941)

4,608	0	4,620	36	4,628	1,480	4,646	13,500
4,610	6	4,622	49	4,630	2,450	4,650	17,000
4,612	12	4,624	92	4,632	3,580	4,655	21,500
4,614	18	4,625	211	4,635	5,270	4,660	26,100
4,616	24	4,626	550	4,638	7,330	4,663	29,100
4,618	27	4,627	996	4,642	10,300		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e18000	e18600	19000	19300	21700	21900	22900	24500	24900	17400	8090	e2210
2	e18000	e18600	19000	19300	21800	21900	23000	24500	24800	17000	7830	e2160
3	e18000	e18600	19100	19400	21900	22000	23400	24600	24600	16700	7560	e2160
4	e18000	e18600	19100	19500	21900	22100	23500	24700	24500	16400	7290	e2060
5	e18000	e18600	19100	19600	22000	22500	23500	24700	24300	16100	7020	e2060
6	e18000	e18600	19200	19700	22100	22600	23500	24800	24100	15700	6730	e2010
7	e18000	e18600	19200	19800	22300	22800	23300	25000	23900	15400	6440	e34
8	e18000	e18600	19200	19900	22500	22800	23300	25000	23600	15100	6160	e10
9	e17900	e18600	19300	19900	22600	22900	23300	24900	23400	14800	e6090	e5
10	e17900	e18600	19300	20000	22800	23100	23300	25000	23200	14500	e5820	e5
11	e17900	e18600	19500	20000	22900	23200	23200	25200	22900	14200	e5410	e2
12	e18000	e18600	19600	20100	23000	23200	23200	25400	22700	13900	e5160	e2
13	e18000	e18600	19700	20100	23100	23200	23200	25400	22400	13600	e4930	e2
14	e17900	e18600	19700	20200	23100	23300	23300	25300	22200	13300	e4700	0
15	e17900	e18600	19400	20200	23200	23600	23500	25300	21900	13000	e4090	0
16	e18100	e18600	19200	20300	23200	23700	23900	25100	21600	12700	e4140	0
17	e18200	e18600	18900	20300	23600	23700	24100	24900	21300	12400	e3860	0
18	e18300	e18600	18600	20400	23600	23600	24200	25000	21000	12100	e3580	0
19	e18300	e18600	18400	20400	23300	23700	24300	25000	20700	11800	e3300	0
20	e18400	e18600	18300	20500	23100	23600	24200	25000	20400	11500	e3010	0
21	e18400	e18600	18300	20500	22800	23600	24200	25000	20200	11200	e2730	0
22	e18500	e18700	18400	20600	22600	23500	24100	25000	20200	10900	e2680	0
23	e18500	e18600	18500	20700	22300	23400	24000	24900	20000	10700	e2680	0
24	e18500	e18600	18500	20900	22100	23200	23900	24900	19700	10400	e2560	0
25	e18600	e18600	18600	21000	22000	22900	23900	24900	19300	10100	e2450	0
26	e18600	e18600	18700	21200	21900	22700	24000	24800	19000	9760	e2450	0
27	e18600	e18600	18800	21300	21900	22500	24100	24800	18700	9460	e2450	0
28	e18600	e18700	18900	21400	21900	22500	24200	24800	18400	9150	e2400	0
29	e18600	e18700	19000	21500	---	22500	24200	24700	18000	8830	e2300	0
30	e18600	18900	19100	21600	---	22600	24400	24600	17700	8630	e2300	0
31	e18600	---	19200	21600	---	22700	---	24900	---	8360	e2260	---
MAX	18600	18900	19700	21600	23600	23700	24400	25400	24900	17400	8090	2210
MIN	17900	18600	18300	19300	21700	21900	22900	24500	17700	8360	2260	0
a	4651.8	4652.13	4652.46	4655.12	4655.44	4656.29	4658.13	4658.66	4650.79	4639.49	4629.61	4608.01
b	+500	+300	+300	+2400	+300	+800	+1700	+500	-7200	-9340	-6100	-2260

CAL YR 1993 b +17370

WTR YR 1994 b -18100

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA

LOCATION.--Lat 37°58'09", long 119°52'52", in NW 1/4 SW 1/4 sec.3, T.1 N., R.19 E., Tuolumne County, Hydrologic Unit 18040009, Yosemite National Park, on right bank 0.5 mi downstream from Lake Eleanor Dam, 1.1 mi upstream from Miguel Creek, and 5.5 mi northwest of Hetch Hetchy.

DRAINAGE AREA.--78.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910-18.

REVISED RECORDS.--WSP 1315-A: 1923(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,500 ft above sea level, from topographic map. November 1909 to November 1915, nonrecording gage and water-stage recorder at site 1 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Eleanor (station 11277500) 0.5 mi upstream beginning in 1918. Diversion from Lake Eleanor to Cherry Lake (station 11277200) began in March 1960. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft<sup>3</sup>/s, Nov. 19, 1950, gage height, 14.95 ft, from rating curve extended above 1,600 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 9.94 and 12.24 ft; no flow at times in 1910, 1930-31, 1933, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 370 ft<sup>3</sup>/s, Apr. 20, gage height, 3.99 ft; minimum daily, 4.4 ft<sup>3</sup>/s, Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	5.2	5.2	6.3	7.3	8.3	11	75	90	22	20	20
2	5.2	5.2	5.2	6.3	6.2	11	12	78	87	23	20	20
3	4.9	5.2	5.2	6.7	5.4	11	13	80	81	23	20	20
4	5.2	5.2	5.6	6.8	e5.6	12	22	82	57	23	21	20
5	5.4	5.2	5.6	5.9	e5.0	15	27	86	33	23	22	20
6	4.6	5.2	5.6	5.5	e5.0	22	22	89	28	23	21	192
7	4.4	5.2	5.6	6.0	e10	24	15	97	24	23	21	215
8	5.2	5.2	5.6	6.3	e15	26	13	109	21	23	21	127
9	5.2	5.2	5.6	6.3	18	20	13	103	21	23	21	87
10	5.2	5.2	5.6	6.3	21	11	13	107	23	23	21	65
11	5.3	5.4	5.6	6.6	24	12	13	150	24	23	20	49
12	5.2	5.3	5.6	6.7	27	12	12	248	23	23	20	38
13	5.2	5.2	5.7	6.1	30	12	12	271	23	23	20	30
14	5.2	5.2	5.7	5.6	33	13	12	247	23	23	20	26
15	5.4	5.2	5.6	5.6	34	19	20	218	23	23	20	22
16	5.3	5.2	5.6	5.6	35	53	81	161	23	23	20	19
17	5.2	5.2	5.6	5.6	49	61	200	108	23	23	21	17
18	5.2	5.2	5.6	5.6	76	48	275	99	24	23	21	15
19	5.2	5.2	5.5	5.5	46	54	333	110	23	23	21	13
20	5.2	5.2	5.4	5.9	36	48	353	112	23	21	21	12
21	5.2	5.2	5.3	6.2	27	33	332	117	23	20	21	9.7
22	5.2	5.2	5.2	6.1	21	31	274	120	23	20	21	8.5
23	5.2	5.2	5.4	6.9	15	21	208	106	23	20	20	8.3
24	5.2	5.2	5.5	6.7	11	13	177	96	23	20	20	7.8
25	5.2	5.2	5.6	7.7	7.7	11	157	94	23	20	20	6.5
26	5.2	5.2	5.6	8.1	6.0	11	101	92	23	20	20	5.9
27	5.2	5.2	5.9	6.4	6.1	11	56	90	23	20	20	5.0
28	5.2	5.2	5.9	5.0	5.4	11	60	89	22	20	20	5.1
29	5.2	5.4	5.9	4.6	---	11	65	85	22	20	20	6.0
30	5.2	5.3	5.9	4.7	---	11	71	80	22	21	20	5.4
31	5.2	---	6.0	5.9	---	11	---	83	---	20	20	---
TOTAL	163.8	156.6	172.9	189.5	587.7	667.3	2973	3682	924	678	634	1095.2
MEAN	5.28	5.22	5.58	6.11	21.0	21.5	99.1	119	30.8	21.9	20.5	36.5
MAX	8.9	5.4	6.0	8.1	76	61	353	271	90	23	22	215
MIN	4.4	5.2	5.2	4.6	5.0	8.3	11	75	21	20	20	5.0
AC-FT	325	311	343	376	1170	1320	5900	7300	1830	1340	1260	2170

e Estimated.



## 11278000 ELEANOR CREEK NEAR HETCH HETCHY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1917, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	62.5	97.2	208	175	320	610	742	640	190	25.7	8.81
MAX	157	287	358	485	307	516	806	945	1207	484	65.4	25.8
(WY)	1917	1910	1910	1914	1911	1916	1916	1914	1911	1911	1911	1913
MIN	.081	.19	12.4	33.6	66.6	116	264	536	230	36.5	6.06	2.10
(WY)	1916	1916	1912	1913	1912	1912	1912	1913	1910	1910	1910	1915

## SUMMARY STATISTICS

## WATER YEARS 1910 - 1917

ANNUAL MEAN	259	
HIGHEST ANNUAL MEAN	386	1911
LOWEST ANNUAL MEAN	144	1913
HIGHEST DAILY MEAN	5000	Jan 30 1911
LOWEST DAILY MEAN	.00	Sep 8 1910
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 8 1910
ANNUAL RUNOFF (AC-FT)	187300	
10 PERCENT EXCEEDS	770	
50 PERCENT EXCEEDS	109	
90 PERCENT EXCEEDS	5.0	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1959, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.0	75.5	105	94.5	134	224	460	696	409	144	98.9	103
MAX	145	931	826	490	454	708	794	1330	981	471	204	179
(WY)	1929	1951	1951	1956	1945	1928	1936	1952	1922	1958	1958	1933
MIN	3.68	1.65	1.74	2.50	6.64	1.70	44.5	138	46.0	20.7	16.4	4.16
(WY)	1932	1928	1932	1957	1930	1920	1924	1931	1924	1959	1959	1931

## SUMMARY STATISTICS

## WATER YEARS 1920 - 1959

ANNUAL MEAN	218	
HIGHEST ANNUAL MEAN	356	1938
LOWEST ANNUAL MEAN	86.2	1924
HIGHEST DAILY MEAN	8270	Nov 19 1950
LOWEST DAILY MEAN	.00	Oct 15 1930
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 15 1930
INSTANTANEOUS PEAK FLOW	11700	Nov 19 1950
INSTANTANEOUS PEAK STAGE	14.95	Nov 19 1950
ANNUAL RUNOFF (AC-FT)	158200	
10 PERCENT EXCEEDS	584	
50 PERCENT EXCEEDS	113	
90 PERCENT EXCEEDS	8.5	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.8	37.5	29.7	39.0	46.1	18.1	58.9	230	311	103	25.4	27.2
MAX	333	565	314	459	586	198	916	968	1605	677	176	137
(WY)	1983	1984	1984	1970	1986	1986	1982	1982	1983	1983	1983	1982
MIN	.15	2.54	4.30	4.27	3.76	4.15	4.44	4.81	4.72	12.0	2.43	.40
(WY)	1967	1978	1964	1978	1974	1972	1973	1972	1977	1977	1977	1977

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1961 - 1994

ANNUAL TOTAL	32011.0	11924.0	
ANNUAL MEAN	87.7	32.7	78.6
HIGHEST ANNUAL MEAN			320
LOWEST ANNUAL MEAN			4.73
HIGHEST DAILY MEAN	825	May 26	5610
LOWEST DAILY MEAN	3.6	May 8	.10
ANNUAL SEVEN-DAY MINIMUM	4.3	May 5	.10
INSTANTANEOUS PEAK FLOW			370
INSTANTANEOUS PEAK STAGE			3.99
ANNUAL RUNOFF (AC-FT)	63490	23650	10400
10 PERCENT EXCEEDS	437	89	12.24
50 PERCENT EXCEEDS	7.4	19	7.2
90 PERCENT EXCEEDS	5.2	5.2	4.6

## SAN JOAQUIN RIVER BASIN

## 11278200 CHERRY CREEK CANAL NEAR EARLY INTAKE, CA

LOCATION.--Lat 37°53'36", long 119°57'17", in SW 1/4 SW 1/4 sec.36, T.1 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1.3 mi northeast of Early Intake and 10 mi southwest of Hetch Hetchy Reservoir.

PERIOD OF RECORD.--April 1956 to May 1971, July 1987 to current year.

GAGE.--Water-stage recorder and concrete canal. Elevation of gage is 2,700 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from left bank of Cherry Creek in NW 1/4 SW 1/4 sec.31, T.1 N., R.19 E., to supplement Tuolumne River flows exported to city of San Francisco via the Hetch Hetchy Aqueduct. No diversions for export have been made since September 1988. Canal was originally constructed in 1915 to provide flow for domestic use and power development at Early Intake Powerplant during initial construction of Hetch Hetchy project facilities.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 194 ft<sup>3</sup>/s, July 30, 1959; no flow at times in 1964, 1969, 1971, 1988-94.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.01	0.00	0.02	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.001	.000	.001	.000	.000	.000	.000	.000	.000	.000
MAX	.01	.00	.02	.01	.02	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.02	.00	.04	.02	.06	.00	.00	.00	.00	.00	.00	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1994, BY WATER YEAR (WY)

MEAN	34.2	35.3	30.5	30.0	35.3	36.2	43.8	50.6	53.4	57.8	46.6	42.7
MAX	182	189	186	177	180	181	183	184	189	190	182	182
(WY)	1959	1959	1959	1958	1959	1959	1959	1959	1959	1959	1958	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1989	1991	1990	1991	1988	1990	1989	1989	1989	1989	1989	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1956 - 1994

ANNUAL TOTAL	0.37	0.07		
ANNUAL MEAN	.001	.000		
HIGHEST ANNUAL MEAN			39.0	
LOWEST ANNUAL MEAN			179	1958
HIGHEST DAILY MEAN	.07	Jan 7	.02	Dec 11
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 23	.00	Oct 1
ANNUAL RUNOFF (AC-FT)	.7		28280	
10 PERCENT EXCEEDS	.00		178	
50 PERCENT EXCEEDS	.00		7.6	
90 PERCENT EXCEEDS	.00		.00	

## 11278300 CHERRY CREEK NEAR EARLY INTAKE, CA

LOCATION.--Lat 37°53'40", long 119°57'42", in NW 1/4 SE 1/4 sec.35, T.1 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 1.2 mi upstream from mouth, 1.3 mi north of Early Intake, and 10.3 mi southwest of Hetch Hetchy.

DRAINAGE AREA.--226 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,272.00 ft above sea level (levels by city and county of San Francisco).

REMARKS.--Records good except for period of estimated daily record Dec. 2-16, which is fair. Flow regulated by Cherry Lake (station 11277200) 10 mi upstream and Lake Eleanor (station 11277500) 9.8 mi upstream. Diversion from Cherry Lake to Dion R. Holm Powerplant began Aug. 1, 1960. Water is returned to creek 1.2 mi below station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft<sup>3</sup>/s, Feb. 1, 1963, gage height, 14.50 ft, from rating curve extended above 4,600 ft<sup>3</sup>/s; minimum daily, 0.30 ft<sup>3</sup>/s, Apr. 5, 6, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 400 ft<sup>3</sup>/s, Apr. 20, gage height, 5.41 ft; minimum daily, 11 ft<sup>3</sup>/s, several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	13	14	13	12	24	23	88	94	25	32	33
2	e15	13	e13	13	12	29	23	89	92	31	32	33
3	11	12	e14	13	12	33	23	90	86	33	32	33
4	11	12	e13	13	12	34	28	92	74	34	32	33
5	11	12	e13	14	13	50	39	96	39	33	33	33
6	11	12	e13	14	13	76	36	100	36	33	37	150
7	11	12	e13	14	27	59	31	109	31	33	37	263
8	11	12	e13	14	38	55	26	126	28	33	37	159
9	11	12	e13	14	31	54	34	121	25	33	34	107
10	11	12	e14	14	31	37	34	117	27	33	34	82
11	13	13	e17	14	36	35	32	153	28	33	33	65
12	13	15	e20	14	35	34	30	257	28	33	33	54
13	12	13	e16	14	37	32	28	301	27	33	33	47
14	12	13	e17	14	39	31	26	289	27	33	33	41
15	e14	12	e16	13	40	33	26	247	27	32	33	37
16	19	12	e14	13	42	55	63	189	27	32	32	34
17	14	12	14	13	65	79	199	129	27	32	32	32
18	13	12	14	13	92	66	294	111	28	33	34	30
19	12	12	13	13	67	67	360	127	27	33	33	29
20	12	12	13	13	53	70	387	133	27	33	33	27
21	12	12	13	13	44	53	368	131	27	31	33	26
22	13	13	13	14	36	46	312	e139	27	31	33	24
23	13	13	13	17	31	42	240	e124	27	32	33	24
24	13	13	13	20	27	32	206	e111	27	32	33	24
25	13	13	13	20	25	28	185	100	26	32	33	23
26	13	13	13	18	24	27	151	98	26	32	33	23
27	13	13	14	17	25	26	74	94	26	32	33	22
28	13	13	15	15	25	25	79	93	26	31	33	22
29	13	13	14	13	---	25	81	90	26	31	33	24
30	13	18	14	12	---	24	85	86	25	32	33	23
31	13	---	13	12	---	24	---	86	---	33	33	---
TOTAL	403	382	435	441	944	1305	3523	4116	1068	997	1032	1557
MEAN	13.0	12.7	14.0	14.2	33.7	42.1	117	133	35.6	32.2	33.3	51.9
MAX	24	18	20	20	92	79	387	301	94	34	37	263
MIN	11	12	13	12	12	24	23	86	25	25	32	22
AC-FT	799	758	863	875	1870	2590	6990	8160	2120	1980	2050	3090

e Estimated.

## SAN JOAQUIN RIVER BASIN

11278300 CHERRY CREEK NEAR EARLY INTAKE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.6	51.9	56.5	90.5	117	101	128	283	437	176	40.2	39.0
MAX	341	610	390	591	922	399	1298	1342	2845	1699	229	164
(WY)	1983	1984	1965	1970	1986	1983	1982	1982	1983	1983	1983	1978
MIN	2.95	4.85	3.07	3.27	2.70	2.71	2.12	2.16	2.88	9.55	10.3	11.0
(WY)	1961	1961	1977	1977	1977	1977	1977	1977	1977	1977	1963	1962

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	50108				16203							
ANNUAL MEAN	137				44.4				128			
HIGHEST ANNUAL MEAN									634			
LOWEST ANNUAL MEAN									8.08			
HIGHEST DAILY MEAN	939				May 26				9350			
LOWEST DAILY MEAN	11				Oct 3				.30			
ANNUAL SEVEN-DAY MINIMUM	11				Oct 3				1.4			
INSTANTANEOUS PEAK FLOW					400				16500			
INSTANTANEOUS PEAK STAGE					5.41				14.50			
ANNUAL RUNOFF (AC-FT)	99390				32140				93060			
10 PERCENT EXCEEDS	493				95				315			
50 PERCENT EXCEEDS	39				28				30			
90 PERCENT EXCEEDS	13				13				9.2			

## 11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA

LOCATION.--Lat 37°53'24", long 119°58'08", in NE 1/4 NW 1/4 sec.2, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 600 ft upstream from mouth, 0.5 mi downstream from powerplant, 0.8 mi northwest of Early Intake, and 6.2 mi west of Mather.

DRAINAGE AREA.--234 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1963 to current year. Prior to October 1965, published as "below Cherry Powerhouse, near Mather."

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,133.50 ft above sea level (levels by city and county of San Francisco).

REMARKS.--Records good. Flow regulated by Cherry Lake (station 11277200) 11 mi upstream and Lake Eleanor (station 11277500) 10 mi upstream. Flow diverted, at times, into Cherry Creek Canal (station 11278200) 2 mi upstream from station for domestic use and to supplement flow to Hetch Hetchy Aqueduct. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft<sup>3</sup>/s, Apr. 11, 1982, gage height, 15.36 ft, from rating curve extended above 4,400 ft<sup>3</sup>/s on basis of combined peak flow for Cherry Creek near Early Intake (station 11278300) and Dion R. Holm Powerplant; minimum daily, 1.6 ft<sup>3</sup>/s, June 4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,400 ft<sup>3</sup>/s, Apr. 20, gage height, 8.93 ft; minimum daily, 9.0 ft<sup>3</sup>/s, Oct. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	11	21	15	265	615	809	1050	1080	298	e370	e203
2	17	11	19	16	256	705	803	1050	1080	145	e262	e201
3	13	11	19	16	264	953	803	1050	1070	159	e201	e149
4	13	11	16	15	249	944	816	1050	1040	166	e432	e151
5	14	11	16	16	239	884	920	1060	1020	313	e472	e171
6	20	11	16	16	101	965	924	1050	945	205	e350	e316
7	18	11	15	16	262	963	984	1070	327	213	e177	e416
8	11	11	15	16	406	976	933	1090	323	223	e483	e363
9	9.0	11	16	17	84	986	816	1080	149	162	e443	e321
10	9.0	11	17	17	35	969	773	1080	182	48	e443	e213
11	11	11	21	16	42	973	912	1110	158	211	e449	e84
12	11	13	23	16	42	973	770	1210	154	213	e370	e96
13	11	13	32	15	42	971	522	1270	184	488	e404	e56
14	11	17	20	12	42	972	488	1250	151	471	e203	e100
15	13	44	19	11	44	968	498	1220	149	466	e546	e46
16	18	15	18	11	47	944	306	1160	196	372	e605	e43
17	14	16	19	11	74	1020	288	1100	202	279	e561	e41
18	12	15	16	13	101	1010	659	1080	154	510	e364	e38
19	12	15	16	15	81	1010	1290	1100	37	460	e354	e37
20	12	15	18	150	65	1010	1350	1110	196	e456	e324	e35
21	11	15	16	157	55	995	1330	1110	205	e499	e263	e34
22	11	17	16	138	100	989	1270	1110	288	490	e503	e32
23	11	18	16	153	471	985	1160	1100	270	392	e457	e31
24	11	16	16	138	470	975	1150	1090	201	330	e497	e31
25	11	16	16	164	521	971	1120	1090	115	531	e456	e30
26	11	15	16	178	574	970	1100	1080	50	486	e284	e80
27	11	15	17	175	357	968	1030	1080	526	509	e268	77
28	11	15	17	182	627	968	1040	1080	525	e482	e117	e29
29	11	15	15	18	---	969	1040	1080	260	e254	e289	e29
30	11	22	16	17	---	920	1040	1070	567	e148	194	e29
31	11	---	16	264	---	802	---	1070	---	e35	211	---
TOTAL	394.0	448	549	2014	5916	29323	26944	34200	11804	10014	11352	3482
MEAN	12.7	14.9	17.7	65.0	211	946	898	1103	393	323	366	116
MAX	24	44	32	264	627	1020	1350	1270	1080	531	605	416
MIN	9.0	11	15	11	35	615	288	1050	37	35	117	29
AC-FT	781	889	1090	3990	11730	58160	53440	67840	23410	19860	22520	6910

e Estimated.

## SAN JOAQUIN RIVER BASIN

11278400 CHERRY CREEK BELOW DION R. HOLM POWERPLANT, NEAR MATHER, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	430	457	452	586	592	651	735	956	1096	702	517	473
MAX	962	1445	1394	1335	1528	1303	2199	2209	3728	2643	1161	753
(WY)	1983	1984	1984	1970	1986	1983	1982	1982	1983	1983	1983	1968
MIN	12.7	14.9	5.56	4.22	3.84	3.71	2.63	2.67	4.08	11.3	25.8	20.4
(WY)	1994	1994	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1963 - 1994			
ANNUAL TOTAL	218589.0				136440.0							
ANNUAL MEAN	599				374				636			
HIGHEST ANNUAL MEAN									1437			
LOWEST ANNUAL MEAN									47.9			
HIGHEST DAILY MEAN	1920				May 26				9790			
LOWEST DAILY MEAN	9.0				Oct 9				1.6			
ANNUAL SEVEN-DAY MINIMUM	10				Oct 8				2.1			
INSTANTANEOUS PEAK FLOW					1400				Apr 20			
INSTANTANEOUS PEAK STAGE					8.93				Apr 20			
ANNUAL RUNOFF (AC-FT)	433600				270600				460800			
10 PERCENT EXCEEDS	1480				1060				1120			
50 PERCENT EXCEEDS	388				196				610			
90 PERCENT EXCEEDS	13				13				74			

## 11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'18", long 120°00'43", in SE 1/4 SE 1/4 sec.29, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mi southwest of Oakland Recreation Camp, and 0.6 mi upstream from Middle Tuolumne River.

DRAINAGE AREA.--87.0 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1923 to current year.

REVISED RECORDS.--WSP 1445: 1923, 1925(M), 1926-28, 1929-30(M), 1932(M), 1935-36(M), 1937-38, 1943(M), 1945(M).  
WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map. Prior to Nov. 22, 1931, at site 50 ft upstream at same datum. Nov. 22, 1931, to July 19, 1977, at present site, datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. No diversion upstream from station. One small recreation reservoir (capacity unknown) is located approximately 3.5 mi upstream. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 11.9 ft, from floodmarks; present datum, from rating curve extended above 3,300 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 9.08 and 11.9 ft; minimum daily, 0.4 ft<sup>3</sup>/s, Aug. 22, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 17	1230	*155	*3.96				

Minimum daily, 2.3 ft<sup>3</sup>/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	21	17	19	50	60	76	47	9.1	3.9	2.4
2	11	13	18	17	18	50	62	82	39	8.7	3.4	2.3
3	11	13	17	17	19	53	68	91	35	8.4	3.3	2.3
4	11	13	16	18	18	54	59	97	32	8.3	3.3	2.4
5	11	13	16	20	18	64	53	100	30	8.1	3.2	2.4
6	14	13	15	19	18	81	53	99	29	8.0	3.2	2.5
7	14	13	15	18	83	63	49	93	28	7.9	3.0	2.4
8	13	13	15	18	73	59	49	95	27	7.5	2.9	2.3
9	13	13	15	18	43	58	58	96	24	7.1	2.8	2.4
10	13	16	15	15	36	57	50	105	23	6.6	2.8	2.4
11	17	17	23	16	35	59	47	114	21	6.2	2.7	2.5
12	17	21	23	16	27	54	48	117	20	6.1	2.9	2.7
13	15	18	19	17	28	50	51	101	19	5.9	3.0	2.9
14	14	16	24	17	25	54	63	97	19	5.5	2.6	3.0
15	20	15	20	16	24	60	74	86	18	5.4	2.5	3.1
16	22	15	17	16	24	62	88	72	17	5.2	2.4	3.2
17	20	15	17	16	87	55	91	63	17	5.0	2.3	3.3
18	18	15	16	16	61	51	93	66	17	4.8	2.3	2.8
19	16	15	16	16	41	60	104	70	16	4.7	2.4	2.7
20	15	15	16	16	40	56	104	67	15	4.5	2.3	2.7
21	15	15	16	16	36	49	99	74	15	4.5	2.5	2.7
22	14	15	16	16	33	51	85	75	14	4.8	2.5	2.5
23	14	16	16	27	33	46	78	67	13	4.7	2.5	2.5
24	14	15	16	33	34	43	73	69	13	4.5	2.5	3.1
25	14	14	17	26	37	42	74	64	12	4.3	2.5	3.5
26	14	15	17	24	43	41	70	59	12	4.1	2.4	3.5
27	13	15	21	21	50	41	68	51	11	5.1	2.3	3.5
28	13	15	20	18	52	45	62	49	11	6.0	2.3	3.8
29	14	17	18	18	---	50	68	44	10	5.3	2.3	7.9
30	13	33	18	19	---	51	68	41	9.6	4.6	2.3	8.4
31	13	---	17	19	---	57	---	53	---	4.0	2.3	---
TOTAL	447	465	546	576	1055	1666	2069	2433	613.6	184.9	83.6	94.1
MEAN	14.4	15.5	17.6	18.6	37.7	53.7	69.0	78.5	20.5	5.96	2.70	3.14
MAX	22	33	24	33	87	81	104	117	47	9.1	3.9	8.4
MIN	11	13	15	15	18	41	47	41	9.6	4.0	2.3	2.3
AC-FT	887	922	1080	1140	2090	3300	4100	4830	1220	367	166	187

## SAN JOAQUIN RIVER BASIN

11281000 SOUTH FORK TUOLUMNE RIVER NEAR OAKLAND RECREATION CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.5	31.5	63.4	88.2	131	156	221	249	125	32.0	12.6	9.53
MAX	50.6	229	516	652	725	750	730	760	656	242	57.9	32.9
(WY)	1983	1951	1956	1969	1986	1983	1982	1969	1983	1983	1983	1983
MIN	1.53	3.66	6.04	8.05	8.74	11.1	15.7	26.0	12.7	2.56	.48	.75
(WY)	1978	1930	1991	1977	1991	1977	1977	1977	1976	1931	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1923 - 1994
ANNUAL TOTAL	50271	10233.2	
ANNUAL MEAN	138	28.0	93.7
HIGHEST ANNUAL MEAN			330
LOWEST ANNUAL MEAN			9.25
HIGHEST DAILY MEAN	790	Jan 14	117
LOWEST DAILY MEAN	11	Sep 27	2.3
ANNUAL SEVEN-DAY MINIMUM	11	Sep 27	2.3
INSTANTANEOUS PEAK FLOW			155
INSTANTANEOUS PEAK STAGE			3.96
ANNUAL RUNOFF (AC-FT)	99710	20300	67860
10 PERCENT EXCEEDS	374	68	250
50 PERCENT EXCEEDS	55	17	30
90 PERCENT EXCEEDS	13	2.8	6.0



## 11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA

LOCATION.--Lat 37°49'42", long 120°00'38", in SW 1/4 NW 1/4 sec.28, T.1 S., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.8 mi upstream from South Fork Tuolumne River, and 2.7 mi east of Buck Meadows Post Office.

DRAINAGE AREA.--73.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1916 to current year. Monthly discharge only for October and November 1916, published in WSP 1315-A. Published as Middle Fork of Tuolumne River near Buck Meadows 1917-32 and as "near Buck Meadows" 1933-40.

REVISED RECORDS.--WSP 1395: 1919(M), 1938(M), 1951(P). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges and those below 1 ft<sup>3</sup>/s, which are fair. No regulation but small diversion upstream from station for irrigation. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft<sup>3</sup>/s, Dec. 23, 1955, gage height, 11.75 ft from flood profile, 11.05 ft from floodmarks inside gage well, from rating curve extended above 3,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 12	0400	*210	*3.40				

No flow for many days during August and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.3	7.5	6.8	6.8	22	38	58	65	5.2	.18	.00
2	2.1	3.2	6.2	6.8	6.3	22	41	62	49	4.8	.17	.00
3	2.1	3.2	5.6	7.1	6.9	22	48	74	42	4.2	.21	.00
4	2.1	3.2	5.3	7.5	6.7	22	48	88	37	4.1	.22	.00
5	2.1	3.2	5.1	8.7	6.7	30	40	99	33	3.7	.18	.00
6	2.4	3.2	4.7	8.3	6.7	38	39	98	32	3.5	.08	.00
7	2.6	3.2	5.0	7.1	e32	32	37	83	30	3.2	.05	.00
8	2.7	3.2	5.1	7.1	e31	29	36	81	28	2.9	.02	.00
9	2.7	3.2	5.2	7.3	17	28	40	94	26	2.8	.03	.00
10	2.7	3.2	5.5	6.2	14	28	34	115	23	2.6	.02	.00
11	3.7	4.1	8.0	6.1	13	28	31	133	21	2.3	.04	.00
12	5.0	5.1	8.0	5.5	9.4	26	31	148	20	2.1	.02	.00
13	4.9	4.9	6.5	6.6	11	24	34	133	18	1.8	.01	.00
14	4.3	4.4	8.3	6.2	10	26	42	126	17	1.6	.01	.00
15	5.6	4.2	7.2	6.1	10	29	53	112	16	1.6	.00	.00
16	10	3.8	6.1	5.7	9.9	31	69	89	15	1.5	.01	.00
17	9.6	4.0	5.5	6.2	e35	30	74	74	14	1.3	.00	.00
18	7.3	4.1	5.9	5.9	28	30	81	73	14	1.2	.00	.00
19	5.8	4.1	5.4	6.1	16	34	97	73	13	1.0	.00	.00
20	5.5	4.0	5.3	6.0	20	32	102	73	12	.82	.00	.00
21	4.7	3.9	5.6	6.0	15	30	102	87	11	.78	.06	.00
22	4.3	4.2	5.6	5.9	14	30	88	94	10	.84	.14	.00
23	4.1	4.5	5.6	8.8	13	27	77	91	9.6	.90	.02	.00
24	3.9	4.6	5.9	11	14	27	64	96	9.0	.85	.00	.00
25	3.7	3.9	6.2	8.6	16	23	60	86	8.3	.83	.00	.00
26	3.6	3.6	6.5	8.6	19	23	53	78	7.5	.61	.00	.10
27	3.5	4.8	7.5	7.7	22	22	51	74	7.1	.56	.00	.14
28	3.4	4.7	7.8	6.0	23	24	47	65	6.6	.40	.00	.23
29	3.3	5.2	7.2	6.7	---	27	50	57	6.0	.30	.00	.53
30	3.2	8.4	7.1	6.7	---	30	52	52	5.6	.26	.00	1.1
31	3.2	---	6.8	6.7	---	34	---	85	---	.23	.00	---
TOTAL	126.2	122.6	193.2	216.0	432.4	860	1659	2751	605.7	58.78	1.47	2.10
MEAN	4.07	4.09	6.23	6.97	15.4	27.7	55.3	88.7	20.2	1.90	.047	.070
MAX	10	8.4	8.3	11	35	38	102	148	65	5.2	.22	1.1
MIN	2.1	3.2	4.7	5.5	6.3	22	31	52	5.6	.23	.00	.00
AC-FT	250	243	383	428	858	1710	3290	5460	1200	117	2.9	4.2

e Estimated.

## 11282000 MIDDLE TUOLUMNE RIVER AT OAKLAND RECREATION CAMP, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.24	15.4	32.6	42.0	64.9	82.3	152	288	181	33.4	6.34	3.23
MAX	36.9	181	318	248	345	341	476	747	875	361	60.7	23.5
(WY)	1983	1951	1951	1956	1986	1983	1982	1969	1983	1983	1983	1983
MIN	.083	.80	1.71	2.49	3.51	4.87	16.9	24.0	10.7	.85	.011	.000
(WY)	1978	1930	1991	1991	1991	1977	1977	1977	1992	1924	1977	1931

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1917 - 1994

ANNUAL TOTAL	42606.2			7028.45			75.4		
ANNUAL MEAN	117			19.3			246		
HIGHEST ANNUAL MEAN							6.49		
LOWEST ANNUAL MEAN							4000		
HIGHEST DAILY MEAN	734			May 25			Dec 23		
LOWEST DAILY MEAN	2.1			Oct 1			Sep 4		
ANNUAL SEVEN-DAY MINIMUM	2.1			Sep 29			Sep 4		
INSTANTANEOUS PEAK FLOW				210			4920		
INSTANTANEOUS PEAK STAGE				3.40			11.75		
ANNUAL RUNOFF (AC-FT)	84510			13940			54650		
10 PERCENT EXCEEDS	407			64			228		
50 PERCENT EXCEEDS	33			6.2			18		
90 PERCENT EXCEEDS	3.2			.00			1.6		

## 11283250 CLAVEY RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°04'36", long 120°00'37", in NW 1/4 NW 1/4 sec.33, T.3 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 10 ft upstream from Forest Service Road Bridge, 0.4 mi downstream from Trout Creek, and 7.0 mi east of town of Long Barn.

DRAINAGE AREA.--48.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to September 1994 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,160 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No storage or diversion upstream from station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft<sup>3</sup>/s, Jan. 22, 1993, gage height, 7.03 ft; minimum daily, 0.07 ft<sup>3</sup>/s, Sept. 9; 15-19, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 19	2400	*507	*3.56	May 11	0330	405	3.25

Minimum daily, 0.25 ft<sup>3</sup>/s, Sept. 7-10, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.94	1.7	4.9	6.4	11	45	172	186	121	5.6	1.1	.27
2	.91	1.7	4.2	6.2	11	58	187	212	101	5.3	1.1	.27
3	.90	1.7	3.7	6.4	9.9	77	201	217	92	5.1	.97	.27
4	.90	1.7	3.6	8.1	9.5	83	160	226	77	4.9	.93	.27
5	1.1	1.7	3.3	11	9.3	98	135	218	69	4.5	.89	.27
6	1.1	1.6	e3.2	8.9	9.1	98	132	207	64	4.3	.85	.26
7	1.1	1.6	3.3	8.2	9.8	88	107	176	55	4.0	.74	.25
8	1.1	1.6	3.4	7.3	15	88	108	170	48	3.8	.70	.25
9	1.2	1.6	3.9	6.7	13	109	106	195	45	3.5	.66	.25
10	1.2	1.6	4.1	6.0	12	117	95	249	40	3.3	.64	.25
11	1.7	2.0	4.7	6.0	e10	112	100	301	37	3.2	.61	.27
12	2.0	3.3	e4.6	5.8	e9.8	95	119	270	33	3.0	.59	.28
13	2.1	2.8	5.2	5.9	e8.4	98	146	218	29	2.9	.63	.32
14	2.0	2.5	5.7	6.2	e8.4	153	184	206	26	2.7	.66	.33
15	4.4	2.3	5.3	6.4	e10	168	240	174	23	2.4	.51	.32
16	8.0	2.2	e4.6	6.6	14	149	298	126	20	2.3	.49	.30
17	7.1	2.2	e4.6	6.9	20	114	317	105	18	2.2	.47	.26
18	5.0	2.1	e4.6	7.7	17	121	317	125	16	2.1	.44	.25
19	3.8	2.0	e4.5	8.5	16	127	339	138	15	2.0	.41	.26
20	3.4	2.0	e4.5	9.5	16	108	321	155	14	2.0	.35	.30
21	3.2	2.0	e4.6	9.4	15	120	273	204	13	1.9	.36	.33
22	3.0	2.2	e4.6	9.4	15	125	213	195	12	1.9	.36	.31
23	2.8	2.3	e4.6	11	15	89	181	169	11	1.9	.35	.29
24	2.6	2.1	e4.9	9.7	17	76	143	173	10	1.8	.35	.44
25	2.4	2.1	e5.6	11	21	71	127	180	9.7	1.6	.33	.39
26	2.2	2.5	e7.2	11	24	66	120	143	8.9	1.4	.32	.37
27	2.1	2.4	9.3	10	30	84	142	160	8.2	1.4	.30	.32
28	2.0	2.3	7.6	11	46	131	127	145	7.4	1.3	.29	.64
29	1.9	4.4	7.2	11	---	144	155	129	6.6	1.2	.28	1.1
30	1.8	7.6	7.0	10	---	155	172	125	6.0	1.2	.28	.80
31	1.7	---	6.7	11	---	172	---	156	---	1.2	.27	---
TOTAL	75.65	69.8	155.2	259.2	422.2	3339	5437	5653	1035.8	85.9	17.23	10.49
MEAN	2.44	2.33	5.01	8.36	15.1	108	181	182	34.5	2.77	.56	.35
MAX	8.0	7.6	9.3	11	46	172	339	301	121	5.6	1.1	1.1
MIN	.90	1.6	3.2	5.8	8.4	45	95	105	6.0	1.2	.27	.25
AC-FT	150	138	308	514	837	6620	10780	11210	2050	170	34	21

e Estimated.

## SAN JOAQUIN RIVER BASIN

11283250 CLAVEY RIVER NEAR LONG BARN, CA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.47	9.20	12.1	30.9	42.7	158	243	201	71.9	15.9	1.92	1.53
MAX	44.9	21.8	25.7	133	93.0	331	392	414	216	61.0	5.50	7.70
(WY)	1990	1990	1988	1993	1993	1989	1993	1993	1993	1993	1993	1989
MIN	.11	1.04	1.47	2.68	4.95	67.7	151	97.4	15.0	2.12	.30	.11
(WY)	1989	1991	1987	1991	1991	1987	1988	1992	1992	1987	1987	1988
SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR					FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994		
ANNUAL TOTAL	49883.86					16560.47						
ANNUAL MEAN	137					45.4				66.3		
HIGHEST ANNUAL MEAN										138		
LOWEST ANNUAL MEAN										33.6		
HIGHEST DAILY MEAN	750					339				1470		
LOWEST DAILY MEAN	.90					.25				.07		
ANNUAL SEVEN-DAY MINIMUM	.92					.26				.07		
INSTANTANEOUS PEAK FLOW						507				2150		
INSTANTANEOUS PEAK STAGE						3.56				7.03		
ANNUAL RUNOFF (AC-FT)	98940					32850				48050		
10 PERCENT EXCEEDS	414					163				200		
50 PERCENT EXCEEDS	62					6.4				14		
90 PERCENT EXCEEDS	1.6					.37				.47		

11283350 REED CREEK NEAR LONG BARN, CA

LOCATION.--Lat 38°00'17", long 120°01'16", in NW 1/4 NE 1/4 sec.29, T.2 N., R.18 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on left bank 1.0 mi upstream from Niagara Creek and 8.7 mi southeast of town of Long Barn.

DRAINAGE AREA.--27.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to September 1994 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 4,575 ft above sea level, from topographic map. Prior to Oct. 1, 1987, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. No storage or diversion upstream from station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 410 ft<sup>3</sup>/s, Mar. 17, 1993, gage height, 4.38 ft; minimum daily, 0.25 ft<sup>3</sup>/s, Sept. 9, 10, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 175 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 3	2000	*122	*3.44				
Minimum daily, 0.50 ft <sup>3</sup> /s, Sept. 9.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.5	5.4	4.2	5.4	17	93	73	27	5.0	1.3	.59
2	2.2	2.4	4.4	4.2	5.2	19	100	77	25	4.7	1.2	.58
3	2.1	2.4	4.0	4.6	5.1	24	110	76	23	4.6	1.2	.59
4	2.1	2.5	3.7	5.4	5.1	25	86	75	21	4.5	1.1	.60
5	2.5	2.4	3.3	7.4	5.2	38	70	71	20	4.2	1.1	.60
6	2.8	2.4	3.6	5.6	5.3	39	66	70	19	4.0	1.0	.57
7	2.7	2.4	3.5	5.6	7.9	34	55	70	18	3.8	.95	.55
8	2.6	2.4	3.5	5.3	7.0	37	49	68	17	3.6	.91	.53
9	2.5	2.4	4.2	4.6	7.9	37	46	67	16	3.3	.89	.50
10	2.4	2.4	4.3	4.6	7.5	36	43	67	15	3.1	.88	.52
11	3.6	3.4	4.1	4.7	6.7	34	45	69	14	3.0	.85	.57
12	3.4	4.6	4.5	4.4	6.4	33	50	68	13	2.9	.79	.63
13	2.9	3.7	5.2	4.3	6.5	41	54	63	12	2.8	.75	.68
14	2.8	3.4	4.8	4.3	6.6	54	61	60	12	2.7	.72	.75
15	7.0	3.0	4.8	4.2	6.6	57	70	53	11	2.6	.70	.73
16	8.2	3.1	4.2	4.5	6.7	58	73	48	11	2.5	.65	.64
17	5.3	3.1	4.1	4.5	9.9	51	72	45	10	2.3	.66	.58
18	4.4	3.1	4.0	4.5	9.4	57	72	51	10	2.2	.67	.54
19	3.8	3.0	4.0	4.4	11	65	74	56	9.7	2.1	.68	.54
20	3.5	3.0	3.9	4.4	11	58	71	57	9.3	2.1	.67	.62
21	3.2	3.2	3.9	4.3	8.6	60	66	59	9.1	2.0	.66	.73
22	3.1	3.5	3.9	4.3	8.3	71	61	55	8.9	2.0	.66	.59
23	3.0	3.7	3.8	7.3	8.7	66	58	49	8.3	1.9	.66	.57
24	3.0	3.1	4.0	6.3	9.1	57	53	46	8.0	1.8	.66	.78
25	2.8	3.1	4.0	6.5	11	52	52	44	7.8	1.7	.66	.86
26	2.8	3.3	4.3	6.3	12	50	53	42	7.4	1.7	.64	.74
27	2.6	3.2	6.5	5.1	16	58	56	38	6.5	1.6	.62	.67
28	2.5	3.2	5.4	5.1	19	72	54	35	5.8	1.5	.60	.94
29	2.6	5.5	4.6	5.1	---	73	58	31	5.6	1.4	.59	1.9
30	2.5	10	4.4	5.4	---	81	66	29	5.2	1.3	.60	1.4
31	2.5	---	4.3	5.5	---	89	---	31	---	1.3	.60	---
TOTAL	99.6	99.4	132.6	156.9	235.1	1543	1937	1743	385.6	84.2	24.62	21.09
MEAN	3.21	3.31	4.28	5.06	8.40	49.8	64.6	56.2	12.9	2.72	.79	.70
MAX	8.2	10	6.5	7.4	19	89	110	77	27	5.0	1.3	1.9
MIN	2.1	2.4	3.3	4.2	5.1	17	43	29	5.2	1.3	.59	.50
AC-FT	198	197	263	311	466	3060	3840	3460	765	167	49	42

## SAN JOAQUIN RIVER BASIN

11283350 REED CREEK NEAR LONG BARN, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.05	3.96	4.86	13.5	20.5	74.4	106	83.9	31.8	6.74	1.82	1.16
MAX	12.5	9.15	9.38	56.5	59.9	182	284	300	138	20.8	6.23	2.93
(WY)	1990	1990	1990	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	.49	1.35	1.48	2.34	3.94	34.0	44.0	20.2	5.03	1.51	.56	.36
(WY)	1989	1991	1991	1991	1991	1987	1988	1987	1987	1987	1988	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1987 - 1994			
ANNUAL TOTAL	32291.4				6462.11							
ANNUAL MEAN	88.5				17.7				29.3			
HIGHEST ANNUAL MEAN									88.4			
LOWEST ANNUAL MEAN									11.6			
HIGHEST DAILY MEAN	357				110				357			
LOWEST DAILY MEAN	2.1				.50				.25			
ANNUAL SEVEN-DAY MINIMUM	2.2				.55				.26			
INSTANTANEOUS PEAK FLOW					122				410			
INSTANTANEOUS PEAK STAGE					3.44				4.38			
ANNUAL RUNOFF (AC-FT)	64050				12820				21230			
10 PERCENT EXCEEDS	294				60				80			
50 PERCENT EXCEEDS	22				4.6				6.2			
90 PERCENT EXCEEDS	2.8				.68				.65			

## 11283500 CLAVEY RIVER NEAR BUCK MEADOWS, CA

LOCATION.--Lat 37°54'02", long 120°04'15", in SW 1/4 NE 1/4 sec.35, T.1 N., R.17 E., Tuolumne County, Hydrologic Unit 18040009, Stanislaus National Forest, on right bank 300 ft upstream from Forest Service Road Bridge, 1.7 mi downstream from Quilty Creek, and 6 mi north of Buck Meadows Post Office.

DRAINAGE AREA.--144 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1959 to September 1983, October 1986 to September 1994 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,374.08 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No storage or diversion upstream from station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft<sup>3</sup>/s, Jan. 13, 1980, gage height, 21.47 ft, from rating curve extended above 2,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 21.40 ft; minimum daily, 1.2 ft<sup>3</sup>/s Sept. 11, 12, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 20	0400	*537	*6.61				

Minimum daily, 3.2 ft<sup>3</sup>/s, Sept. 2, 3, 9-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	14	27	25	31	132	289	345	177	21	6.1	3.3
2	11	13	22	24	29	140	301	364	148	20	5.8	3.2
3	11	13	21	24	30	160	328	364	137	19	5.5	3.2
4	11	13	20	26	28	178	300	363	121	18	5.4	3.3
5	11	13	19	34	27	217	245	361	110	18	5.3	3.4
6	12	13	19	28	28	230	233	346	103	17	5.1	3.4
7	13	13	18	27	109	207	201	324	95	16	4.9	3.3
8	13	13	18	26	116	203	201	316	86	16	4.6	3.3
9	12	13	20	25	76	223	220	314	80	15	4.4	3.2
10	12	13	21	22	65	234	190	362	75	13	4.4	3.2
11	14	17	27	22	63	228	193	399	69	13	4.4	3.2
12	16	24	29	22	48	205	209	403	64	12	4.2	3.5
13	15	21	25	23	48	195	236	344	59	12	4.0	3.7
14	15	18	29	23	42	253	286	324	55	11	3.9	3.8
15	17	17	26	23	42	307	339	283	51	11	3.8	4.0
16	30	16	23	22	42	293	399	218	48	10	3.6	3.9
17	26	16	22	23	95	241	412	186	45	9.7	3.5	3.7
18	23	16	22	23	93	237	407	219	43	9.1	3.4	3.6
19	20	16	22	24	69	263	429	262	41	8.8	3.4	3.5
20	18	16	21	25	71	235	429	269	39	8.6	3.4	3.5
21	17	16	21	25	66	238	390	320	37	8.6	3.4	3.5
22	17	17	21	25	59	244	329	326	35	8.7	3.4	3.4
23	16	18	21	44	63	189	289	268	33	8.6	3.4	3.4
24	16	17	22	52	67	165	251	253	31	8.1	3.4	3.7
25	15	16	22	41	76	152	249	253	30	7.8	3.4	4.2
26	15	16	23	44	88	141	236	215	28	7.4	3.4	4.4
27	14	16	30	36	114	154	272	220	27	7.1	3.3	4.2
28	14	17	29	30	122	216	249	205	25	6.7	3.3	4.2
29	14	18	26	30	---	245	291	183	23	6.4	3.3	6.5
30	14	40	25	31	---	250	317	175	22	6.2	3.3	7.7
31	14	---	24	30	---	293	---	196	---	6.1	3.3	---
TOTAL	477	499	715	879	1807	6668	8720	8980	1937	359.9	126.0	114.4
MEAN	15.4	16.6	23.1	28.4	64.5	215	291	290	64.6	11.6	4.06	3.81
MAX	30	40	30	52	122	307	429	403	177	21	6.1	7.7
MIN	11	13	18	22	27	132	190	175	22	6.1	3.3	3.2
AC-FT	946	990	1420	1740	3580	13230	17300	17810	3840	714	250	227

## SAN JOAQUIN RIVER BASIN

11283500 CLAVEY RIVER NEAR BUCK MEADOWS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.1	72.9	148	267	314	426	605	687	331	84.3	22.8	17.0
MAX	226	339	999	1331	1426	1482	2057	1754	1746	566	101	69.4
(WY)	1983	1983	1965	1980	1982	1983	1982	1983	1983	1983	1983	1982
MIN	2.89	7.65	8.67	10.8	15.4	39.0	84.4	117	27.0	5.06	1.66	2.28
(WY)	1978	1991	1991	1991	1991	1977	1977	1977	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1960 - 1994	
ANNUAL TOTAL	139237		31282.3			
ANNUAL MEAN	381		85.7		250	
HIGHEST ANNUAL MEAN					771	
LOWEST ANNUAL MEAN					31.0	
HIGHEST DAILY MEAN	2000		Mar 17		12000	
LOWEST DAILY MEAN	11		Sep 28		1.2	
ANNUAL SEVEN-DAY MINIMUM	11		Sep 28		1.3	
INSTANTANEOUS PEAK FLOW			537		19400	
INSTANTANEOUS PEAK STAGE			6.61		21.47	
ANNUAL RUNOFF (AC-FT)	276200		62050		180800	
10 PERCENT EXCEEDS	1070		276		656	
50 PERCENT EXCEEDS	175		24		69	
90 PERCENT EXCEEDS	13		3.7		8.6	



## 11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA

LOCATION.--Lat 37°50'31", long 120°11'02", in SW 1/4 NE 1/4 sec.23, T.1 S., R.16 E., Tuolumne County, Hydrologic Unit 18040009, on right bank 500 ft upstream from Whites Gulch and 2.5 mi east of Groveland.

DRAINAGE AREA.--16.4 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1969 to current year.

REVISED RECORDS.--WDR CA-85-3: 1980-84(P).

GAGE.--Water-stage recorder. Datum of gage is 2,561.79 ft above sea level (levels by Boise-Cascade Corp.).

REMARKS.--No estimated daily discharges. Records good except flows below 1 ft<sup>3</sup>/s, which are fair and flows below 0.10 ft<sup>3</sup>/s, which are poor. No storage or diversion from station. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 7.03 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 6.51 ft; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of 6.4 ft from floodmarks, discharge, 1,850 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 8	0300	*124	*3.40				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.34	.56	2.3	.70	1.4	.26	.00	.00	.00
2	.00	.00	.00	.31	.53	2.0	.69	1.2	.22	.00	.00	.00
3	.00	.00	.00	.28	.52	1.8	.67	1.1	.18	.00	.00	.00
4	.00	.00	.00	.28	.49	1.6	.65	1.0	.14	.00	.00	.00
5	.00	.00	.00	.30	.49	1.8	.62	.96	.12	.00	.00	.00
6	.00	.00	.00	.30	.53	2.3	.59	1.4	.10	.00	.00	.00
7	.00	.00	.00	.28	27	1.8	.59	1.9	.09	.00	.00	.00
8	.00	.00	.00	.28	75	1.5	.65	1.7	.07	.00	.00	.00
9	.00	.00	.00	.27	11	1.4	2.0	1.4	.06	.00	.00	.00
10	.00	.00	.00	.24	5.2	1.3	1.7	1.2	.05	.00	.00	.00
11	.00	.00	.06	.26	10	1.2	1.0	1.0	.04	.00	.00	.00
12	.00	.00	2.0	.28	4.1	1.1	.71	.91	.04	.00	.00	.00
13	.00	.00	.98	.28	2.8	1.0	.69	.85	.03	.00	.00	.00
14	.00	.00	1.9	.28	2.2	.96	.65	.76	.03	.00	.00	.00
15	.00	.00	2.5	.28	1.8	.96	.62	.68	.02	.00	.00	.00
16	.00	.00	1.1	.28	1.6	.93	.59	.65	.02	.00	.00	.00
17	.00	.00	.72	.28	26	.90	.54	.69	.02	.00	.00	.00
18	.00	.00	.55	.28	36	.90	.52	1.3	.01	.00	.00	.00
19	.00	.00	.47	.28	16	.90	.49	2.4	.01	.00	.00	.00
20	.00	.00	.41	.27	21	.87	.46	2.1	.01	.00	.00	.00
21	.00	.00	.38	.26	17	.85	.42	1.5	.01	.00	.00	.00
22	.00	.00	.35	.26	11	.92	.39	1.2	.01	.00	.00	.00
23	.00	.00	.34	1.6	7.1	.79	.54	.97	.01	.00	.00	.00
24	.00	.00	.31	3.8	5.3	.78	1.4	.86	.01	.00	.00	.00
25	.00	.00	.31	6.2	4.2	.85	3.8	.72	.00	.00	.00	.00
26	.00	.00	.34	2.6	3.5	.89	10	.62	.00	.00	.00	.00
27	.00	.00	.43	1.5	3.6	.82	4.0	.54	.00	.00	.00	.00
28	.00	.00	.42	1.1	2.9	.75	2.6	.46	.00	.00	.00	.00
29	.00	.00	.39	.77	---	.77	2.0	.38	.00	.00	.00	.00
30	.00	.00	.38	.66	---	.75	1.6	.32	.00	.00	.00	.00
31	.00	---	.35	.60	---	.73	---	.31	---	.00	.00	---
TOTAL	0.00	0.00	14.69	25.00	297.42	36.42	41.88	32.48	1.56	0.00	0.00	0.00
MEAN	.000	.000	.47	.81	10.6	1.17	1.40	1.05	.052	.000	.000	.000
MAX	.00	.00	2.5	6.2	75	2.3	10	2.4	.26	.00	.00	.00
MIN	.00	.00	.00	.24	.49	.73	.39	.31	.00	.00	.00	.00
AC-FT	.00	.00	29	50	590	72	83	64	3.1	.00	.00	.00

## 11284400 BIG CREEK ABOVE WHITES GULCH, NEAR GROVELAND, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.096	3.80	8.48	21.1	30.2	22.7	10.5	3.03	.86	.20	.035	.019
MAX	1.05	43.2	80.3	84.8	173	126	74.1	26.2	6.41	2.42	.82	.42
(WY)	1983	1983	1984	1980	1986	1983	1982	1983	1983	1983	1983	1983
MIN	.000	.000	.000	.000	.000	.038	.014	.018	.000	.000	.000	.000
(WY)	1971	1977	1977	1991	1991	1977	1977	1977	1977	1972	1971	1969

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1969 - 1994			
ANNUAL TOTAL	4927.72				449.45							
ANNUAL MEAN	13.5				1.23				8.29			
HIGHEST ANNUAL MEAN									38.2			
LOWEST ANNUAL MEAN									.011			
HIGHEST DAILY MEAN	560 Jan 14				75 Feb 8				1340 Feb 17 1986			
LOWEST DAILY MEAN	.00 Aug 2				.00 Oct 1				.00 Aug 27 1969			
ANNUAL SEVEN-DAY MINIMUM	.00 Aug 2				.00 Oct 1				.00 Aug 27 1969			
INSTANTANEOUS PEAK FLOW					124 Feb 8				2620 Feb 17 1986			
INSTANTANEOUS PEAK STAGE					3.40 Feb 8				7.03 Feb 17 1986			
ANNUAL RUNOFF (AC-FT)	9770				891				6010			
10 PERCENT EXCEEDS	30				1.9				13			
50 PERCENT EXCEEDS	.71				.04				.26			
90 PERCENT EXCEEDS	.00				.00				.00			

## 11287500 DON PEDRO RESERVOIR NEAR LA GRANGE, CA

LOCATION.--Lat 37°42'06", long 120°25'16", in NE 1/4 SW 1/4 sec.3, T.3 S., R.14 E., Tuolumne County, Hydrologic Unit 18040009, on left end of New Don Pedro Dam on Tuolumne River, 500 ft downstream from Mexican Gulch, and 3.4 mi northeast of La Grange.

DRAINAGE AREA.--1,533 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1923 to current year. Year-end contents only 1923-24 and October 1924 to September 1930 monthend contents, published in WSP 1315-A.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, nonrecording gage at site 1.5 mi upstream at same datum. Feb. 2, 1941, to Nov. 3, 1970, water-stage recorder at site 1.5 mi upstream at same datum. Nov. 4, 1970, to Apr. 26, 1972, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed June 23, 1971. Storage began Nov. 3, 1970. Total capacity, 2,030,000 acre-ft at elevation 830.0 ft, top of uncontrolled spillway, of which 309,000 acre-ft below elevation 600.0 ft, mutually agreed-upon minimum, is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 2.5 mi downstream, where it is diverted into Turlock and Modesto Canals (stations 11289500 and 11289000) for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Prior to June 1971, reservoir was formed by a concrete gravity-type dam completed Jan. 1, 1923, capacity, 290,400 acre-ft. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,025,000 acre-ft, Aug. 4-6, 13, 1983, elevation, 829.6 ft; minimum, 29,200 acre-ft, Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft, Sept. 1, 2, 1934. Minimum since reservoir first filled, 302,600 acre-ft, Oct. 14, 15, 1977, elevation, 598.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,687,000 acre-ft, Oct. 1, elevation, 801.65 ft; minimum, 1,270,000 acre-ft, Sept. 29, 30, elevation, 760.42 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Modesto and Turlock Irrigation Districts, dated August 1970)

550	158,700	650	517,400	770	1,359,000
570	212,900	680	679,000	800	1,669,000
590	274,800	710	869,700	830	2,030,000
620	384,100	740	1,095,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1687000	1610000	1605000	1591000	1571000	1592000	1633000	1617000	1650000	1573000	1449000	1324000
2	1684000	1609000	1601000	1590000	1571000	1594000	1630000	1619000	1650000	1569000	1445000	1323000
3	1681000	1609000	1601000	1589000	1571000	1596000	1628000	1622000	1650000	1564000	1439000	1322000
4	1679000	1608000	1601000	1588000	1571000	1598000	1626000	1624000	1650000	1559000	1434000	1320000
5	1676000	1608000	1601000	1586000	1571000	1601000	1622000	1627000	1651000	1555000	1430000	1317000
6	1669000	1607000	1601000	1585000	1571000	1603000	1620000	1630000	1653000	1551000	1425000	1314000
7	1660000	1606000	1600000	1585000	1571000	1605000	1617000	1632000	1654000	1547000	1420000	1313000
8	1656000	1606000	1599000	1585000	1575000	1608000	1615000	1634000	1653000	1544000	1416000	1312000
9	1652000	1605000	1598000	1584000	1581000	1611000	1614000	1636000	1652000	1539000	1412000	1310000
10	1649000	1605000	1597000	1582000	1582000	1614000	1614000	1637000	1648000	1533000	1408000	1308000
11	1647000	1605000	1597000	1581000	1583000	1618000	1612000	1639000	1645000	1529000	1403000	1308000
12	1645000	1605000	1597000	1579000	1583000	1620000	1610000	1639000	1644000	1525000	1397000	1305000
13	1643000	1604000	1597000	1578000	1583000	1623000	1610000	1640000	1642000	1521000	1392000	1301000
14	1642000	1603000	1597000	1577000	1583000	1625000	1610000	1640000	1638000	1517000	1386000	1297000
15	1641000	1603000	1597000	1576000	1583000	1629000	1610000	1641000	1635000	1513000	1381000	1294000
16	1640000	1603000	1597000	1575000	1582000	1631000	1610000	1641000	1632000	1509000	1377000	1291000
17	1639000	1602000	1597000	1575000	1583000	1634000	1609000	1641000	1628000	1504000	1372000	1288000
18	1638000	1602000	1596000	1573000	1584000	1636000	1609000	1642000	1625000	1500000	1368000	1286000
19	1637000	1602000	1596000	1571000	1585000	1639000	1608000	1643000	1622000	1497000	1364000	1282000
20	1634000	1602000	1595000	1570000	1586000	1640000	1608000	1644000	1618000	1494000	1360000	1279000
21	1631000	1603000	1595000	1569000	1586000	1642000	1607000	1646000	1615000	1491000	1356000	1278000
22	1628000	1603000	1595000	1569000	1587000	1642000	1606000	1647000	1613000	1488000	1352000	1277000
23	1626000	1603000	1594000	1569000	1587000	1642000	1604000	1647000	1608000	1485000	1348000	1276000
24	1625000	1604000	1594000	1570000	1588000	1641000	1603000	1647000	1604000	1481000	1346000	1275000
25	1623000	1604000	1594000	1570000	1589000	1641000	1603000	1647000	1599000	1476000	1343000	1274000
26	1621000	1603000	1593000	1571000	1590000	1640000	1605000	1648000	1595000	1472000	1339000	1273000
27	1617000	1603000	1593000	1571000	1591000	1639000	1606000	1648000	1589000	1470000	1335000	1272000
28	1613000	1602000	1593000	1571000	1592000	1639000	1609000	1650000	1585000	1466000	1332000	1272000
29	1612000	1602000	1593000	1571000	---	1638000	1612000	1650000	1582000	1461000	1329000	1270000
30	1611000	1602000	1593000	1571000	---	1637000	1614000	1650000	1578000	1456000	1327000	1270000
31	1611000	---	1592000	1571000	---	1635000	---	1650000	---	1453000	1325000	---
MAX	1687000	1610000	1605000	1591000	1592000	1642000	1633000	1650000	1654000	1573000	1449000	1324000
MIN	1611000	1602000	1592000	1569000	1571000	1592000	1603000	1617000	1578000	1453000	1325000	1270000
a	794.69	793.87	792.98	791.03	792.97	796.95	794.83	798.26	791.64	779.55	766.37	760.42
b	-79000	-9000	-10000	-21000	-21000	+43000	-21000	+36000	-72000	-125000	-128000	-55000

CAL YR 1993 b +776100

WTR YR 1994 b -420000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11289000 MODESTO CANAL NEAR LA GRANGE, CA

LOCATION.--Lat 37°40'21", long 120°28'26", in NE 1/4 SW 1/4 sec.18, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.9 mi northwest of La Grange and 1.7 mi downstream from intake at La Grange Dam.

PERIOD OF RECORD.--April 1903 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1904-9 (monthly figures only).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 267.47 ft above sea level (levels by Modesto Irrigation District). See WSP 1930 for history of changes prior to March 1932. March 1932 to Apr. 27, 1988, at site 1.1 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,820 ft<sup>3</sup>/s, July 1, 1935; no flow at times most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	754	139	8.7	.22	.00	345	553	389	535	984	935	69
2	707	.29	.92	.21	.00	246	1080	586	534	943	1010	66
3	444	.28	.81	.23	.00	157	994	554	670	970	939	278
4	593	25	.66	.25	18	146	1010	735	486	853	836	523
5	457	23	.60	.23	20	175	812	584	739	795	775	415
6	473	101	.78	.17	25	299	519	174	829	674	839	826
7	492	.27	.87	.05	183	149	543	315	419	404	780	311
8	582	64	.72	.02	.10	106	597	211	1130	589	417	53
9	650	.29	.99	.00	42	118	800	308	1000	763	760	134
10	823	177	.57	.00	77	134	899	408	1270	1120	853	295
11	918	45	40	.00	13	177	595	271	881	750	1180	161
12	883	29	170	.00	.21	520	213	579	471	342	1210	839
13	11	.30	.30	.00	.02	796	246	614	676	510	977	629
14	83	.29	.34	.00	.00	410	287	600	736	616	1100	531
15	22	90	.26	.00	118	433	228	406	927	884	1090	858
16	66	.55	.26	.00	.06	454	365	455	559	841	1020	1300
17	142	32	.30	.00	131	204	430	455	906	1050	1130	764
18	104	186	.27	.00	10	202	775	518	1020	840	1010	1080
19	40	266	.29	.00	19	118	416	422	922	732	699	1530
20	67	.58	.27	.00	19	630	467	430	794	878	905	1110
21	67	.58	.26	.00	19	201	669	261	703	955	891	77
22	204	23	.25	.00	20	530	478	500	699	1060	882	205
23	261	1.1	.20	.00	17	773	646	465	956	806	1060	241
24	66	303	.21	.00	108	625	402	648	943	1100	535	387
25	348	.90	.21	.00	13	768	460	427	867	1240	908	65
26	480	.90	.22	.00	13	951	182	477	978	722	1100	548
27	479	.90	.24	.00	13	989	96	603	1200	517	915	129
28	173	31	.30	.00	13	999	224	658	997	751	785	100
29	46	231	.27	.00	---	803	201	785	767	983	308	334
30	.28	404	.25	.00	---	678	473	823	894	846	485	276
31	63	---	.22	.00	---	666	---	901	---	686	574	---
TOTAL	10498.28	2176.23	230.54	1.38	891.39	13802	15660	15562	24508	25204	26908	14134
MEAN	339	72.5	7.44	.045	31.8	445	522	502	817	813	868	471
MAX	918	404	170	.25	183	999	1080	901	1270	1240	1210	1530
MIN	.28	.27	.20	.00	.00	106	96	174	419	342	308	53
AC-FT	20820	4320	457	2.7	1770	27380	31060	30870	48610	49990	53370	28030

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1994, BY WATER YEAR (WY)

	MEAN	234	107	78.6	51.3	86.9	301	665	837	895	782	630	423
	MAX	633	579	416	465	407	799	1198	1349	1244	1194	977	901
	(WY)	1968	1983	1980	1976	1976	1932	1949	1946	1943	1956	1983	1980
	MIN	.000	.000	.000	.000	.000	.000	220	224	450	186	12.1	.000
	(WY)	1913	1910	1910	1910	1920	1938	1991	1977	1926	1919	1918	1917

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1909 - 1994
ANNUAL TOTAL	143909.96	149575.82	
ANNUAL MEAN	394	410	427
HIGHEST ANNUAL MEAN			570
LOWEST ANNUAL MEAN			1980
HIGHEST DAILY MEAN	1430	1530	1820
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.03	.00	.00
ANNUAL RUNOFF (AC-FT)	285400	296700	309400
10 PERCENT EXCEEDS	942	955	1010
50 PERCENT EXCEEDS	338	348	376
90 PERCENT EXCEEDS	.29	.21	.00

## 11289500 TURLOCK CANAL NEAR LA GRANGE, CA

LOCATION.--Lat 37°39'49", long 120°26'23", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on right bank 0.7 mi downstream from intake at La Grange Dam and 1.2 mi east of La Grange.

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1899-1908 (monthly figures only). WSP 1445: 1917-20, 1922.

GAGE.--Electromagnetic flow meter and concrete control. Datum of gage is 274.98 ft above sea level (levels by Turlock Irrigation District). See WSP 1930 for history of changes prior to Apr. 17, 1924. Prior to May 17, 1984, water-stage recorder at site 0.2 mi upstream at datum 2.72 ft higher.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from left bank of Tuolumne River at La Grange Dam for irrigation in Turlock Irrigation District and to supply town of La Grange. Capacity of canal increased in March 1980 and in March 1984. During autumn and winter, some unmeasured flow is diverted from canal at tunnel 0.3 mi upstream from gage, passed through La Grange Powerplant, and returned to river. See schematic diagram of Tuolumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,400 ft<sup>3</sup>/s several days in May 1984; no diversion for irrigation during some periods in some years; prior to 1939, unmeasured small discharge during winter called zero. No flow Jan. 27, 1984, to Mar. 14, 1984, when canal was drained for construction and installation of electromagnetic flow meter and many days during most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	654	50	123	.00	55	252	1940	489	933	2020	1410	717
2	612	124	15	.00	134	143	1630	728	1350	1670	1610	636
3	366	84	57	.00	187	271	1440	513	1200	1990	2260	528
4	238	12	11	.00	151	342	1710	351	1650	1850	2250	737
5	350	83	14	.00	49	327	2320	289	812	2020	2080	1310
6	185	50	165	.00	91	482	2330	149	248	1620	2190	1190
7	450	83	114	149	148	304	2200	255	1290	1710	2140	914
8	1130	47	102	50	277	289	2100	536	1050	1650	1810	1100
9	416	40	167	46	130	299	1110	567	1250	2080	1950	912
10	.00	38	14	172	224	350	778	373	1930	2020	1990	881
11	.27	11	13	137	189	310	1900	678	1650	1960	1890	577
12	.00	11	13	175	111	392	1980	1100	1260	1760	2230	842
13	1.1	16	178	159	78	282	814	1310	1280	1930	2160	1460
14	45	108	84	168	266	368	742	1080	2210	2020	2210	1680
15	123	82	23	93	120	429	862	900	1450	2170	2460	964
16	216	44	21	53	182	299	556	1180	1500	1540	1800	677
17	755	24	230	424	169	879	636	895	1930	1790	2130	640
18	306	56	24	491	176	963	784	1000	1210	1770	1910	426
19	260	38	136	277	60	845	1430	905	1200	1430	1710	539
20	900	36	45	202	138	851	2120	914	1820	1060	1770	932
21	1260	174	22	264	190	1340	1990	775	1310	1070	1590	407
22	1310	38	137	16	240	2040	1980	1040	1200	1610	1560	256
23	502	59	11	16	261	2100	1430	1490	1620	1310	1590	188
24	382	94	.60	229	286	1680	989	1590	1810	995	1160	220
25	488	43	.86	191	145	1830	859	904	1620	2000	1320	127
26	729	55	.29	127	218	1810	195	984	1810	2230	1400	376
27	1490	154	.13	60	186	1640	30	1130	2120	1620	1580	213
28	1460	104	.07	232	252	1700	339	626	1850	1960	1450	110
29	319	12	.00	122	---	1870	496	737	1540	2030	1540	75
30	180	52	.00	244	---	1870	708	1240	1900	1650	986	93
31	113	---	.00	106	---	1900	---	1030	---	1660	1020	---
TOTAL	15240.37	1822	1720.95	4203.00	4713	28457	38398	25758	44003	54195	55156	19727
MEAN	492	60.7	55.5	136	168	918	1280	831	1467	1748	1779	658
MAX	1490	174	230	491	286	2100	2330	1590	2210	2230	2460	1680
MIN	.00	11	.00	.00	49	143	30	149	248	995	986	75
AC-FT	30230	3610	3410	8340	9350	56440	76160	51090	87280	107500	109400	39130

## SAN JOAQUIN RIVER BASIN

11289500 TURLOCK CANAL NEAR LA GRANGE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	285	152	135	69.0	116	457	1017	1252	1337	1250	1044	682
MAX	867	1008	1210	467	855	1350	1874	1829	1883	2098	1991	1604
(WY)	1987	1976	1984	1971	1976	1972	1949	1984	1981	1980	1983	1967
MIN	.000	.000	.000	.000	.000	2.72	90.3	27.4	71.0	.000	25.4	.000
(WY)	1901	1901	1900	1900	1905	1973	1900	1977	1900	1914	1901	1901

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1899 - 1994
ANNUAL TOTAL	285275.35	293393.32	
ANNUAL MEAN	782	804	655
HIGHEST ANNUAL MEAN			1082
LOWEST ANNUAL MEAN			54.3
HIGHEST DAILY MEAN	2480	Aug 1	2460
LOWEST DAILY MEAN	.00	Oct 10	.00
ANNUAL SEVEN-DAY MINIMUM	.19	Dec 25	.00
ANNUAL RUNOFF (AC-FT)	565800	581900	474300
10 PERCENT EXCEEDS	2010	1940	1650
50 PERCENT EXCEEDS	456	539	435
90 PERCENT EXCEEDS	16	24	.00

## 11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA

LOCATION.--Lat 37°39'59", long 120°26'28", in NW 1/4 NW 1/4 sec.21, T.3 S., R.14 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 0.5 mi downstream from La Grange Dam and 1.1 mi east of La Grange.

DRAINAGE AREA.--1,538 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 170.19 ft above sea level (levels by Turlock Irrigation District).

REMARKS.--Records good. Flow diverted into Modesto Canal (station 11289000) and Turlock Canal (station 11289500) at La Grange Dam. Flow regulated by Don Pedro Powerplant, Don Pedro Reservoir (station 11287500), 4.5 mi upstream, Hetch Hetchy Reservoir (station 11275500), Cherry Lake (station 11277200), and Lake Eleanor (station 11277500). Tuolumne Canal (station 11297500) diverts water from the Stanislaus River basin into the Tuolumne River basin for power, irrigation, and domestic supply in the vicinity of Sonora, upstream from station. Diversion through Hetch Hetchy Aqueduct to San Francisco began Oct. 19, 1934; an average of 305 ft<sup>3</sup>/s was diverted during the current year. See schematic diagram of Tuolumne River basin. For records of combined discharge of river and Modesto and Turlock Canals, see station 11289651.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 10,400 ft<sup>3</sup>/s, Apr. 24, 1983, gage height, 15.09 ft; no flow for several days during September and October 1977.  
Combined flow, maximum daily discharge, 13,800 ft<sup>3</sup>/s, May 26, 1983; minimum daily, 0.45 ft<sup>3</sup>/s, Nov. 2, 1970.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 3,390 ft<sup>3</sup>/s, Oct. 5, gage height, 9.32 ft; minimum daily, 17 ft<sup>3</sup>/s, June 28, 30, July 1.  
Combined flow, maximum daily discharge, 3,740 ft<sup>3</sup>/s, Oct. 6; minimum daily, 215 ft<sup>3</sup>/s, Sept. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	479	244	253	759	236	222	278	324	40	17	22	21
2	481	245	253	820	236	220	288	325	38	18	24	21
3	311	246	253	669	239	220	290	325	35	18	22	21
4	553	246	252	975	242	220	290	325	38	18	23	20
5	2030	247	251	676	231	219	291	453	38	20	20	21
6	3080	247	606	775	233	218	289	1190	29	21	22	19
7	2440	252	551	775	238	219	290	1190	25	21	20	21
8	738	244	461	791	230	222	294	1180	21	20	20	20
9	726	238	435	702	223	222	293	1180	20	21	21	21
10	748	253	262	836	222	222	290	1190	21	21	21	22
11	639	260	259	924	222	222	289	693	25	21	19	27
12	622	256	266	748	219	222	301	357	24	25	22	24
13	621	255	530	713	221	220	295	329	25	29	23	26
14	365	256	250	469	222	220	298	332	26	28	22	25
15	326	259	251	400	231	228	294	331	20	28	23	23
16	294	257	257	431	235	242	292	327	19	29	22	23
17	247	255	499	577	230	237	292	327	20	29	22	23
18	326	255	285	607	229	238	290	327	20	26	23	21
19	279	255	295	641	227	237	291	196	21	25	22	22
20	239	257	273	404	225	234	288	171	20	23	19	22
21	237	257	265	234	224	233	286	171	20	25	19	21
22	237	258	265	237	222	238	413	97	20	23	e39	21
23	241	259	236	238	227	237	1160	85	20	22	21	22
24	243	257	234	233	220	235	1260	83	20	23	19	23
25	243	253	239	231	220	231	1180	88	20	24	19	23
26	243	252	251	230	224	228	1200	92	19	24	20	23
27	243	254	256	232	223	230	1220	91	31	22	21	21
28	243	254	420	232	222	231	665	85	17	25	21	21
29	243	253	368	237	---	231	347	84	18	23	21	20
30	244	253	424	236	---	232	324	84	17	20	21	20
31	244	---	484	234	---	238	---	84	---	22	21	---
TOTAL	18205	7577	10184	16266	6373	7068	13878	12116	727	711	674	658
MEAN	587	253	329	525	228	228	463	391	24.2	22.9	21.7	21.9
MAX	3080	260	606	975	242	242	1260	1190	40	29	39	27
MIN	237	238	234	230	219	218	278	83	17	17	19	19
AC-FT	36110	15030	20200	32260	12640	14020	27530	24030	1440	1410	1340	1310

e Estimated.

## SAN JOAQUIN RIVER BASIN

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	731	395	891	1303	1327	1420	1239	1067	482	285	165	461
MAX	4187	905	4327	5563	5265	6636	8900	9744	5161	3808	1747	3491
(WY)	1984	1984	1983	1984	1983	1983	1983	1983	1983	1983	1983	1983
MIN	1.02	8.16	10.2	9.78	21.6	93.9	40.9	8.73	8.43	7.46	5.63	4.42
(WY)	1978	1978	1978	1978	1978	1989	1977	1972	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1971 - 1994			
ANNUAL TOTAL	143501				94437							
ANNUAL MEAN	393				259				812			
HIGHEST ANNUAL MEAN									4786			
LOWEST ANNUAL MEAN									84.3			
HIGHEST DAILY MEAN	3080				3080				10400			
LOWEST DAILY MEAN	88				17				.00			
ANNUAL SEVEN-DAY MINIMUM	88				18				.00			
INSTANTANEOUS PEAK FLOW					3390				10400			
INSTANTANEOUS PEAK STAGE					9.32				15.09			
ANNUAL RUNOFF (AC-FT)	284600				187300				588100			
10 PERCENT EXCEEDS	855				606				2580			
50 PERCENT EXCEEDS	237				233				194			
90 PERCENT EXCEEDS	119				21				11			



## 11289651 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

TUOLUMNE RIVER, MODESTO CANAL NEAR LA GRANGE, AND TURLOCK CANAL NEAR LA GRANGE,  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1890	433	385	759	291	819	2770	1200	1510	3020	2360	807
2	1800	369	269	820	370	609	3000	1630	1920	2630	2640	723
3	1120	330	311	669	426	648	2720	1390	1900	2980	3220	827
4	1380	283	264	975	411	708	3010	1410	2180	2720	3110	1280
5	2840	353	266	676	300	721	3420	1330	1590	2830	2870	1740
6	3740	398	772	775	349	999	3140	1510	1110	2310	3050	2040
7	3380	335	666	924	569	672	3030	1760	1730	2130	2940	1240
8	2450	355	564	841	507	617	2990	1930	2200	2260	2250	1170
9	1800	278	603	748	395	639	2200	2050	2270	2860	2730	1070
10	1570	468	277	1010	523	706	1970	1970	3220	3160	2860	1200
11	1560	316	312	1060	424	709	2780	1640	2550	2730	3090	765
12	1500	296	449	923	330	1130	2490	2040	1750	2120	3460	1700
13	633	271	708	872	299	1300	1350	2250	1980	2470	3160	2120
14	493	364	334	637	488	998	1330	2010	2980	2670	3330	2230
15	471	431	274	493	469	1090	1380	1640	2400	3080	3570	1840
16	576	302	278	484	417	995	1210	1960	2080	2410	2840	2000
17	1140	311	729	1000	530	1320	1360	1680	2860	2870	3280	1420
18	736	497	309	1100	415	1400	1850	1850	2250	2640	2940	1530
19	579	559	431	918	306	1200	2140	1530	2140	2180	2430	2090
20	1210	294	318	606	382	1710	2880	1510	2630	1960	2690	2060
21	1570	432	287	498	433	1770	2950	1210	2030	2040	2500	505
22	1750	319	402	253	482	2810	2870	1640	1920	2690	2480	482
23	1000	319	247	254	505	3110	3240	2030	2600	2140	2670	451
24	691	654	235	462	614	2530	2650	2320	2770	2110	1710	630
25	1080	297	240	422	378	2830	2500	1420	2510	3260	2250	215
26	1450	308	252	357	455	2990	1580	1550	2810	2970	2520	947
27	2210	409	256	292	422	2860	1350	1820	3350	2160	2510	363
28	1870	389	420	464	487	2930	1230	1360	2870	2730	2250	231
29	608	496	368	359	---	2900	1040	1600	2330	3030	1870	429
30	424	709	424	480	---	2780	1500	2140	2810	2520	1490	389
31	420	---	484	340	---	2810	---	2010	---	2370	1610	---
TOTAL	43941	11575	12134	20471	11977	49310	67930	53390	69250	80050	82680	34494
MEAN	1417	386	391	660	428	1591	2264	1722	2308	2582	2667	1150
MAX	3740	709	772	1100	614	3110	3420	2320	3350	3260	3570	2230
MIN	420	271	235	253	291	609	1040	1200	1110	1960	1490	215
AC-FT	87160	22960	24070	40600	23760	97810	134700	105900	137400	158800	164000	68420

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1994, BY WATER YEAR (WY)

MEAN	1326	914	1346	1455	1480	2205	2886	2938	2689	2845	2424	1716
MAX	4693	2383	5327	5968	5292	6677	9873	11840	7644	6670	4715	5429
(WY)	1984	1983	1983	1984	1983	1983	1983	1983	1983	1983	1983	1983
MIN	107	35.9	115	76.8	97.8	230	921	262	595	664	606	305
(WY)	1978	1978	1989	1978	1989	1992	1992	1977	1992	1992	1992	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1971 - 1994	
ANNUAL TOTAL	572489		537202			
ANNUAL MEAN	1568		1472		2027	
HIGHEST ANNUAL MEAN					6186	
LOWEST ANNUAL MEAN					442	
HIGHEST DAILY MEAN	4280	Jun 18	3740	Oct 6	13800	May 26 1983
LOWEST DAILY MEAN	130	Feb 6	215	Sep 25	.45	Nov 2 1970
ANNUAL SEVEN-DAY MINIMUM	140	Feb 10	274	Dec 21	.61	Oct 29 1970
ANNUAL RUNOFF (AC-FT)	1136000		1066000		1469000	
10 PERCENT EXCEEDS	3330		2870		4340	
50 PERCENT EXCEEDS	1330		1360		1740	
90 PERCENT EXCEEDS	187		319		223	

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1970 to current year.

INSTRUMENTATION.--Temperature recorder since November 1970.

REMARKS.--Interruptions in record were due to malfunction of the recording instrument. Water temperature can be affected by releases from La Grange Dam.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.0°C, Sept. 27, Oct. 15, 1977; minimum recorded, 6.0°C, Feb. 6-8, 10, 1971.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 20.0°C, July 1-4; minimum recorded, 9.5°C, several days in December and February.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	11.5	12.0	11.5	11.0	10.5	10.0	10.0	10.0	9.5	11.0	10.0
2	12.5	11.5	12.0	11.5	11.0	10.5	10.0	10.0	10.0	9.5	11.0	10.0
3	13.5	11.5	12.0	11.5	11.0	10.5	10.0	10.0	10.5	10.0	11.0	10.0
4	12.0	11.5	12.0	11.5	11.0	10.5	10.0	10.0	11.0	10.0	10.5	10.5
5	12.0	11.5	12.0	11.5	11.0	10.5	10.0	10.0	10.5	10.0	11.0	10.0
6	12.0	11.5	12.0	11.0	10.5	10.5	10.0	10.0	10.5	10.0	11.0	10.0
7	12.5	11.5	12.0	11.0	10.5	10.0	10.5	10.0	10.5	10.0	11.0	10.0
8	12.5	11.5	12.0	11.0	10.5	10.5	10.5	10.0	10.5	10.0	11.0	10.0
9	12.0	11.5	11.5	11.0	11.0	10.5	10.5	10.5	10.5	10.0	11.0	10.0
10	12.0	11.5	11.5	11.0	11.0	10.5	10.5	10.5	11.0	10.0	11.0	10.0
11	12.0	11.5	11.5	11.5	11.0	10.5	10.5	10.0	11.0	10.0	11.0	10.0
12	12.0	11.5	11.5	11.0	10.5	10.0	10.5	10.0	10.5	10.0	11.0	10.0
13	12.0	11.5	11.5	11.0	10.5	10.0	10.5	10.0	10.5	10.0	11.0	10.0
14	12.0	11.5	11.5	10.5	10.5	10.5	10.5	10.5	10.5	9.5	11.0	10.0
15	12.0	11.5	11.0	10.5	10.5	10.0	10.5	10.5	10.5	10.0	11.0	10.0
16	12.0	11.5	11.0	10.5	10.5	10.0	10.5	10.5	10.5	10.0	10.5	10.0
17	12.0	11.5	11.0	10.5	10.5	9.5	10.5	10.5	10.5	10.0	11.0	10.0
18	12.0	11.0	11.0	10.5	10.5	10.0	11.0	10.5	10.0	10.0	11.0	10.0
19	12.0	11.5	11.0	10.5	10.0	10.0	10.5	10.5	10.0	9.5	11.0	10.0
20	12.5	11.5	11.0	10.5	10.0	10.0	11.0	10.5	10.5	9.5	11.0	10.0
21	12.0	11.5	11.0	10.5	10.0	10.0	11.0	10.5	10.5	10.0	---	---
22	12.5	11.5	11.0	11.0	10.0	9.5	11.0	10.5	10.5	10.0	---	---
23	12.5	11.5	11.0	10.5	10.0	10.0	11.0	10.5	10.5	10.0	---	---
24	12.5	11.5	10.5	10.0	10.0	9.5	10.5	10.5	11.0	10.0	---	---
25	12.0	11.5	11.0	10.5	9.5	9.5	10.5	10.0	11.0	10.5	---	---
26	12.5	11.5	11.0	10.0	10.0	9.5	11.0	10.5	11.0	10.5	---	---
27	12.5	11.5	10.5	10.0	10.5	9.5	10.5	10.0	11.5	10.5	---	---
28	12.5	11.5	10.5	10.5	10.5	9.5	10.5	10.0	11.0	10.5	---	---
29	12.0	11.5	11.0	10.5	10.5	10.0	10.5	10.0	---	---	11.0	10.0
30	12.5	11.5	11.0	10.5	10.0	10.0	10.5	10.0	---	---	11.5	10.0
31	12.0	11.5	---	---	10.0	10.0	10.0	10.0	---	---	11.5	10.0
MONTH	13.5	11.0	12.0	10.0	11.0	9.5	11.0	10.0	11.5	9.5	---	---

11289650 TUOLUMNE RIVER BELOW LA GRANGE DAM, NEAR LA GRANGE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	10.0	11.5	10.0	16.5	11.0	20.0	15.5	---	---	17.5	13.5
2	11.0	10.0	11.5	10.0	17.5	13.5	20.0	15.5	---	---	17.0	13.5
3	11.0	10.0	11.5	10.5	17.5	13.0	20.0	16.0	---	---	17.0	13.5
4	11.5	10.0	11.0	10.0	16.5	13.0	20.0	16.0	---	---	17.5	13.5
5	11.5	10.0	11.0	10.5	16.0	13.0	19.5	15.5	---	---	16.5	13.5
6	11.0	10.0	10.5	10.5	17.0	12.5	19.0	15.0	18.5	14.5	17.0	13.0
7	11.5	10.0	11.0	10.5	17.0	14.0	19.0	15.0	18.5	14.5	17.0	13.5
8	10.5	10.0	11.0	10.5	18.5	13.5	19.5	15.5	18.5	14.5	17.0	13.0
9	11.0	10.0	11.5	10.5	19.0	14.5	19.0	15.5	18.5	14.5	16.5	13.0
10	11.5	10.0	11.5	10.5	19.5	15.5	19.0	15.0	18.5	14.5	16.5	12.5
11	11.5	10.0	11.5	10.5	19.0	14.5	19.0	15.0	19.0	14.5	15.5	12.5
12	11.5	10.0	11.5	10.5	18.0	15.0	18.5	15.0	18.5	15.0	16.0	12.5
13	11.5	10.0	12.0	10.5	18.5	14.5	18.0	14.0	18.0	14.5	15.5	12.5
14	11.5	10.0	12.0	10.5	18.0	14.0	18.0	14.0	18.5	14.5	15.5	12.5
15	11.5	10.0	11.0	10.5	18.5	13.5	18.0	14.0	18.5	14.0	16.0	13.0
16	11.0	10.0	11.5	10.5	18.5	14.5	17.5	14.0	18.5	14.0	15.5	12.5
17	11.5	10.0	11.0	10.5	18.5	14.0	18.0	14.0	18.0	14.0	16.0	13.0
18	11.5	10.0	11.0	10.5	18.0	14.5	18.0	14.5	17.5	13.5	16.0	13.0
19	11.5	10.0	11.5	10.5	18.5	14.5	17.5	14.0	18.0	14.0	15.5	13.5
20	11.5	10.0	12.0	10.5	18.0	14.5	18.0	14.5	18.0	14.0	16.5	13.0
21	11.5	10.0	12.0	10.5	19.0	14.5	16.5	14.5	18.0	14.0	16.5	13.0
22	11.5	10.0	13.5	10.5	19.0	14.5	18.0	13.5	15.5	13.5	16.5	13.0
23	10.5	10.5	13.5	10.5	19.0	14.5	18.5	15.0	17.5	13.0	14.5	13.5
24	11.0	10.0	13.5	10.5	18.5	14.5	18.0	14.5	18.0	13.5	16.0	13.0
25	10.5	10.0	13.5	11.0	19.0	14.5	18.0	14.0	17.5	13.5	16.0	13.0
26	11.0	10.5	13.0	11.0	19.0	15.0	18.0	14.0	17.5	14.0	16.0	13.0
27	11.0	10.5	13.5	10.5	19.0	15.5	---	---	17.5	14.0	15.5	13.5
28	11.0	10.5	13.5	11.0	19.5	14.0	---	---	17.5	13.5	14.0	13.0
29	11.5	10.0	14.0	11.0	19.5	15.5	---	---	17.5	13.5	16.0	12.5
30	11.5	10.5	12.5	11.0	19.5	15.5	---	---	17.5	13.5	15.5	13.0
31	---	---	13.5	11.0	---	---	---	---	17.5	13.5	---	---
MONTH	11.5	10.0	14.0	10.0	19.5	11.0	---	---	---	---	17.5	12.5

## SAN JOAQUIN RIVER BASIN

11290000 TUOLUMNE RIVER AT MODESTO, CA

LOCATION.--Lat 37°37'38", long 120°59'11", in SE 1/4 SW 1/4 sec.33, T.3 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank at bridge on Ninth Street in Modesto and 0.2 mi downstream from Dry Creek.

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

## WATER-DISCHARGE 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.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is sea level (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft downstream at same datum; July 11, 1947, to Nov. 16, 1953, at site 1,000 ft downstream at same datum.

REMARKS.--No estimated daily discharges. 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.

EXTREMES FOR PERIOD OF RECORD (water years 1896, 1941-94).--Maximum discharge observed, 57,000 ft<sup>3</sup>/s, Dec. 9, 1950, elevation, 69.19 ft; minimum daily, 56 ft<sup>3</sup>/s, Aug. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,090 ft<sup>3</sup>/s, Oct. 8, elevation, 45.57 ft; minimum daily, 92 ft<sup>3</sup>/s, July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	569	390	367	538	395	316	345	434	210	120	148	119
2	586	393	361	712	393	315	378	416	187	110	129	109
3	575	388	356	762	391	314	411	398	165	116	130	121
4	511	380	354	718	392	313	425	383	147	117	111	134
5	583	373	354	863	393	343	403	392	144	121	119	134
6	1480	371	352	724	388	323	395	492	156	106	118	138
7	2890	373	485	754	420	316	378	881	154	107	126	133
8	2570	374	572	758	507	313	385	962	152	106	133	114
9	1120	368	529	761	1100	310	458	924	143	102	132	109
10	878	365	508	720	594	309	484	937	150	119	132	113
11	892	397	453	797	461	306	429	971	150	101	110	127
12	793	375	392	844	415	304	414	674	151	116	113	140
13	756	364	379	780	399	300	414	473	153	113	109	129
14	808	359	504	727	377	299	396	411	142	108	108	129
15	654	361	463	602	364	307	391	402	136	107	114	117
16	583	361	386	539	358	307	392	394	124	102	122	135
17	549	359	379	555	381	328	377	397	137	92	113	131
18	502	362	501	599	378	331	387	424	138	100	114	122
19	486	363	429	655	408	341	378	438	132	106	127	119
20	466	362	397	693	393	337	387	365	126	102	141	120
21	450	359	442	588	377	335	383	306	138	126	145	123
22	434	360	488	429	382	325	376	294	129	115	128	121
23	393	357	478	472	353	321	424	274	123	114	132	116
24	406	358	469	536	346	321	862	223	119	116	129	141
25	404	468	457	580	334	320	1100	204	137	138	146	130
26	375	515	459	542	323	341	1150	197	115	139	145	125
27	376	516	470	447	320	327	1050	189	135	136	122	121
28	384	522	411	420	316	332	1040	195	124	128	123	121
29	489	525	460	406	---	337	709	199	132	136	124	116
30	575	410	478	402	---	343	508	198	129	128	117	123
31	489	---	497	400	---	358	---	215	---	123	118	---
TOTAL	23026	11828	13630	19323	11658	9992	15629	13662	4278	3570	3878	3730
MEAN	743	394	440	623	416	322	521	441	143	115	125	124
MAX	2890	525	572	863	1100	358	1150	971	210	139	148	141
MIN	375	357	352	400	316	299	345	189	115	92	108	109
AC-FT	45670	23460	27040	38330	23120	19820	31000	27100	8490	7080	7690	7400

## 11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	875	1057	1590	1766	1835	1852	1768	1794	1544	576	331	518
MAX	4760	4124	8677	8054	7606	7658	9268	10420	7665	4244	2225	4041
(WY)	1984	1951	1951	1956	1969	1983	1983	1983	1942	1983	1983	1983
MIN	78.2	93.1	110	154	166	199	169	138	94.5	78.8	67.5	72.6
(WY)	1978	1978	1978	1991	1991	1961	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1940 - 1994			
ANNUAL TOTAL	210665				134204							
ANNUAL MEAN	577				368				1281			
HIGHEST ANNUAL MEAN									5518			
LOWEST ANNUAL MEAN									185			
HIGHEST DAILY MEAN	2980				2890				43800			
LOWEST DAILY MEAN	196				92				56			
ANNUAL SEVEN-DAY MINIMUM	222				102				62			
INSTANTANEOUS PEAK FLOW					3090				57000			
INSTANTANEOUS PEAK STAGE					45.57				69.19			
ANNUAL RUNOFF (AC-FT)	417900				266200				927800			
10 PERCENT EXCEEDS	1260				663				3300			
50 PERCENT EXCEEDS	409				361				595			
90 PERCENT EXCEEDS	283				117				176			

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989 to current year. 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 files of the U.S. Geological Survey.

CHEMICAL DATA: Water year 1993 to current year.

SPECIFIC CONDUCTANCE: Water year 1989 to current year.

WATER TEMPERATURE: Water year 1989 to current year.

SEDIMENT DATA: Water year 1993 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to current year.

WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1985.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments and vandalism. Large variations between daily maximums and minimums may be caused by irrigation-return flow or urban runoff.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 587 microsiemens, Mar. 12, 1993; minimum recorded, 35 microsiemens, Apr. 29, 1989.

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, 353 microsiemens, Sept. 29; minimum recorded, 36 microsiemens, May 9-11.

WATER TEMPERATURE: Maximum recorded, 33.0°C, July 17; minimum recorded, 7.0°C, Dec. 25.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
26...	1330	375	145	7.5	17.0	765	--	--	44	10	4.5
NOV											
16...	1235	360	137	7.3	11.0	767	11.5	104	44	10	4.5
DEC											
27...	1015	471	143	7.3	8.0	767	11.6	97	46	11	4.5
JAN											
04...	0945	667	75	7.2	10.0	767	10.4	91	24	5.7	2.4
11...	1000	829	74	7.0	9.0	771	11.0	94	25	5.9	2.4
18...	1010	580	121	7.2	10.0	766	10.8	95	37	8.6	3.7
FEB											
01...	1315	394	168	7.6	10.0	770	11.1	97	51	12	5.2
16...	1045	360	1167	7.2	11.5	764	11.1	101	52	12	5.3
23...	1115	352	1164	7.7	--	767	--	--	52	12	5.3
MAR											
01...	1340	315	158	7.5	--	768	--	--	51	12	5.2
23...	0900	321	137	7.5	14.5	762	10.3	101	44	10	4.7
APR											
26...	1010	1170	48	7.2	13.0	761	8.7	83	17	4.0	1.8
MAY											
24...	1050	225	174	7.8	21.5	758	10.2	116	60	14	6.0
JUN											
30...	0915	127	315	7.8	26.0	761	7.0	87	98	21	11
JUL											
27...	1500	141	217	8.4	27.0	758	8.4	106	70	15	7.8
AUG											
23...	1445	130	278	8.1	26.0	760	9.3	115	--	--	--
25...	0950	161	292	7.7	22.5	763	7.8	90	88	20	9.2
SEP											
27...	1455	120	336	8.4	23.0	760	10.2	119	96	22	10

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT											
26...	9.7	32	0.6	1.4	52	--	0	--	43	--	5.0
NOV											
16...	9.3	31	0.6	1.7	54	--	0	--	44	--	4.7
DEC											
27...	9.0	29	0.6	0.90	53	--	0	--	44	--	5.2
JAN											
04...	3.9	25	0.3	0.80	29	--	0	--	24	--	2.7
11...	4.3	27	0.4	0.80	33	--	0	--	27	--	2.7
18...	7.5	30	0.5	1.1	49	--	0	--	40	--	4.2
FEB											
01...	11	31	0.7	2.1	54	--	0	--	44	--	5.8
16...	11	31	0.7	1.7	61	--	0	--	50	--	5.7
23...	11	31	0.7	1.7	51	--	0	--	42	--	5.7
MAR											
01...	11	31	0.7	1.5	58	--	0	--	48	--	5.6
23...	9.1	30	0.6	1.6	54	--	0	--	44	--	4.9
APR											
26...	2.5	23	0.3	0.70	--	29	--	0	--	24	1.9
MAY											
24...	12	29	0.7	2.9	--	74	--	0	--	60	7.1
JUN											
30...	27	36	1	5.7	--	126	--	0	--	103	9.9
JUL											
27...	17	32	0.9	5.7	--	90	--	2	--	78	7.9
AUG											
23...	--	--	--	--	--	--	--	--	--	--	--
25...	21	33	1	5.1	--	112	--	0	--	92	8.7
SEP											
27...	24	34	1	4.5	--	110	--	7	--	102	10

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT											
26...	10	0.20	16	95	85	0.13	<0.010	0.650	0.020	<0.20	<0.20
NOV											
16...	9.8	0.10	15	83	84	0.11	0.010	0.550	0.010	<0.20	<0.20
DEC											
27...	11	<0.10	16	88	87	0.12	<0.010	0.690	0.070	0.20	<0.20
JAN											
04...	3.8	<0.10	12	49	47	0.07	0.020	0.240	0.040	<0.20	<0.20
11...	4.2	<0.10	12	47	50	0.06	0.020	0.330	0.030	<0.20	<0.20
18...	7.8	<0.10	13	72	72	0.10	0.020	0.500	0.040	<0.20	<0.20
FEB											
01...	13	<0.10	15	101	95	0.14	0.030	0.740	0.250	0.50	0.30
16...	12	<0.10	15	103	96	0.14	0.050	0.680	0.040	0.30	<0.20
23...	12	<0.10	15	101	91	0.14	0.010	0.640	0.020	0.20	<0.20
MAR											
01...	13	<0.10	13	95	92	0.13	0.010	0.490	0.020	0.20	<0.20
23...	10	<0.10	13	83	82	0.11	0.040	0.470	0.030	0.20	<0.20
APR											
26...	2.2	<0.10	8.5	44	38	0.06	0.010	0.440	0.050	0.30	<0.20
MAY											
24...	14	<0.10	16	113	113	0.15	0.030	0.830	0.050	0.40	0.30
JUN											
30...	27	0.60	25	177	195	0.24	0.070	1.00	0.080	0.60	0.50
JUL											
27...	19	0.10	24	164	148	0.22	0.070	0.860	0.120	0.90	0.80
AUG											
23...	--	--	--	--	--	--	0.040	1.00	0.030	0.60	0.40
25...	22	0.20	29	185	175	0.25	0.040	0.860	0.040	0.60	0.40
SEP											
27...	27	0.20	33	192	197	0.26	0.040	0.970	0.060	0.40	0.40

## SAN JOAQUIN RIVER BASIN

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT										
26...	0.030	0.020	0.020	30	95	20	<1	<1	8.6	0.3
NOV										
16...	0.030	0.020	0.020	10	71	19	<1	<1	1.1	0.2
DEC										
27...	0.040	<0.010	0.030	30	70	22	<1	<1	2.9	0.3
JAN										
04...	0.050	<0.010	0.010	20	30	10	<1	<1	2.6	0.5
11...	0.010	0.020	0.010	20	35	11	<1	<1	4.8	0.3
18...	0.050	0.020	0.020	20	55	21	<1	<1	2.7	0.3
FEB										
01...	0.100	0.090	0.080	30	70	23	<1	<1	27	0.8
16...	0.060	0.040	0.040	20	59	20	1	<1	4.8	0.3
23...	0.040	0.030	0.020	20	55	19	<1	<1	7.4	0.4
MAR										
01...	0.040	0.020	<0.010	30	58	20	<1	<1	2.3	0.1
23...	0.050	0.030	0.030	20	110	25	<1	<1	3.2	0.4
APR										
26...	0.100	0.030	0.040	<10	37	8	<1	<1	2.8	0.5
MAY										
24...	0.200	0.160	0.170	30	150	22	<1	<1	--	--
JUN										
30...	0.330	0.300	0.290	50	160	35	1	<1	5.4	0.7
JUL										
27...	0.470	0.410	0.400	40	180	28	1	<1	6.5	0.6
AUG										
23...	0.400	0.370	0.340	--	--	--	--	--	--	--
25...	0.370	0.330	0.300	50	170	31	1	<1	4.4	0.9
SEP										
27...	0.220	0.190	0.190	40	120	34	1	<1	7.9	0.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT					
26...N	1330	375	17.0	2	2.0
NOV					
16...N	1235	360	11.0	8	7.8
DEC					
27...N	1015	471	8.0	9	11
JAN					
04...N	0945	667	10.0	14	25
11...N	1000	829	9.0	13	29
18...N	1010	580	10.0	8	13
FEB					
01...N	1315	394	10.0	28	30
16...N	1045	360	11.5	5	4.9
23...N	1115	352	--	4	3.8
MAR					
01...N	1340	315	--	9	7.7
23...N	0900	321	14.5	9	7.8
APR					
26...N	1010	1170	13.0	14	44
MAY					
24...N	1050	225	21.5	10	6.1
JUN					
30...N	0915	127	26.0	28	9.6
JUL					
27...N	1500	141	27.0	25	9.5
AUG					
25...N	0950	161	22.5	26	11
SEP					
27...N	1455	120	23.0	7	2.3



## 11290000 TUOLUMNE RIVER AT MODESTO, CA-Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	138	131	---	---	170	167	158	154
2	---	---	129	123	140	138	---	---	168	164	156	154
3	---	---	136	129	142	140	---	---	165	161	159	156
4	---	---	141	135	143	141	---	---	162	159	158	156
5	---	---	144	139	143	141	---	---	160	158	158	137
6	---	---	143	139	144	142	---	---	162	156	163	145
7	---	---	139	136	143	119	---	---	161	142	159	153
8	---	---	138	134	119	90	---	---	193	134	159	156
9	---	---	142	137	97	89	---	---	243	128	158	155
10	---	---	152	140	102	90	---	---	144	129	158	155
11	---	---	152	132	118	97	74	64	159	144	159	155
12	---	---	134	131	128	118	66	63	173	159	157	155
13	---	---	134	133	140	128	75	64	174	172	158	156
14	---	---	136	132	141	121	81	75	173	169	158	155
15	---	---	136	134	121	112	100	81	171	168	156	147
16	---	---	137	134	137	116	127	97	169	163	157	150
17	---	---	135	133	151	133	120	110	164	147	150	140
18	---	---	134	133	145	120	121	97	156	151	146	140
19	---	---	136	132	124	118	101	86	157	129	140	134
20	---	---	138	136	138	123	88	83	157	129	139	135
21	---	---	140	138	169	113	113	84	166	157	140	136
22	---	---	142	138	121	112	146	113	165	159	142	136
23	---	---	140	136	125	115	151	130	164	158	139	134
24	---	---	137	135	124	115	150	124	164	162	141	135
25	---	---	156	104	122	118	274	127	166	160	144	137
26	---	---	104	101	---	---	251	199	165	162	149	140
27	---	---	106	102	---	---	199	178	162	159	148	141
28	---	---	103	101	---	---	181	173	161	158	142	132
29	---	---	109	101	---	---	173	171	---	---	152	137
30	---	---	132	109	---	---	172	169	---	---	159	145
31	---	---	---	---	---	---	170	168	---	---	157	130
MONTH	---	---	---	---	---	---	---	---	243	128	163	130
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	145	134	90	70	---	---	---	---	263	244	322	294
2	146	129	105	90	---	---	341	256	267	228	332	308
3	132	124	113	105	---	---	306	231	271	247	340	276
4	136	118	121	113	---	---	323	234	257	195	285	254
5	127	121	121	117	---	---	313	277	287	245	286	266
6	126	123	120	104	---	---	314	252	281	189	273	256
7	129	124	105	60	---	---	344	245	298	224	292	273
8	131	125	60	40	---	---	294	239	241	218	330	292
9	128	117	40	36	---	---	279	232	236	223	338	328
10	124	118	38	36	---	---	279	204	254	206	341	329
11	129	123	38	36	---	---	266	222	273	249	345	334
12	134	127	44	38	---	---	260	229	290	256	347	315
13	176	134	74	44	---	---	237	195	281	261	340	311
14	180	144	102	74	---	---	254	217	293	268	346	326
15	166	144	---	---	---	---	268	242	297	253	352	335
16	171	165	---	---	---	---	284	215	285	264	349	321
17	172	168	---	---	---	---	318	284	285	229	334	305
18	170	145	---	---	---	---	323	296	273	254	332	314
19	150	141	---	---	---	---	310	254	274	225	338	324
20	149	135	---	---	---	---	295	264	269	206	343	320
21	136	133	---	---	---	---	292	205	260	189	335	320
22	135	133	---	---	---	---	249	189	283	180	339	326
23	134	126	---	---	---	---	286	193	289	256	348	337
24	127	76	---	---	---	---	295	251	274	247	349	299
25	76	53	---	---	---	---	256	239	294	233	334	294
26	53	47	---	---	---	---	247	186	266	224	342	321
27	49	46	---	---	---	---	247	211	316	264	348	335
28	46	43	---	---	---	---	267	243	320	305	349	339
29	48	42	---	---	---	---	259	203	320	280	353	348
30	70	48	---	---	---	---	255	229	335	306	351	335
31	---	---	---	---	---	---	259	243	340	291	---	---
MONTH	180	42	---	---	---	---	---	---	340	180	353	254

## SAN JOAQUIN RIVER BASIN

11290000 TUOLUMNE RIVER AT MODESTO, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	19.0	17.5	16.5	14.5	11.5	10.0	---	---	10.5	9.0	17.5	14.0
2	19.5	18.0	16.0	14.0	12.5	10.5	---	---	10.5	9.0	17.5	14.5
3	19.0	18.0	16.0	14.0	12.0	10.5	---	---	11.0	9.5	17.0	15.0
4	18.5	17.5	15.5	13.5	12.5	10.5	---	---	12.5	10.0	18.5	15.0
5	18.0	17.0	15.5	13.0	12.0	10.5	---	---	11.5	10.0	16.5	15.5
6	17.5	14.0	15.0	13.0	11.5	10.0	---	---	11.0	10.5	18.0	14.5
7	14.5	13.5	15.0	13.0	11.0	10.0	---	---	12.0	11.0	18.5	15.0
8	14.5	13.5	14.5	12.5	11.0	10.5	---	---	12.5	11.0	18.5	15.0
9	15.0	14.0	14.5	12.5	12.0	11.0	---	---	11.5	10.5	18.5	15.5
10	16.0	15.0	14.5	12.5	12.0	10.5	---	---	12.0	11.0	18.5	15.5
11	16.0	15.0	15.0	13.0	12.0	11.0	10.5	9.0	12.0	10.0	18.5	15.0
12	16.5	15.0	14.0	12.5	12.0	10.5	10.5	9.5	12.5	10.0	18.5	14.5
13	16.0	15.5	14.0	12.0	12.0	10.5	10.5	9.5	12.0	10.0	19.0	15.0
14	16.5	15.5	13.0	11.0	11.0	10.5	10.5	9.5	12.5	10.0	19.0	15.5
15	16.5	15.5	12.5	10.5	11.0	10.0	11.0	9.5	12.0	10.0	18.5	16.0
16	17.0	15.5	12.0	10.5	11.0	9.5	11.0	9.5	12.0	11.0	17.0	15.5
17	17.5	16.0	12.0	10.5	10.5	9.5	11.0	9.5	12.5	11.0	18.0	15.0
18	17.5	16.0	12.5	10.5	10.0	9.0	11.5	10.0	12.0	11.0	18.5	16.0
19	17.5	15.5	12.0	10.0	9.0	8.5	11.5	10.0	11.0	9.5	18.5	15.5
20	17.5	15.5	12.0	10.0	9.5	8.5	11.5	10.0	12.0	9.5	18.5	15.0
21	17.0	16.0	11.0	10.5	9.0	8.0	12.0	10.5	11.5	10.5	19.0	15.5
22	17.5	15.5	12.0	11.0	8.5	8.0	12.0	11.0	13.0	10.0	17.0	14.5
23	17.5	15.5	12.0	9.5	8.5	7.5	13.5	12.0	13.5	10.5	16.0	14.0
24	17.5	15.5	11.0	9.0	8.0	7.5	12.0	10.5	14.0	11.0	15.5	14.0
25	17.5	15.5	10.0	8.0	7.5	7.0	11.5	10.5	15.0	12.0	17.0	14.0
26	17.5	15.5	10.0	9.0	---	---	11.5	10.5	14.5	13.0	17.5	14.5
27	17.0	15.5	9.0	9.0	---	---	12.5	10.5	16.0	13.0	18.5	14.5
28	17.0	15.5	9.5	9.0	---	---	11.5	10.0	16.5	13.5	18.5	15.5
29	16.5	15.0	11.0	9.5	---	---	12.0	9.5	---	---	17.5	16.0
30	16.0	15.0	12.0	10.5	---	---	10.5	9.5	---	---	19.5	16.0
31	16.0	15.0	---	---	---	---	10.5	9.0	---	---	19.0	16.0
MONTH	19.5	13.5	16.5	8.0	---	---	---	---	16.5	9.0	19.5	14.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	19.5	16.0	19.0	16.0	---	---	---	---	29.5	22.5	29.0	21.0
2	19.0	17.0	20.0	17.0	---	---	31.5	23.0	30.5	22.0	28.5	20.5
3	20.0	17.0	21.0	18.0	---	---	31.5	23.0	30.5	22.5	27.5	20.0
4	19.5	17.0	20.5	18.5	---	---	31.0	23.0	31.0	22.5	28.0	20.5
5	19.0	16.5	21.0	18.5	---	---	31.0	23.5	31.0	22.5	28.0	21.5
6	19.5	17.0	19.0	17.5	---	---	31.5	23.5	30.5	23.0	28.5	21.5
7	19.0	16.0	18.0	15.5	---	---	32.0	23.5	31.5	24.0	28.0	21.5
8	16.5	15.5	16.0	14.0	---	---	32.5	23.5	30.5	22.5	28.0	20.5
9	17.5	15.0	16.5	14.5	---	---	32.5	23.5	30.0	22.5	26.5	20.0
10	17.5	15.0	17.5	15.0	---	---	32.0	24.0	29.5	22.0	27.0	19.0
11	18.5	15.5	18.0	16.0	---	---	32.5	23.5	30.5	22.0	25.5	18.5
12	19.5	16.5	18.5	16.0	---	---	31.5	24.0	30.5	22.5	25.5	18.5
13	20.0	17.0	20.0	17.0	---	---	32.0	23.5	31.0	22.5	25.5	18.5
14	20.5	17.5	21.0	18.5	---	---	32.0	23.5	31.5	23.0	26.0	19.0
15	21.5	18.5	---	---	---	---	32.5	24.0	31.5	23.0	27.5	19.5
16	21.0	19.0	---	---	---	---	32.5	24.0	31.0	22.5	25.5	20.5
17	22.0	18.5	---	---	---	---	33.0	23.5	31.0	23.0	27.0	21.0
18	22.5	19.0	---	---	---	---	32.5	24.0	31.0	23.5	26.0	20.5
19	22.0	19.0	---	---	---	---	31.5	23.5	30.0	23.0	27.0	20.5
20	22.0	18.5	---	---	---	---	30.5	23.0	29.5	22.0	27.5	20.5
21	21.5	18.5	---	---	---	---	28.0	23.0	28.5	22.0	27.5	21.0
22	21.0	18.5	---	---	---	---	30.5	22.0	28.5	21.0	27.5	21.5
23	18.5	17.0	---	---	---	---	30.0	22.0	29.0	22.0	23.0	21.0
24	17.0	14.0	---	---	---	---	30.0	21.5	29.0	21.5	25.5	20.0
25	14.0	13.0	---	---	---	---	30.0	22.0	29.0	22.0	26.5	20.5
26	14.5	13.0	---	---	---	---	30.5	23.0	28.0	21.5	27.5	21.0
27	14.5	12.5	---	---	---	---	30.0	23.0	29.0	21.5	26.0	21.0
28	15.0	13.0	---	---	---	---	30.5	23.0	28.5	21.0	23.0	21.0
29	16.0	13.5	---	---	---	---	29.5	23.0	28.5	20.5	26.0	19.5
30	18.0	15.0	---	---	---	---	30.5	23.0	29.5	21.0	25.0	19.0
31	---	---	---	---	---	---	30.5	22.5	29.5	21.5	---	---
MONTH	22.5	12.5	---	---	---	---	---	---	31.5	20.5	29.0	18.5

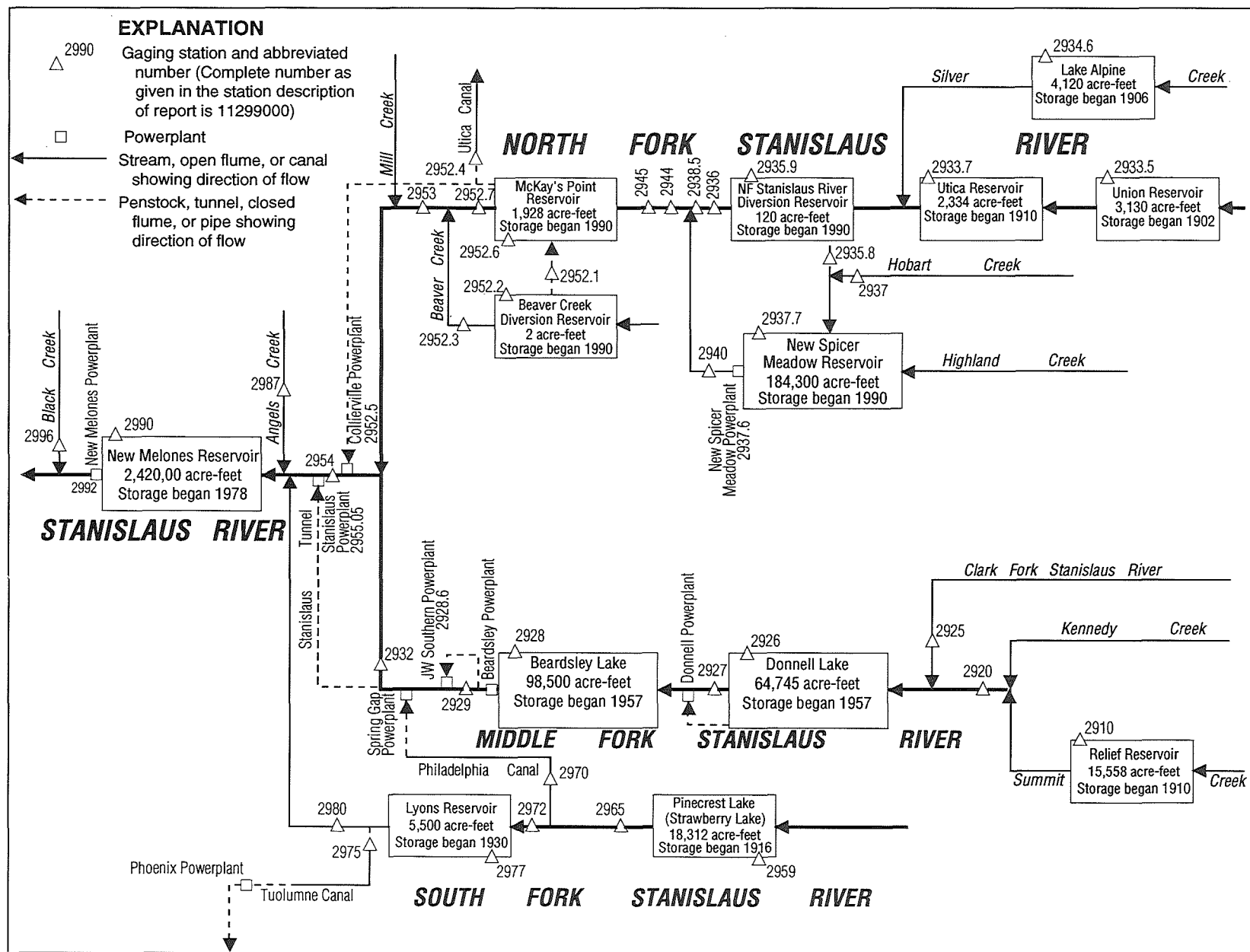


Figure 34. Diversions and storage in Stanislaus River basin.

## SAN JOAQUIN RIVER BASIN

## 11291000 RELIEF RESERVOIR NEAR BAKER STATION, CA

LOCATION.--Lat 38°16'52", long 119°43'57", in NW 1/4 SW 1/4 sec.13, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on dam near spillway, 2.2 mi south of Kennedy Meadows, 3.6 mi southeast of Baker Station, and 7.0 mi southeast of Dardanelle.

DRAINAGE AREA.--24.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Prior to Dec. 9, 1991, nonrecording gage observed approximately weekly. Datum of gage is 7,200 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--No record Nov. 18 to Mar. 6 because the orifice was out of the water. Reservoir is formed by concrete-faced, rockfill dam completed in 1910. Usable capacity, 12,348 acre-ft between gage height -1.37 ft, invert of outlet, and 123 ft, spillway crest. Flashboards are added in the summer months, increasing gage height to 138 ft and usable capacity to 15,550 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 15,622 acre-ft, July 25, 1993, gage height, 138.31 ft; minimum observed, 33 acre-ft, Jan. 12, 1987, gage height, 6.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,951 acre-ft, May 30, gage height, 124.84 ft; minimum observed, 353 acre-ft, Jan. 3, gage height, 31.2 ft.

Capacity table (gage height, in feet, and contents, in acre-ft)  
(Based on survey by Pacific Gas & Electric Co. in 1942)

10	53	50	1605	90	6579
20	105	60	2632	100	8105
30	308	70	3763	120	11895
40	842	80	5105	140	16012

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5144	1543	---	---	---	---	2324	8149	12875	12651	10419	6726
2	4948	1469	---	---	---	---	2468	8352	12875	12645	10310	6544
3	4751	1391	---	e353	---	---	2620	8617	12848	12640	10185	6351
4	4562	1314	---	---	---	---	2713	8980	12830	12632	10066	6164
5	4379	1240	---	---	---	---	2800	9347	12844	12630	9940	5968
6	4207	1164	---	---	---	---	2882	9639	12788	12630	9842	5789
7	4028	1089	---	---	---	946	2949	9833	12777	12581	9746	5607
8	3856	1046	---	---	---	976	3016	10051	12798	12495	9645	5423
9	3682	1032	---	---	---	1012	3081	10491	12809	12408	9547	5250
10	3509	1018	---	---	---	1049	3137	11029	12830	12322	9455	5067
11	3384	1005	---	---	---	1080	3193	11642	12819	12233	9354	4888
12	3239	994	---	---	---	1106	3266	12253	12786	12134	9260	4714
13	3089	980	e659	---	---	1147	3380	12830	12780	12034	9166	4542
14	2945	967	---	---	---	1203	3547	12945	12773	11939	9063	4374
15	2850	956	---	---	---	1280	3795	12856	12729	11849	8971	4209
16	2757	941	---	---	---	1347	4129	12790	12704	11780	8868	4045
17	2646	929	---	---	---	1406	4531	12769	12696	11713	8766	3886
18	2508	---	---	---	---	1465	5031	12759	12698	11647	8680	3732
19	2419	---	---	---	---	1518	5551	12752	12700	11581	8597	3573
20	2362	---	---	---	---	1568	6076	12767	12700	11506	8519	3421
21	2305	---	---	---	---	1628	6559	12784	12698	11441	8435	3263
22	2244	---	---	---	---	1677	6893	12798	12691	11370	8346	3116
23	2180	---	---	---	---	1719	7138	12852	12687	11287	8265	2969
24	2114	---	---	---	---	1756	7305	12916	12674	11202	8179	2835
25	2049	---	---	---	---	1795	7446	12885	12666	11119	8027	2699
26	1978	---	---	---	---	1829	7561	12918	12664	11025	7832	2552
27	1907	---	---	---	---	1866	7664	12914	12662	10934	7646	2402
28	1834	---	---	---	---	1923	7764	12890	12666	10845	7460	2282
29	1763	---	---	---	---	1995	7868	12904	12672	10742	7275	2180
30	1692	---	---	---	---	2090	7994	12951	12657	10644	7091	2052
31	1622	---	---	---	---	2200	---	12922	---	10534	6907	---
MAX	5144	---	---	---	---	---	7994	12951	12875	12651	10419	6726
MIN	1622	---	---	---	---	---	2324	8149	12657	10534	6907	2052
a	50.19	---	---	---	---	56.16	99.39	124.70	123.43	112.49	92.26	54.74
b	-3714	---	---	---	---	---	+5794	+4928	-265	-2123	-3627	-4855

WTR YR 1994 b -3284

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## 11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA

LOCATION.--Lat 38°17'51", long 119°44'25", in SW 1/4 NE 1/4 sec.11, T.5 N., R.20 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at upper end of Kennedy Meadows, 1.3 mi upstream from Deadman Creek, 1.6 mi downstream from Relief Reservoir, and 5.8 mi southwest of Dardanelle.

DRAINAGE AREA.--47.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1960, published as "at Kennedy Meadows."

REVISED RECORDS.--WSP 1315-A: 1939(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,326.3 ft above sea level.

REMARKS.--Low and medium flow regulated by Relief Reservoir (station 11291000) 1.6 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft<sup>3</sup>/s, Nov. 20, 1950, gage height, 6.66 ft; maximum gage height, 6.67 ft, May 29, 1983; minimum daily, 7.1 ft<sup>3</sup>/s, Jan. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 531 ft<sup>3</sup>/s, May 31, gage height, 4.69 ft; minimum daily, 12 ft<sup>3</sup>/s, several days in January.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	e60	24	22	e14	21	40	48	362	87	65	112
2	123	e59	e24	22	e14	24	43	52	306	75	64	111
3	123	59	24	20	e14	24	48	59	301	66	64	110
4	122	59	24	15	14	25	42	73	266	61	63	110
5	122	59	23	e14	e14	27	38	87	253	58	63	109
6	121	58	e23	14	14	27	37	92	249	53	62	109
7	120	57	23	e14	14	26	36	85	198	67	61	108
8	119	42	e23	e13	e14	25	34	75	191	86	61	106
9	118	26	e23	e13	e14	27	34	75	215	84	61	106
10	116	26	e23	e13	15	28	33	101	234	83	61	104
11	119	26	23	e13	15	27	31	135	256	81	61	104
12	117	26	e23	e13	e15	24	32	165	240	80	60	104
13	115	26	e23	e12	e15	25	37	157	205	78	60	104
14	114	24	e23	e12	e15	31	47	327	208	77	59	103
15	119	26	e23	e12	e15	37	61	377	187	76	59	101
16	118	26	e23	e12	15	36	78	265	137	76	59	100
17	116	26	e22	e12	15	33	92	195	116	75	59	99
18	113	25	e22	e12	e15	33	104	181	110	74	55	97
19	91	25	e22	e12	e15	32	119	164	114	73	49	97
20	68	25	e22	e12	15	32	122	160	118	72	49	96
21	68	25	e22	e12	15	31	122	176	120	74	49	94
22	68	24	22	e12	e15	32	113	195	116	74	49	93
23	67	25	22	e12	15	30	94	222	110	72	48	93
24	66	23	22	e13	15	29	76	298	106	70	48	92
25	e66	24	22	e13	17	27	64	352	98	69	78	91
26	e65	24	22	e13	19	27	57	326	90	68	115	90
27	e64	25	23	e14	19	27	52	365	86	67	115	89
28	e63	24	22	e14	20	29	48	348	94	67	114	89
29	e62	24	23	e14	---	31	47	326	101	66	114	92
30	e61	26	23	e14	---	34	47	344	95	66	113	89
31	e60	---	22	e14	---	38	---	475	---	66	112	---
TOTAL	3008	1004	705	427	426	899	1828	6300	5282	2241	2150	3002
MEAN	97.0	33.5	22.7	13.8	15.2	29.0	60.9	203	176	72.3	69.4	100
MAX	124	60	24	22	20	38	122	475	362	87	115	112
MIN	60	23	22	12	14	21	31	48	86	53	48	89
AC-FT	5970	1990	1400	847	845	1780	3630	12500	10480	4450	4260	5950

e Estimated.

## 11292000 MIDDLE FORK STANISLAUS RIVER AT KENNEDY MEADOWS, NEAR DARDANELLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	79.3	47.4	39.9	29.9	28.5	42.3	92.1	309	431	231	118	125
MAX	226	372	266	85.0	89.0	155	247	626	949	669	328	272
(WY)	1983	1951	1951	1951	1982	1980	1943	1969	1983	1983	1983	1983
MIN	10.4	9.85	10.0	9.23	8.81	12.6	23.7	28.0	68.1	43.1	24.9	12.2
(WY)	1967	1978	1960	1960	1991	1948	1975	1977	1977	1939	1961	1981

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1939 - 1994			
ANNUAL TOTAL	61659				27272							
ANNUAL MEAN	169				74.7				131			
HIGHEST ANNUAL MEAN									256			
LOWEST ANNUAL MEAN									36.4			
HIGHEST DAILY MEAN	717				475				1360			
LOWEST DAILY MEAN	22				12				7.1			
ANNUAL SEVEN-DAY MINIMUM	22				12				7.5			
INSTANTANEOUS PEAK FLOW					531				1700			
INSTANTANEOUS PEAK STAGE					4.69				6.67			
ANNUAL RUNOFF (AC-FT)	122300				54090				95260			
10 PERCENT EXCEEDS	467				136				352			
50 PERCENT EXCEEDS	129				59				58			
90 PERCENT EXCEEDS	24				15				15			

## 11292500 CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CA

LOCATION.--Lat 38°21'50", long 119°52'13", in NE 1/4 NE 1/4 sec.22, T.6 N., R.19 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi upstream from mouth and 2.6 mi northwest of Dardanelle.

DRAINAGE AREA.--67.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to September 1994 (discontinued).

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,507.3 ft above sea level (river-profile survey).

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,350 ft<sup>3</sup>/s, Nov. 20, 1950, gage height, 11.88 ft, from rating curve extended above 1,300 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 9.8 ft<sup>3</sup>/s, Sept. 11-15, 26-30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	2200	*635	*5.12				

Minimum daily, 13 ft<sup>3</sup>/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	28	28	e26	35	109	131	357	48	21	15
2	32	29	29	29	e25	39	116	148	346	46	21	15
3	31	29	28	27	e25	42	126	172	319	44	21	15
4	31	29	28	e29	25	44	102	218	284	43	21	15
5	31	29	28	31	e24	51	95	230	270	41	20	14
6	33	29	28	33	e24	45	96	225	241	40	20	14
7	33	28	27	e31	24	43	86	184	204	38	20	14
8	33	27	28	e30	e25	45	84	176	205	37	19	14
9	32	28	31	27	e26	49	81	259	214	35	19	13
10	32	28	29	e26	27	52	74	343	220	35	19	14
11	33	29	28	e25	e27	50	75	436	209	34	19	15
12	36	30	30	e25	e26	47	87	476	189	33	19	16
13	35	29	e28	e26	e28	51	103	440	170	32	19	18
14	34	29	31	26	e28	68	126	429	160	31	18	18
15	46	32	e28	26	e29	83	165	379	138	30	17	16
16	42	32	e28	26	29	77	210	283	118	30	17	15
17	39	30	e25	26	e29	65	246	227	109	30	17	15
18	36	29	e25	27	e29	68	294	207	104	28	17	15
19	35	28	e25	27	e29	66	334	184	98	28	17	15
20	35	30	e24	27	e29	62	340	181	94	27	17	15
21	34	29	e24	27	e29	69	324	193	87	27	17	15
22	33	29	e24	26	e30	70	277	206	81	29	17	14
23	32	28	e24	28	e30	60	226	238	76	27	17	15
24	32	e28	e25	27	e30	56	175	307	71	25	17	16
25	32	e28	e25	27	e30	54	151	310	66	25	17	16
26	31	e28	e26	26	e31	53	135	332	63	24	17	15
27	30	e28	e27	26	32	57	127	361	58	24	16	15
28	30	29	32	e26	32	69	122	355	56	23	16	17
29	30	30	32	e26	---	79	124	356	54	22	15	21
30	30	31	30	e26	---	91	127	363	51	22	15	18
31	30	---	30	e26	---	104	---	437	---	22	15	---
TOTAL	1035	871	855	843	780	1844	4737	8786	4712	980	557	463
MEAN	33.4	29.0	27.6	27.2	27.9	59.5	158	283	157	31.6	18.0	15.4
MAX	46	32	32	33	32	104	340	476	357	48	21	21
MIN	30	27	24	25	24	35	74	131	51	22	15	13
AC-FT	2050	1730	1700	1670	1550	3660	9400	17430	9350	1940	1100	918

e Estimated.

## SAN JOAQUIN RIVER BASIN

11292500 CLARK FORK STANISLAUS RIVER NEAR DARDANELLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	33.1	49.8	61.2	55.0	62.7	87.3	199	462	476	190	57.6	35.0
MAX	127	440	447	208	196	289	378	1018	1330	862	298	106
(WY)	1983	1951	1951	1980	1982	1986	1989	1969	1983	1983	1983	1983
MIN	12.1	19.6	16.7	19.0	16.7	25.9	71.3	78.6	73.3	23.0	12.7	10.2
(WY)	1978	1991	1977	1977	1991	1977	1977	1977	1992	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1951 - 1994	
ANNUAL TOTAL	70587		26463			
ANNUAL MEAN	193		72.5		148	
HIGHEST ANNUAL MEAN					335	
LOWEST ANNUAL MEAN					36.5	
HIGHEST DAILY MEAN	955		May 20		2600	
LOWEST DAILY MEAN	24		Dec 20		9.8	
ANNUAL SEVEN-DAY MINIMUM	24		Dec 17		9.8	
INSTANTANEOUS PEAK FLOW			635		4350	
INSTANTANEOUS PEAK STAGE			5.12		11.88	
ANNUAL RUNOFF (AC-FT)	140000		52490		106900	
10 PERCENT EXCEEDS	676		212		420	
50 PERCENT EXCEEDS	47		30		52	
90 PERCENT EXCEEDS	29		17		22	



## 11292600 DONNELL LAKE NEAR DARDANELLE, CA

LOCATION.--Lat 38°19'46", long 119°57'37", unsurveyed, T.6 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank in hoist house of Donnell Dam on Middle Fork Stanislaus River, 1.2 mi downstream from Niagara Creek, and 6.9 mi west of Dardanelle.

DRAINAGE AREA.--230 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1960, published as Donnell's Reservoir near Dardanelle.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.84 ft above sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Lake is formed by concrete arch-type dam completed in 1957. Usable capacity, 64,745 acre-ft, between gage heights 4,720.0 ft, minimum operating head, and 4,917.0 ft, top of spillway gates. Lake is for power and conservation storage. Water passes through a 7.2-mi tunnel to a powerplant and down the Middle Fork Stanislaus River to Beardsley Lake (station 11292800). Records, including extremes, represent total contents at 2400 hours, of which 2,150 acre-ft is below minimum operating head. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,900 acre-ft, May 8, 1963, gage height, 4,917.3 ft; minimum since reservoir first filled, 2,220 acre-ft, Apr. 15, 1983, gage height, 4,720.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 58,000 acre-ft, June 19, maximum gage height, 4,900.68 ft, June 3; minimum, 3,870 acre-ft, Mar. 24, gage height, 4,730.74 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated Oct. 1, 1956)

4,720	2,150	4,740	5,830	4,780	16,200	4,850	38,700
4,725	2,850	4,750	8,220	4,790	19,100	4,880	49,800
4,730	3,730	4,760	10,800	4,800	22,100	4,917.3	64,900
4,735	4,730	4,770	13,400	4,820	28,400		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34800	29800	11200	13000	6380	5610	5140	24500	55500	55600	47000	35200
2	34100	29900	11300	12900	6450	5890	5520	24800	55800	55800	46400	34600
3	34300	30100	11400	12500	6570	6200	6090	25000	55900	56100	45800	34800
4	33600	30200	11500	12200	6660	5710	6430	25600	55900	56300	45200	35000
5	32900	30400	11600	11700	6750	6070	6630	26300	55900	55900	44600	34800
6	32100	30500	11700	11300	6850	6440	6910	26900	57200	55500	44400	34400
7	31300	29700	11800	10900	6980	6780	6730	27200	57500	55100	44500	33900
8	31000	28800	11900	10900	7090	7150	6670	27300	57200	54700	44300	33400
9	30200	27900	12000	11000	7200	7550	7250	27300	57100	54900	43800	32900
10	30200	26900	12100	10800	7330	7770	7770	29400	57000	55100	43200	33100
11	29500	26300	12300	10400	7420	8180	7690	30900	57200	54700	42700	33300
12	28800	25300	12400	9860	7500	8570	7330	33300	57600	54300	42200	32800
13	28000	24400	12500	9450	7610	8970	8010	35000	57700	53800	42300	32400
14	27200	23400	12700	9020	7460	8890	8480	36500	57700	53300	42100	31900
15	26500	22500	12400	9080	7160	8530	9130	38100	57600	52800	41500	31400
16	26800	21500	11800	9170	6660	8150	10500	38900	57400	52500	41000	30900
17	27100	20600	11600	8860	6140	7620	12100	39500	57000	52600	40500	31100
18	27400	19600	11500	8640	6270	7120	13400	40200	57400	52100	40000	31200
19	27600	18700	11600	8360	6380	6640	14900	40700	58000	51600	39300	30800
20	27800	17700	11700	8010	6140	6120	16300	41200	57600	51200	39400	30200
21	28000	17700	11800	7640	5940	5600	17700	41900	57400	50700	39500	29700
22	28200	16900	11900	7640	6020	5150	18800	42500	57300	50200	38900	29200
23	28400	15900	12000	7760	6130	4560	20100	43200	57000	49700	38300	28700
24	28500	14800	12100	7550	5790	3870	21200	44400	56800	49900	37800	28900
25	28700	13900	12200	7150	5570	4050	21600	45700	56900	49300	37200	29100
26	28900	12800	12400	6730	5690	4430	22000	46900	57300	48800	36700	28600
27	29000	11800	12500	6450	5510	4840	22300	48400	56900	48300	36900	28000
28	29200	10900	12600	6060	5670	4860	22500	49900	56600	47800	37100	27600
29	29300	10900	12700	6090	---	4710	22700	51100	56300	47300	36700	27000
30	29500	11100	12800	6200	---	4720	23600	52500	56000	47400	36200	26200
31	29600	---	12900	6300	---	4930	---	54300	---	47500	35700	---
MAX	34800	30500	12900	13000	7610	8970	23600	54300	58000	56300	47000	35200
MIN	26500	10900	11200	6060	5510	3870	5140	24500	55500	47300	35700	26200
a'	4823.68	4761.04	4768.00	4742.04	4739.29	4735.93	4804.93	4891.43	4895.72	4874.08	4841.50	4813.22
b	-5900	-18500	+1800	-6600	-630	-740	+18700	+30700	+1700	-8500	-11800	-9500

CAL YR 1993 b +4180  
WTR YR 1994 b -9300

a Gage height, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA

LOCATION.--Lat 38°14'50", long 120°02'01", in NW 1/4 NE 1/4 sec.31, T.5 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 200 ft upstream from Donnell Powerplant, 800 ft downstream from Hells Half Acre bridge, 1.1 mi upstream from Cow Creek, and 4.7 mi northwest of Pinecrest.

DRAINAGE AREA.--287 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1956 to current year. Prior to October 1965, published as Middle Fork Stanislaus River at Hells Half Acre bridge.

WATER TEMPERATURE: Water years 1966-71 and 1973-78.

GAGE.--Water-stage recorder. Datum of gage is 3,418.31 ft above sea level (river-profile survey). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Relief Reservoir (station 11291000), Donnell Lake (station 11292600) since April 1957, and diversion around station through Donnell Powerplant. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft<sup>3</sup>/s, Dec. 24, 1964, gage height, 13.64 ft in gage well, 14.2 ft outside, from floodmarks, from rating curve extended above 5,200 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 12.20 ft; minimum daily, 3.3 ft<sup>3</sup>/s, Nov. 9, 10, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1905, 23 ft, Dec. 23, 1955, from floodmarks, at present site, discharge, 26,600 ft<sup>3</sup>/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 209 ft<sup>3</sup>/s, Apr. 18, gage height, 4.54 ft; minimum daily, 18 ft<sup>3</sup>/s, Nov. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	42	25	26	23	61	121	156	83	41	32	28
2	38	42	24	26	23	64	126	162	79	40	32	28
3	37	42	24	26	23	69	150	162	75	40	32	27
4	38	42	24	28	23	71	141	163	72	40	32	27
5	39	42	23	37	23	91	124	162	71	40	31	28
6	39	41	23	31	23	95	120	159	70	39	31	28
7	39	31	23	28	31	87	109	169	68	39	31	27
8	39	23	23	27	32	86	113	174	66	39	31	27
9	38	21	26	26	31	89	113	165	63	38	31	27
10	41	21	26	26	32	92	104	165	61	38	31	27
11	43	21	29	25	32	95	106	167	59	38	31	27
12	42	24	30	25	28	87	114	163	57	37	30	27
13	42	22	27	25	28	85	123	149	56	37	30	28
14	41	21	28	24	28	104	134	140	55	37	30	27
15	46	21	27	24	28	119	149	131	54	36	30	27
16	44	20	26	24	28	122	164	120	53	36	30	27
17	43	20	25	24	42	106	168	117	52	36	30	26
18	42	20	25	24	38	104	172	126	52	35	30	26
19	42	20	24	24	33	110	178	128	51	35	29	26
20	42	19	24	24	34	103	172	133	50	34	29	26
21	42	20	24	24	31	109	160	137	49	34	29	26
22	42	21	24	23	31	113	147	132	48	34	29	26
23	42	21	24	29	32	94	138	120	47	34	29	26
24	42	20	24	29	33	86	128	114	46	34	29	26
25	41	19	24	29	37	81	126	110	46	33	28	25
26	41	19	25	27	42	74	127	109	45	33	28	25
27	41	19	31	25	60	80	132	103	44	33	28	25
28	42	18	28	24	60	98	129	98	43	33	28	27
29	42	19	27	24	---	106	140	92	42	32	28	27
30	42	29	26	24	---	112	149	88	41	32	28	25
31	42	---	26	23	---	122	---	88	---	32	28	---
TOTAL	1272	760	789	805	909	2915	4077	4202	1698	1119	925	799
MEAN	41.0	25.3	25.5	26.0	32.5	94.0	136	136	56.6	36.1	29.8	26.6
MAX	46	42	31	37	60	122	178	174	83	41	32	28
MIN	37	18	23	23	23	61	104	88	41	32	28	25
AC-FT	2520	1510	1560	1600	1800	5780	8090	8330	3370	2220	1830	1580

## 11292700 MIDDLE FORK STANISLAUS RIVER AT HELLS HALF ACRE BRIDGE, NEAR PINECREST, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37.8	46.5	83.2	119	149	193	279	803	912	231	43.8	34.2
MAX	184	305	814	630	986	738	808	3144	4512	1885	320	72.8
(WY)	1983	1984	1965	1980	1986	1986	1986	1969	1983	1983	1983	1983
MIN	12.6	7.09	8.69	13.9	12.4	13.0	19.9	29.9	16.7	12.5	11.5	12.1
(WY)	1978	1958	1959	1961	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1958 - 1994			
ANNUAL TOTAL	146108				20270							
ANNUAL MEAN	400				55.5				244			
HIGHEST ANNUAL MEAN									868			
LOWEST ANNUAL MEAN									18.4			
HIGHEST DAILY MEAN	2860				May 21				7410			
LOWEST DAILY MEAN	18				Nov 28				3.3			
ANNUAL SEVEN-DAY MINIMUM	19				Nov 23				3.7			
INSTANTANEOUS PEAK FLOW					209				10200			
INSTANTANEOUS PEAK STAGE					4.54				13.64			
ANNUAL RUNOFF (AC-FT)	289800				40210				176900			
10 PERCENT EXCEEDS	1400				127				565			
50 PERCENT EXCEEDS	98				36				46			
90 PERCENT EXCEEDS	25				24				19			

## SAN JOAQUIN RIVER BASIN

## 11292800 BEARDSLEY LAKE NEAR STRAWBERRY, CA

LOCATION.--Lat 38°12'17", long 120°04'31", in SE 1/4 NW 1/4 sec.14, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 mi upstream from Spring Gap Powerplant, 3.9 mi west of Strawberry, and 4.7 mi west of Pinecrest.

DRAINAGE AREA.--309 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1957 to current year. Prior to October 1960, published as Lake Hartley near Strawberry.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.84 ft above sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by rockfill, earth-core dam completed in 1957. Capacity, 98,500 acre-ft between gage heights 3,145.0 ft, tunnel invert, and 3,398.0 ft, top of spillway gates. No dead storage. Reservoir is used for power and conservation storage. Water passes through Beardsley Powerplant, is diverted at Beardsley Afterbay to J.W. Southern Powerplant at Sand Bar Flat on the Middle Fork Stanislaus River, and diverted again at Spring Gap Powerplant to Stanislaus Powerplant at the head of New Melones Reservoir (station 11299000). Records, including extremes, represent contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,700 acre-ft, June 27, 1957, gage height, 3,398.2 ft; minimum since reservoir first filled, 3 acre-ft, Sept. 23, 1976, gage height, 3,154.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 88,600 acre-ft, Oct. 2, gage height, 3,384.02 ft; minimum, 20,000 acre-ft, Feb. 15, gage height, 3,261.27 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated Oct. 3, 1956)

3,154	2	3,200	2,370	3,290	33,100
3,160	41	3,210	3,790	3,320	48,800
3,170	267	3,220	5,720	3,350	66,400
3,180	693	3,240	11,600	3,370	79,200
3,190	1,370	3,260	19,500	3,398	98,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88500	72600	70700	45000	26800	20900	26800	34500	52000	54100	43800	33300
2	88600	72400	69800	44300	25800	20700	27000	35400	52500	53600	43500	33200
3	87700	72200	68900	44000	25000	20600	27200	36300	53100	53200	43200	32700
4	87800	72000	68100	43600	24300	21300	27100	36900	54200	52900	42900	32300
5	87800	71700	67200	43200	23700	21200	26900	37500	55100	52500	42600	31900
6	87900	71400	66300	42900	23300	21100	26700	38100	55300	52100	42300	31600
7	88100	71500	65400	42500	22900	21000	26800	39000	55300	51700	41700	31400
8	87900	71600	64500	41600	22500	20900	27000	40000	55700	51400	41000	31300
9	88000	71700	63700	40800	22000	20800	27000	40600	56100	51000	40700	31100
10	87300	71800	62700	40200	21600	20900	26800	41300	56500	50600	40300	30700
11	87300	71700	62000	39700	21200	20800	27300	41900	57100	50300	39900	30200
12	87400	71800	61100	39500	20700	20700	27700	41800	57400	49900	39600	30100
13	87500	72000	60200	39100	20200	20600	28200	42200	57500	49500	39200	30000
14	87700	72000	59300	38700	20100	21100	28600	43200	57600	49200	39100	29800
15	87800	72100	59000	37800	20000	21900	29100	44200	57700	49000	38800	29700
16	86800	72200	58800	36800	20400	22700	29100	44700	57700	49000	38400	29600
17	85800	72400	58300	36400	20900	23500	29100	45300	57700	48400	38100	29100
18	84900	72600	57400	36000	20900	24300	29600	45700	57200	48200	37700	28700
19	83900	72800	56500	35400	20500	25100	30200	46200	56700	47800	37500	28600
20	83000	73000	55600	34900	20700	25800	30800	46600	56900	47600	36800	28500
21	82100	72100	54800	34500	20800	26500	31300	47400	56600	47200	36400	28300
22	81200	72300	53800	33600	20600	27200	31800	48300	56300	47000	36200	28200
23	80300	72500	53000	32700	20400	27500	31800	48800	56100	47200	35800	28400
24	79400	72700	52100	32200	20600	27700	31700	49200	55900	46800	35600	28400
25	78500	72900	51200	31900	20800	27400	32200	49700	55800	46600	35200	28300
26	77600	73100	50300	31500	20600	27000	32600	50100	55400	46300	35100	28800
27	76600	73300	49400	30900	20900	26700	33200	50500	55300	45900	34600	28900
28	75800	73400	48500	30400	20700	26900	33800	50900	55000	45500	34200	28900
29	74900	72600	47600	29500	---	26800	34300	51500	54700	45200	34000	29100
30	74000	71700	46700	28600	---	26700	34300	51800	54300	44600	33700	29400
31	73100	---	45900	27700	---	26600	---	52100	---	44000	33500	---
MAX	88600	73400	70700	45000	26800	27700	34300	52100	57700	54100	43800	33300
MIN	73100	71400	45900	27700	20000	20600	26700	34500	52000	44000	33500	28200
a	3360.69	3358.52	3314.75	3278.50	3262.96	3276.22	3292.44	3325.87	3329.80	3311.23	3290.70	3282.20
b	-15400	-1400	-25800	-18200	-7000	+5900	+7700	+17800	+2200	-10300	-10500	-4100

CAL YR 1993 b +21800

WTR YR 1994 b -59100

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

## 11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA

LOCATION.--Lat 38°11'36", long 120°05'53", in NW 1/4 NW 1/4 sec.22, T.4 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.5 mi downstream from Beardsley Afterbay Dam, 1.5 mi downstream from Beardsley Dam, and 5.7 mi west of Pincrest.

DRAINAGE AREA.--316 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1956 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,044.7 ft above sea level (river-profile survey).

REMARKS.--No estimated daily discharges. Records good. Diversion from Beardsley Afterbay Dam, 0.5 mi upstream, to J.W. Southern Powerplant (station 11292900), at Sand Bar Flat 3 mi downstream, began May 31, 1986. Flow regulated by Relief Reservoir (station 11291000) since 1909, Donnell Lake (station 11292600) since April 1957, and by Beardsley Lake (station 11292800) since January 1957. See schematic diagram of Stanislaus River basin. For records of combined discharge for river and powerplant, see following page.

COOPERATION.--Records of diversion to J.W. Southern Powerplant provided by Oakdale-South San Joaquin Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,080 ft<sup>3</sup>/s, May 30, 1983, gage height, 12.30 ft; minimum daily, 3.0 ft<sup>3</sup>/s, Oct. 10, 11, 1958.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 482 ft<sup>3</sup>/s, Nov. 6, gage height, 5.12 ft; minimum daily, 55 ft<sup>3</sup>/s, June 19, 20, July 30, 31.  
Combined flow, maximum daily discharge, 586 ft<sup>3</sup>/s, July 6, minimum daily, 57 ft<sup>3</sup>/s, May 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	144	149	158	139	145	147	75	57	58	56	57
2	146	146	148	157	140	146	148	60	57	57	58	57
3	145	145	149	151	139	147	147	62	57	57	57	57
4	146	146	149	143	139	146	147	60	57	57	58	58
5	147	159	150	143	139	146	148	61	57	57	57	58
6	146	180	149	142	138	146	149	61	58	57	57	58
7	145	471	148	143	139	147	153	61	58	58	60	58
8	146	337	149	142	139	147	152	60	59	58	58	58
9	145	129	150	141	139	146	153	61	58	57	58	58
10	145	129	151	141	139	147	153	61	57	58	59	58
11	145	130	152	140	139	147	154	58	57	57	59	58
12	145	132	151	140	139	147	153	59	57	58	58	58
13	145	132	152	140	138	146	154	57	57	58	58	58
14	144	132	151	140	141	146	154	57	58	57	57	58
15	143	133	151	140	146	147	153	57	58	58	56	58
16	146	134	152	142	146	147	152	58	59	58	58	58
17	145	131	153	141	146	148	153	59	58	58	58	58
18	145	130	153	140	145	147	153	60	58	57	57	58
19	145	129	155	141	147	146	154	59	55	57	57	58
20	143	130	155	141	146	147	154	57	55	58	58	58
21	144	130	155	140	148	146	153	59	57	56	58	58
22	145	131	154	141	147	146	154	59	59	57	59	58
23	144	138	152	140	147	148	153	57	58	57	58	58
24	144	146	156	141	148	147	152	57	58	57	57	60
25	144	148	156	140	147	147	152	56	58	57	58	58
26	145	148	156	140	147	146	152	57	58	57	57	58
27	145	147	156	139	149	147	153	57	56	58	58	57
28	145	149	156	138	147	146	153	56	58	58	59	60
29	145	148	157	138	---	146	153	57	59	58	57	61
30	145	149	157	138	---	148	152	58	59	55	57	61
31	144	---	157	138	---	148	---	57	---	55	58	---
TOTAL	4492	4733	4729	4399	4003	4546	4558	1833	1727	1775	1790	1746
MEAN	145	158	153	142	143	147	152	59.1	57.6	57.3	57.7	58.2
MAX	147	471	157	158	149	148	154	75	59	58	60	61
MIN	143	129	148	138	138	145	147	56	55	55	56	57
AC-FT	8910	9390	9380	8730	7940	9020	9040	3640	3430	3520	3550	3460

## 11292900 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1985, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	396	410	449	432	478	494	588	1271	1607	819	523	488
MAX	651	1064	1322	1035	1322	1307	1378	3754	5325	2420	958	690
(WY)	1984	1983	1984	1984	1980	1983	1982	1969	1983	1983	1983	1983
MIN	23.3	19.9	18.8	18.9	21.0	22.4	180	168	348	77.5	44.5	39.5
(WY)	1977	1977	1977	1977	1977	1977	1957	1960	1976	1977	1977	1977

## SUMMARY STATISTICS

## WATER YEARS 1957 - 1985

ANNUAL MEAN	671	
HIGHEST ANNUAL MEAN	1507	1983
LOWEST ANNUAL MEAN	111	1977
HIGHEST DAILY MEAN	8630	May 30 1983
LOWEST DAILY MEAN	3.0	Oct 10 1958
ANNUAL SEVEN-DAY MINIMUM	5.0	Jan 16 1957
INSTANTANEOUS PEAK FLOW	9080	May 30 1983
INSTANTANEOUS PEAK STAGE	12.30	May 30 1983
ANNUAL RUNOFF (AC-FT)	485800	
10 PERCENT EXCEEDS	1270	
50 PERCENT EXCEEDS	500	
90 PERCENT EXCEEDS	110	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	98.1	103	102	102	117	136	156	316	315	125	93.3	90.4
MAX	145	158	154	154	158	157	221	1691	1591	389	154	148
(WY)	1994	1994	1990	1990	1990	1990	1993	1993	1993	1993	1989	1991
MIN	54.8	54.4	55.8	55.3	55.1	58.7	135	59.1	57.6	57.3	55.8	56.8
(WY)	1991	1991	1989	1989	1991	1991	1991	1994	1994	1994	1988	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1987 - 1994

ANNUAL TOTAL	151271	40331	
ANNUAL MEAN	414	110	146
HIGHEST ANNUAL MEAN			391
LOWEST ANNUAL MEAN			76.6
HIGHEST DAILY MEAN	3110	May 21	3110
LOWEST DAILY MEAN	54	Feb 6	25
ANNUAL SEVEN-DAY MINIMUM	55	Feb 1	53
INSTANTANEOUS PEAK FLOW			3270
INSTANTANEOUS PEAK STAGE			8.90
ANNUAL RUNOFF (AC-FT)	300000	80000	105900
10 PERCENT EXCEEDS	1430	153	157
50 PERCENT EXCEEDS	149	139	137
90 PERCENT EXCEEDS	59	57	57

## 11292901 MIDDLE FORK STANISLAUS RIVER BELOW BEARDSLEY DAM, CA--Continued

MIDDLE FORK STANISLAUS RIVER AND J.W. SOUTHERN POWERPLANT BELOW BEARDSLEY DAM,  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	269	501	497	502	145	365	75	504	509	512	500
2	531	146	500	496	502	146	285	60	522	244	561	482
3	530	145	502	496	498	147	278	62	419	243	559	257
4	531	146	495	499	374	146	420	234	169	241	561	259
5	532	159	494	498	285	146	482	242	302	512	547	421
6	531	180	493	497	281	146	479	250	432	586	359	529
7	504	471	496	497	283	147	470	61	520	577	361	485
8	439	495	497	497	224	147	305	60	531	533	534	458
9	525	502	496	494	277	146	153	61	539	246	542	454
10	526	494	480	494	277	147	153	249	479	248	562	262
11	526	477	494	494	255	147	154	244	303	508	561	262
12	525	495	493	500	279	147	153	242	303	567	505	418
13	528	495	494	503	279	146	154	224	471	474	259	459
14	519	503	493	501	282	214	154	57	533	562	258	459
15	534	509	419	502	234	249	153	57	536	514	506	459
16	534	498	494	502	146	250	152	239	535	337	551	420
17	534	487	494	500	146	250	153	229	531	343	547	260
18	534	487	494	499	145	249	153	241	343	498	546	260
19	531	462	496	485	147	250	154	244	292	564	545	419
20	517	485	496	504	146	257	154	243	455	504	351	462
21	509	484	496	506	148	255	153	59	532	567	258	461
22	510	488	494	504	147	365	154	59	533	490	482	465
23	508	499	468	503	147	472	153	239	532	250	545	270
24	507	502	499	504	148	472	152	245	467	252	543	60
25	509	503	494	505	147	371	152	240	239	492	542	58
26	509	503	494	503	147	247	152	241	237	569	487	165
27	510	500	495	501	149	247	153	242	463	560	259	355
28	510	502	512	501	147	368	153	162	549	561	259	346
29	510	501	496	500	---	469	153	184	533	512	465	359
30	511	502	501	500	---	470	152	285	577	343	526	360
31	525	---	496	500	---	470	---	328	---	344	523	---
TOTAL	16079	12889	15266	15482	6742	7828	6451	5658	13381	13750	14616	10884
MEAN	519	430	492	499	241	253	215	183	446	444	471	363
MAX	534	509	512	506	502	472	482	328	577	586	562	529
MIN	439	145	419	485	145	145	152	57	169	241	258	58
AC-FT	31890	25570	30280	30710	13370	15530	12800	11220	26540	27270	28990	21590

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

MEAN	289	227	332	222	268	394	472	729	875	587	527	428
MAX	519	538	500	499	939	1560	1448	2273	2174	942	583	611
(WY)	1994	1987	1986	1994	1986	1986	1986	1993	1993	1993	1993	1986
MIN	57.6	58.1	55.8	55.3	55.1	58.7	146	72.7	208	444	471	124
(WY)	1989	1989	1989	1989	1991	1991	1988	1990	1987	1994	1994	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1986 - 1994	
ANNUAL TOTAL	305591		139026			
ANNUAL MEAN	837		381		447	
HIGHEST ANNUAL MEAN					973	
LOWEST ANNUAL MEAN					221	
HIGHEST DAILY MEAN	3690		586		4890	
LOWEST DAILY MEAN	58		57		25	
ANNUAL SEVEN-DAY MINIMUM	217		115		27	
ANNUAL RUNOFF (AC-FT)	606100		275800		323500	
10 PERCENT EXCEEDS	2010		533		657	
50 PERCENT EXCEEDS	534		471		442	
90 PERCENT EXCEEDS	410		147		59	

## SAN JOAQUIN RIVER BASIN

## 11293200 MIDDLE FORK STANISLAUS RIVER BELOW SAND BAR DIVERSION DAM, CA

LOCATION.--Lat 38°10'59", long 120°09'28", in NW 1/4 SE 1/4 sec.24, T.4 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 100 ft downstream from Sand Bar Diversion Dam and 8.5 mi west of Strawberry.

DRAINAGE AREA.--332 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year (low-flow records only). Unpublished records for water years 1970, 1971, and 1976-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and sharp-crested weir since February 1986. Elevation of gage is 2,700 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 70 ft<sup>3</sup>/s. Flow regulated by Relief Reservoir and Donnell and Beardsley Lakes (stations 11291000, 11292600, and 11292800). Most of the water is diverted at Sand Bar Diversion Dam for use at Stanislaus Powerplant (station 11295505). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	40	28	29	28	28	28	55	---	---	56	53
2	56	30	28	29	28	28	28	55	---	52	---	53
3	56	29	28	29	28	28	27	55	---	52	54	53
4	58	29	27	28	28	27	28	54	52	52	55	54
5	61	29	27	28	28	28	29	54	53	---	54	54
6	59	30	27	28	28	28	29	54	---	---	53	53
7	58	32	27	28	28	28	28	53	---	---	53	54
8	58	---	28	28	29	28	28	53	---	---	56	53
9	56	38	29	28	29	28	28	53	---	53	56	53
10	56	30	30	28	28	27	28	54	---	54	56	53
11	56	32	30	28	29	27	28	54	54	---	56	53
12	55	34	29	28	28	27	28	54	53	---	56	53
13	56	33	28	28	28	27	28	53	---	---	53	53
14	55	33	29	27	28	28	27	53	---	---	53	53
15	58	32	30	27	28	27	27	54	---	---	56	53
16	58	29	29	27	30	27	27	55	---	55	56	53
17	57	27	28	27	29	27	27	53	---	54	56	53
18	57	27	28	27	29	27	27	53	52	---	56	53
19	58	27	28	28	29	27	27	53	53	---	56	53
20	56	28	28	28	29	27	27	53	---	---	53	53
21	54	28	28	28	29	27	27	52	---	---	53	53
22	54	28	27	28	29	29	27	52	---	---	57	53
23	53	30	27	29	29	29	28	53	---	53	56	53
24	53	31	28	30	29	27	27	53	---	52	56	53
25	53	32	28	29	28	27	27	52	52	---	---	53
26	53	31	28	29	28	28	27	52	52	---	---	53
27	53	29	28	28	28	27	28	53	---	---	53	53
28	53	28	29	28	28	28	28	52	---	56	53	53
29	53	28	29	28	---	28	28	53	---	---	55	53
30	53	29	29	28	---	26	39	53	---	53	55	53
31	53	---	29	28	---	29	---	53	---	53	55	---
TOTAL	1726	---	876	871	797	854	840	1653	---	---	---	1593
MEAN	55.7	---	28.3	28.1	28.5	27.5	28.0	53.3	---	---	---	53.1
MAX	61	---	30	30	30	29	39	55	---	---	---	54
MIN	53	---	27	27	28	26	27	52	---	---	---	53
AC-FT	3420	---	1740	1730	1580	1690	1670	3280	---	---	---	3160



LOCATION.--Lat 38°25'50", long 119°59'47", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Union Dam on North Fork Stanislaus River and 6.4 mi east of Big Meadows.

[illegible]

## SAN JOAQUIN RIVER BASIN

11293370 UTICA RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°26'26", long 120°00'08", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Utica Dam on North Fork Stanislaus River, 1.2 mi upstream from Silver Creek, 2.6 mi southeast of Bear Valley, and 6.2 mi west of Big Meadows.

DRAINAGE AREA.--15.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-86 available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage, observed approximately weekly except during winter months. Datum of gage is 6,776.75 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete and rock dam completed in 1910. Usable capacity, 2,334 acre-ft between gage heights 0.7 ft, invert of outlet, and 42.5 ft, crest of spillway. Figures given represent usable contents. Reservoir observed to be spilling on Apr. 5, 19, May 3, 17, June 2, 14, 28, and July 12. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Pacific Gas and Electric Co. in 1954)

0.7	0	30	356
10	19	35	858
20	65	40	1,763
25	127	43	2,456

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY INSTANTANEOUS VALUES[illegible]

LOCATION.--Lat 38°28'17", long 120°00'10", in NE 1/4 SW 1/4 sec.9, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of Lake Alpine Dam on Silver Creek and 7.2 mi northeast of Big Meadows.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-86 available in files of the U.S. Geological Survey.

REMARKS.--Reservoir is formed on natural lake by concrete and rock dam completed in 1906. Usable capacity, 4,117 acre-ft between gage heights 0.0 ft, invert of outlet, and 42.07 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

0	0	25	1,564
5	41	30	2,229
10	208	35	2,962
15	533	40	3,765
20	990	43	4,279

[illegible]

11293580 NORTH FORK STANISLAUS RIVER DIVERSION TUNNEL AT DIVERSION DAM, NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°26'17", long 120°00'59", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 50 ft upstream from diversion dam, at diversion tunnel entrance, and 5.6 mi southeast of Big Meadows.

PERIOD OF RECORD.--January 1989 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of tunnel invert is 6,684 ft above sea level (levels by Calaveras County Water District).

REMARKS.--Records good except for estimated daily discharges which are fair. Flow diverted from North Fork Stanislaus River Diversion Dam to New Spicer Meadow Reservoir (station 11293770) beginning Oct. 21, 1987. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 777 ft<sup>3</sup>/s, May 25, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	.19	.00	.00	.00	34	31	e94	60	.05	.01	.49
2	6.3	.12	.00	.00	.00	10	32	e104	48	.04	.02	.61
3	6.2	.10	.00	.00	.00	9.3	41	e125	42	.04	.02	.15
4	6.3	.06	.00	.00	.00	11	28	e139	32	.04	.02	.00
5	6.6	.04	.00	.00	.00	14	41	e153	26	.04	.02	.02
6	6.3	.01	.00	.00	.00	13	62	e147	23	.04	.02	.01
7	5.9	.01	.00	.00	.00	13	51	e134	18	.04	.02	.03
8	4.8	.61	.00	.00	.00	15	51	e143	14	6.0	.01	.03
9	4.8	2.8	.00	.00	.00	20	57	e184	11	12	.02	.02
10	4.8	2.9	.00	.00	.00	22	43	e251	8.4	12	.04	.02
11	5.4	2.8	.00	.00	.00	20	43	e280	7.0	12	.04	.02
12	4.8	3.5	.00	.01	.01	14	65	e271	7.3	12	.03	.00
13	4.8	3.0	.00	.00	.00	17	107	e212	8.4	12	.02	.00
14	4.8	2.7	.00	.00	.00	31	156	e194	1.5	12	.02	.02
15	10	2.7	.00	.00	.00	36	201	e160	.04	14	.02	.02
16	6.6	2.6	.00	.00	.00	29	e232	e98	.00	13	.02	.02
17	5.5	2.5	.00	.00	.00	19	e241	73	.00	12	.02	.03
18	5.3	2.4	.00	.00	.00	22	e245	96	.01	11	.02	.02
19	5.2	2.2	.00	.00	.00	19	e281	92	.00	11	.04	.02
20	5.1	2.0	.01	.00	.00	18	e262	94	.00	9.5	.02	.03
21	5.2	1.6	.00	.00	.00	31	e219	116	.00	9.1	.02	.02
22	5.0	1.4	.00	.00	.00	31	e165	128	.00	10	.01	.03
23	5.0	.60	.04	.00	.00	14	e133	119	.00	9.1	.01	.02
24	4.9	.00	.00	.00	.00	7.1	e105	129	.02	7.7	.02	.01
25	3.5	.00	.00	.00	.00	4.4	e98	123	.02	8.2	.44	.03
26	.46	.00	.00	.00	.00	6.2	e90	109	.01	7.7	.62	.02
27	.34	.00	.00	.00	.00	19	e94	113	.02	8.7	.68	.04
28	.30	.00	.00	.00	.01	30	e97	95	.03	9.0	.68	.04
29	.33	.00	.00	.00	---	31	e96	76	.04	6.6	.67	.04
30	.26	.00	.00	.00	---	37	e97	74	.04	.02	.58	.71
31	.25	---	.00	.00	---	34	---	65	---	.01	.50	---
TOTAL	141.34	36.84	0.05	0.01	0.02	631.0	3464	4191	306.83	224.92	4.68	2.52
MEAN	4.56	1.23	.002	.000	.001	20.4	115	135	10.2	7.26	.15	.084
MAX	10	3.5	.04	.01	.01	37	281	280	60	14	.68	.71
MIN	.25	.00	.00	.00	.00	4.4	28	65	.00	.01	.01	.00
AC-FT	280	73	.1	.02	.04	1250	6870	8310	609	446	9.3	5.0

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	MEAN	7.27	1.90	.97	6.12	2.48	43.0	162	197	69.2	7.73	4.23	8.53
MAX	14.2	6.51	4.22	27.5	10.8	130	301	561	262	25.5	14.3	18.5	
(WY)	1992	1992	1990	1990	1992	1989	1989	1993	1993	1993	1993	1990	
MIN	.33	.14	.002	.000	.001	7.28	39.3	33.0	.021	.10	.027	.013	
(WY)	1990	1991	1994	1994	1994	1991	1991	1992	1992	1990	1990	1989	

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1989 - 1994

ANNUAL TOTAL	35296.79	9003.21	
ANNUAL MEAN	96.7	24.7	39.8
HIGHEST ANNUAL MEAN			97.1
LOWEST ANNUAL MEAN			22.0
HIGHEST DAILY MEAN	777	May 25	777
LOWEST DAILY MEAN	.00	Feb 25	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Nov 24	.00
ANNUAL RUNOFF (AC-FT)	70010	17860	28820
10 PERCENT EXCEEDS	361	97	148
50 PERCENT EXCEEDS	12	.30	3.2
90 PERCENT EXCEEDS	.00	.00	.01

## 11293590 NORTH FORK STANISLAUS RIVER DIVERSION RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°26'18", long 120°01'00", unsurveyed, T.7 N., R.18 E., Alpine County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank of diversion dam on North Fork Stanislaus River, 5.6 mi southeast of Big Meadows.

PERIOD OF RECORD.--February 1990 to current year. Contents less than 12 acre-feet and end of month elevations for November 1990 to March 1991 published in WDR CA-91-3 are unreliable and should not be used.

REVISED RECORD.--WDR CA-92-3: 1991.

GAGE.--Water-stage recorder. Prior to Sept. 14, 1990, contents estimated on basis of periodic observations of nonrecording gage. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by gravity-type concrete dam completed in October 1987. Capacity, 120 acre-ft between elevations 6,672.0 ft, sill of emergency release gate, and 6,695.0 ft, crest of spillway. Reservoir is used for power development and fishery enhancement. Flow is diverted through tunnel to New Spicer Meadow Reservoir (station 11293770). Records, including extremes, represent total contents at 2400 hours. Elevations below 6,678.9 ft are not recorded. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 133 acre-ft, May 11, 1993, elevation, 6,695.7 ft; minimum observed, 5 acre-ft, Feb. 1, 28, Mar. 1, 1990, elevation, 6,676.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 93 acre-ft, Apr. 18, elevation, 6,692.5 ft; minimum, not recorded.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Calaveras County Water District in July 1989)

6,680	13	6,690	65	6,696	140
6,685	32	6,695	120		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	28	---	---	12	30	38	e58	40	12	22	28
2	30	28	---	---	12	30	39	51	38	12	22	28
3	30	28	---	11	12	31	37	53	37	12	21	28
4	30	28	---	13	12	31	37	56	35	12	21	28
5	30	28	---	15	12	31	41	55	34	11	22	28
6	30	28	---	12	13	31	41	56	33	---	22	28
7	30	28	---	11	---	32	40	56	32	24	22	28
8	30	29	---	---	---	33	41	56	31	30	25	28
9	29	29	12	---	11	34	40	71	31	31	26	27
10	29	29	12	---	12	34	39	79	31	31	26	27
11	30	29	12	---	---	32	41	83	30	31	26	27
12	29	29	12	---	---	31	47	70	30	31	25	27
13	30	29	---	---	---	35	54	64	29	31	24	26
14	29	29	---	---	12	39	60	60	28	32	24	26
15	30	29	---	---	12	38	76	52	26	32	24	26
16	30	29	---	---	12	33	82	45	22	31	25	26
17	30	29	---	12	12	35	80	46	18	31	25	26
18	30	29	---	12	12	34	93	49	15	31	25	26
19	30	29	---	13	12	32	78	49	13	31	26	26
20	30	28	---	13	12	36	69	51	13	31	26	26
21	30	28	---	12	12	38	60	54	13	31	26	26
22	29	28	---	11	---	32	54	52	12	31	26	26
23	29	25	---	12	12	30	52	53	12	31	27	26
24	30	15	---	12	14	29	45	54	12	31	28	26
25	28	12	---	12	18	29	48	52	12	30	28	26
26	28	---	---	12	22	31	47	50	12	30	28	26
27	28	---	---	11	23	37	51	49	12	30	28	26
28	28	---	---	---	26	39	e58	46	12	30	28	27
29	28	12	---	---	---	38	e58	44	12	27	28	26
30	28	12	---	---	---	40	e58	44	12	24	28	29
31	28	---	11	---	---	38	---	42	---	23	28	---
MAX	30	---	---	---	---	40	93	83	40	---	28	29
MIN	28	---	---	---	---	29	37	42	12	---	21	26
a	6684.0	6679.2	6679.0	---	6683.5	6685.9	e6689.0	6686.6	6679.3	6682.6	6684.0	6684.3
b	-2	-16	-1	---	---	+12	+20	-16	-30	+11	+5	+1

CAL YR 1993 b -17

WTR YR 1994 b -1

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

## 11293600 NORTH FORK STANISLAUS RIVER BELOW DIVERSION DAM, NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°26'04", long 120°01'04", unsurveyed, T.7 N., R.18 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.3 mi downstream from diversion dam and 5.6 mi northeast of Big Meadows.

DRAINAGE AREA.--28.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year.

REVISED RECORDS.--WDR CA-89-3: 1988 (M).

GAGE.--Water-stage recorder, crest-stage gage, and artificial control. Elevation of gage is 6,640 ft above sea level, from topographic map.

REMARKS.--Records good. Low and medium flow regulated by Union and Utica Reservoirs and Lake Alpine (stations 11293350, 11293370, and 11293460). See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 573 ft<sup>3</sup>/s, May 12, 1993, gage height 5.19 ft; minimum daily, 2.3 ft<sup>3</sup>/s, Oct. 18-20, 22, 23, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25 ft<sup>3</sup>/s, Apr. 19, May 12, gage height, 3.11 ft; minimum daily, 5.5 ft<sup>3</sup>/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	8.1	7.0	8.1	17	17	20	18	6.2	15	16
2	16	16	7.8	6.9	7.7	17	18	20	18	6.1	14	16
3	16	16	7.5	7.1	7.4	17	18	20	17	6.0	14	16
4	17	16	7.7	8.4	7.3	18	17	20	17	5.9	14	16
5	16	16	7.6	11	7.1	18	18	21	17	5.8	13	16
6	17	16	7.4	10	7.0	18	18	21	17	5.5	13	16
7	17	16	7.3	8.7	7.2	17	18	21	16	7.2	13	16
8	17	16	7.3	7.6	7.6	17	18	21	16	14	14	16
9	17	16	7.9	7.1	8.1	17	18	21	16	14	15	16
10	17	16	8.4	6.7	8.3	17	18	23	16	14	15	16
11	17	16	8.7	6.5	e8.3	17	18	24	16	14	15	16
12	16	16	8.6	6.5	e8.1	17	19	24	16	14	15	15
13	16	16	8.3	6.8	e8.6	17	19	23	16	13	15	16
14	16	16	7.7	7.2	e8.3	18	20	23	15	15	14	16
15	18	16	7.2	7.3	e8.8	18	21	21	15	15	14	16
16	16	16	7.0	7.4	9.4	18	23	20	13	15	14	15
17	16	16	7.1	8.0	9.3	17	23	19	11	15	14	16
18	16	16	7.3	9.0	9.7	17	24	20	9.8	16	14	15
19	16	16	7.5	9.5	10	17	24	20	8.5	16	15	16
20	16	16	7.6	9.5	9.5	17	22	20	7.8	17	15	16
21	16	16	7.4	9.2	9.6	18	22	20	8.0	18	15	15
22	16	16	6.8	8.3	9.5	17	21	20	7.5	18	15	16
23	16	16	6.6	8.1	9.2	17	21	20	7.1	18	15	16
24	16	13	6.5	8.6	9.8	16	20	20	7.2	18	15	16
25	16	9.2	6.8	8.8	12	16	20	20	7.0	17	16	16
26	16	7.8	6.9	8.5	14	16	20	20	6.8	17	16	16
27	16	7.4	7.2	8.4	15	17	20	19	6.7	18	16	15
28	16	7.4	7.3	8.1	16	18	20	19	6.7	18	16	16
29	16	8.0	7.3	7.8	---	18	20	19	6.5	18	16	16
30	16	8.5	7.3	8.0	---	18	20	19	6.4	16	16	16
31	16	---	7.3	8.2	---	17	---	18	---	15	16	---
TOTAL	505	429.3	231.4	250.2	260.9	534	595	636	366.0	425.7	457	475
MEAN	16.3	14.3	7.46	8.07	9.32	17.2	19.8	20.5	12.2	13.7	14.7	15.8
MAX	18	16	8.7	11	16	18	24	24	18	18	16	16
MIN	16	7.4	6.5	6.5	7.0	16	17	18	6.4	5.5	13	15
AC-FT	1000	852	459	496	517	1060	1180	1260	726	844	906	942

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1994, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	15.4	17.3	11.1	13.4	15.0	22.1	34.9	31.2	17.0	15.6	14.6	16.7
MAX	20.2	42.2	14.8	18.0	24.8	42.5	99.6	69.5	25.3	28.1	22.8	26.5
(WY)	1989	1990	1992	1990	1988	1988	1988	1988	1993	1989	1988	1988
MIN	10.1	7.01	3.19	3.80	4.85	16.2	18.8	18.0	9.68	5.45	5.32	5.48
(WY)	1993	1991	1991	1991	1991	1991	1991	1992	1992	1988	1989	1989

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1988 - 1994
ANNUAL TOTAL	6994.7	5165.5	
ANNUAL MEAN	19.2	14.2	18.7
HIGHEST ANNUAL MEAN			31.0
LOWEST ANNUAL MEAN			13.0
HIGHEST DAILY MEAN	139	May 19	139
LOWEST DAILY MEAN	6.5	Dec 24	2.3
ANNUAL SEVEN-DAY MINIMUM	6.9	Dec 22	2.3
INSTANTANEOUS PEAK FLOW			573
INSTANTANEOUS PEAK STAGE			5.19
ANNUAL RUNOFF (AC-FT)	13870	10250	13530
10 PERCENT EXCEEDS	25	20	26
50 PERCENT EXCEEDS	17	16	17
90 PERCENT EXCEEDS	9.0	7.3	6.2

## 11293650 NORTH FORK STANISLAUS RIVER AT CAMP WOLFEBORO, NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°24'38", long 120°04'38", unsurveyed, T.7 N., R.17 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 1.6 mi downstream from Bloods Creek and 2.1 mi east of Big Meadows.

DRAINAGE AREA.--47.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1993 to September 1994.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,790 ft above sea level, from topographic map.

REMARKS.--Records good. Low and medium flow regulated by Union and Utica Reservoirs and Lake Alpine (stations 11293350, 11293370, and 11293460). See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 222 ft<sup>3</sup>/s, Apr. 18, 1994, gage height, 3.43 ft; minimum daily, 6.4 ft<sup>3</sup>/s, July 7, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 222 ft<sup>3</sup>/s, Apr. 18, gage height, 3.43 ft; minimum daily, 6.4 ft<sup>3</sup>/s, July 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	15	10	8.7	13	38	113	112	36	7.9	14	16
2	17	15	9.2	8.6	12	44	115	114	34	7.4	14	16
3	17	16	8.7	9.2	12	45	139	115	31	7.2	14	16
4	17	16	8.8	15	11	47	109	118	30	7.1	14	15
5	17	16	8.5	19	11	55	96	118	28	6.9	14	15
6	17	16	8.3	14	11	52	91	119	27	6.7	14	16
7	17	16	8.2	12	11	53	78	118	26	6.4	14	16
8	17	16	8.3	10	13	58	80	116	25	14	15	16
9	17	16	10	9.0	13	63	77	120	24	15	16	16
10	17	17	11	8.1	14	68	71	121	23	15	16	16
11	18	17	11	7.9	14	69	75	123	22	15	15	16
12	18	18	11	e7.4	14	60	91	114	22	15	15	16
13	24	16	11	e9.0	15	67	e99	100	22	15	17	16
14	24	16	9.9	10	15	91	e127	91	21	15	15	16
15	28	16	8.8	10	16	101	149	79	20	16	14	16
16	20	16	8.3	11	16	95	160	68	18	16	15	16
17	18	16	8.1	12	18	78	157	63	17	16	15	16
18	18	16	8.2	13	18	84	163	72	14	16	15	15
19	18	16	8.2	14	18	82	169	79	13	16	15	16
20	17	16	e8.2	15	19	80	156	77	11	17	15	16
21	17	16	e8.0	14	18	93	140	72	12	17	15	16
22	17	17	e7.6	13	16	84	124	65	10	18	15	16
23	17	16	e7.2	13	16	61	108	60	10	17	15	16
24	16	14	e7.2	14	17	53	95	58	9.9	17	15	16
25	16	11	e7.8	14	22	49	88	56	9.6	17	15	16
26	16	8.8	8.7	13	26	49	93	54	9.3	17	15	16
27	16	8.2	9.6	13	28	67	103	51	9.1	17	15	16
28	16	8.3	9.8	13	31	89	109	46	8.8	17	16	17
29	16	12	9.5	13	---	95	114	43	8.9	17	16	18
30	16	13	9.3	13	---	109	114	40	8.6	16	16	17
31	16	---	9.1	13	---	112	---	39	---	15	16	---
TOTAL	552	446.3	277.5	368.9	458	2191	3403	2621	560.2	435.6	465	481
MEAN	17.8	14.9	8.95	11.9	16.4	70.7	113	84.5	18.7	14.1	15.0	16.0
MAX	28	18	11	19	31	112	169	123	36	18	17	18
MIN	16	8.2	7.2	7.4	11	38	71	39	8.6	6.4	14	15
AC-FT	1090	885	550	732	908	4350	6750	5200	1110	864	922	954

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1994, BY WATER YEAR (WY)

MEAN	17.8	14.9	8.95	11.9	16.4	70.7	113	84.5	18.7	14.1	15.0	16.0
MAX	17.8	14.9	8.95	11.9	16.4	70.7	113	84.5	18.7	14.1	15.0	16.0
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
MIN	17.8	14.9	8.95	11.9	16.4	70.7	113	84.5	18.7	14.1	15.0	16.0
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

## SUMMARY STATISTICS

## FOR 1994 WATER YEAR

ANNUAL TOTAL	12259.5
ANNUAL MEAN	33.6
HIGHEST DAILY MEAN	169
LOWEST DAILY MEAN	6.4
ANNUAL SEVEN-DAY MINIMUM	7.1
INSTANTANEOUS PEAK FLOW	222
INSTANTANEOUS PEAK STAGE	3.43
ANNUAL RUNOFF (AC-FT)	24320
10 PERCENT EXCEEDS	95
50 PERCENT EXCEEDS	16
90 PERCENT EXCEEDS	9.0

11293700 HOBART CREEK AT NORTH FORK STANISLAUS RIVER DIVERSION TUNNEL OUTLET, NEAR NEW SPICER MEADOW DAM, CA

LOCATION.--Lat 38°24'42", long 119°59'37", unsurveyed, T.7 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 250 ft upstream from North Fork Stanislaus River Diversion Channel, 1.3 mi northwest of New Spicer Meadow Dam, and 7.5 mi east of Big Meadows.

DRAINAGE AREA.--1.13 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1988 to September 1994 (discontinued).

GAGE.--Water-stage recorder and culvert control. Elevation of gage is 6,680 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No storage or diversion upstream from station. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48 ft<sup>3</sup>/s, May 11, 1993, gage height, 1.57 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 18	1830	*9.3	*0.92				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e.00	e.00	e.00	e.00	e.00	3.7	5.0	.49	e.01	.00	.00
2	.00	e.00	e.00	e.00	e.00	e.00	4.0	5.0	.43	e.01	.00	.00
3	.00	e.00	e.00	e.00	e.00	e.00	4.9	4.4	.37	e.01	.00	.00
4	.00	e.00	e.00	e.00	e.00	e.00	4.1	4.1	.34	e.01	.00	.00
5	.00	e.00	e.00	e.00	e.00	e.00	3.7	3.7	.30	e.01	.00	.00
6	.00	e.00	e.00	e.00	e.00	e.00	3.5	3.8	.24	e.01	.00	.00
7	.00	e.00	e.00	e.00	e.00	.01	3.0	4.3	.16	e.01	.00	.00
8	.00	e.00	e.00	e.00	e.00	.65	3.0	4.1	.07	e.01	.00	.00
9	.00	e.00	e.00	e.00	e.00	.81	2.6	3.5	e.06	e.01	.00	.00
10	.00	e.00	e.00	e.00	e.00	.31	2.4	3.1	e.06	e.01	.00	.00
11	.00	e.00	e.00	.00	e.00	.32	2.6	2.7	e.05	.00	.00	.00
12	.00	e.00	e.00	.00	e.00	.31	3.5	2.3	e.05	.00	.00	.00
13	.00	e.00	e.00	.00	e.00	.36	4.4	1.9	e.04	.00	.00	.00
14	.00	e.00	e.00	.00	e.00	.41	5.2	1.6	e.04	.00	.00	.00
15	.00	e.00	e.00	.00	e.00	.47	6.2	1.4	e.04	.00	.00	.00
16	.00	e.00	e.00	.00	e.00	.48	6.9	1.3	e.03	.00	.00	.00
17	.00	e.00	e.00	.00	e.00	.54	6.7	1.2	e.03	.00	.00	.00
18	.00	e.00	e.00	.00	e.00	2.6	7.0	1.6	e.03	.00	.00	.00
19	.00	e.00	e.00	.00	e.00	7.3	6.9	2.1	e.03	.00	.00	.00
20	.00	e.00	e.00	e.00	e.00	5.1	6.1	2.4	e.02	.00	.00	.00
21	.00	e.00	e.00	e.00	e.00	2.2	5.2	2.7	e.02	.00	.00	.00
22	e.00	e.00	e.00	e.00	e.00	2.4	4.2	2.5	e.02	.00	.00	.00
23	e.00	e.00	e.00	e.00	e.00	2.0	3.5	1.9	e.02	.00	.00	.00
24	e.00	e.00	e.00	e.00	e.00	1.7	3.0	1.4	e.02	.00	.00	.00
25	e.00	e.00	e.00	e.00	e.00	1.8	2.9	1.3	e.02	.00	.00	.00
26	e.00	e.00	e.00	e.00	e.00	1.4	2.8	1.1	e.02	.00	.00	.00
27	e.00	e.00	e.00	e.00	e.00	1.8	3.0	.91	e.02	.00	.00	.00
28	e.00	e.00	e.00	e.00	e.00	2.5	3.4	.74	e.02	.00	.00	.00
29	e.00	e.00	e.00	e.00	---	2.9	3.8	.66	e.02	.00	.00	.00
30	e.00	e.00	e.00	e.00	---	3.5	4.5	.59	e.01	.00	.00	.00
31	e.00	---	e.00	e.00	---	3.7	---	.58	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	45.57	126.7	73.88	3.07	0.10	0.00	0.00
MEAN	.000	.000	.000	.000	.000	1.47	4.22	2.38	.10	.003	.000	.000
MAX	.00	.00	.00	.00	.00	7.3	7.0	5.0	.49	.01	.00	.00
MIN	.00	.00	.00	.00	.00	.00	2.4	.58	.01	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	90	251	147	6.1	.2	.00	.00

e Estimated.



11293700 HOBART CREEK AT NORTH FORK STANISLAUS RIVER DIVERSION TUNNEL OUTLET, NEAR NEW SPICER MEADOW DAM, CA--  
Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.015	.052	.016	.041	.22	3.85	6.85	4.24	.59	.033	.002	.001
MAX	.073	.26	.079	.20	.74	8.06	11.3	13.3	2.26	.051	.012	.009
(WY)	1990	1990	1990	1993	1993	1989	1989	1993	1993	1991	1990	1989
MIN	.000	.000	.000	.000	.000	.65	3.62	.30	.027	.003	.000	.000
(WY)	1991	1991	1991	1989	1994	1991	1991	1992	1992	1994	1989	1990

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1989 - 1994			
ANNUAL TOTAL	980.53				249.32							
ANNUAL MEAN	2.69				.68				1.23			
HIGHEST ANNUAL MEAN									2.69			
LOWEST ANNUAL MEAN									.65			
HIGHEST DAILY MEAN	25				May 11				26			
LOWEST DAILY MEAN	.00				Jan 1				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				Jul 21				.00			
INSTANTANEOUS PEAK FLOW					9.3				Apr 18			
INSTANTANEOUS PEAK STAGE					.92				Apr 18			
ANNUAL RUNOFF (AC-FT)	1940				495				893			
10 PERCENT EXCEEDS	10				3.0				5.1			
50 PERCENT EXCEEDS	.01				.00				.01			
90 PERCENT EXCEEDS	.00				.00				.00			

## 11293770 NEW SPICER MEADOW RESERVOIR NEAR BIG MEADOWS, CA

LOCATION.--Lat 38°23'35", long 119°59'53", in NW 1/4 NE 1/4 sec.9, T.7 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, at outlet structure on upstream face of New Spicer Meadow Dam on Highland Creek and 7.7 mi east-southeast of Big Meadows.

DRAINAGE AREA.--45.4 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by rockfill dam with a reinforced concrete face completed in December 1988. Dam is 600 ft downstream from original concrete gravity-type dam which was completed in 1929. Usable capacity, 184,298 acre-ft between elevations 6,420.0 ft, minimum operating head, and 6,614.0 ft, crest of spillway. Released water is used for hydroelectric power and fishery maintenance. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 185,564 acre-ft, July 5, 1993, elevation, 6,612.3 ft; minimum, 30,198 acre-ft, Mar. 5, 1993, elevation, 6,491.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 139,712 acre-ft, Oct. 1, elevation, 6,588.2 ft; minimum, 74,503 acre-ft, Feb. 28 elevation, 6,543.8 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Calaveras County Water District in July 1989)

6,420	4,702	6,500	35,214	6,580	125,341
6,440	9,299	6,520	50,197	6,600	160,318
6,460	15,511	6,540	69,652	6,614	189,000
6,480	23,781	6,560	94,859		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139712	120670	106352	86994	78873	74540	80959	100272	122931	119129	109827	98677
2	139393	120232	105680	86536	78508	74588	81479	100914	123263	118783	109568	98291
3	138661	119417	105230	85979	78326	74662	82038	101665	123532	118535	109188	97856
4	137563	118907	104979	85530	78111	74624	82453	102544	123646	118209	108921	97721
5	136301	118399	104529	84915	77877	74792	82747	103471	123728	117971	108625	97278
6	135091	117838	103682	84371	77670	74845	83155	104226	123770	117717	108196	97006
7	133915	117308	102838	84126	77730	75024	83451	104990	123710	117430	107860	96595
8	133070	116816	101626	83908	77686	75166	83800	105824	123927	117147	107497	96246
9	132687	116275	100237	83444	77451	75372	84119	106863	123934	116871	107217	95998
10	132264	115913	98711	82782	77002	75602	84399	108115	123981	116580	106893	95548
11	131066	115710	97130	82440	76696	75644	84681	109613	123815	116249	106563	95122
12	130352	115486	95390	82241	76533	75833	85102	111063	123692	116004	106283	94738
13	129529	115323	94231	82110	76314	76029	85600	112181	123554	115693	105881	94479
14	128682	115035	94072	81892	76061	76292	86376	113249	123436	115365	105549	94252
15	128509	114654	93734	81737	75972	76633	87245	113976	123150	115067	105059	93976
16	128137	113979	93406	81519	75807	76961	88298	114473	123062	114815	104636	93785
17	127903	113464	92730	81380	75897	77181	89412	114945	122789	114474	104211	93490
18	127454	112925	92168	81269	75953	77429	90549	115503	122552	114196	103734	93173
19	126823	112266	91179	81037	75792	77660	91905	116069	122408	113843	103297	92914
20	126299	111864	90217	80934	75804	77871	93075	116575	122351	113606	102828	92684
21	125718	111516	89891	80732	75663	78263	94084	117203	122110	113308	102364	92392
22	125260	110905	89666	80641	75469	78451	94888	117847	121814	112967	101995	92017
23	125046	110318	89302	80567	75274	78546	95656	118512	121558	112709	101624	91768
24	124790	109957	89119	80524	75088	78729	96216	119192	121287	112418	101408	91523
25	124354	109609	88934	80361	74918	78810	96913	119382	120959	112033	101051	91147
26	123784	109284	88666	80223	74688	78932	97624	119818	120789	111738	100729	90680
27	123076	108869	88230	80060	74573	79144	97962	120566	120688	111399	100302	90272
28	122358	108609	88043	80048	74503	79442	98589	121007	120251	111240	100094	90016
29	122023	107912	87808	79768	---	79749	99056	121683	120007	110863	99640	89915
30	121671	107170	87651	79614	---	80112	99597	122155	119525	110602	99383	89857
31	121224	---	87342	79337	---	80652	---	122618	---	110193	98952	---
MAX	139712	120670	106352	86994	78873	80652	99597	122618	123981	119129	109827	98677
MIN	121224	107170	87342	79337	74503	74540	80959	100272	119525	110193	98952	89857
a	6577.3	6568.1	6554.0	6547.7	6543.8	6548.7	6563.1	6578.2	6576.2	6570.1	6562.7	6556.0
b	-19044	-14054	-19828	-8005	-4834	+6149	+18945	+23021	-3093	-9332	-11241	-9095

CAL YR 1993 b +48602

WTR YR 1994 b -50411

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11294000 HIGHLAND CREEK BELOW NEW SPICER MEADOW RESERVOIR, CA

LOCATION.--Lat 38°23'35", long 119°59'53", in NW 1/4 NE 1/4 sec.9, T.7 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank in New Spicer Meadow Powerplant at downstream side of New Spicer Meadow Dam, 5.4 mi upstream from mouth, and 6.5 mi east-southeast of Big Meadows.

DRAINAGE AREA.--45.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1930: 1953. WDR CA-89-3: Drainage area, 1987(M), 1988(M).

GAGE.--Acoustic-flow meter and water-stage recorder on New Spicer Meadow Reservoir (station 11293770). Elevation of gage is 6,362 ft above sea level, from topographic map. December 1986 to September 1990 at site 1,400 ft downstream at different datum. October 1952 to November 1986, at site 900 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Low and medium flows regulated by New Spicer Meadow Reservoir since 1988 and, prior to 1988, by Spicer Meadows Reservoir, capacity 4,060 acre-feet. Flow has been diverted to New Spicer Meadow Reservoir from North Fork Stanislaus River since October 21, 1987. Penstock diverts from New Spicer Meadow Reservoir to New Spicer Meadow Powerplant (station 11293760). At times flow may bypass New Spicer Meadow Powerplant. Discharges, including extremes, represent flow through or past powerplant, and flow over spillway of reservoir. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft<sup>3</sup>/s, Jan. 31, 1963, gage height, 11.88 ft, site and datum then in use, from rating curve extended above 1,200 ft<sup>3</sup>/s; no flow some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1950, reached a stage of 11.50 ft, site and datum then in use, from Pacific Gas & Electric Co. recorder chart, discharge, 8,800 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 997 ft<sup>3</sup>/s, Dec. 19; minimum daily, 19 ft<sup>3</sup>/s, several days in March and April.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	280	263	408	250	240	31	20	21	68	179	157	153
2	190	322	326	262	254	37	20	20	77	150	151	152
3	331	290	222	273	132	59	19	20	85	150	151	152
4	527	274	150	316	119	58	20	20	94	150	151	152
5	588	274	226	348	119	50	20	20	96	150	151	152
6	605	274	400	323	119	32	20	20	107	154	151	153
7	590	273	443	148	99	24	20	20	109	154	151	152
8	419	273	617	126	104	19	20	20	109	154	151	152
9	172	273	689	250	165	19	20	20	109	154	151	152
10	223	164	753	350	216	19	20	20	116	153	152	152
11	506	143	797	207	162	19	20	21	128	151	152	152
12	450	118	850	100	125	19	20	21	132	152	164	151
13	398	103	641	99	124	21	21	22	132	152	177	151
14	398	101	128	99	124	24	22	22	132	152	177	152
15	245	248	179	99	99	19	22	22	131	154	186	152
16	150	314	249	99	79	20	22	23	131	151	199	152
17	150	296	330	101	59	20	22	23	131	151	204	152
18	229	296	358	101	83	20	22	23	137	150	205	152
19	290	295	564	101	97	20	22	23	137	150	207	152
20	274	225	525	91	68	20	19	23	139	150	207	152
21	260	196	179	91	106	20	21	23	143	150	192	152
22	189	292	166	90	127	20	21	23	145	150	160	152
23	153	301	165	90	126	25	21	21	145	150	150	152
24	150	197	124	91	126	24	21	72	145	151	148	152
25	230	170	100	91	122	20	21	294	145	151	149	219
26	312	170	191	90	84	20	21	116	145	152	148	254
27	340	170	252	80	84	20	21	59	145	152	150	232
28	358	219	116	82	55	20	21	20	144	152	152	144
29	199	405	98	90	---	20	21	20	188	152	152	26
30	216	388	98	125	---	20	22	20	252	152	152	40
31	216	---	166	127	---	20	---	54	---	151	153	---
TOTAL	9638	7327	10510	4790	3417	779	622	1146	3897	4724	5101	4563
MEAN	311	244	339	155	122	25.1	20.7	37.0	130	152	165	152
MAX	605	405	850	350	254	59	22	294	252	179	207	254
MIN	150	101	98	80	55	19	19	20	68	150	148	26
AC-FT	19120	14530	20850	9500	6780	1550	1230	2270	7730	9370	10120	9050
a	19120	14530	20850	9500	6780	1550	1230	2270	7730	9370	10120	9050

a Diversion, in acre-feet, through New Spicer Meadow Powerplant, provided by Calaveras County Water District.

## 11294000 HIGHLAND CREEK BELOW NEW SPICER MEADOW RESERVOIR, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.5	38.4	60.5	57.8	70.9	98.3	224	418	287	92.2	47.4	39.5
MAX	311	244	399	317	301	369	455	1047	1097	471	305	286
(WY)	1994	1994	1965	1980	1963	1986	1962	1969	1983	1983	1990	1993
MIN	.000	.000	.50	.50	2.69	.83	17.9	21.9	37.7	5.23	1.63	1.34
(WY)	1965	1965	1961	1961	1960	1977	1992	1991	1987	1961	1961	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1953 - 1994			
ANNUAL TOTAL	69710				56514							
ANNUAL MEAN	191				155				123			
HIGHEST ANNUAL MEAN									256			
LOWEST ANNUAL MEAN									25.3			
HIGHEST DAILY MEAN	850				850				5040			
LOWEST DAILY MEAN	18				19				.00			
ANNUAL SEVEN-DAY MINIMUM	19				20				.00			
INSTANTANEOUS PEAK FLOW					997				9860			
INSTANTANEOUS PEAK STAGE									11.88			
ANNUAL RUNOFF (AC-FT)	138300				112100				88860			
10 PERCENT EXCEEDS	413				298				351			
50 PERCENT EXCEEDS	166				150				43			
90 PERCENT EXCEEDS	20				20				2.6			

## 11294400 NORTH FORK STANISLAUS RIVER AT SOURGRASS CAMPGROUND, NEAR DORRINGTON, CA

LOCATION.--Lat 38°19'14", long 120°13'05", in NE 1/4 NW 1/4 sec.04, T.5 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 1.1 mi downstream from Little Rattlesnake Creek, 1.5 mi upstream from Mill Creek, and 3.3 mi east of Dorrington.

DRAINAGE AREA.--149 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,930 ft above sea level, from topographic map.

REMARKS.--Records fair. Low and medium flows regulated by Union and Utica Reservoirs, Lake Alpine, North Fork Stanislaus River Diversion Reservoir, and New Spicer Meadow Reservoir (stations 11293350, 11293370, 11293460, 11293590, and 11293770), total combined usable capacity, 194,001 acre-ft. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,590 ft<sup>3</sup>/s, Mar. 4, 1991, gage height, 12.81 ft; minimum daily, 11 ft<sup>3</sup>/s, Oct. 24, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft<sup>3</sup>/s, Dec. 20, gage height, 11.03 ft; minimum daily, 63 ft<sup>3</sup>/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369	249	434	258	221	161	316	381	163	241	171	172
2	217	352	375	277	282	169	331	384	167	165	176	172
3	266	330	301	302	212	195	448	386	166	166	168	173
4	553	302	169	354	145	201	383	396	170	166	169	172
5	619	302	170	e400	145	261	304	400	171	166	170	172
6	646	301	407	e380	146	225	290	392	173	166	169	172
7	625	300	421	e280	159	201	248	386	176	168	169	172
8	567	300	621	e160	122	194	258	389	172	171	168	172
9	212	301	706	e170	163	207	257	392	169	175	169	172
10	195	237	797	e350	259	219	231	404	166	176	170	172
11	504	169	843	e340	234	224	225	423	175	173	171	172
12	522	166	885	e200	157	193	258	407	180	172	172	172
13	439	129	809	e130	158	190	311	361	178	172	193	172
14	442	126	247	e122	158	267	368	334	176	173	194	172
15	399	192	158	123	158	306	433	293	173	175	196	172
16	186	337	249	122	115	308	495	251	172	174	211	172
17	177	323	317	124	146	249	498	226	170	172	222	172
18	204	322	383	128	100	250	511	243	170	172	222	172
19	318	320	456	129	148	262	543	280	169	172	228	172
20	310	282	718	125	126	235	512	278	168	172	226	172
21	286	216	222	117	113	268	460	258	167	172	224	172
22	252	284	182	116	163	272	408	229	170	172	189	172
23	176	328	182	130	164	196	363	208	168	172	171	173
24	172	273	171	129	169	180	312	197	168	172	169	172
25	202	177	121	126	188	161	295	432	168	172	169	203
26	326	182	153	124	173	151	301	379	166	172	169	281
27	359	182	285	114	208	170	337	251	166	173	169	281
28	393	184	205	104	192	235	337	169	165	172	172	202
29	272	418	121	110	---	274	363	153	166	172	172	124
30	230	424	120	137	---	290	375	142	273	172	172	63
31	234	---	139	154	---	324	---	147	---	172	172	---
TOTAL	10672	8008	11367	5835	4724	7038	10771	9571	5201	5380	5682	5284
MEAN	344	267	367	188	169	227	359	309	173	174	183	176
MAX	646	424	885	400	282	324	543	432	273	241	228	281
MIN	172	126	120	104	100	151	225	142	163	165	168	63
AC-FT	21170	15880	22550	11570	9370	13960	21360	18980	10320	10670	11270	10480

e Estimated.

## SAN JOAQUIN RIVER BASIN

11294400 NORTH FORK STANISLAUS RIVER AT SOURGRASS CAMPGROUND, NEAR DORRINGTON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	225	167	205	207	221	362	507	554	316	245	225	244
MAX	344	267	367	314	408	741	817	1146	647	404	278	324
(WY)	1994	1994	1994	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	131	115	120	118	126	227	359	160	165	172	171	168
(WY)	1993	1993	1992	1992	1991	1994	1994	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1991 - 1994		
ANNUAL TOTAL	184483			89533					
ANNUAL MEAN	505			245			296		
HIGHEST ANNUAL MEAN							455		
LOWEST ANNUAL MEAN							188		
HIGHEST DAILY MEAN	1980			Mar 17			1980		
LOWEST DAILY MEAN	120			Dec 30			11		
ANNUAL SEVEN-DAY MINIMUM	163			Dec 25			15		
INSTANTANEOUS PEAK FLOW				1040			2590		
INSTANTANEOUS PEAK STAGE				11.03			12.81		
ANNUAL RUNOFF (AC-FT)	365900			177600			214300		
10 PERCENT EXCEEDS	1020			400			600		
50 PERCENT EXCEEDS	381			190			205		
90 PERCENT EXCEEDS	187			147			120		

## 11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA

LOCATION.--Lat 38°14'38", long 120°17'24", in SW 1/4 NE 1/4 sec.35, T.5 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 1.1 mi upstream from McKay's Point Dam, 3.3 mi upstream from Beaver Creek, and 5.1 mi northeast of Avery.

DRAINAGE AREA.--163 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1914 to September 1925, October 1928 to current year. Water-year estimates for 1923-25 and 1929 published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M). WSP 1515: 1915(M), 1932(M), 1936(M), 1938, 1940(M).

GAGE.--Water-stage recorder. Datum of gage is 3,388.3 ft above sea level (river-profile survey). Prior to September 1922, nonrecording gage at same site at datum 0.05 ft lower.

REMARKS.--No estimated daily discharges. Records fair. Low and medium flows regulated by Union and Utica Reservoirs, Lake Alpine, North Fork Stanislaus River Diversion Reservoir beginning 1990, and New Spicer Meadow Reservoir beginning 1990 (stations 11293350, 11293370, 11293460, 11293590, and 11293770), total combined usable capacity, 194,001 acre-ft. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft<sup>3</sup>/s, Jan. 31, 1963, gage height, 15.00 ft, from floodmarks, from rating curve extended above 14,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 ft<sup>3</sup>/s, Dec. 6, 7, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft<sup>3</sup>/s, Dec. 20, gage height, 4.84 ft; minimum daily, 58 ft<sup>3</sup>/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	362	236	425	251	206	174	295	360	154	234	155	157
2	223	338	377	270	280	178	306	357	158	157	161	157
3	231	326	313	292	229	203	402	361	157	157	152	156
4	518	296	181	330	149	211	376	370	160	156	153	156
5	598	295	173	405	148	258	293	376	162	155	153	156
6	636	296	378	368	150	243	277	372	162	156	152	156
7	614	296	405	261	177	214	244	367	167	158	152	156
8	581	295	601	158	135	204	250	372	163	161	152	156
9	233	295	713	172	161	216	254	364	159	167	153	156
10	200	254	808	358	257	223	233	379	155	165	154	156
11	443	177	855	329	250	231	224	394	163	163	155	156
12	507	181	899	140	164	204	245	388	171	162	155	156
13	418	133	841	124	164	191	283	339	168	161	178	156
14	421	129	286	125	162	252	334	311	166	161	181	156
15	406	169	153	124	162	292	382	277	164	164	180	156
16	200	327	248	124	122	297	458	241	161	162	194	155
17	182	323	302	125	160	249	469	221	159	161	204	155
18	190	317	369	128	115	242	463	235	158	160	204	155
19	309	316	417	129	148	256	506	268	159	159	208	156
20	305	294	749	127	141	233	485	269	156	159	208	156
21	283	227	249	119	114	254	434	252	157	160	208	155
22	264	273	191	115	166	269	383	226	161	160	180	155
23	183	324	190	136	171	205	343	207	159	160	155	156
24	178	292	185	134	176	187	299	196	158	159	153	157
25	187	185	125	132	193	165	288	378	157	160	153	170
26	310	193	136	128	186	153	284	386	156	159	153	248
27	343	193	282	122	214	167	321	237	155	159	153	251
28	374	193	225	109	206	223	322	165	153	159	155	193
29	284	383	125	114	---	262	342	144	152	159	156	132
30	230	424	124	135	---	267	352	134	240	158	156	58
31	238	---	127	158	---	307	---	133	---	156	156	---
TOTAL	10451	7980	11452	5742	4906	7030	10147	9079	4870	5027	5182	4794
MEAN	337	266	369	185	175	227	338	293	162	162	167	160
MAX	636	424	899	405	280	307	506	394	240	234	208	251
MIN	178	129	124	109	114	153	224	133	152	155	152	58
AC-FT	20730	15830	22720	11390	9730	13940	20130	18010	9660	9970	10280	9510

## 11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	68.0	133	222	235	319	480	971	1477	777	155	69.3	64.4
MAX	482	2103	1957	1691	2105	1785	2026	3299	3651	1231	337	304
(WY)	1983	1951	1965	1980	1986	1986	1982	1969	1983	1983	1990	1993
MIN	21.8	10.6	10.1	17.0	23.5	39.7	70.6	138	44.9	34.0	24.2	22.9
(WY)	1960	1960	1977	1977	1933	1977	1924	1924	1924	1924	1981	1924

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1915 - 1994			
ANNUAL TOTAL	189905				86660							
ANNUAL MEAN	520				237				414			
HIGHEST ANNUAL MEAN									1019			
LOWEST ANNUAL MEAN									54.3			
HIGHEST DAILY MEAN	1920				899				23400			
LOWEST DAILY MEAN	117				58				5.5			
ANNUAL SEVEN-DAY MINIMUM	163				124				7.4			
INSTANTANEOUS PEAK FLOW					1050				36000			
INSTANTANEOUS PEAK STAGE					4.84				15.00			
ANNUAL RUNOFF (AC-FT)	376700				171900				300100			
10 PERCENT EXCEEDS	1060				378				1180			
50 PERCENT EXCEEDS	388				190				118			
90 PERCENT EXCEEDS	188				146				34			



11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1990 to current year.

INSTRUMENTATION.--Temperature recorder since June 1990.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 23.0°C, July 5, 27-30, 1991; minimum recorded, 0.5°C, Jan. 12-14, Feb. 15, 16, 1992, Feb. 18-22, 1994.

EXTREMES FOR CURRENT YEAR.--WATER TEMPERATURE: Maximum recorded, 21.5°C, July 23; minimum recorded, 0.5°C, Feb. 18-22.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.5	15.0	10.5	9.0	6.5	5.5	4.0	3.0	3.0	2.0	6.0	4.0
2	17.0	14.5	10.0	8.0	6.5	6.0	5.0	4.0	3.5	2.5	6.5	4.5
3	15.5	13.0	10.0	8.5	6.5	5.5	5.0	4.5	4.5	3.0	6.0	4.5
4	14.0	12.5	10.0	8.5	6.0	5.5	5.0	4.5	4.5	3.0	6.5	4.5
5	13.0	12.0	9.5	8.5	5.5	4.5	5.5	4.5	4.5	3.0	6.0	4.5
6	12.5	10.5	9.5	8.5	5.5	4.0	4.5	3.5	4.5	3.5	6.0	4.0
7	13.0	11.0	9.0	8.0	6.0	5.0	4.0	3.0	4.5	2.0	7.0	4.5
8	12.5	10.0	8.5	7.5	6.5	6.0	3.5	2.5	2.5	1.0	7.0	4.5
9	12.5	12.0	8.5	7.5	7.5	6.0	3.5	2.5	3.5	1.5	7.0	4.5
10	12.5	11.0	8.5	8.0	7.0	6.0	4.0	3.0	4.0	3.0	7.0	5.0
11	12.5	11.5	8.5	8.0	6.5	4.0	4.0	3.5	3.0	2.0	7.0	5.5
12	12.5	11.0	8.0	6.5	5.5	4.0	4.0	3.0	3.0	1.5	7.0	4.5
13	12.5	11.5	6.5	5.5	6.0	5.0	4.0	3.0	3.0	1.5	7.5	4.5
14	12.0	11.5	6.0	4.5	6.0	3.5	4.5	3.5	3.5	1.5	7.5	5.5
15	11.5	11.0	4.5	3.5	3.5	3.0	4.5	3.5	3.5	2.0	7.5	6.0
16	11.5	10.0	6.5	4.5	3.0	2.0	4.5	3.5	4.5	3.0	7.0	5.5
17	11.0	10.0	6.5	5.5	3.0	2.5	4.5	3.5	4.5	1.0	6.5	4.5
18	10.5	8.5	6.5	5.5	3.5	3.0	5.0	4.0	1.0	.5	7.5	5.5
19	11.0	9.0	6.5	5.5	3.5	3.0	5.0	4.0	.5	.5	8.0	6.0
20	11.5	10.0	6.0	5.5	4.5	3.5	5.0	3.5	.5	.5	7.5	5.5
21	11.5	10.5	6.5	5.5	4.0	3.0	4.5	3.5	.5	.5	8.0	6.0
22	11.0	9.5	6.5	6.0	3.0	2.5	4.5	3.5	1.5	.5	7.5	4.0
23	11.0	9.0	7.0	6.0	3.5	2.0	5.0	4.5	3.5	1.0	4.5	2.5
24	11.0	9.0	6.0	4.5	3.0	2.5	4.5	2.0	4.5	2.5	5.5	3.5
25	11.0	9.5	4.5	3.5	3.0	2.5	2.5	1.5	5.0	3.5	5.5	5.0
26	12.0	10.0	4.5	3.5	4.0	3.0	3.5	2.0	5.5	4.5	7.5	4.5
27	11.5	10.0	6.0	4.0	4.5	4.0	4.0	3.0	5.5	4.5	9.0	5.5
28	11.0	10.0	6.5	6.0	4.5	4.0	3.0	2.0	6.0	3.5	9.0	6.5
29	11.5	10.0	7.0	6.5	4.0	3.5	2.5	1.5	---	---	8.0	6.5
30	11.5	10.0	7.0	6.0	4.0	3.0	2.5	1.5	---	---	9.0	6.0
31	11.5	10.0	---	---	3.5	3.0	3.0	2.0	---	---	8.5	6.0
MONTH	17.0	8.5	10.5	3.5	7.5	2.0	5.5	1.5	6.0	.5	9.0	2.5

## 11294500 NORTH FORK STANISLAUS RIVER NEAR AVERY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	6.0	10.5	7.5	17.5	13.5	18.5	15.0	20.5	16.5	18.5	15.0
2	9.0	6.5	11.5	8.0	18.0	14.0	18.5	14.0	20.0	16.5	18.0	15.0
3	8.5	6.0	11.5	8.5	17.5	14.0	19.0	15.0	20.0	16.0	17.5	14.0
4	7.5	4.5	11.5	9.5	17.0	13.0	19.5	15.5	20.5	16.5	18.0	14.0
5	8.0	5.5	10.5	9.5	16.5	13.5	19.5	16.0	21.0	17.5	18.0	15.0
6	7.5	6.5	9.5	7.5	16.0	13.0	19.5	15.5	20.5	17.0	18.5	15.0
7	8.0	6.0	8.5	7.0	16.0	12.0	19.5	15.5	20.0	16.5	18.5	15.5
8	7.5	5.5	10.0	7.5	17.0	12.0	20.0	16.0	20.0	16.5	18.0	15.5
9	6.0	4.0	13.5	9.5	18.0	13.5	20.5	16.0	19.5	16.0	17.0	14.5
10	8.0	4.5	14.5	11.0	19.0	14.5	20.0	16.0	20.0	16.5	16.5	13.5
11	9.0	5.5	15.0	11.5	19.5	15.5	20.0	16.0	20.5	17.0	16.0	13.0
12	10.0	6.5	14.5	12.0	18.5	15.0	20.0	16.0	21.0	17.5	15.0	12.5
13	10.0	7.5	15.0	11.5	18.5	15.0	20.5	16.5	21.0	17.5	15.0	13.0
14	10.5	7.5	15.0	11.5	17.5	14.0	20.5	16.5	21.0	17.5	15.5	12.5
15	11.0	8.0	13.0	10.5	16.5	12.5	21.0	16.5	21.0	17.5	16.5	13.0
16	10.0	8.5	10.5	8.5	15.5	11.5	21.0	17.5	21.0	17.0	16.5	13.5
17	9.5	8.0	8.5	7.5	16.0	11.5	21.0	17.0	20.0	16.5	17.0	14.5
18	11.0	8.5	7.5	7.0	16.5	12.5	20.5	17.0	20.0	17.0	16.5	14.5
19	11.0	9.0	8.5	7.0	17.5	13.5	20.0	17.0	20.5	17.0	16.5	14.5
20	11.0	8.5	11.0	7.0	17.5	14.0	20.5	17.5	19.5	16.5	17.0	14.5
21	10.5	8.5	12.5	8.5	18.5	14.0	20.0	17.5	19.5	16.0	17.5	14.5
22	10.5	8.0	13.5	10.0	18.5	14.0	21.0	17.5	19.0	15.5	17.5	14.5
23	8.5	6.0	15.0	11.0	18.5	14.0	21.5	17.5	19.0	15.5	16.5	14.5
24	6.5	4.5	16.5	12.0	17.5	14.5	21.0	17.0	19.0	15.5	17.0	15.0
25	6.0	2.5	16.0	13.0	18.0	14.0	20.5	16.5	19.0	15.5	17.5	15.0
26	6.0	2.0	14.0	11.5	18.5	14.0	20.0	16.5	19.0	16.0	17.0	15.0
27	6.5	5.5	16.0	12.0	19.0	15.0	20.5	16.5	19.5	16.0	16.5	15.5
28	8.0	5.5	16.5	12.5	20.0	15.5	20.5	17.0	19.0	16.0	16.0	15.0
29	9.5	6.0	17.5	13.0	20.0	16.0	21.0	17.5	18.5	15.5	17.0	15.0
30	10.5	7.5	16.5	14.0	19.5	15.5	20.0	17.5	19.0	15.5	16.0	13.5
31	---	---	18.0	14.5	---	---	20.5	16.5	19.0	15.5	---	---
MONTH	11.0	2.0	18.0	7.0	20.0	11.5	21.5	14.0	21.0	15.5	18.5	12.5

## 11295210 BEAVER CREEK DIVERSION TO MCKAY'S POINT RESERVOIR NEAR ARNOLD, CA

LOCATION.--Lat 38°14'01", long 120°16'44", in NW 1/4 NW 1/4 sec.1, T.4 N., R.15 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at Beaver Creek Diversion Dam and 4.5 mi east-southeast of Arnold.

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,188.0 ft above sea level (levels by Calaveras County Water District).

REMARKS.--No estimated daily discharges. Diversion through tunnel and penstock to small turbine at McKay's Point Reservoir (station 11295260) and for further power development in Collierville Powerplant (station 11295250). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 232 ft<sup>3</sup>/s, Apr. 4, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3.8	25	40	1.3	.00	.00	.00
2	.00	.00	.00	.00	.00	6.1	27	44	1.3	.00	.00	.00
3	.00	.00	.00	.00	.00	8.8	58	45	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	8.0	61	38	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	19	37	36	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	24	29	37	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	24	24	40	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	21	32	33	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	24	23	30	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	25	20	31	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	18	30	30	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	14	22	25	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	8.5	30	32	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	36	23	27	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	42	37	19	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	46	46	20	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	27	49	20	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	30	46	22	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	36	50	26	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	23	46	28	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	28	35	26	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	31	24	20	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	28	23	16	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	22	19	11	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	21	26	9.0	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	16	22	17	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	19	28	9.2	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	24	25	8.6	.00	.00	.00	.00
29	.00	.00	.00	.00	---	24	29	4.6	.00	.00	.00	.00
30	.00	.00	.00	.00	---	27	36	4.2	.00	.00	.00	.00
31	.00	---	.00	.00	---	38	---	2.8	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	2.80	722.2	982	751.4	2.60	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.10	23.3	32.7	24.2	.087	.000	.000	.000
MAX	.00	.00	.00	.00	2.8	46	61	45	1.3	.00	.00	.00
MIN	.00	.00	.00	.00	.00	3.8	19	2.8	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	5.6	1430	1950	1490	5.2	.00	.00	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1990	.10	.41	1993	.000	1991
1991	.000	.000	1991	.000	1991
1992	.63	2.52	1993	.000	1991
1993	12.4	49.7	1993	.000	1991
1994	21.4	69.5	1993	.000	1991
1995	49.9	127	1993	3.90	1991
1996	78.4	176	1993	32.7	1994
1997	60.4	173	1993	2.52	1992
1998	15.3	58.8	1993	.000	1992
1999	.32	1.19	1992	.000	1990
2000	.000	.000	1990	.000	1990
2001	.001	.003	1991	.000	1990

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1990 - 1994

ANNUAL TOTAL	19843.70	2461.00			
ANNUAL MEAN	54.4	6.74			
HIGHEST ANNUAL MEAN			21.3		
LOWEST ANNUAL MEAN			54.6		1993
HIGHEST DAILY MEAN	232	Apr 4	6.74		1994
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	Apr 4 1993
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 7	.00	Oct 1	Feb 5 1990
ANNUAL RUNOFF (AC-FT)	39360		4880		Feb 5 1990
10 PERCENT EXCEEDS	183		28		
50 PERCENT EXCEEDS	.00		.00		
90 PERCENT EXCEEDS	.00		.00		

## 11295220 BEAVER CREEK DIVERSION RESERVOIR NEAR ARNOLD, CA

LOCATION.--Lat 38°13'58", long 120°16'43", in NW 1/4 NW 1/4 sec.1, T.4 N., R.15 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at outlet structure of Beaver Creek Diversion Dam on Beaver Creek and 4.5 mi east-southeast of Arnold.

DRAINAGE AREA.--29.3 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by concrete gravity-type dam completed in July 1989. Usable capacity, 3.5 acre-ft between elevations 4,186.0 ft, minimum fishwater release elevation, and 4,191.5 ft, crest of spillway. Water is diverted through tunnel to McKay's Point Reservoir (station 11295260) on North Fork Stanislaus River. Released water is used for fishery maintenance. At times, during some years, reservoir is drained below minimum fishwater release elevation to allow replacement of the fish screens. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 14 acre-ft, Jan. 21, Mar. 17, 1993, maximum elevation, 4,192.9 ft, Mar. 17, 1993; minimum, 6.0 acre-ft, Dec. 24, 1993, minimum elevation, 4,180.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13 acre-ft, several days March to May; maximum elevation, 4,191.6 ft, Apr. 14, 28; minimum, 6.0 acre-ft, Dec. 24, elevation, 4,180.8 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Calaveras County Water District in July 1989)

4,180	6	4,186	9	4,192	13
4,182	7	4,188	11	4,193	14
4,184	8	4,190	12		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	7.3	7.3	10	12	12	12	12	10	9.9	9.9
2	10	10	7.3	7.3	10	12	12	12	12	10	9.9	9.9
3	10	10	7.3	7.3	10	12	11	11	11	10	9.9	9.9
4	10	10	7.3	7.3	10	12	12	12	10	10	9.9	9.9
5	10	10	7.3	11	10	12	12	12	10	10	9.9	9.9
6	10	10	7.3	10	10	12	12	12	10	10	9.9	9.9
7	10	10	7.3	10	10	12	12	11	10	10	9.9	9.9
8	10	7.3	7.3	10	10	13	12	12	10	10	9.9	9.9
9	10	7.3	7.3	10	10	12	12	12	10	10	9.9	9.9
10	10	7.3	7.3	10	10	12	12	12	10	10	9.9	9.9
11	10	7.3	7.3	10	10	11	11	12	10	10	9.9	9.9
12	10	7.3	7.3	10	10	11	11	11	10	10	9.9	9.9
13	10	7.3	7.3	10	10	12	11	12	10	10	9.9	9.9
14	10	7.3	7.3	10	10	12	13	11	10	10	9.9	9.9
15	10	7.3	7.3	10	10	12	12	12	10	10	9.9	9.9
16	10	7.3	7.3	10	10	12	12	12	10	10	9.9	9.9
17	10	7.3	7.3	10	11	12	12	12	10	10	9.9	9.9
18	10	7.3	7.3	10	10	12	12	11	10	9.9	9.9	9.9
19	10	7.3	7.4	10	10	11	12	12	10	9.9	9.9	9.9
20	10	7.3	8.5	10	10	12	12	12	10	9.9	9.9	9.9
21	10	7.3	6.8	10	10	12	12	12	10	10	9.9	9.9
22	10	7.3	7.0	10	10	12	12	13	10	9.9	9.9	9.9
23	10	7.3	6.1	10	10	12	12	12	10	9.9	9.9	9.9
24	10	7.3	6.0	10	10	12	12	12	10	9.9	9.9	9.9
25	10	7.3	7.2	10	10	12	12	12	10	9.9	9.9	9.9
26	10	7.3	7.3	10	10	12	11	11	10	9.9	9.9	9.9
27	10	7.3	7.3	10	12	13	12	12	10	9.9	9.9	9.9
28	10	7.3	7.3	10	12	12	13	11	10	9.9	9.9	8.2
29	10	7.3	7.3	10	---	12	12	12	10	9.9	9.9	8.7
30	10	7.3	7.3	10	---	13	12	12	10	9.9	9.9	9.8
31	10	---	7.3	10	---	12	---	12	---	9.9	9.9	---
MAX	10	10	8.5	11	12	13	13	13	12	10	9.9	9.9
MIN	10	7.3	6.0	7.3	10	11	11	11	10	9.9	9.9	8.2
a	4187.1	4182.8	4182.7	4187.3	4190.5	4189.5	4189.8	4190.2	4187.1	4186.9	4186.8	4186.7
b	0	-2.7	0	+2.7	+2	0	0	0	-2	-0.1	0	-0.1

CAL YR 1993 b -2.7

WTR YR 1994 -0.2

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11295230 BEAVER CREEK BELOW DIVERSION DAM, NEAR ARNOLD, CA

LOCATION.--Lat 38°13'59", long 120°16'46", in NE 1/4 NW 1/4 sec.1, T.4 N., R.15 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, at Beaver Creek Diversion Dam, 4.5 mi east-southeast of Arnold.

DRAINAGE AREA.--29.3 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1990 to current year.

REVISED RECORDS.--WDR CA-92-3: 1991 (M).

GAGE.--Acoustic-velocity meter on low-flow discharge, and water-stage recorder on Beaver Creek Diversion Reservoir (station 11295220). Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.--Entire flow of Beaver Creek in excess of 16.5 ft<sup>3</sup>/s required for stream maintenance can be diverted through tunnel and penstock to turbine at McKay's Point Reservoir (stations 11295210 and 11295260). Capacity of tunnel and penstock is 400 ft<sup>3</sup>/s and flow in excess of that amount is either released or spilled at Beaver Creek Diversion Dam to the creek. Discharge, including extremes, represents the combined flow of Beaver Creek and spill or release at diversion dam. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 701 ft<sup>3</sup>/s, Mar. 17, 1993; minimum daily, 2.0 ft<sup>3</sup>/s, Oct. 1-25, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 107 ft<sup>3</sup>/s, Apr. 17; minimum daily, 2.1 ft<sup>3</sup>/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	6.0	e6.3	e5.7	11	22	19	20	20	6.6	3.4	2.3
2	5.6	6.1	e6.0	e5.8	11	23	20	20	20	6.5	3.2	2.3
3	5.6	6.0	e5.8	e5.9	12	22	19	20	20	6.5	3.1	2.4
4	5.5	6.0	e5.7	e5.4	11	23	20	20	20	6.4	3.1	2.5
5	5.9	6.1	e5.6	15	11	23	19	20	18	6.2	3.1	2.5
6	6.5	6.1	e5.6	15	12	23	19	21	18	6.1	3.0	2.4
7	6.2	6.1	e5.5	13	20	22	19	20	17	5.9	2.9	2.3
8	6.1	e6.1	e5.5	12	18	22	20	20	16	5.6	2.9	2.2
9	6.1	e5.7	e5.9	12	18	22	32	20	15	5.4	2.7	2.2
10	6.2	e5.7	e6.0	9.8	17	23	22	20	15	5.2	2.8	2.4
11	7.4	e5.7	e6.4	10	15	22	22	20	14	5.0	2.7	2.7
12	7.5	e5.6	e6.8	10	13	22	22	20	13	4.9	2.7	2.8
13	6.8	e5.6	e6.8	11	14	22	22	20	12	4.8	2.7	3.0
14	6.9	e5.6	e6.5	10	13	22	22	20	12	4.6	2.6	3.0
15	13	e5.6	e6.3	10	14	22	22	20	12	4.5	2.5	2.8
16	15	e5.6	e6.1	10	14	22	22	20	11	4.5	2.4	2.6
17	9.6	e5.5	e6.0	11	21	22	26	20	11	4.4	2.3	2.5
18	8.4	e5.5	e6.0	11	14	22	22	20	11	4.2	2.2	2.5
19	7.7	e5.5	e5.9	11	18	22	22	20	10	4.2	2.3	2.6
20	7.4	e4.6	e5.8	11	15	22	22	20	10	4.2	2.4	2.7
21	7.1	e4.6	e5.9	11	16	22	22	20	9.6	4.2	2.5	2.6
22	7.0	e4.6	e6.0	10	16	22	22	20	9.2	4.5	2.4	2.4
23	6.8	e4.0	e5.9	18	17	22	22	20	8.9	4.3	2.4	2.4
24	6.7	e4.0	e5.8	16	17	22	25	20	8.7	4.0	2.4	2.9
25	6.5	e4.0	e5.7	15	18	22	22	20	8.5	3.8	2.4	3.1
26	6.2	e5.0	e5.7	14	19	22	20	20	8.1	3.8	2.3	2.8
27	6.0	e5.0	e5.7	12	22	22	20	20	7.8	3.7	2.3	2.7
28	6.1	e4.6	e5.7	11	23	22	22	20	7.5	3.5	2.4	2.1
29	6.1	e7.0	e5.8	11	---	22	54	20	7.1	3.4	2.3	4.1
30	6.1	e6.5	e5.8	12	---	22	20	20	6.9	3.4	2.3	4.4
31	6.3	---	e5.7	11	---	21	---	20	---	3.5	2.3	---
TOTAL	219.8	164.0	184.2	345.6	440	686	682	621	377.3	147.8	81.0	80.2
MEAN	7.09	5.47	5.94	11.1	15.7	22.1	22.7	20.0	12.6	4.77	2.61	2.67
MAX	15	7.0	6.8	18	23	23	54	21	20	6.6	3.4	4.4
MIN	5.5	4.0	5.5	5.4	11	21	19	20	6.9	3.4	2.2	2.1
AC-FT	436	325	365	685	873	1360	1350	1230	748	293	161	159

e Estimated.

## 11295230 BEAVER CREEK BELOW DIVERSION DAM, NEAR ARNOLD, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.13	5.54	7.07	17.4	14.6	39.5	30.6	23.1	14.0	7.97	4.21	3.46
MAX	7.09	7.20	10.9	45.5	20.1	115	75.6	43.6	19.0	14.6	8.43	6.06
(WY)	1994	1992	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	3.28	4.48	4.53	5.00	6.32	17.6	17.2	16.3	6.93	4.77	2.61	2.48
(WY)	1991	1991	1991	1991	1991	1990	1990	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1990 - 1994			
ANNUAL TOTAL	11186.5				4028.9							
ANNUAL MEAN	30.6				11.0				15.4			
HIGHEST ANNUAL MEAN									30.8			
LOWEST ANNUAL MEAN									9.86			
HIGHEST DAILY MEAN	535				54				535			
LOWEST DAILY MEAN	4.0				2.1				2.0			
ANNUAL SEVEN-DAY MINIMUM	4.4				2.3				2.0			
INSTANTANEOUS PEAK FLOW					107				701			
ANNUAL RUNOFF (AC-FT)	22190				7990				11150			
10 PERCENT EXCEEDS	50				22				20			
50 PERCENT EXCEEDS	17				7.4				8.6			
90 PERCENT EXCEEDS	5.7				2.7				2.9			

## 11295240 UTICA CANAL AT PRESSURE TAP, NEAR HATHAWAY PINES, CA

LOCATION.--Lat 38°11'33", long 120°21'14", in SW 1/4 SW 1/4 sec.17, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at pressure tap in Collierville Tunnel and 0.5 mi east of Hathaway Pines.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Acoustic-velocity meter. Elevation of gage is 3,160 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow is diverted into Collierville Tunnel at McKay's Point Reservoir (stations 11295250 and 11295260) and enters canal through pressure tap in the tunnel. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 89 ft<sup>3</sup>/s, Oct. 17, 1989; no flow in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	53	32	79	82	65	77	80	69	54	39	34
2	52	57	18	79	82	70	77	80	69	47	34	34
3	52	58	29	79	82	74	77	80	69	47	34	34
4	51	57	42	79	81	74	19	80	66	47	34	34
5	50	56	67	79	81	71	.88	80	64	47	34	34
6	50	55	74	79	78	70	.82	80	65	47	34	34
7	50	56	75	79	77	74	9.3	79	65	47	34	34
8	50	57	75	79	76	74	35	78	65	47	34	34
9	51	42	78	79	56	74	36	79	47	47	34	34
10	53	57	66	79	68	74	35	80	67	47	34	34
11	50	56	59	79	77	74	8.7	80	70	47	34	34
12	46	55	70	79	73	75	.64	80	70	47	34	34
13	47	55	76	79	70	77	.65	80	70	47	34	34
14	48	57	76	79	75	77	35	81	70	47	34	34
15	48	56	74	79	80	77	80	82	69	47	34	34
16	47	56	75	79	79	77	81	82	69	47	34	34
17	47	57	80	79	68	77	80	82	67	47	34	34
18	47	57	84	79	21	78	80	81	69	47	34	34
19	47	56	83	79	47	78	81	74	69	47	34	34
20	47	56	76	79	47	78	81	77	69	47	34	34
21	47	57	77	79	53	78	81	81	69	47	34	34
22	46	56	79	79	60	78	81	81	69	47	34	34
23	46	55	79	70	64	74	78	78	69	47	34	34
24	48	55	79	64	67	73	78	71	70	47	34	34
25	47	56	79	64	72	76	73	69	70	47	34	34
26	46	57	79	72	72	76	67	69	70	47	34	34
27	47	57	79	83	71	76	73	68	70	47	34	34
28	47	57	79	83	67	76	74	68	69	47	34	34
29	47	55	79	55	---	76	75	68	70	47	34	31
30	47	55	79	85	---	76	78	68	70	47	34	34
31	48	---	79	82	---	77	---	68	---	47	34	---
TOTAL	1502	1669	2176	2396	1926	2324	1652.99	2384	2034	1464	1059	1017
MEAN	48.5	55.6	70.2	77.3	68.8	75.0	55.1	76.9	67.8	47.2	34.2	33.9
MAX	53	58	84	85	82	78	81	82	70	54	39	34
MIN	46	42	18	55	21	65	.64	68	47	47	34	31
AC-FT	2980	3310	4320	4750	3820	4610	3280	4730	4030	2900	2100	2020

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1990	1991	1992	1993	1994	1990	1991	1992	1993	1994
MEAN	50.9	51.7	59.7	59.3	56.3	65.9	62.2	78.1	73.3	49.1	38.6	39.3			
MAX	74.7	59.3	70.2	77.7	79.0	75.8	81.5	85.2	86.0	81.9	55.5	51.3			
(WY)	1990	1992	1994	1990	1991	1990	1990	1992	1992	1993	1993	1993			
MIN	40.4	38.1	44.8	29.7	27.4	43.4	48.8	72.6	66.3	36.2	30.4	33.9			
(WY)	1993	1991	1993	1993	1990	1993	1992	1991	1990	1990	1990	1994			

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1990 - 1994

ANNUAL TOTAL	20816	21603.99	
ANNUAL MEAN	57.0	59.2	57.0
HIGHEST ANNUAL MEAN			59.8
LOWEST ANNUAL MEAN			53.6
HIGHEST DAILY MEAN	87	Apr 14	89
LOWEST DAILY MEAN	11	Apr 1	.00
ANNUAL SEVEN-DAY MINIMUM	15	Jan 14	.00
ANNUAL RUNOFF (AC-FT)	41290	42850	41330
10 PERCENT EXCEEDS	79	80	81
50 PERCENT EXCEEDS	56	65	60
90 PERCENT EXCEEDS	30	34	32

## SAN JOAQUIN RIVER BASIN

## 11295250 COLLIERVILLE POWERPLANT NEAR MURPHYS, CA

LOCATION.--Lat 38°08'33", long 120°22'39", in NE 1/4 SE 1/4 sec.1, T.3 N., R.14 E., Calaveras County, Hydrologic Unit 18040010, 800 ft upstream from Stanislaus River and 4.4 mi east of Murphys.

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Pressure-differential sensors in powerplant penstocks. Elevation of powerplant is 1,120 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow is diverted from McKay's Point Reservoir (station 11295260) through Collierville Tunnel to the powerplant. A portion of the flow in the tunnel is diverted to Utica Canal (station 11295240) through a pressure tap near Mill Creek in SW 1/4 SW 1/4 sec.17, T.4 N., R.15 E. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,330 ft<sup>3</sup>/s, Mar. 26, May 1, 2, 1993; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	206	319	.00	.00	234	300	136	79	238	90	262
2	51	290	322	.00	52	134	192	359	86	.00	164	222
3	32	301	344	142	66	88	136	389	88	.00	181	.00
4	502	268	.00	183	.00	86	498	402	58	.00	116	.00
5	551	238	.00	248	.00	148	448	404	56	131	206	.00
6	483	240	331	212	15	91	258	365	83	129	48	147
7	555	111	366	169	56	224	252	170	80	78	.00	155
8	563	265	377	25	144	223	400	177	91	120	141	180
9	113	297	371	20	183	160	124	391	195	90	139	180
10	30	135	676	123	165	173	112	350	199	.00	97	.00
11	406	143	686	156	127	154	296	284	.00	124	270	.00
12	462	197	698	110	.00	204	258	367	.00	155	214	142
13	353	.00	687	107	.00	33	264	366	96	114	35	135
14	369	15	437	90	106	256	345	180	75	188	7.2	149
15	399	210	240	.00	144	236	410	130	65	156	148	141
16	133	246	286	16	176	311	238	216	70	.00	224	198
17	.00	194	255	90	105	234	306	220	103	.00	231	.00
18	250	233	30	90	116	181	411	205	44	210	164	.00
19	258	320	36	130	71	61	472	164	21	136	199	177
20	243	128	559	108	.00	47	379	226	82	87	50	187
21	260	38	274	104	71	253	322	147	80	141	.00	170
22	271	301	297	44	96	211	454	133	114	143	136	157
23	.00	285	176	.00	99	231	380	276	122	.00	118	131
24	.00	308	73	138	83	216	334	154	160	.00	120	.00
25	299	7.4	.00	163	58	190	310	137	.00	108	154	.00
26	217	103	.00	89	38	62	287	267	.00	176	192	178
27	380	80	96	101	66	.00	256	267	183	96	.00	177
28	196	90	142	85	178	224	308	.00	171	107	.00	100
29	308	388	240	.00	---	179	311	107	137	208	122	276
30	.00	304	220	.00	---	192	200	102	183	.00	135	160
31	.00	---	63	.00	---	197	---	139	---	.00	133	---
TOTAL	8010.00	5941.40	8601.00	2743.00	2215.00	5233.00	9261	7230.00	2721.00	2935.00	3834.20	3624.00
MEAN	258	198	277	88.5	79.1	169	309	233	90.7	94.7	124	121
MAX	563	388	698	248	183	311	498	404	199	238	270	276
MIN	.00	.00	.00	.00	.00	.00	112	.00	.00	.00	.00	.00
AC-FT	15890	11780	17060	5440	4390	10380	18370	14340	5400	5820	7610	7190

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994
MEAN	135	86.7	108	123	155
MAX	258	198	277	334	453
(WY)	1994	1994	1994	1993	1993
MIN	49.5	40.2	25.3	32.3	9.79
(WY)	1993	1992	1992	1992	1991

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1990 - 1994
ANNUAL TOTAL	173263.40	62348.60	
ANNUAL MEAN	475	171	221
HIGHEST ANNUAL MEAN			427
LOWEST ANNUAL MEAN			115
HIGHEST DAILY MEAN	1330	698	1330
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	104	17	.00
ANNUAL RUNOFF (AC-FT)	343700	123700	160000
10 PERCENT EXCEEDS	1090	361	521
50 PERCENT EXCEEDS	349	147	142
90 PERCENT EXCEEDS	49	.00	.00



## 11295260 MCKAY'S POINT RESERVOIR NEAR AVERY, CA

LOCATION.--Lat 38°14'01", long 120°17'30", in NE 1/4 NW 1/4 sec.2, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank at outlet structure near upstream face of McKay's Point Dam on North Fork Stanislaus River and 4.6 mi northeast of Avery.

DRAINAGE AREA.--166 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1990 to current year.

REVISED RECORDS.--WDR CA-92-3: 1992 (M).

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Calaveras County Water District).

REMARKS.--Reservoir is formed by concrete arch-type dam completed in July 1989. Usable capacity, 1,928 acre-ft between elevations 3,280.0 ft, minimum operating head, and 3,370.0 ft, crest of spillway. Water is diverted from reservoir through tunnel to Utica Canal (station 11295240) and Collierville Powerplant (station 11295250, near the confluence of the middle and north forks of the Stanislaus River). Released water is used for fishery maintenance. New capacity table started on Sept. 1, 1991, based on inflow-outflow computations. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,279 acre-ft, Mar. 17, 1993, elevation, 3,370.9 ft; minimum, 313 acre-ft, Jan. 28, 1994, elevation, 3,279.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,160 acre-ft, Sept. 28, elevation, 3,367.3 ft; minimum, 313 acre-ft, Jan. 28, elevation, 3,279.2 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on inflow-outflow computations provided by Calaveras County Water District in September 1991)

3,280	320	3,340	1,325	3,370	2,248
3,300	480	3,360	1,921	3,380	2,575
3,320	869				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1484	1819	1304	735	672	753	1003	1723	1852	1480	2110	1685
2	1676	1783	1340	1060	924	682	1148	1661	1849	1662	2021	1470
3	1906	1686	1173	1147	1046	782	1607	1545	1835	1844	1894	1678
4	1784	1590	1375	1224	1133	889	1453	1418	1891	2015	1883	1878
5	1671	1557	1514	1340	1222	997	1190	1299	1952	1957	1697	2066
6	1778	1526	1421	1481	1286	1194	1275	1251	1963	1906	1814	2004
7	1714	1745	1293	1485	1332	1056	1250	1585	1989	1946	2002	1921
8	1559	1657	1520	1551	1184	896	876	1835	1987	1910	1939	1800
9	1660	1523	1944	1652	969	894	1043	1804	1816	1947	1890	1669
10	1841	1597	1939	1939	969	875	1182	1798	1646	2121	1917	1866
11	1759	1506	1974	2093	1040	926	1031	1932	1750	2087	1602	2061
12	1703	1317	2060	1977	1176	824	1037	1895	1920	2002	1404	1999
13	1705	1418	2109	1832	1303	1009	1111	1751	1905	1979	1587	1960
14	1676	1469	1636	1710	1226	906	1104	1905	1941	1822	1829	1896
15	1553	1223	1261	1764	1076	968	955	2074	1982	1729	1805	1831
16	1556	1234	1006	1776	801	868	1308	1993	2006	1916	1661	1655
17	1773	1339	886	1649	836	799	1561	1868	1979	2089	1528	1859
18	1512	1349	1340	1535	709	819	1572	1809	2043	1887	1522	2044
19	1496	1206	1877	1345	732	1116	1574	1903	2141	1819	1462	1925
20	1501	1368	1966	1194	868	1372	1716	1884	2143	1846	1677	1780
21	1425	1564	1730	1039	801	1279	1869	1967	2140	1774	1974	1660
22	1282	1345	1300	990	778	1300	1654	2007	2085	1697	1972	1566
23	1501	1264	1131	1079	759	1134	1505	1741	2019	1887	1963	1526
24	1710	1079	1139	917	772	951	1351	1684	1869	2058	1939	1722
25	1340	1251	1173	676	853	765	1236	2012	2013	2050	1856	1958
26	1418	1251	1218	555	978	805	1155	2111	2134	1914	1695	2008
27	1216	1300	1378	421	1098	994	1210	1940	1949	1937	1890	2078
28	1441	1319	1338	313	1003	877	1147	2113	1763	1925	2080	2160
29	1267	1134	936	362	---	938	1115	2052	1637	1725	2056	1825
30	1571	1207	495	401	---	983	1341	1988	1600	1903	2011	1535
31	1898	---	439	461	---	1111	---	1847	---	2076	1974	---
MAX	1910	1820	2110	2090	1330	1370	1870	2110	2140	2120	2110	2160
MIN	1220	1080	439	313	672	682	876	1250	1600	1480	1400	1470
a	3359.3	3335.1	3294.9	3297.6	3326.2	3331.1	3340.6	3357.7	3349.8	3364.7	3361.6	3347.5
b	+346	-691	-768	+22	+542	+108	+230	+506	-247	+476	-102	-439

CAL YR 1993 b -501

WTR YR 1994 b -17

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11295270 NORTH FORK STANISLAUS RIVER BELOW MCKAY'S POINT DAM, NEAR AVERY, CA

LOCATION.--Lat 38°13'58", long 120°17'33", in NE 1/4 NW 1/4 sec.2, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at McKay's Point Dam and 4.5 mi northeast of Avery.

DRAINAGE AREA.--166 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1989 to current year.

REVISED RECORDS.--WDR CA-91-3: 1990.

GAGE.--Acoustic-flow meter and water-stage recorder on McKay's Point Reservoir (station 11295260). August 1989 to September 1992 at site 500 ft downstream at different datum. Elevation of gage is 3,280 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Union and Utica Reservoirs, Lake Alpine (stations 11293350, 11293370, and 11293460), New Spicer Meadow Reservoir and McKay's Point Reservoir (stations 11293770 and 11295260) with combined capacity, 200,770 acre-ft. Collierville Tunnel diverts at McKay's Point Reservoir to Utica Canal (station 11295240) and Collierville Powerplant (station 11295250). Discharge, including extremes, represents flow through dam's release valve, mini-hydro generator, and flow over spillway. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft<sup>3</sup>/s, Mar. 4, 1991, gage height, 2.68 ft, site and datum then in use, from rating curve extended above 36 ft<sup>3</sup>/s on the basis of computation of flow over dam and discharge through minimum release valve; minimum daily, 3.4 ft<sup>3</sup>/s, Nov. 25, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40 ft<sup>3</sup>/s, July 30; minimum daily, 18 ft<sup>3</sup>/s, for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	21	28	28	22	19	19	19	19	20	24	25
2	22	22	28	29	20	18	19	19	19	20	25	26
3	22	22	28	27	21	19	18	19	19	21	24	26
4	22	22	28	27	19	19	19	19	19	22	25	26
5	21	21	28	21	18	19	19	19	19	21	24	25
6	21	21	28	18	18	19	19	19	19	22	24	26
7	22	21	27	18	19	18	19	19	19	21	24	26
8	22	24	28	18	19	18	19	19	19	23	24	26
9	22	27	29	18	18	20	19	19	19	24	25	26
10	21	26	28	20	18	18	19	19	19	24	24	26
11	21	26	27	19	18	19	19	19	19	23	24	25
12	21	27	27	21	20	18	19	19	19	23	24	26
13	20	27	27	19	18	18	19	19	19	24	24	26
14	21	28	27	18	19	20	19	19	19	24	25	26
15	20	27	26	18	18	19	19	19	19	23	25	26
16	19	27	27	19	19	19	19	19	19	23	24	26
17	22	27	26	19	19	19	19	19	19	23	24	26
18	21	27	28	18	19	19	19	19	19	23	24	26
19	20	27	28	19	18	19	19	19	19	23	25	26
20	20	27	27	19	19	19	19	19	19	24	24	26
21	20	28	27	19	19	19	19	19	19	24	24	26
22	20	28	26	19	19	19	19	19	19	23	24	25
23	20	27	26	19	19	19	19	19	19	24	24	26
24	21	27	26	18	19	19	19	19	19	24	25	26
25	21	28	27	19	20	19	19	19	19	24	25	26
26	21	28	27	18	21	19	18	19	20	24	25	26
27	21	28	27	18	24	19	19	19	20	25	24	26
28	22	29	27	21	21	19	19	19	20	25	24	26
29	22	28	26	20	---	19	19	19	20	24	25	26
30	21	28	25	20	---	19	19	19	20	23	26	25
31	22	---	26	21	---	19	---	19	---	25	26	---
TOTAL	653	776	840	625	541	585	568	589	575	716	758	775
MEAN	21.1	25.9	27.1	20.2	19.3	18.9	18.9	19.0	19.2	23.1	24.5	25.8
MAX	22	29	29	29	24	20	19	19	20	25	26	26
MIN	19	21	25	18	18	18	18	19	19	20	24	25
AC-FT	1300	1540	1670	1240	1070	1160	1130	1170	1140	1420	1500	1540

## 11295270 NORTH FORK STANISLAUS RIVER BELOW MCKAY'S POINT DAM, NEAR AVERY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	23.0	20.0	19.5	17.1	18.9	21.9	19.5	20.5	20.4	21.2	20.9	23.5
MAX	27.6	25.9	27.1	20.2	20.7	28.8	20.5	22.7	21.3	23.1	24.5	27.5
(WY)	1992	1994	1994	1994	1991	1991	1993	1990	1991	1994	1994	1991
MIN	20.3	6.06	5.55	7.93	17.4	15.8	18.9	18.4	19.2	19.5	10.6	18.9
(WY)	1990	1990	1990	1990	1990	1990	1990	1992	1994	1993	1989	1989

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1989 - 1994			
ANNUAL TOTAL	7966				8001							
ANNUAL MEAN	21.8				21.9				20.8			
HIGHEST ANNUAL MEAN									22.0			
LOWEST ANNUAL MEAN									16.9			
HIGHEST DAILY MEAN	141				Mar 16				325			
LOWEST DAILY MEAN	18				Jan 24				3.4			
ANNUAL SEVEN-DAY MINIMUM	18				Jan 23				4.2			
INSTANTANEOUS PEAK FLOW									1050			
INSTANTANEOUS PEAK STAGE									2.68			
ANNUAL RUNOFF (AC-FT)	15800				15870				15070			
10 PERCENT EXCEEDS	27				27				25			
50 PERCENT EXCEEDS	20				21				20			
90 PERCENT EXCEEDS	19				19				17			

## SAN JOAQUIN RIVER BASIN

11295300 NORTH FORK STANISLAUS RIVER BELOW BEAVER CREEK, NEAR HATHAWAY PINES, CA

LOCATION.--Lat 38°12'26", long 120°18'58", in SW 1/4 SW 1/4 sec.10, T.4 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, Stanislaus National Forest, at confluence with Beaver Creek and 2.8 mi northeast of Hathaway Pines.

DRAINAGE AREA.--224 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1990 to current year.

REVISED RECORD.--WDR CA-91-3: 1990.

GAGE.--Discharge computed as the sum of North Fork Stanislaus River below McKay's Point Dam (station 11295270) and Beaver Creek below diversion dam (station 11295230). Elevation of gage is 2,230 ft above sea level, from topographic map.

REMARKS.--Records consist of release and spill from McKay's Point Reservoir (station 11295260) and Beaver Creek Diversion Reservoir (station 11295220). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Calaveras County Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 665 ft<sup>3</sup>/s, Mar. 17, 1993; minimum daily, 22 ft<sup>3</sup>/s, on several days in December 1990 and January 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	27	e34	e34	33	41	38	39	39	27	28	28
2	27	28	e34	e34	31	41	38	39	39	27	28	28
3	27	28	e33	e33	33	42	37	39	39	28	28	28
4	27	28	e33	e33	30	41	38	39	39	28	28	28
5	27	27	e34	36	29	41	38	39	38	28	28	28
6	28	27	e34	34	30	41	38	39	37	28	28	28
7	28	28	e33	31	38	41	38	39	36	27	27	28
8	28	e30	e33	30	36	41	38	39	35	28	27	28
9	28	e32	e35	30	35	42	52	40	34	29	27	28
10	28	e32	e34	29	35	41	41	39	33	29	27	28
11	28	e32	e34	30	34	41	40	39	33	28	27	28
12	28	e32	e34	31	33	41	40	40	32	28	27	28
13	27	e32	e34	29	32	41	40	39	31	28	27	29
14	28	e33	e33	29	32	41	41	39	31	28	27	29
15	33	e33	e33	29	32	41	41	39	30	28	27	28
16	34	e32	e33	29	32	40	41	40	30	28	27	28
17	31	e33	e32	30	39	40	41	40	30	28	27	28
18	29	e32	e34	29	32	41	41	39	30	28	27	28
19	28	e32	e34	30	36	41	41	39	30	28	27	28
20	28	e32	e33	30	34	41	41	39	29	28	27	28
21	27	e33	e33	30	35	41	41	39	29	28	27	28
22	27	e32	e32	29	35	41	41	40	28	28	27	28
23	27	e31	e32	36	36	41	41	39	28	28	27	28
24	28	e31	e32	35	36	41	44	39	28	28	27	28
25	27	e32	e32	34	38	41	40	39	27	27	27	29
26	27	e33	e33	33	41	41	39	40	29	28	27	28
27	27	e33	e33	30	46	41	39	40	28	28	27	28
28	28	e33	e33	32	44	41	40	39	28	28	27	28
29	29	e35	e32	32	---	41	73	40	27	28	27	30
30	28	e34	e31	31	---	41	39	40	27	26	28	29
31	28	---	e32	32	---	40	---	39	---	28	28	---
TOTAL	872	937	1026	974	977	1270	1240	1218	954	864	845	846
MEAN	28.1	31.2	33.1	31.4	34.9	41.0	41.3	39.3	31.8	27.9	27.3	28.2
MAX	34	35	35	36	46	42	73	40	39	29	28	30
MIN	27	27	31	29	29	40	37	39	27	26	27	28
AC-FT	1730	1860	2040	1930	1940	2520	2460	2420	1890	1710	1680	1680

e Estimated.

## 11295300 NORTH FORK STANISLAUS RIVER BELOW BEAVER CREEK, NEAR HATHAWAY PINES, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28.8	29.0	30.0	36.8	33.5	61.4	50.0	43.7	34.4	29.2	27.1	27.9
MAX	33.5	32.1	33.1	64.7	39.1	142	96.2	64.2	39.1	34.1	28.5	30.7
(WY)	1992	1992	1994	1993	1993	1993	1993	1993	1993	1993	1993	1991
MIN	25.9	25.7	23.0	23.7	27.0	33.4	36.1	34.7	27.7	27.3	26.1	25.9
(WY)	1991	1991	1991	1991	1991	1990	1990	1992	1992	1990	1990	1990

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1990 - 1994			
ANNUAL TOTAL	19148				12023							
ANNUAL MEAN	52.5				32.9				37.1			
HIGHEST ANNUAL MEAN									52.0			
LOWEST ANNUAL MEAN									31.7			
HIGHEST DAILY MEAN	665				73				665			
LOWEST DAILY MEAN	26				26				22			
ANNUAL SEVEN-DAY MINIMUM	27				27				22			
ANNUAL RUNOFF (AC-FT)	37980				23850				26900			
10 PERCENT EXCEEDS	72				41				41			
50 PERCENT EXCEEDS	37				32				31			
90 PERCENT EXCEEDS	28				27				26			

## SAN JOAQUIN RIVER BASIN

## 11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA

LOCATION.--Lat 38°08'29", long 120°22'19", in NW 1/4 SW 1/4 sec.6, T.3 N., R.15 E., Calaveras County, Hydrologic Unit 18040010, on right bank 1,000 ft upstream from Stanislaus Powerplant and 3.6 mi south of Hathaway Pines.

DRAINAGE AREA.--629 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1967 to September 1994 (discontinued).

WATER TEMPERATURE: Water years 1970-83.

REVISED RECORDS.--WDR CA-80-3: 1979, WDR CA-93: 1992.

GAGE.--Water-stage recorder. Datum of gage is 1,077.21 ft above sea level (levels by Pacific Gas & Electric Co.). Prior to Oct. 1, 1982, published at datum 47.21 ft higher.

REMARKS.--No estimated daily discharges. Records good. Many diversions upstream from station for hydroelectric powerplants. Small diversions for domestic water supply. Stanislaus Tunnel (station 11295505) diverts from left bank of Middle Fork Stanislaus River 13.7 mi upstream from station in SE 1/4 sec.24, T.4 N., R.16 E., to Stanislaus Powerplant 1,000 ft downstream from station. See schematic diagram of Stanislaus River basin. For records of combined discharge of river and tunnel, see following page.

COOPERATION.--Records of diversion to Stanislaus Powerplant were provided by Pacific Gas & Electric Co.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 46,200 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 23.5 ft, from outside highwater mark, from rating curve extended above 10,000 ft<sup>3</sup>/s on basis of computation of peak flow over a weir; minimum daily, 9.4 ft<sup>3</sup>/s, Aug. 7, 1977.  
Combined flow, maximum discharge, 46,700 ft<sup>3</sup>/s, Feb. 19, 1986; minimum daily, 27 ft<sup>3</sup>/s, July 20, 1977.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,580 ft<sup>3</sup>/s, Dec. 20, gage height, 10.09 ft; minimum daily, 63 ft<sup>3</sup>/s, Jan. 15.  
Combined flow, maximum discharge, 2,070 ft<sup>3</sup>/s, Dec. 20; minimum daily, 75 ft<sup>3</sup>/s, Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	304	401	72	74	375	443	319	180	330	153	338
2	127	472	392	72	125	282	320	562	200	82	231	294
3	109	492	428	215	137	229	273	589	207	76	249	74
4	596	455	68	267	73	229	661	599	169	76	180	74
5	665	420	67	353	70	315	612	592	150	201	276	74
6	586	416	395	300	83	275	407	548	177	209	116	214
7	662	164	448	239	166	399	406	336	200	156	73	223
8	670	322	442	93	305	397	548	343	202	197	205	248
9	191	407	451	86	295	332	275	562	308	163	204	250
10	108	195	772	182	266	344	240	509	308	76	161	75
11	504	206	830	215	228	325	438	440	102	196	346	75
12	559	274	847	169	89	358	392	520	87	228	287	211
13	443	74	783	167	87	178	402	512	174	179	108	219
14	462	84	548	147	180	428	476	306	167	261	80	231
15	504	278	333	63	224	426	569	245	156	225	215	222
16	230	314	361	78	261	499	376	345	156	81	300	285
17	91	251	339	150	245	407	447	353	196	73	313	80
18	344	296	99	148	285	343	565	360	140	289	238	80
19	350	380	107	186	191	213	609	332	102	206	307	261
20	331	186	667	168	142	199	514	396	163	161	122	272
21	348	101	347	164	199	411	448	303	168	215	78	255
22	358	376	376	103	213	367	576	276	203	218	214	239
23	81	362	241	85	214	382	501	428	211	80	192	204
24	80	385	138	241	194	355	467	289	252	74	194	75
25	388	74	71	260	176	319	468	262	86	175	245	78
26	293	164	71	173	157	181	449	401	80	260	277	254
27	470	142	174	177	205	116	405	402	266	167	79	252
28	279	153	223	154	333	353	451	114	274	181	77	169
29	398	478	313	75	---	311	484	216	239	287	177	363
30	82	415	298	73	---	326	370	211	277	77	201	242
31	81	---	130	72	---	335	---	250	---	77	199	---
TOTAL	10810	8640	11160	4947	5217	10009	13592	11920	5600	5276	6097	5931
MEAN	349	288	360	160	186	323	453	385	187	170	197	198
MAX	670	492	847	353	333	499	661	599	308	330	346	363
MIN	80	74	67	63	70	116	240	114	80	73	73	74
AC-FT	21440	17140	22140	9810	10350	19850	26960	23640	11110	10460	12090	11760

## 11295400 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	152	292	373	672	850	1046	1384	2236	1718	472	136	130
MAX	688	2124	2757	2859	4869	3413	3996	7297	9509	3342	624	347
(WY)	1983	1984	1984	1980	1986	1986	1982	1969	1983	1983	1983	1983
MIN	13.9	21.9	19.2	24.3	33.6	41.0	112	148	29.3	11.8	12.1	14.1
(WY)	1978	1977	1977	1977	1977	1977	1977	1992	1976	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1967 - 1994		
ANNUAL TOTAL	390719			99199					
ANNUAL MEAN	1070			272			787		
HIGHEST ANNUAL MEAN							2551		
LOWEST ANNUAL MEAN							47.3		
HIGHEST DAILY MEAN	4520			May 22			23600		
LOWEST DAILY MEAN	67			Dec 5			9.4		
ANNUAL SEVEN-DAY MINIMUM	176			Dec 23			9.7		
INSTANTANEOUS PEAK FLOW				1580			46200		
INSTANTANEOUS PEAK STAGE				10.09			23.50		
ANNUAL RUNOFF (AC-FT)	775000			196800			570200		
10 PERCENT EXCEEDS	2650			477			2140		
50 PERCENT EXCEEDS	662			245			222		
90 PERCENT EXCEEDS	156			80			38		

## SAN JOAQUIN RIVER BASIN

## 11295401 STANISLAUS RIVER NEAR HATHAWAY PINES, CA--Continued

STANISLAUS RIVER AND STANISLAUS TUNNEL AT OUTLET, NEAR HATHAWAY PINES, CA,  
COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	948	479	912	e546	e525	544	799	396	643	797	652	770
2	609	472	e887	e546	624	458	645	644	706	316	713	748
3	627	492	e929	e688	600	440	568	706	692	273	762	285
4	1100	455	e568	e735	461	412	1110	767	279	250	670	259
5	1170	433	e560	e822	286	514	1120	848	485	630	757	398
6	1130	578	e883	e767	359	434	857	846	550	733	440	654
7	1140	604	e939	e707	453	585	941	424	725	666	375	671
8	1120	829	e935	e561	561	584	909	390	731	666	624	653
9	680	915	e945	e552	508	512	412	646	816	412	594	607
10	609	700	e1270	e647	543	558	499	711	794	286	617	319
11	1030	718	e1330	e680	498	497	640	707	415	586	834	248
12	1070	765	e1340	e633	293	554	566	792	375	782	812	557
13	944	596	e1280	e624	372	371	581	710	617	653	369	627
14	966	598	e1040	e603	420	678	641	395	684	786	324	609
15	1020	801	e763	e518	468	689	777	334	655	686	528	627
16	752	832	e853	e534	394	772	567	550	631	376	774	623
17	597	724	e832	e605	409	687	633	598	682	320	801	313
18	860	779	e587	e602	454	635	766	619	574	728	720	307
19	864	877	e597	e640	381	483	786	621	391	709	800	606
20	832	674	e1160	e628	290	481	704	628	552	626	537	668
21	843	589	e837	e622	335	676	622	402	656	673	336	630
22	851	863	e863	e561	363	725	780	343	715	660	594	645
23	601	836	e715	e550	389	879	694	685	700	329	676	455
24	548	910	e612	e721	316	821	643	511	691	263	677	75
25	906	558	e544	e741	379	777	679	508	335	580	734	78
26	793	668	e545	e646	316	450	608	644	272	798	736	347
27	984	660	e648	e635	367	371	639	674	632	628	309	547
28	778	658	e698	e611	501	725	629	270	809	713	268	467
29	887	986	e788	e530	---	766	695	415	737	799	520	660
30	574	927	e773	e529	---	843	569	455	790	364	673	544
31	583	---	e604	e528	---	858	---	585	---	338	655	---
TOTAL	26416	20976	26237	19312	11865	18779	21079	17824	18334	17426	18881	14997
MEAN	852	699	846	623	424	606	703	575	611	562	609	500
MAX	1170	986	1340	822	624	879	1120	848	816	799	834	770
MIN	548	433	544	518	286	371	412	270	272	250	268	75
AC-FT	52400	41610	52040	38310	23530	37250	41810	35350	36370	34560	37450	29750

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1994, BY WATER YEAR (WY)

MEAN	530	595	782	1048	1223	1462	1835	2689	2217	978	640	603
MAX	1108	2483	3283	3390	5388	3942	4516	7837	10020	3873	1156	879
(WY)	1983	1984	1984	1980	1986	1986	1982	1969	1983	1983	1983	1983
MIN	63.5	40.2	35.4	40.5	47.8	57.1	426	269	318	96.4	55.4	77.0
(WY)	1978	1977	1977	1977	1977	1977	1977	1992	1987	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1967 - 1994	
ANNUAL TOTAL	565830		232126			
ANNUAL MEAN	1550		636		1215	
HIGHEST ANNUAL MEAN					3051	
LOWEST ANNUAL MEAN					165	
HIGHEST DAILY MEAN	5040	May 22	1340	Dec 12	24100	Feb 19 1986
LOWEST DAILY MEAN	169	Jan 1	75	Sep 24	27	Jul 20 1977
ANNUAL SEVEN-DAY MINIMUM	481	Jan 1	341	Feb 20	29	Aug 4 1977
INSTANTANEOUS PEAK FLOW			2070	Dec 20	46700	Feb 19 1986
ANNUAL RUNOFF (AC-FT)	1122000		460400		880400	
10 PERCENT EXCEEDS	3150		878		2680	
50 PERCENT EXCEEDS	1140		632		700	
90 PERCENT EXCEEDS	609		366		200	



## 11295900 PINECREST LAKE AT PINECREST, CA

LOCATION.--Lat 38°11'59", long 119°59'20" (revised), in NE 1/4 SW 1/4 sec.15, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on south side of intake tower, 400 ft upstream from dam on South Fork Stanislaus River, and 0.7 mi north of Pinecrest.

DRAINAGE AREA.--26.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder since July 14, 1992. Oct. 1, 1985, to July 13, 1992, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1916; storage began in 1916. Capacity, 18,312 acre-ft between elevations 5,498.7 ft, outlet drain, and 5,617.5 ft, top of flash boards in spillway. Released water flows down South Fork Stanislaus River to diversion dam for Philadelphia Canal (station 11297000) for use at Spring Gap Powerplant on Middle Fork Stanislaus River. Figures given, including extremes, represent total contents. Records from July 14, 1992, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 18,483 acre-ft, July 16, 1992, elevation, 5,618.06 ft; minimum observed, 3,157 acre-ft, Mar. 3, 4, 1991, elevation, 5,546.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,401 acre-ft, June 6, elevation, 5,617.79 ft; minimum, 3,206 acre-ft, Feb. 24, elevation, 5,547.05 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated 1938)

5,520	792	5,550	3,534	5,580	8,576
5,530	1,558	5,560	4,738	5,600	13,537
5,540	2,475	5,570	6,395	5,618.5	18,615

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13155	10213	7592	4799	3492	3245	4780	12274	18340	17534	16602	14634
2	12985	10198	7496	4721	3497	3268	4996	12497	18340	17496	16583	14603
3	12815	10176	7395	4660	3499	3300	5244	12771	18327	17455	16554	14576
4	12671	10161	7300	4629	3501	3326	5379	13135	18358	17410	16523	14559
5	12556	10125	7194	4595	3478	3382	5480	13487	18395	17381	16497	14536
6	12459	10052	7098	4545	3439	3409	5583	13829	18401	17351	16443	14524
7	12364	9962	6996	4490	3425	3424	5648	14054	18377	17311	16334	14503
8	12272	9870	6891	4434	3395	3455	5742	14281	18370	17266	16250	14481
9	12180	9770	6802	4375	3366	3490	5836	14650	18370	17239	16144	14464
10	12089	9674	6714	4313	3349	3525	5904	15193	18364	17202	16048	14443
11	12018	9576	6639	4255	3336	3535	5953	16027	18355	17172	15959	14415
12	11934	9481	6550	4195	3347	3529	6039	16625	18340	17126	15851	14394
13	11845	9380	6468	4137	3360	3551	6196	17037	18327	17101	15732	14359
14	11763	9270	6393	4081	3372	3632	6464	17525	18318	17068	15634	14328
15	11756	9173	6302	4023	3390	3724	6870	17857	18303	17032	15572	14295
16	11700	9072	6196	3968	3371	3800	7365	17992	18275	16989	15510	14264
17	11637	8971	6082	3915	3380	3855	7923	18105	18220	16964	15449	14214
18	11564	8872	5964	3862	3358	3904	8546	18141	18161	16924	15378	14157
19	11471	8766	5850	3813	3332	3967	9197	18150	18088	16884	15315	14095
20	11365	8666	5741	3759	3305	4022	9809	18182	18040	16852	15242	14033
21	11259	8562	5642	3710	3275	4084	10316	18231	18013	16814	15167	13975
22	11156	8465	5557	3659	3246	4124	10708	18234	17986	16787	15097	13913
23	11054	8365	5471	3626	3219	4135	10999	18260	17956	16749	15050	13850
24	10944	8260	5396	3592	3206	4134	11206	18309	17917	16721	14986	13788
25	10834	8148	5318	3554	3212	4114	11390	18240	17877	16707	14927	13720
26	10728	8044	5244	3514	3221	4086	11557	18272	17857	16695	14862	13657
27	10621	7934	5177	3470	3239	4092	11690	18275	17771	16680	14800	13592
28	10516	7831	5100	3454	3242	4165	11822	18269	17667	16662	14747	13526
29	10409	7758	5026	3461	---	4258	11972	18275	17606	16649	14721	13469
30	10301	7687	4952	3472	---	4395	12122	18303	17566	16632	14689	13391
31	10235	---	4875	3481	---	4578	---	18383	---	16620	14665	---
MAX	13155	10213	7592	4799	3501	4578	12122	18383	18401	17534	16602	14634
MIN	10235	7687	4875	3454	3206	3245	4780	12274	17566	16820	14665	13391
a	5586.96	5576.08	5561.01	5549.53	5547.38	5558.74	5594.50	5617.73	5614.93	5611.08	5604.26	5599.44
b	-3086	-2548	-2812	-1394	-239	+1336	+7544	+6261	-817	-946	-1955	-1274

CAL YR 1993 MAX 18395 MIN 3706 b +1021  
WTR YR 1994 MAX 18401 MIN 3206 b +70

a Elevation, in feet, at end of month.  
b Change in contents, in acre-feet.

## 11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA

LOCATION.--Lat 38°11'51", long 120°00'27", in SW 1/4 SW 1/4 sec.16, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 0.4 mi downstream from bridge on State Highway 108 at Strawberry, 0.6 mi downstream from Herring Creek, and 1.2 mi downstream from Pinecrest Lake.

DRAINAGE AREA.--44.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1911 to January 1917, August 1938 to current year. Monthly discharge only for October 1913 and yearly estimates for 1912-13, published in WSP 1315-A. Published as "near Confidence" 1911-13.

REVISED RECORDS.--WSP 1215: 1945(M). WSP 1515: 1916, 1943(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,235.1 ft above sea level (river-profile survey). October 1911 to January 1917, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Low and medium flows regulated beginning in 1916 by Pinecrest Lake (station 11295900) 1.2 mi upstream. No diversion upstream from station. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft<sup>3</sup>/s, Nov. 21, 1950, gage height, 9.25 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow at bridge 0.3 mi downstream from station; minimum daily, 1.3 ft<sup>3</sup>/s, Nov. 22, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 368 ft<sup>3</sup>/s, May 25, gage height, 3.62 ft; minimum daily, 7.6 ft<sup>3</sup>/s, Jan. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	11	54	46	7.7	45	63	64	248	21	15	11
2	87	11	53	46	7.7	46	73	70	215	19	17	11
3	87	11	53	41	7.7	46	73	76	189	19	26	11
4	76	11	53	37	7.7	47	61	91	139	19	30	11
5	57	19	52	38	18	48	59	93	126	19	30	11
6	51	38	52	37	28	49	59	93	132	19	30	11
7	48	44	52	37	28	49	53	78	114	18	30	11
8	45	49	52	37	29	49	53	74	101	18	30	10
9	45	48	52	37	28	54	50	99	98	18	30	10
10	45	50	52	36	28	56	46	129	93	18	30	10
11	45	53	52	36	19	57	56	159	90	17	30	10
12	45	54	52	36	8.7	57	62	156	80	17	31	12
13	45	53	52	36	8.6	57	68	146	65	17	31	18
14	45	53	52	36	8.5	61	72	148	57	17	31	18
15	46	53	52	36	8.2	67	86	133	49	17	30	14
16	48	53	57	35	20	66	97	127	47	17	30	15
17	47	52	63	35	31	61	103	113	52	17	30	22
18	46	52	62	35	31	63	115	156	59	17	30	23
19	53	52	62	35	30	54	119	162	59	16	30	24
20	57	52	61	35	30	47	123	165	41	16	31	24
21	57	52	55	35	30	54	113	210	30	16	31	28
22	57	52	48	35	29	61	99	244	29	16	31	33
23	57	51	48	35	29	57	85	262	28	16	30	33
24	57	52	47	35	29	55	65	301	26	16	30	33
25	56	54	47	35	29	57	57	333	25	16	30	33
26	56	54	47	35	30	59	57	278	25	16	30	33
27	56	54	47	35	31	61	58	312	47	15	30	34
28	56	54	47	21	38	65	54	290	60	15	23	35
29	55	54	46	7.6	---	66	59	259	36	15	12	36
30	55	54	46	7.7	---	68	62	234	21	15	12	36
31	31	---	46	7.7	---	68	---	299	---	15	11	---
TOTAL	1698	1350	1614	1036.0	629.8	1750	2200	5354	2381	527	842	621
MEAN	54.8	45.0	52.1	33.4	22.5	56.5	73.3	173	79.4	17.0	27.2	20.7
MAX	87	54	63	46	38	68	123	333	248	21	31	36
MIN	31	11	46	7.6	7.7	45	46	64	21	15	11	10
AC-FT	3370	2680	3200	2050	1250	3470	4360	10620	4720	1050	1670	1230

## 11296500 SOUTH FORK STANISLAUS RIVER AT STRAWBERRY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	60.5	52.7	56.9	50.3	52.1	64.5	130	412	370	102	50.2	60.4
MAX	121	344	338	161	229	212	386	874	1066	683	127	99.2
(WY)	1983	1951	1951	1956	1982	1986	1982	1969	1983	1983	1983	1968
MIN	6.43	12.0	6.30	11.0	5.91	5.24	29.0	36.8	37.3	9.17	12.8	8.09
(WY)	1945	1943	1969	1987	1987	1977	1977	1977	1992	1977	1988	1984

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1938 - 1994			
ANNUAL TOTAL	59070.6				20002.8							
ANNUAL MEAN	162				54.8				122			
HIGHEST ANNUAL MEAN									259			
LOWEST ANNUAL MEAN									26.6			
HIGHEST DAILY MEAN	1020				May 25				2470			
LOWEST DAILY MEAN	6.9				Jan 5				1.3			
ANNUAL SEVEN-DAY MINIMUM	9.4				Jan 1				2.3			
INSTANTANEOUS PEAK FLOW									3900			
INSTANTANEOUS PEAK STAGE									9.25			
ANNUAL RUNOFF (AC-FT)	117200				39680				88350			
10 PERCENT EXCEEDS	534				99				314			
50 PERCENT EXCEEDS	65				46				60			
90 PERCENT EXCEEDS	22				15				21			

## 11297000 PHILADELPHIA CANAL NEAR STRAWBERRY, CA

LOCATION.--Lat 38°10'42", long 120°02'44", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on right bank 250 ft downstream from diversion dam on South Fork Stanislaus River and 2.8 mi southwest of Strawberry.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,960 ft above sea level (river-profile survey).

REMARKS.--No estimated daily discharges. Canal diverts from right bank of South Fork Stanislaus River for power development at Spring Gap Powerplant of Pacific Gas & Electric Co.; tailrace empties into Middle Fork Stanislaus River. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66 ft<sup>3</sup>/s, June 16, 1984; no flow at times in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	3.0	49	28	1.7	42	41	55	53	15	8.0	.00
2	44	4.3	49	28	1.9	42	46	56	55	14	4.7	.00
3	43	4.5	49	23	1.7	42	37	57	56	14	.95	.00
4	48	4.2	48	19	1.7	42	33	58	56	14	.79	.00
5	50	9.6	48	19	9.2	43	43	57	58	14	.79	.00
6	47	34	48	19	21	43	54	57	58	13	.79	.00
7	47	39	48	20	21	44	48	57	57	13	.79	.00
8	43	45	48	20	21	45	49	56	58	13	.79	.00
9	43	45	48	20	21	49	46	58	58	12	.79	.00
10	43	47	48	20	21	54	42	57	58	12	.79	.00
11	43	50	47	20	8.1	55	49	57	58	12	.79	.00
12	43	50	47	8.7	.00	54	54	57	57	11	.79	.00
13	37	50	47	.55	.00	54	54	57	57	11	.78	.00
14	38	49	47	.55	.00	56	55	56	57	11	.73	.00
15	38	49	47	.55	.00	58	57	58	50	11	.72	.00
16	40	48	47	.55	10	58	57	58	46	9.8	.79	.00
17	40	48	45	.48	23	58	57	58	52	9.4	2.1	.00
18	40	47	43	.46	23	58	56	58	57	9.7	1.6	.00
19	46	47	43	.46	23	52	55	58	59	9.7	.44	.00
20	53	47	43	12	23	44	54	58	42	9.7	.42	.00
21	53	47	42	24	23	50	54	58	27	9.7	.43	.00
22	53	47	36	24	23	56	52	56	25	9.6	.23	.00
23	53	47	30	24	23	53	55	57	24	9.6	.16	.00
24	52	47	30	24	24	49	55	58	23	9.3	.44	.00
25	51	49	30	24	25	51	54	56	22	9.2	.42	.00
26	51	49	29	24	26	55	52	57	21	8.8	.41	.00
27	51	49	28	24	26	57	54	58	37	8.6	.98	.00
28	51	49	28	13	33	56	50	58	54	8.6	.74	.00
29	50	49	28	.73	---	56	54	58	35	8.5	.14	.00
30	50	50	28	2.8	---	56	55	56	16	8.5	.00	.00
31	28	---	27	2.8	---	55	---	57	---	8.2	.00	---
TOTAL	1413	1203.6	1275	447.63	434.30	1587	1522	1772	1386	336.9	32.29	0.00
MEAN	45.6	40.1	41.1	14.4	15.5	51.2	50.7	57.2	46.2	10.9	1.04	.000
MAX	53	50	49	28	33	58	57	58	59	15	8.0	.00
MIN	28	3.0	27	.46	.00	42	33	55	16	8.2	.00	.00
AC-FT	2800	2390	2530	888	861	3150	3020	3510	2750	668	64	.00

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1994, BY WATER YEAR (WY)

	MEAN	42.2	31.6	33.7	34.2	38.1	44.8	51.8	52.4	49.4	40.2	37.0	44.0
MAX	60.9	60.1	60.1	58.8	60.7	60.8	61.8	62.1	61.9	61.2	60.0	60.9	60.9
(WY)	1968	1976	1984	1982	1984	1965	1987	1987	1984	1982	1969	1983	1983
MIN	.000	.41	1.05	.92	.000	.000	.42	.42	.16	.59	.76	.000	.000
(WY)	1945	1988	1977	1981	1949	1949	1977	1977	1941	1977	1977	1994	1994

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1940 - 1994

ANNUAL TOTAL	14894.40	11409.72	
ANNUAL MEAN	40.8	31.3	
HIGHEST ANNUAL MEAN			41.6
LOWEST ANNUAL MEAN			57.5
HIGHEST DAILY MEAN	60	Jan 22	59
LOWEST DAILY MEAN	.00	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Mar 7	.00
ANNUAL RUNOFF (AC-FT)	29540	22630	30150
10 PERCENT EXCEEDS	58	57	60
50 PERCENT EXCEEDS	48	39	54
90 PERCENT EXCEEDS	.00	.08	2.6

## 11297200 SOUTH FORK STANISLAUS RIVER NEAR STRAWBERRY, CA

LOCATION.--Lat 38°10'40", long 120°02'45", in NW 1/4 NW 1/4 sec.30, T.4 N., R.18 E., Tuolumne County, Hydrologic Unit 18040010, on right bank 400 ft downstream from diversion dam and 2.8 mi southwest of Strawberry.

DRAINAGE AREA.--48.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year (low-flow records only). Unpublished records for water years 1970, 1976-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,915 ft above sea level, from topographic map.

REMARKS.--No records computed above 50 ft<sup>3</sup>/s. Flow regulated by Pinecrest Lake (station 11295900). Most of the water is diverted at diversion dam 400 ft upstream to Philadelphia Canal (station 11297000). See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	7.4	4.6	18	9.2	5.8	22	11	---	7.9	7.3	e11
2	49	5.6	4.3	19	6.6	5.6	28	17	---	7.9	12	e11
3	49	5.6	4.5	19	6.1	5.8	41	23	---	7.9	23	e11
4	34	5.6	4.7	19	6.1	5.9	29	38	---	7.6	31	e11
5	11	5.4	4.8	20	7.0	7.9	17	42	---	7.6	30	e11
6	5.6	5.0	4.7	19	9.2	8.0	6.2	45	---	7.6	30	e11
7	3.5	4.9	4.6	18	12	6.8	4.6	25	---	7.6	30	e11
8	3.8	4.8	4.4	18	11	6.2	5.1	21	---	7.5	30	e10
9	3.6	4.8	4.5	18	10	6.4	5.3	---	---	7.3	30	e10
10	3.4	4.6	4.4	18	10	5.5	5.0	---	48	7.3	30	e10
11	3.5	4.6	5.7	18	16	5.5	5.3	---	46	7.4	30	e10
12	3.2	4.5	4.8	28	11	5.0	8.9	---	33	7.5	30	e12
13	10	4.3	4.9	35	11	5.1	14	---	17	7.6	32	e18
14	9.4	4.5	5.0	34	11	7.2	18	---	8.9	7.6	32	e18
15	11	4.8	4.9	34	11	12	26	---	7.6	7.5	31	e14
16	12	4.6	9.2	34	9.4	12	---	---	7.5	7.9	31	e15
17	9.0	4.6	19	34	13	5.9	---	---	6.8	8.2	30	23
18	7.9	4.8	20	34	11	8.0	---	---	8.9	7.9	30	24
19	8.3	4.7	19	33	9.5	6.2	---	---	7.8	7.9	31	25
20	8.4	4.6	19	23	9.4	4.5	---	---	8.3	7.8	31	25
21	7.7	4.6	15	11	8.9	5.3	---	---	7.3	7.8	31	29
22	7.5	4.5	15	11	8.8	6.8	---	---	7.6	7.6	31	35
23	7.4	4.5	19	13	8.8	5.8	37	---	7.3	7.6	32	35
24	7.5	4.9	18	12	7.4	6.7	13	---	7.3	7.4	e30	35
25	7.8	4.7	18	12	6.0	6.5	5.9	---	7.7	7.5	e30	35
26	7.7	4.6	18	12	5.8	6.1	6.9	---	7.6	7.6	e30	35
27	7.7	4.5	19	11	6.6	6.2	6.9	---	12	7.8	e30	36
28	7.6	4.6	19	14	6.0	11	5.6	---	12	7.8	e23	39
29	7.6	5.3	18	7.0	---	12	7.2	---	9.6	7.8	e12	39
30	7.6	5.5	18	7.6	---	12	9.7	---	7.9	7.7	e12	38
31	9.2	---	18	7.7	---	15	---	---	---	7.4	e11	---
TOTAL	380.9	147.4	352.0	611.3	257.8	228.7	---	---	---	237.5	833.3	647
MEAN	12.3	4.91	11.4	19.7	9.21	7.38	---	---	---	7.66	26.9	21.6
MAX	50	7.4	20	35	16	15	---	---	---	8.2	32	39
MIN	3.2	4.3	4.3	7.0	5.8	4.5	---	---	---	7.3	7.3	10
AC-FT	756	292	698	1210	511	454	---	---	---	471	1650	1280

e Estimated.

## SAN JOAQUIN RIVER BASIN

## 11297500 TUOLUMNE CANAL NEAR LONG BARN, CA

LOCATION.--Lat 38°05'35", long 120°10'03", in SE 1/4 SW 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 300 ft downstream from intake, 350 ft downstream from Lyons Reservoir on South Fork Stanislaus River, 2 mi west of Long Barn, and 15 mi northeast of Sonora.

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,110.0 ft above sea level (river-profile survey). Prior to June 1938, at site 200 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from left bank of South Fork Stanislaus River into Tuolumne River basin for power and domestic supply in vicinity of Sonora. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft<sup>3</sup>/s, May 11, 1975; no flow at times in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	16	16	18	11	11	18	15	42	34	37	40
2	28	16	16	17	11	11	18	16	41	32	38	39
3	24	16	16	16	11	11	18	16	45	31	38	38
4	21	16	16	16	11	11	18	16	45	34	38	34
5	24	16	16	16	11	13	18	16	45	34	38	34
6	26	16	16	16	11	14	18	14	45	34	38	36
7	26	16	16	16	11	14	18	13	46	33	38	40
8	26	16	16	16	11	16	18	13	46	34	38	39
9	26	16	16	17	11	18	18	13	46	34	37	39
10	26	16	22	16	11	18	18	14	46	34	38	38
11	25	16	27	15	11	18	18	14	46	34	41	38
12	25	16	26	14	12	18	18	14	46	36	39	38
13	24	16	23	13	12	18	18	14	31	36	37	38
14	22	16	26	13	12	18	18	14	20	36	37	36
15	23	16	25	14	11	18	19	14	19	36	37	36
16	23	16	21	13	18	19	19	14	18	35	33	36
17	23	16	21	13	28	19	19	14	17	35	30	35
18	3.2	16	21	13	28	19	19	14	25	31	35	35
19	.00	16	21	13	28	19	19	14	32	21	38	35
20	.00	16	21	14	28	19	19	32	32	27	37	35
21	.00	16	21	14	28	18	19	45	32	36	34	35
22	.00	16	21	14	18	17	20	47	32	35	37	35
23	.00	16	20	14	12	20	20	39	32	37	38	35
24	19	16	21	20	12	19	20	43	32	39	39	35
25	42	16	21	26	12	17	20	44	32	37	40	34
26	26	16	21	20	11	17	18	40	32	37	40	34
27	16	16	19	15	11	18	16	37	32	38	40	34
28	16	16	17	14	11	18	16	13	34	39	40	33
29	16	16	17	12	---	18	16	24	35	38	40	32
30	16	16	17	12	---	18	15	42	34	38	40	31
31	16	---	18	12	---	18	---	42	---	38	40	---
TOTAL	590.20	480	611	472	413	520	546	720	1060	1073	1170	1077
MEAN	19.0	16.0	19.7	15.2	14.7	16.8	18.2	23.2	35.3	34.6	37.7	35.9
MAX	42	16	27	26	28	20	20	47	46	39	41	40
MIN	.00	16	16	12	11	11	15	13	17	21	30	31
AC-FT	1170	952	1210	936	819	1030	1080	1430	2100	2130	2320	2140

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

	MEAN	18.0	20.0	22.6	25.1	27.9	30.5	35.1	39.2	35.9	36.4	32.4
MAX	36.4	40.9	44.5	45.8	45.1	45.7	47.7	52.4	53.8	49.1	48.5	48.6
(WY)	1947	1983	1974	1974	1973	1974	1973	1973	1973	1983	1983	1983
MIN	12.2	8.41	8.15	8.16	9.86	7.98	.000	.000	20.6	18.6	20.0	20.1
(WY)	1940	1941	1940	1948	1961	1977	1941	1938	1939	1944	1942	1941

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1938 - 1994

ANNUAL TOTAL	12846.20	8732.20	
ANNUAL MEAN	35.2	23.9	28.7
HIGHEST ANNUAL MEAN			43.5
LOWEST ANNUAL MEAN			18.1
HIGHEST DAILY MEAN	51	Jul 4	59
LOWEST DAILY MEAN	.00	Oct 19	.00
ANNUAL SEVEN-DAY MINIMUM	3.2	Oct 18	3.2
ANNUAL RUNOFF (AC-FT)	25480	17320	20800
10 PERCENT EXCEEDS	46	39	44
50 PERCENT EXCEEDS	39	19	30
90 PERCENT EXCEEDS	16	13	12

## 11297700 LYONS RESERVOIR NEAR LONG BARN, CA

LOCATION.--Lat 38°05'38", long 120°09'59", in SW 1/4 NE 1/4 sec.24, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, at left abutment of dam and 1.6 mi west of Long Barn.  
DRAINAGE AREA.--66.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for 1981-85 water years are available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Prior to Dec. 10, 1990, nonrecording gage read three times weekly. Datum of gage is 4,134 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Reservoir is formed by concrete arch dam completed in 1930; storage began in 1930. Usable capacity, 5,504 acre-ft between gage heights 0.0 ft, invert of outlet, and 86.0 ft, top of spillway gates. Dead storage, 4 acre-ft. Part of the released water is diverted to Tuolumne Canal (station 11297500) near the base of the dam. Records from Dec. 10, 1990, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 6,292 acre-ft, June 4, 5, 7, 9, 10, 1989, gage height, 90.4 ft; minimum observed, 847 acre-ft, Apr. 7, 1988, gage height, 41.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,288 acre-ft, May 31, gage height, 90.38 ft; minimum, 1,074 acre-ft, Dec. 26, gage height, 46.07 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Pacific Gas & Electric Co. in 1930)

20	210	50	1,299	80	4,541
25	309	60	2,070	90	6,219
30	437	70	3,153	92.5	6,680
40	785				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3074	2430	1662	1098	1651	2062	2140	2799	6263	5199	3165	2247
2	3105	2406	1635	1101	1639	2094	2147	2809	6268	5136	3096	2183
3	3136	2379	1608	1107	1627	2124	2208	2826	6272	5076	3048	2116
4	3163	2353	1581	1121	1615	2153	2231	2867	6248	5017	3025	2051
5	3133	2328	1553	1140	1601	2205	2257	2927	6217	4958	3003	1988
6	3092	2301	1528	1148	1594	2250	2234	2996	6232	4897	2983	1921
7	3042	2275	1499	1152	1655	2280	2209	3040	6241	4838	2959	1855
8	2993	2247	1469	1155	1696	2300	2190	3069	6224	4780	2935	1787
9	2941	2218	1443	1158	1763	2315	2182	3108	6204	4720	2915	1721
10	2886	2190	1401	1160	1821	2326	2162	3226	6180	4660	2890	1656
11	2846	2173	1363	1163	1845	2334	2139	3415	6153	4600	2861	1591
12	2797	2154	1321	1177	1855	2335	2123	3629	6113	4533	2835	1526
13	2752	2125	1278	1220	1862	2330	2107	3804	6086	4467	2816	1469
14	2722	2098	1239	1262	1867	2322	2109	3985	6064	4402	2797	1420
15	2707	2071	1197	1303	1874	2321	2112	4159	6035	4335	2779	1373
16	2683	2045	1160	1344	1866	2330	2151	4301	6008	4268	2765	1315
17	2655	2015	1144	1385	1908	2326	2211	4387	5983	4202	2758	1277
18	2657	1989	1141	1427	1910	2313	2294	4609	5940	4132	2738	1245
19	2666	1959	1137	1467	1897	2305	2410	4863	5885	4063	2718	1220
20	2677	1931	1131	1501	1885	2289	2535	5054	5830	3992	2697	1193
21	2684	1902	1123	1539	1863	2271	2645	5297	5773	3927	2674	1168
22	2696	1878	1097	1577	1853	2258	2723	5620	5715	3860	2652	1161
23	2703	1852	1092	1635	1862	2237	2780	5922	5657	3793	2627	1154
24	2676	1824	1086	1635	1875	2218	2792	6235	5601	3726	2602	1150
25	2601	1798	1080	1610	1903	2202	2791	6248	5546	3658	2578	1143
26	2561	1772	1074	1610	1933	2185	2791	6213	5489	3588	2551	1137
27	2540	1744	1083	1653	1986	2168	2795	6237	5434	3518	2527	1132
28	2515	1718	1089	1691	2025	2157	2798	6226	5380	3446	2499	1145
29	2494	1703	1092	1685	---	2148	2797	6234	5326	3377	2439	1154
30	2472	1688	1094	1673	---	2142	2797	6248	5261	3305	2375	1162
31	2449	---	1098	1661	---	2138	---	6288	---	3235	2310	---
MAX	3163	2430	1662	1691	2025	2335	2798	6288	6272	5199	3165	2247
MIN	2449	1688	1074	1098	1594	2062	2107	2799	5261	3235	2310	1132
a	63.81	55.55	46.51	55.20	59.51	60.72	67.01	90.38	84.56	70.66	62.47	47.68
b	-591	-761	-590	+563	+364	+113	+659	+3491	-1027	-2026	-925	-1148

CAL YR 1993 MAX 6109 MIN 1074 b -1907  
WTR YR 1994 MAX 6288 MIN 1074 b -1878

a Gage height, in feet, at end of month.  
b Change in contents, in acre-feet.

## SAN JOAQUIN RIVER BASIN

11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CA

LOCATION.--Lat 38°05'33", long 120°10'04", in NE 1/4 NW 1/4 sec.25, T.3 N., R.16 E., Tuolumne County, Hydrologic Unit 18040010, Stanislaus National Forest, on left bank 600 ft downstream from Lyons Dam, 1.9 mi west of Long Barn, and 15 mi northeast of Sonora.

DRAINAGE AREA.--66.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1215: 1938(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above sea level (river-profile survey).

REMARKS.--No estimated daily discharges. Flow regulated by Lyons Reservoir (station 11297700) 600 ft upstream and Pinecrest Lake (station 11295900). Tuolumne Canal (station 11297500) diverts at Lyons Dam. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft<sup>3</sup>/s, Nov. 21, 1950, gage height, 9.3 ft, from rating curve extended above 2,400 ft<sup>3</sup>/s, on basis of computation of peak flow over Lyons Dam; no flow at times in 1937-39, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 393 ft<sup>3</sup>/s, May 25, gage height, 3.63 ft; minimum daily, 2.3 ft<sup>3</sup>/s, Aug. 29 to Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.0	2.8	3.0	3.3	3.0	3.0	3.0	215	2.9	2.7	2.3
2	3.2	3.0	2.8	3.0	3.3	3.0	3.0	3.1	148	2.9	2.7	2.5
3	3.2	3.0	2.8	3.0	3.2	3.0	3.0	3.0	122	2.9	2.7	2.5
4	3.2	3.0	2.8	3.0	3.2	2.9	3.0	3.0	71	3.0	2.7	2.5
5	3.2	3.0	2.8	3.0	3.2	3.1	3.0	3.0	57	2.8	2.7	2.5
6	3.2	3.0	2.8	3.0	3.2	3.2	3.0	3.0	29	2.7	2.7	2.5
7	3.2	3.0	2.9	2.9	3.4	3.2	3.0	3.0	20	2.7	2.7	2.5
8	3.2	3.0	3.0	3.0	3.3	3.1	3.0	3.0	16	2.7	2.7	2.6
9	3.2	3.0	3.0	3.0	3.3	3.0	3.0	3.0	13	2.7	2.7	2.6
10	3.2	3.0	3.0	3.0	3.2	3.0	3.0	3.0	11	2.7	2.7	2.7
11	3.2	3.0	3.1	2.9	3.2	3.0	2.9	3.0	9.1	2.7	2.7	2.7
12	3.2	3.2	3.2	2.9	3.2	3.0	2.9	2.9	7.4	2.7	2.7	2.7
13	3.2	3.1	3.1	3.0	3.2	3.0	2.8	2.9	4.4	2.7	2.7	2.7
14	3.2	3.1	3.1	3.0	3.2	3.0	2.9	3.0	3.1	2.7	2.7	2.7
15	3.2	3.1	3.2	3.0	3.2	3.0	3.0	3.2	3.0	2.7	2.7	2.7
16	3.2	3.2	3.0	3.0	3.2	3.0	3.0	3.2	3.0	2.8	2.8	2.7
17	3.1	3.0	3.0	3.0	3.3	3.0	3.1	3.2	3.0	2.8	2.9	2.7
18	3.3	2.9	3.0	3.1	3.2	3.0	3.1	3.2	3.0	2.7	2.8	2.7
19	3.3	2.9	3.0	3.2	3.2	3.0	3.2	3.2	3.0	2.7	2.8	2.7
20	3.2	2.9	3.0	3.2	3.2	3.0	3.2	3.1	3.0	2.7	2.8	2.7
21	3.0	2.9	3.0	3.2	3.2	3.0	3.2	3.0	3.0	2.8	2.8	2.8
22	3.0	3.0	3.0	3.2	3.2	3.0	3.2	7.9	3.0	2.8	2.7	2.8
23	3.0	3.0	3.0	3.3	3.2	3.0	3.2	38	3.0	2.8	2.7	2.8
24	2.9	3.0	3.0	3.3	3.2	3.0	3.1	74	3.0	2.8	2.7	2.8
25	2.8	3.0	3.0	3.3	3.2	3.0	3.1	289	3.0	2.7	2.7	2.8
26	2.9	2.8	3.0	3.3	3.2	3.0	3.1	244	3.0	2.7	2.6	2.8
27	3.0	2.8	3.0	3.3	3.2	3.0	3.0	265	3.0	2.7	2.5	2.8
28	3.0	2.8	3.0	3.2	3.1	3.0	2.9	286	3.0	2.7	2.4	2.8
29	3.0	2.9	3.0	3.3	---	3.0	2.8	221	2.9	2.7	2.3	2.8
30	3.0	3.0	3.0	3.3	---	3.0	2.9	170	2.9	2.7	2.3	2.8
31	3.0	---	3.0	3.3	---	3.0	---	209	---	2.7	2.3	---
TOTAL	96.7	89.6	92.4	96.2	90.2	93.5	90.6	1867.9	773.8	85.3	82.6	80.2
MEAN	3.12	2.99	2.98	3.10	3.22	3.02	3.02	60.3	25.8	2.75	2.66	2.67
MAX	3.3	3.2	3.2	3.3	3.4	3.2	3.2	289	215	3.0	2.9	2.8
MIN	2.8	2.8	2.8	2.9	3.1	2.9	2.8	2.9	2.9	2.7	2.3	2.3
AC-FT	192	178	183	191	179	185	180	3700	1530	169	164	159



## 11298000 SOUTH FORK STANISLAUS RIVER NEAR LONG BARN, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.36	11.3	24.8	29.2	36.9	48.8	96.0	347	305	50.7	2.70	2.03
MAX	14.7	324	399	258	306	291	501	875	950	572	37.7	3.37
(WY)	1983	1951	1951	1956	1982	1938	1982	1969	1983	1983	1983	1947
MIN	.000	.023	.077	.013	.000	.23	.97	1.02	1.00	.92	.83	.71
(WY)	1938	1939	1939	1939	1939	1939	1977	1977	1977	1949	1940	1949

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1938 - 1994			
ANNUAL TOTAL	47274.0				3539.0							
ANNUAL MEAN	130				9.70				78.9			
HIGHEST ANNUAL MEAN									234			
LOWEST ANNUAL MEAN									1.50			
HIGHEST DAILY MEAN	994				289				3370			
LOWEST DAILY MEAN	2.7				2.3				.00			
ANNUAL SEVEN-DAY MINIMUM	2.7				2.4				.00			
INSTANTANEOUS PEAK FLOW					393				4900			
INSTANTANEOUS PEAK STAGE					3.63				9.30			
ANNUAL RUNOFF (AC-FT)	93770				7020				57160			
10 PERCENT EXCEEDS	498				3.3				274			
50 PERCENT EXCEEDS	4.2				3.0				2.4			
90 PERCENT EXCEEDS	2.8				2.7				1.4			

## SAN JOAQUIN RIVER BASIN

11298700 ANGELS CREEK BELOW UTICA DITCH DIVERSION DAM, NEAR MURPHYS, CA

LOCATION.--Lat 38°07'51", long 120°29'03", in NW 1/4 NW 1/4 sec.7, T.3 N., R.14 E., Calaveras County, Hydrologic Unit 18040010, on right bank 120 ft downstream from diversion dam and 1.2 mi southwest of Murphys.

DRAINAGE AREA.--6.01 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1990 to current year (low-flow records only).

GAGE.--Water-stage recorder and 90° V-notch weir. Elevation of gage is 2,040 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 2.5 ft<sup>3</sup>/s. Flow consists of fishery release and spill over diversion dam. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

[illegible]

## 11299000 NEW MELONES RESERVOIR NEAR SONORA, CA

LOCATION.--Lat 37°57'02", long 120°30'49", in NW 1/4 SE 1/4 sec.11, T.1 N., R.13 E., Calaveras County, Hydrologic Unit 18040010, at right abutment of New Melones Dam on Stanislaus River, 0.1 mi downstream from the old Melones Dam, and 7.6 mi southwest of Sonora.

DRAINAGE AREA.--904 mi<sup>2</sup>.

PERIOD OF RECORD.--1926 (year-end contents only, published in WSP 1315-A), June 1927 to current year. Prior to October 1970, published as Melones Reservoir at Melones Dam. October 1970 to September 1978, published as Melones Lake near Sonora.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Feb. 28, 1961, nonrecording gage, and Mar. 1, 1961, to Nov. 26, 1978, water-stage recorder at site on left side of old Melones Dam, at same datum.

REMARKS.--Reservoir is formed by earth and rockfill dam completed in November 1978. Dam is downstream from the original concrete dam which was completed in December 1926. Usable capacity 2,420,000 acre-ft between elevations 543.0 ft, invert entrance to outlet tunnel, and 1,088.0 ft, gross pool elevation. No dead storage. When elevation is above 808.0 ft, water is released through New Melones Powerplant (station 11299200) to Tulloch Reservoir (station 11299995) where it is used for irrigation. Records for the 1971 water year represent contents at 1630 hours. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Stanislaus River basin.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD (Subsequent to completion of New Melones Dam in 1978).--Maximum contents, 2,400,000 acre-ft, July 8-10, 1983, elevation, 1,086.42 ft; minimum since reservoir first filled in July 1983, 83,630 acre-ft, Oct. 1, 1992, elevation, 721.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 793,800 acre-ft, Mar. 3, elevation, 911.71 ft; minimum, 376,800 acre-ft, Sept. 28, elevation, 828.97 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)							
(Based on table provided by U.S. Army Corps of Engineers, dated September 1978)							
700	53,900	760	160,500	880	611,500	1,000	1,471,000
710	66,950	780	212,300	900	723,000	1,020	1,662,000
720	81,800	800	272,800	920	846,500	1,040	1,867,000
730	98,530	820	342,400	940	982,600	1,060	2,087,000
740	117,200	840	421,800	960	1,132,000	1,088	2,420,000
750	137,800	860	511,200	980	1,295,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	672500	683800	711000	748800	774300	793400	740500	692300	648800	576500	493100	421000
2	672800	683900	712700	750100	773400	793000	738300	691900	646200	573900	491300	419300
3	672400	683600	712000	750200	772700	793800	736200	692200	643400	570800	489200	416500
4	672400	684300	713100	751800	771900	791500	734800	691200	642200	567500	486500	413700
5	672900	684100	714200	753500	770800	790400	733800	690700	640400	564600	484500	411800
6	674100	685100	716000	755200	771200	791300	732300	690000	638100	562600	481900	410900
7	675500	686300	715900	755100	772500	790200	730000	689700	636400	560500	479100	410400
8	675300	686300	717300	756200	774900	788900	728200	690800	634900	559000	476500	409200
9	673000	688100	719300	757400	776400	787300	725900	692400	633400	556200	474100	407200
10	670600	689600	721800	757100	777700	785300	724600	692400	631300	552800	471600	404900
11	669200	691100	724900	758300	779000	784700	724000	691800	629000	549100	469000	402600
12	668400	690200	727800	759700	780000	783300	722000	690900	626300	545400	466700	400600
13	669100	691300	728200	758700	781000	781600	720000	689700	622900	542600	463800	398900
14	669700	692500	729200	760000	780400	780100	718100	688200	621000	540900	460700	397500
15	671600	694000	730500	761300	781400	778400	716400	687000	618400	538500	457300	397100
16	672100	693600	731900	762300	782300	776200	714600	685600	615400	535700	455100	396800
17	671300	695000	733200	763600	781600	774000	712700	684500	612900	532400	453300	394100
18	670900	696500	734500	762700	783400	772500	709900	681100	610200	529600	450600	391100
19	670200	696800	735900	764000	784700	770300	707200	678500	607200	526700	447900	389100
20	670200	698000	737200	765400	786400	768100	708000	675700	603900	523900	444900	387800
21	670800	699200	738700	766600	787700	766000	703600	672300	601800	521000	441500	387600
22	671900	700700	740300	766400	789100	763300	701900	669200	599900	519000	438900	387400
23	673000	700900	741800	767900	788400	761800	700700	665600	597300	515800	436600	385600
24	674300	701900	741100	769900	789400	760100	700000	663400	595100	512600	434700	383000
25	676100	703000	742100	771700	788700	758500	698500	662100	591700	509700	432900	380400
26	677700	704500	743500	773300	789700	755900	697200	660200	588300	507100	431100	378300
27	678500	703600	744400	773000	790700	752300	695900	658100	585500	505000	428200	377100
28	680200	704900	745500	774200	792000	749300	693800	655700	582900	503000	425800	376800
29	681100	707100	747000	773900	---	746300	691700	653400	580500	501500	424600	378100
30	681800	709000	746900	774900	---	743900	691500	651500	578800	498700	423000	379200
31	682700	---	747500	774300	---	742100	---	649500	---	495700	422300	---
MAX	682700	709000	747500	774900	792000	793800	740500	692400	648800	576500	493100	421000
MIN	668400	683600	711000	748800	770800	742100	691500	649500	578800	495700	422300	376800
a	893.02	897.60	904.13	908.54	911.42	903.22	894.55	887.06	873.72	856.69	840.13	829.58
b	+12000	+26300	+38500	+26800	+17700	-49900	-50600	-42000	-70700	-83100	-73400	-43100
c	2055	1661	961	1248	1170	1799	2120	2814	2912	3375	3451	1948
d	36190	15910	15810	16860	17300	84880	93340	85480	108700	115100	107300	53800

CAL YR 1993 b +631900

WTR YR 1994 b -291500

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, published as provided; not reviewed by U.S. Geological Survey.

d Discharge, in acre-feet, through New Melones Powerplant, provided by U.S. Bureau of Reclamation.

## SAN JOAQUIN RIVER BASIN

11299600 BLACK CREEK NEAR COPPEROPOLIS, CA

LOCATION.--Lat 37°57'40", long 120°36'51", in SE 1/4 SE 1/4, sec.2, T.1 N., R.12 E., Calaveras County, Hydrologic Unit 18040010, on left bank 100 ft upstream from O'Byrnes Ferry Road bridge, 1,300 ft upstream from Copper Creek, and 2.1 mi southeast of Copperopolis.

DRAINAGE AREA.--14.4 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1983 to current year.

REVISED RECORDS.--WDR CA-86-3: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 746.13 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. See schematic diagram of Stanislaus River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 9.10 ft, from rating curve extended above 2,500 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	0415	*117	*3.29				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.20	.15	.55	2.8	.76	.58	.10	.00	.00	.00
2	.00	.00	.13	.15	.52	2.5	.75	.49	.06	.00	.00	.00
3	.00	.00	.11	.15	.50	2.3	.77	.43	.05	.00	.00	.00
4	.00	.00	.11	.19	.49	2.2	.74	.41	.05	.00	.00	.00
5	.00	.00	.11	.28	.45	2.6	.65	.41	.05	.00	.00	.00
6	.00	.00	.11	.22	.57	2.5	.65	.59	.05	.00	.00	.00
7	.00	.00	.11	.19	3.1	2.0	.67	.94	.04	.00	.00	.00
8	.00	.00	.11	.18	21	1.8	.76	.64	.03	.00	.00	.00
9	.00	.00	.21	.18	4.8	1.7	2.0	.52	.01	.00	.00	.00
10	.00	.00	.19	.17	3.3	1.7	.91	.44	.00	.00	.00	.00
11	.00	.00	.92	.15	2.8	1.5	.69	.38	.00	.00	.00	.00
12	.00	.00	.66	.15	2.1	1.4	.64	.32	.00	.00	.00	.00
13	.00	.00	.29	.15	1.8	1.3	.59	.31	.00	.00	.00	.00
14	.00	.00	2.2	.15	1.6	1.3	.54	.27	.00	.00	.00	.00
15	.00	.00	.75	.15	1.5	1.3	.50	.24	.00	.00	.00	.00
16	.00	.00	.39	.17	1.4	1.3	.47	.29	.00	.00	.00	.00
17	.00	.00	.29	.18	6.1	1.3	.44	.56	.00	.00	.00	.00
18	.00	.00	.26	.18	22	1.2	.39	.74	.00	.00	.00	.00
19	.00	.00	.23	.18	11	1.1	.34	.56	.00	.00	.00	.00
20	.00	.00	.22	.18	42	1.1	.32	.44	.00	.00	.00	.00
21	.00	.00	.20	.18	13	1.0	.29	.36	.00	.00	.00	.00
22	.00	.00	.18	.18	11	1.0	.29	.31	.00	.00	.00	.00
23	.00	.02	.18	1.9	7.3	1.0	.45	.29	.00	.00	.00	.00
24	.00	.04	.17	4.7	5.7	1.1	1.3	.26	.00	.00	.00	.00
25	.00	.04	.16	3.3	4.7	1.2	3.0	.22	.00	.00	.00	.00
26	.00	.05	.18	2.2	4.1	1.1	3.1	.20	.00	.00	.00	.00
27	.00	.05	.23	1.4	3.7	1.0	1.2	.19	.00	.00	.00	.00
28	.00	.08	.20	1.0	3.1	.91	.95	.17	.00	.00	.00	.00
29	.00	.19	.17	.78	---	.89	.74	.16	.00	.00	.00	.00
30	.00	.52	.15	.67	---	.85	.64	.12	.00	.00	.00	.00
31	.00	---	.15	.61	---	.79	---	.13	---	.00	.00	---
TOTAL	0.00	0.99	9.57	20.42	180.18	45.74	25.54	11.97	0.44	0.00	0.00	0.00
MEAN	.000	.033	.31	.66	6.43	1.48	.85	.39	.015	.000	.000	.000
MAX	.00	.52	2.2	4.7	42	2.8	3.1	.94	.10	.00	.00	.00
MIN	.00	.00	.11	.15	.45	.79	.29	.12	.00	.00	.00	.00
AC-FT	.00	2.0	19	41	357	91	51	24	.9	.00	.00	.00

## 11299600 BLACK CREEK NEAR COPPEROPOLIS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.21	6.28	6.77	12.2	30.6	17.1	3.19	.78	.13	.004	.000	.009
MAX	1.80	53.1	59.4	101	170	53.4	9.12	1.83	.67	.048	.000	.11
(WY)	1992	1984	1984	1993	1986	1986	1993	1986	1993	1993	1984	1983
MIN	.000	.000	.000	.000	.16	.62	.62	.17	.000	.000	.000	.000
(WY)	1986	1991	1991	1991	1991	1988	1988	1992	1988	1984	1984	1984

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1983 - 1994			
ANNUAL TOTAL	5462.33				294.85							
ANNUAL MEAN	15.0				.81				6.31			
HIGHEST ANNUAL MEAN									19.7			
LOWEST ANNUAL MEAN									.32			
HIGHEST DAILY MEAN	397				42				1400			
LOWEST DAILY MEAN	.00				.00				.00			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				.00			
INSTANTANEOUS PEAK FLOW					117				5200			
INSTANTANEOUS PEAK STAGE					3.29				9.10			
ANNUAL RUNOFF (AC-FT)	10830				585				4570			
10 PERCENT EXCEEDS	38				1.7				8.4			
50 PERCENT EXCEEDS	.29				.11				.15			
90 PERCENT EXCEEDS	.00				.00				.00			

## SAN JOAQUIN RIVER BASIN

## 11299995 TULLOCH RESERVOIR NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'12", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, in center of Tulloch Dam on Stanislaus River, 1.9 mi upstream from Goodwin Dam, and 5.3 mi northeast of Knights Ferry.

DRAINAGE AREA.--980 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1957 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

REMARKS.--Reservoir is formed by gravity-type concrete dam completed in October 1957. Usable capacity, 56,840 acre-ft between elevations 431.0 ft, normal minimum water surface, and 511.0 ft, top of radial gates. Dead storage, 11,560 acre-ft. Reservoir is used for irrigation and power. Water passes down Stanislaus River, first passing through Tulloch Powerplant at dam. Part of flow is diverted at Goodwin Dam to Oakdale Canal (station 11301000) and South San Joaquin Canal (station 11300500). Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records were provided by Oakdale and South San Joaquin Irrigation Districts, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 69,500 acre-ft, Jan. 7, 1965, elevation, 512.0 ft; minimum, 4,580 acre-ft, Oct. 3, 1960, elevation, 404.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,400 acre-ft, Sept. 4, maximum elevation, 509.55 ft; minimum, 53,500 acre-ft, Dec. 12, elevation, 498.34.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated October 1956)

404	4,580	430	11,100	475	33,100
411	6,020	445	16,400	490	45,300
420	8,200	460	23,600	512	69,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62600	54100	54300	55100	55200	54000	57300	59200	64800	65300	65100	64500
2	61900	54400	53700	54500	55300	55200	57400	59900	66100	64800	64700	64900
3	62000	55300	55900	55800	55300	53800	57400	59700	66000	64700	64900	65700
4	62000	54700	55300	55200	55000	55800	57400	60500	64800	64700	65000	66400
5	62000	55400	54700	54600	55100	56400	57200	60900	64200	64900	65100	66300
6	61500	54800	54100	54100	54700	54800	57000	61400	64800	65000	65000	65700
7	60700	54200	55900	55300	55200	55700	57500	62000	64900	65500	65000	64700
8	60000	55300	55700	54700	55400	56200	58000	61000	64900	64900	65100	64300
9	60200	54700	55100	54200	55200	56400	58600	59700	64700	65000	65200	64800
10	60400	54300	54600	55600	54900	56500	58200	59800	65200	65000	65200	65000
11	60100	53800	54100	55000	54700	55400	57600	60300	65000	65000	65200	65200
12	60300	55800	53500	54300	54400	55100	57800	60900	64900	65700	65100	65500
13	59600	55200	55300	56300	54100	54800	57800	61800	65800	65700	65100	65700
14	59500	54600	56400	55700	55600	54700	58000	62200	64900	65100	65100	65800
15	58900	54000	56000	55100	55200	54900	58200	62000	65100	64500	65300	64600
16	58300	55700	55700	54500	54900	55000	58000	61800	65000	65200	65200	63100
17	57800	55200	55200	53900	56500	55500	58200	61600	65100	65300	64700	63500
18	57500	54700	54700	56100	55600	55200	58600	62300	65100	64900	64900	64100
19	57600	55600	54200	55500	55100	55300	59200	61900	65100	65400	65300	64200
20	57500	55000	55700	55000	55000	55400	56900	61800	65700	65000	65500	63900
21	57500	54500	55300	54400	54500	55500	59700	61900	65500	65100	65500	62500
22	57500	54100	55000	55800	54100	56100	60000	61800	65100	64800	65400	61100
23	56900	55200	54400	55400	55400	56000	59800	63000	64600	64900	65400	60900
24	56300	55900	56200	55100	54800	55800	59000	62500	64500	64900	65300	60800
25	55700	55300	55600	54500	56100	55200	60200	62200	64900	65200	65200	60800
26	55100	54700	55200	54000	55500	55000	60100	62100	65200	65700	65200	60700
27	55600	56700	55100	55600	55000	55200	59700	62900	65400	65500	65800	60800
28	55000	56100	54800	55100	54600	56200	59600	63300	65800	65400	65700	60000
29	55500	55500	54400	56200	---	56800	59600	63900	66000	64900	65000	58800
30	55300	54900	55900	55400	---	57400	60000	64000	65400	65100	65200	58100
31	54700	---	55700	56000	---	57500	---	64700	---	65300	64400	---
MAX	62600	56700	56400	56300	56500	57500	60200	64700	66100	65700	65800	66400
MIN	54700	53800	53500	53900	54100	53800	56900	59200	64200	64500	64400	58100
a	499.39	499.65	500.37	500.68	499.32	502.03	504.25	508.20	508.72	508.64	507.91	502.59
b	-9600	+200	+800	+300	-1400	+2900	+2500	+4700	+700	-100	-900	-6300

CAL YR 1993 b +1500

WTR YR 1994 b -6200

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°52'34", long 120°36'15", in Rancheria del Rio Estanislao Grant, T.1 S., R.12 E., on Calaveras-Tuolumne County line, Hydrologic Unit 18040010, temperature recorder in south corner of Tulloch Powerplant at downstream side of Tulloch Dam, 5.2 mi northeast of Knights Ferry.

DRAINAGE AREA.--980 mi<sup>2</sup>.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1972 to current year.

INSTRUMENTATION.--Temperature recorder since June 1972.

REMARKS.--Water temperature is affected by regulation from Tulloch Powerplant. Interruptions in record were due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 27.5°C, Aug. 30, 1977; minimum recorded, 5.0°C, Jan. 13, 1973.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 17.5°C, Sept. 21-23; minimum recorded, 9.5°C, many days during the year.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	13.5	14.0	14.0	13.0	12.5	10.5	10.5	9.5	9.5	10.0	9.5
2	14.0	13.5	14.0	14.0	13.0	12.5	10.5	10.5	9.5	9.5	10.0	9.5
3	14.0	13.5	14.0	14.0	13.0	12.5	10.5	10.5	9.5	9.5	9.5	9.5
4	14.0	13.5	14.0	14.0	12.5	12.5	10.5	10.5	9.5	9.5	9.5	9.5
5	14.0	14.0	14.0	14.0	12.5	12.5	10.5	10.0	9.5	9.5	9.5	9.5
6	14.0	13.5	14.0	14.0	12.5	12.5	10.5	10.0	9.5	9.5	9.5	9.5
7	14.0	13.5	14.0	14.0	12.5	12.5	10.5	10.0	9.5	9.5	10.0	9.5
8	14.0	13.5	14.0	14.0	12.5	12.5	10.5	10.0	10.0	9.5	9.5	9.5
9	14.0	14.0	14.0	14.0	12.5	12.5	10.5	10.0	---	---	10.0	9.5
10	14.0	14.0	14.0	14.0	12.5	12.5	10.5	10.0	9.5	9.5	10.0	9.5
11	14.0	14.0	14.0	14.0	12.5	12.0	10.0	10.0	9.5	9.5	10.0	9.5
12	14.0	14.0	14.0	14.0	12.5	12.0	10.0	10.0	9.5	9.5	10.0	9.5
13	14.0	14.0	14.0	14.0	12.5	12.0	10.0	10.0	9.5	9.5	10.0	9.5
14	14.0	14.0	14.0	14.0	12.0	12.0	10.0	9.5	10.0	9.5	10.0	10.0
15	14.0	14.0	14.0	14.0	12.0	12.0	10.0	9.5	9.5	9.5	10.0	10.0
16	14.0	14.0	14.0	13.5	12.0	12.0	10.0	9.5	9.5	9.5	10.0	10.0
17	14.0	14.0	14.0	13.5	12.0	11.5	10.0	9.5	9.5	9.5	10.0	10.0
18	14.0	14.0	14.0	13.5	12.0	11.5	10.0	9.5	9.5	9.5	10.0	10.0
19	14.0	14.0	14.0	13.5	12.0	11.5	10.0	9.5	9.5	9.5	10.0	10.0
20	14.0	14.0	14.0	13.5	11.5	11.5	10.0	9.5	9.5	9.5	10.0	10.0
21	14.5	14.0	13.5	13.5	11.5	11.0	10.0	9.5	9.5	9.5	10.0	10.0
22	14.5	14.0	13.5	13.5	11.5	11.0	10.0	9.5	9.5	9.5	10.0	10.0
23	14.5	14.0	13.5	13.5	11.5	11.0	10.0	9.5	10.0	9.5	10.0	10.0
24	14.5	14.0	13.5	13.0	11.0	11.0	10.0	9.5	9.5	9.5	10.0	10.0
25	14.5	14.0	13.5	13.0	11.0	10.5	10.0	9.5	9.5	9.5	10.0	10.0
26	14.5	14.0	13.0	13.0	11.0	10.5	10.0	9.5	9.5	9.5	10.0	10.0
27	14.0	14.0	13.0	13.0	11.0	10.5	10.0	9.5	9.5	9.5	10.0	10.0
28	14.0	14.0	13.0	13.0	10.5	10.5	10.0	9.5	9.5	9.5	10.0	10.0
29	14.0	14.0	13.0	12.5	10.5	10.5	10.0	9.5	---	---	10.0	10.0
30	14.0	14.0	13.0	12.5	10.5	10.5	9.5	9.5	---	---	10.0	10.0
31	14.0	14.0	---	---	10.5	10.5	10.0	9.5	---	---	10.0	10.0
MONTH	14.5	13.5	14.0	12.5	13.0	10.5	10.5	9.5	---	---	10.0	9.5

## SAN JOAQUIN RIVER BASIN

11299997 STANISLAUS RIVER BELOW TULLOCH POWERPLANT, NEAR KNIGHTS FERRY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	10.0	11.0	10.5	11.5	11.0	12.0	12.0	13.5	13.5	16.0	16.0
2	10.0	10.0	10.5	10.5	11.5	11.0	12.0	12.0	13.5	13.5	16.0	16.0
3	10.0	10.0	10.5	10.5	11.5	11.0	12.0	12.0	14.0	13.5	16.0	16.0
4	10.0	10.0	10.5	10.5	11.5	11.0	12.0	12.0	14.0	14.0	16.0	16.0
5	10.0	10.0	10.5	10.5	11.5	11.0	12.0	12.0	14.0	14.0	16.5	16.0
6	10.0	10.0	10.5	10.5	11.5	11.0	12.0	12.0	14.0	14.0	16.5	16.5
7	10.5	10.0	11.0	10.5	11.5	11.0	12.0	12.0	14.0	14.0	16.5	16.5
8	10.5	10.0	11.0	10.5	11.5	11.0	12.5	12.0	14.5	14.0	16.5	16.5
9	10.0	10.0	11.0	10.5	11.5	11.0	12.5	11.5	14.5	14.0	16.5	16.5
10	10.5	10.0	11.0	10.5	11.5	11.0	---	---	14.5	14.5	16.5	16.5
11	10.5	10.0	11.0	10.5	11.5	11.0	---	---	14.5	14.5	16.5	16.5
12	10.5	10.0	11.0	10.5	11.5	11.5	---	---	14.5	14.5	17.0	16.5
13	10.5	10.0	11.0	10.5	11.5	11.5	---	---	14.5	14.5	17.0	16.5
14	10.5	10.0	11.0	10.5	11.5	11.5	---	---	15.0	14.5	17.0	17.0
15	10.5	10.0	11.0	10.5	11.5	11.5	---	---	15.0	15.0	17.0	17.0
16	10.5	10.0	11.0	10.5	11.5	11.5	---	---	15.0	15.0	17.0	17.0
17	10.5	10.0	11.0	10.5	12.0	11.5	---	---	15.0	15.0	17.0	17.0
18	10.5	10.0	11.0	11.0	12.0	11.5	---	---	15.0	15.0	17.0	17.0
19	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.0	17.0	17.0
20	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	17.0	17.0
21	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	17.5	17.0
22	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	17.5	17.5
23	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	17.5	17.0
24	10.5	10.5	11.5	11.0	12.0	11.5	---	---	15.5	15.5	17.0	15.5
25	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	15.5	14.5
26	10.5	10.5	11.0	11.0	12.0	11.5	---	---	15.5	15.5	14.5	14.0
27	10.5	10.5	11.0	11.0	12.0	11.5	---	---	16.0	15.5	14.0	13.5
28	10.5	10.5	11.0	11.0	12.0	12.0	13.5	13.0	16.0	16.0	13.5	13.0
29	10.5	10.5	11.5	11.0	12.0	12.0	13.5	13.5	16.0	16.0	13.0	13.0
30	10.5	10.5	11.5	11.0	12.0	12.0	13.5	13.5	16.0	16.0	13.0	13.0
31	---	---	11.5	11.0	---	---	13.5	13.5	16.0	16.0	---	---
MONTH	10.5	10.0	11.5	10.5	12.0	11.0	---	---	16.0	13.5	17.5	13.0



LOCATION.--Lat 37°51'16", long 120°38'14", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on left bank 0.8 mi downstream from headgate at Goodwin Dam and 3.0 mi northeast of Knights Ferry.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 334.18 ft above sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, nonrecording gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, nonrecording gage at present site and datum.

REMARKS.--Records fair. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin Irrigation Districts.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	3.7	4.6	1.6	645	.00	896	190	1030	962	1010	711
2	293	4.7	4.6	1.6	720	.00	899	250	960	964	1010	707
3	294	4.6	4.5	1.4	722	.00	900	378	943	962	1010	711
4	296	3.9	4.5	1.4	722	.00	900	403	952	963	1010	714
5	297	4.9	4.6	1.6	555	.08	904	406	881	963	1010	714
6	282	5.0	4.6	1.6	178	.00	903	502	841	837	1010	715
7	271	5.0	4.6	1.6	.77	.00	905	239	832	728	1010	715
8	275	5.4	4.5	1.6	1.2	.00	910	239	831	928	1000	715
9	277	4.4	4.4	1.6	.66	251	897	237	848	1020	1000	715
10	266	4.4	4.0	17	.21	422	888	347	843	1030	1000	715
11	257	4.1	3.4	23	.16	423	897	388	854	1020	1000	713
12	250	4.1	2.0	13	.19	423	964	428	855	1010	1000	715
13	249	3.9	2.0	7.6	.19	423	1010	439	953	1010	1000	715
14	141	3.5	2.2	7.6	.17	423	1000	434	986	1010	1000	715
15	9.0	3.5	2.3	7.4	.52	424	998	437	978	1010	1000	856
16	3.7	3.9	2.4	7.4	1.3	555	1000	485	956	1010	1000	910
17	4.6	4.1	2.6	7.4	1.3	618	1020	503	958	1010	1000	913
18	4.6	11	2.6	7.4	1.1	619	1030	512	964	1010	1000	912
19	4.6	13	2.1	3.7	2.1	617	939	482	964	1010	1000	914
20	4.5	13	2.0	1.8	2.0	615	901	446	962	1010	995	913
21	4.4	13	2.0	1.6	1.7	670	922	466	960	1010	993	913
22	4.2	13	2.0	1.6	1.3	697	840	459	960	1010	989	918
23	4.1	13	e1.0	1.8	1.0	695	816	528	963	1010	988	921
24	4.1	13	e1.0	1.8	.59	702	784	764	955	1010	902	911
25	3.0	13	e1.0	1.4	.00	747	523	1010	969	1010	838	910
26	2.0	9.8	e1.0	1.4	.00	812	307	1020	960	1010	826	904
27	4.8	4.9	e1.0	1.2	.00	833	239	1030	966	1010	827	608
28	6.0	4.9	e2.0	1.6	.00	834	232	1040	964	1000	828	478
29	4.4	4.9	5.6	1.8	---	836	230	1040	962	1000	827	357
30	3.6	4.7	3.5	139	---	846	203	1040	982	1010	741	106
31	3.7	---	1.6	395	---	874	---	1040	---	1000	713	---
TOTAL	3818.3	204.3	90.2	665.5	3558.46	14359.08	23857	17182	28012	30547	29537	22434
MEAN	123	6.81	2.91	21.5	127	463	795	554	934	985	953	748
MAX	297	13	5.6	395	722	874	1030	1040	1030	1030	1010	921
MIN	2.0	3.5	1.0	1.2	.00	.00	203	190	831	728	713	106
AC-FT	7570	405	179	1320	7060	28480	47320	34080	55560	60590	58590	44500

e Estimated.

MEAN	151	46.8	25.4	78.4	130	248	694	900	935	863	741	468
MAX	490	324	238	363	456	1087	1160	1265	1259	1260	1251	1031
(WY)	1981	1951	1969	1987	1985	1972	1984	1975	1978	1967	1978	1967
MIN	.000	.000	.000	.000	.000	.000	115	84.0	147	78.2	70.9	5.55
(WY)	1920	1920	1920	1916	1916	1930	1967	1977	1924	1924	1924	1977

ANNUAL TOTAL	163368.20		174264.84			
ANNUAL MEAN	448		477		446	
HIGHEST ANNUAL MEAN					684	1984
LOWEST ANNUAL MEAN					114	1977
HIGHEST DAILY MEAN	1110	Jul 28	1040	May 28	1320	Aug 10 1978
LOWEST DAILY MEAN	.00	Jan 20	.00	Feb 25	.00	Oct 30 1914
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 28	.00	Feb 25	.00	Oct 30 1914
ANNUAL RUNOFF (AC-FT)	324000		345700		322800	
10 PERCENT EXCEEDS	1020		1010		1070	
50 PERCENT EXCEEDS	323		446		331	
90 PERCENT EXCEEDS	.00		1.4		.00	

## SAN JOAQUIN RIVER BASIN

## 11301000 OAKDALE CANAL NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'32", long 120°37'56", in SW 1/4 SE 1/4 sec.10, T.1 S., R.12 E., Tuolumne County, Hydrologic Unit 18040010, on left bank 0.3 mi downstream from headgate at Goodwin Dam and 3.4 mi northeast of Knights Ferry.

PERIOD OF RECORD.--May 1914 to current year. Records for water years 1933-36 incomplete; monthly and yearly estimates published in WSP 1315-A.

GAGE.--Water-stage recorder. Elevation of gage is 350 ft above sea level, from topographic map. Prior to Apr. 29, 1916, nonrecording gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, nonrecording gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder at present site at datum 0.18 ft higher.

REMARKS.--No estimated daily discharges. Records good. Canal diverts water from left bank of Stanislaus River at Goodwin Dam 0.3 mi upstream for irrigation in Oakdale Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 556 ft<sup>3</sup>/s, July 8-11, 1967; maximum discharge, 595 ft<sup>3</sup>/s, June 10, 1991, gage height, 10.09 ft, result of damage to canal due to vandalism; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	358	6.0	6.6	.00	.00	.00	363	.00	409	382	405	335
2	358	6.0	6.6	.00	.00	.00	364	57	417	382	405	335
3	358	5.8	6.6	.00	.00	.00	364	187	424	382	405	335
4	358	5.6	6.6	.00	.00	.00	364	252	432	382	405	335
5	359	5.6	6.6	.00	.00	.05	363	273	428	382	405	335
6	359	5.4	6.6	3.4	.00	.00	372	236	421	382	405	340
7	350	5.4	6.9	3.9	.02	.00	375	101	422	382	406	348
8	337	5.4	6.9	1.4	.20	.00	375	101	422	382	404	338
9	333	5.2	7.4	.00	.00	.00	357	166	422	382	403	333
10	331	4.8	7.8	.00	.00	.00	346	267	423	382	403	329
11	331	4.9	2.4	.00	.00	.00	342	275	423	390	403	323
12	331	5.3	.00	.00	.00	.00	333	304	423	401	403	323
13	331	5.4	.00	.00	.00	.00	323	323	423	401	404	322
14	186	5.4	.22	.00	.00	.00	324	342	424	402	404	322
15	.40	5.4	.00	.00	.00	.00	324	342	402	402	404	322
16	.13	5.5	.00	.00	.00	.00	325	374	394	402	404	322
17	.02	5.5	.00	.00	.00	.00	325	379	392	402	405	322
18	.00	5.4	.00	.00	.00	.00	326	380	392	402	405	323
19	.00	5.4	.00	.00	.00	.00	326	367	392	402	405	308
20	3.5	5.7	.00	.00	.05	.00	334	353	391	403	405	302
21	6.9	6.0	.00	.00	.00	40	339	353	391	403	405	302
22	6.8	6.0	.00	.00	.00	101	339	342	391	403	405	302
23	6.7	6.0	.00	.08	.00	160	343	347	387	402	405	302
24	6.3	6.1	.00	.15	.00	207	314	360	381	402	405	302
25	6.1	6.3	.00	.01	.00	240	134	374	382	402	323	302
26	6.0	6.3	.00	.00	.00	274	50	390	382	402	325	294
27	5.8	6.6	.00	.00	.00	295	50	403	382	401	333	270
28	5.7	6.8	.00	.00	.00	318	40	403	382	402	333	234
29	5.7	6.5	.00	.00	---	331	12	403	382	404	324	57
30	5.7	6.6	.00	.00	---	350	.00	403	382	405	315	.00
31	6.0	---	.00	.00	---	364	---	403	---	405	329	---
TOTAL	4751.75	172.3	71.22	8.94	0.27	2680.05	8546.00	9260.00	12118	12258	11990	8917.00
MEAN	153	5.74	2.30	.29	.010	86.5	285	299	404	395	387	297
MAX	359	6.8	7.8	3.9	.20	364	375	403	432	405	406	348
MIN	.00	4.8	.00	.00	.00	.00	.00	.00	381	382	315	.00
AC-FT	9430	342	141	18	.5	5320	16950	18370	24040	24310	23780	17690

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1994, BY WATER YEAR (WY)

	MEAN	93.3	5.21	1.09	1.70	2.25	48.2	228	359	371	364	328	244
MAX	404	51.5	15.8	71.0	77.9	364	496	544	552	554	547	518	
(WY)	1979	1940	1987	1987	1976	1972	1962	1965	1965	1967	1967	1958	
MIN	.28	.000	.000	.000	.000	.000	.004	97.5	49.8	25.8	.62	1.20	
(WY)	1978	1915	1916	1916	1915	1918	1983	1915	1924	1924	1977	1977	

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1914 - 1994

ANNUAL TOTAL	75840.42	70773.53	
ANNUAL MEAN	208	194	173
HIGHEST ANNUAL MEAN			277
LOWEST ANNUAL MEAN			52.8
HIGHEST DAILY MEAN	501	432	556
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
ANNUAL RUNOFF (AC-FT)	150400	140400	125500
10 PERCENT EXCEEDS	489	404	475
50 PERCENT EXCEEDS	224	273	77
90 PERCENT EXCEEDS	.00	.00	.00

## 11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°51'06", long 120°38'13", in Rancheria del Rio Estanislao Grant, Calaveras County, Hydrologic Unit 18040010, on right bank 250 ft upstream from Owl Creek, 0.9 mi downstream from Goodwin Dam, and 2.9 mi northeast of Knights Ferry.

DRAINAGE AREA.--986 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1957 to current year. Records equivalent to those published as Stanislaus River at Knights Ferry, 1903-14, and as Stanislaus River near Knights Ferry, 1915-32, if adjusted for diversions in Stanislaus and San Joaquin Water Co.'s Canal and Oakdale and South San Joaquin Canals.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.83 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by New Melones Reservoir (station 11299000) since 1978 and Tulloch Reservoir (station 11299995) since 1957. South San Joaquin Canal (station 11300500) and Oakdale Canal (station 11301000) divert at Goodwin Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft<sup>3</sup>/s, Dec. 24, 1964, gage height, 28.85 ft in gage well, 31.2 ft outside, from floodmarks; minimum daily, 0.12 ft<sup>3</sup>/s, Feb. 8, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 37.7 ft, from floodmarks, discharge, 62,900 ft<sup>3</sup>/s, by computation of flow over Goodwin Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,640 ft<sup>3</sup>/s, Apr. 26, gage height, 10.65 ft; minimum daily, 155 ft<sup>3</sup>/s, Feb. 12-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	267	270	282	306	308	544	286	198	549	324	286
2	206	265	269	281	306	377	542	285	221	549	348	286
3	207	266	269	282	306	772	546	287	242	551	343	290
4	208	268	272	284	306	946	478	279	240	550	342	293
5	207	266	270	286	307	959	442	281	239	552	342	299
6	209	263	269	277	308	953	394	248	270	514	342	301
7	210	262	265	281	320	1040	301	223	326	460	340	301
8	935	260	271	283	333	1150	282	222	373	424	397	300
9	1290	258	272	277	298	1160	284	232	422	423	435	301
10	1330	261	270	277	179	1160	282	218	458	477	434	303
11	1320	264	275	281	161	1160	279	226	452	492	446	303
12	934	258	270	288	155	1150	284	229	447	492	442	304
13	407	260	270	285	155	1150	283	230	460	492	441	275
14	272	259	278	287	155	1150	289	222	477	490	436	250
15	283	258	271	281	156	1210	282	223	557	483	437	259
16	955	262	270	280	189	1270	284	228	584	511	464	259
17	1280	262	269	279	317	1150	284	407	594	518	481	260
18	1270	260	269	281	316	1050	285	1330	628	506	479	263
19	1270	260	272	285	308	1050	289	1560	649	507	482	236
20	915	261	271	277	312	1050	287	1540	535	511	491	211
21	415	259	274	277	308	1050	288	1540	479	513	494	209
22	270	258	277	277	310	1000	294	1390	483	513	429	218
23	271	258	277	287	307	944	282	962	534	427	354	212
24	270	260	276	300	309	963	606	655	580	400	307	214
25	268	261	273	305	310	950	980	193	588	405	276	215
26	264	264	272	304	311	961	1400	191	584	405	285	215
27	271	273	272	304	310	968	1590	198	584	355	281	225
28	274	278	270	305	310	962	1580	204	595	306	285	238
29	276	279	266	304	---	873	833	196	560	305	284	215
30	277	273	283	310	---	742	396	203	527	302	286	223
31	268	---	282	305	---	609	---	206	---	301	291	---
TOTAL	17007	7903	8434	8912	7668	30237	15190	14694	13886	14283	11818	7764
MEAN	549	263	272	287	274	975	506	474	463	461	381	259
MAX	1330	279	283	310	333	1270	1590	1560	649	552	494	304
MIN	175	258	265	277	155	308	279	191	198	301	276	209
AC-FT	33730	15680	16730	17680	15210	59980	30130	29150	27540	28330	23440	15400

## 11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1978, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	128	215	690	1194	1103	1060	1154	1651	1249	96.4	4.18	17.8
MAX	749	681	3521	5040	4309	3265	3686	6233	5100	1063	22.5	231
(WY)	1976	1966	1965	1969	1969	1969	1967	1969	1967	1967	1967	1969
MIN	.19	4.56	.40	11.5	2.19	4.74	2.48	1.52	1.35	1.60	1.09	.51
(WY)	1977	1977	1978	1977	1960	1960	1972	1961	1961	1960	1960	1960

## SUMMARY STATISTICS

## WATER YEARS 1957 - 1978

ANNUAL MEAN	725
HIGHEST ANNUAL MEAN	2131
LOWEST ANNUAL MEAN	6.47
HIGHEST DAILY MEAN	29400
LOWEST DAILY MEAN	.14
ANNUAL SEVEN-DAY MINIMUM	.15
INSTANTANEOUS PEAK FLOW	40200
INSTANTANEOUS PEAK STAGE	28.85
ANNUAL RUNOFF (AC-FT)	525500
10 PERCENT EXCEEDS	2300
50 PERCENT EXCEEDS	43
90 PERCENT EXCEEDS	1.9

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	409	444	716	736	548	1096	700	664	538	522	492	368
MAX	1228	2246	4581	4793	1693	4905	1582	1389	1080	1314	1152	1097
(WY)	1984	1984	1984	1984	1984	1986	1986	1993	1986	1985	1985	1986
MIN	172	161	140	132	140	143	236	275	185	229	157	155
(WY)	1991	1991	1992	1990	1990	1991	1991	1991	1984	1984	1991	1991

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1984 - 1994

ANNUAL TOTAL	157036	157796	
ANNUAL MEAN	430	432	604
HIGHEST ANNUAL MEAN			1469
LOWEST ANNUAL MEAN			185
HIGHEST DAILY MEAN	2430	Jan 18	1590
LOWEST DAILY MEAN	137	Sep 29	155
ANNUAL SEVEN-DAY MINIMUM	142	Sep 18	164
INSTANTANEOUS PEAK FLOW			1640
INSTANTANEOUS PEAK STAGE			10.65
ANNUAL RUNOFF (AC-FT)	311500	313000	437800
10 PERCENT EXCEEDS	1320	960	1250
50 PERCENT EXCEEDS	260	293	340
90 PERCENT EXCEEDS	201	223	149

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: February 1966 to current year.

INSTRUMENTATION.--Temperature recorder since February 1966.

REMARKS.--Temperature recorder located 2,300 ft upstream from gaging station. Water temperature is affected by regulation from Goodwin Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 30.5°C, July 25, 1974; minimum recorded, 5.5°C, Feb. 3, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 17.5°C, Sept. 16, 20-23; minimum recorded, 10.0°C, many days during January to April.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	14.5	14.5	14.5	13.0	13.0	10.5	10.5	10.5	10.0	11.0	11.0
2	15.0	14.5	14.5	14.5	13.0	13.0	10.5	10.5	10.0	10.0	11.5	11.0
3	15.0	14.5	14.5	14.5	13.0	12.5	10.5	10.5	10.5	10.0	11.0	10.5
4	15.0	14.0	14.5	14.5	13.0	12.5	10.5	10.5	10.5	10.0	10.5	10.5
5	14.5	14.0	14.5	14.5	13.0	12.5	10.5	10.5	10.5	10.0	10.5	10.5
6	14.5	14.0	14.5	14.5	12.5	12.5	10.5	10.0	10.5	10.5	10.5	10.5
7	14.5	14.0	14.5	14.5	12.5	12.5	10.0	10.0	10.5	10.5	10.5	10.5
8	14.5	14.0	14.5	14.5	12.5	12.5	10.0	10.0	10.5	10.5	10.5	10.0
9	14.5	14.0	14.5	14.5	12.5	12.5	10.0	10.0	10.5	10.5	10.5	10.5
10	14.5	14.0	14.5	14.5	12.5	12.5	10.5	10.0	10.5	10.5	11.0	10.5
11	14.5	14.5	14.5	14.5	12.5	12.5	10.5	10.0	11.0	10.5	11.0	10.5
12	14.5	14.0	14.5	14.5	12.5	12.0	10.0	10.0	11.0	10.5	11.0	10.0
13	14.5	14.0	14.5	14.0	12.0	12.0	10.0	10.0	11.0	10.5	10.5	10.0
14	14.5	14.5	14.0	14.0	12.0	12.0	10.0	10.0	11.0	10.5	11.0	10.5
15	14.5	14.5	14.0	13.5	12.0	12.0	10.5	10.0	10.5	10.5	11.0	10.5
16	14.5	14.5	13.5	13.5	12.0	11.5	10.5	10.0	11.0	10.5	10.5	10.5
17	14.5	14.0	14.0	13.5	11.5	11.5	10.5	10.0	11.0	10.5	11.0	10.5
18	14.0	14.0	14.0	14.0	11.5	11.5	10.5	10.0	10.5	10.5	11.0	10.5
19	14.5	14.0	14.0	13.5	11.5	11.0	10.5	10.0	10.5	10.0	10.5	10.5
20	14.5	14.0	14.0	13.5	11.0	11.0	10.5	10.0	10.5	10.0	11.0	10.5
21	14.5	14.5	13.5	13.5	11.0	11.0	10.5	10.0	10.5	10.5	11.0	10.5
22	14.5	14.5	13.5	13.5	11.0	11.0	10.5	10.5	10.5	10.0	10.5	10.5
23	14.5	14.5	13.5	13.5	11.0	10.5	10.5	10.5	11.0	10.5	10.5	10.0
24	15.0	14.5	13.5	13.0	10.5	10.5	10.5	10.5	11.0	10.5	10.5	10.0
25	15.0	14.5	13.0	13.0	10.5	10.5	10.5	10.5	11.0	10.5	10.5	10.5
26	14.5	14.5	13.0	13.0	10.5	10.5	10.5	10.5	11.0	11.0	11.0	10.5
27	15.0	14.5	13.0	13.0	10.5	10.5	10.5	10.0	11.0	10.5	11.0	10.5
28	14.5	14.5	13.0	13.0	10.5	10.5	10.5	10.0	11.0	10.5	11.0	10.5
29	14.5	14.5	13.0	13.0	10.5	10.5	10.5	10.0	---	---	11.0	10.5
30	14.5	14.5	13.0	13.0	10.5	10.5	10.5	10.0	---	---	11.0	10.5
31	15.0	14.5	---	---	10.5	10.5	10.5	10.0	---	---	11.0	10.0
MONTH	15.0	14.0	14.5	13.0	13.0	10.5	10.5	10.0	11.0	10.0	11.5	10.0

## SAN JOAQUIN RIVER BASIN

11302000 STANISLAUS RIVER BELOW GOODWIN DAM, NEAR KNIGHTS FERRY, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	10.0	11.5	11.0	12.0	11.0	13.0	12.0	15.0	14.0	17.0	16.5
2	10.5	10.0	12.0	11.5	12.0	11.5	13.0	12.0	15.0	14.5	17.0	16.5
3	11.0	10.5	12.0	11.5	12.0	11.0	13.0	12.5	15.0	14.5	17.0	16.5
4	11.0	10.0	12.0	11.5	12.5	11.5	13.0	12.5	15.0	14.5	17.0	16.5
5	10.5	10.0	11.5	11.0	12.0	11.5	13.0	12.5	15.0	14.5	17.0	16.5
6	10.5	10.0	11.5	11.0	12.0	11.5	13.5	12.5	15.0	14.5	17.0	16.5
7	11.0	10.0	11.5	11.0	12.0	11.0	13.5	12.5	15.0	14.5	17.0	17.0
8	10.5	10.5	11.5	11.5	12.0	11.5	13.5	12.5	15.0	15.0	17.0	16.5
9	11.0	10.0	12.5	11.5	12.0	11.5	13.5	12.5	15.5	15.0	17.0	17.0
10	11.0	10.0	12.5	11.5	12.5	11.5	13.5	12.5	15.5	15.0	17.0	16.5
11	11.0	10.0	12.5	11.5	12.5	11.5	13.5	13.0	15.5	15.5	17.0	16.5
12	11.0	10.0	12.0	11.5	12.5	11.5	13.5	13.0	16.0	15.5	17.0	17.0
13	11.0	10.0	12.5	11.5	12.5	11.5	13.5	13.0	16.0	15.5	17.0	17.0
14	11.0	10.5	12.5	11.5	12.5	11.5	14.0	13.0	16.0	15.5	17.0	17.0
15	11.5	10.5	11.5	11.5	12.5	11.5	14.0	13.0	16.0	15.5	17.0	17.0
16	11.0	10.5	11.5	11.0	12.5	11.5	14.0	13.0	16.0	16.0	17.5	17.0
17	11.5	10.5	11.5	11.0	12.5	12.0	14.0	13.5	16.0	16.0	17.0	17.0
18	11.5	10.5	12.0	11.0	12.5	12.0	14.0	13.5	16.5	16.0	17.0	17.0
19	11.5	10.5	12.0	12.0	12.5	12.0	14.0	13.5	16.5	16.0	17.0	17.0
20	11.5	10.5	12.5	11.5	12.5	12.0	14.0	13.5	16.5	16.0	17.5	17.0
21	11.5	10.5	12.5	11.5	12.5	12.0	14.0	13.5	16.5	16.5	17.5	17.0
22	11.0	10.5	12.5	11.5	12.5	12.0	14.5	13.5	16.5	16.5	17.5	17.5
23	11.0	10.5	12.0	11.5	12.5	12.0	14.5	13.5	16.5	16.5	17.5	17.0
24	11.0	10.5	12.0	11.0	12.5	12.0	14.5	13.5	16.5	16.5	17.0	16.5
25	11.0	10.5	12.0	11.0	13.0	12.0	14.5	13.5	16.5	16.5	16.5	15.0
26	11.0	10.5	12.0	11.0	13.0	12.0	14.5	13.5	17.0	16.5	15.0	14.5
27	11.0	10.5	12.0	11.0	13.0	12.0	14.5	13.5	17.0	16.5	14.5	14.0
28	11.0	10.5	12.0	11.5	13.0	12.0	14.5	13.5	17.0	16.5	14.0	13.5
29	11.5	10.5	12.5	11.0	13.0	12.0	14.5	14.0	17.0	16.5	13.5	13.0
30	11.5	11.0	12.0	11.5	13.0	12.0	14.5	14.0	17.0	16.5	13.5	13.0
31	---	---	12.0	11.5	---	---	14.5	14.0	17.0	16.5	---	---
MONTH	11.5	10.0	12.5	11.0	13.0	11.0	14.5	12.0	17.0	14.0	17.5	13.0

## 11302500 STANISLAUS RIVER AT OAKDALE, CA

LOCATION.--Lat 37°46'38", long 120°51'07", in Eight Square Leagues on Stanislaus River Grant, Stanislaus County, Hydrologic Unit 18040002, on left bank at State Highway 120 bridge at Oakdale.

DRAINAGE AREA.--1,032 mi<sup>2</sup>.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1985 to current year.

INSTRUMENTATION.--Water-temperature recorder since Aug. 28, 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 26.0°C, June 21, 22, 1992; minimum recorded, 5.0°C, Dec. 22-25, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.0°C, Sept. 21, 22; minimum recorded, 8.0°C, Feb. 1.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.0	17.5	15.0	13.5	12.0	11.0	10.5	10.0	9.0	8.0	13.0	10.5
2	19.0	17.5	14.5	13.0	12.5	11.5	10.5	10.0	9.5	8.5	13.5	11.0
3	19.0	17.0	14.5	13.0	12.0	11.0	10.0	10.0	9.5	8.5	12.5	11.0
4	17.5	16.5	14.0	13.0	12.0	11.0	10.0	10.0	10.5	9.5	12.0	10.0
5	17.0	15.5	14.0	12.5	11.5	11.0	10.5	10.0	10.0	9.0	11.5	10.5
6	17.5	15.5	14.0	13.0	11.5	10.5	10.0	9.5	10.0	9.5	11.5	10.0
7	17.5	15.5	14.0	12.5	11.5	11.0	9.5	8.5	11.0	10.0	12.0	10.0
8	17.0	15.0	13.5	12.5	12.0	11.5	9.5	8.5	11.0	10.0	12.0	10.0
9	15.0	14.5	13.5	12.5	13.0	12.0	10.0	9.0	10.5	9.0	12.0	10.0
10	15.0	14.5	14.0	13.0	12.5	11.5	10.0	8.5	11.0	9.5	11.5	10.0
11	15.0	14.5	14.5	13.5	12.0	11.5	9.5	8.5	10.5	9.0	11.5	10.0
12	15.5	14.0	14.0	13.0	11.5	10.5	9.5	8.5	10.5	8.5	11.5	10.0
13	15.5	14.5	13.0	12.0	11.5	10.5	9.5	8.5	10.5	8.5	12.0	10.0
14	16.0	15.0	12.5	12.0	11.5	11.0	9.5	8.5	10.5	8.5	12.0	10.0
15	16.5	15.5	12.0	11.0	11.0	10.5	10.0	9.0	10.5	8.5	12.0	10.5
16	16.0	15.0	12.0	11.0	11.0	10.0	10.0	8.5	10.5	9.5	11.0	10.5
17	15.0	14.0	12.5	11.5	10.5	10.0	10.0	8.5	11.0	10.0	12.0	10.0
18	14.5	13.5	12.5	12.0	10.5	9.5	10.0	9.0	10.5	9.5	12.5	10.5
19	15.0	13.5	12.5	11.5	9.5	9.0	10.0	9.0	9.5	9.0	12.0	10.5
20	15.0	14.0	12.5	11.0	9.5	9.5	10.0	9.0	10.5	9.0	12.0	10.0
21	15.0	14.0	12.0	11.5	10.0	9.5	10.5	9.5	10.0	9.0	12.0	10.0
22	15.5	14.0	13.0	12.0	9.5	9.0	10.5	9.0	11.0	9.0	11.5	10.5
23	15.5	14.0	13.0	11.0	9.0	9.0	11.0	10.5	11.0	9.0	11.0	9.5
24	15.5	14.0	11.0	10.0	9.0	8.5	10.5	10.0	11.5	9.5	11.5	10.0
25	15.5	14.0	11.0	10.0	9.0	8.5	10.0	9.5	12.0	10.0	12.0	10.5
26	15.5	14.0	11.0	10.0	9.5	8.5	10.5	10.0	12.0	11.0	12.0	10.5
27	15.5	14.0	11.0	10.5	10.5	9.5	10.0	9.5	13.0	11.0	13.0	10.5
28	15.5	14.0	11.5	11.0	10.0	9.0	9.5	8.5	12.5	11.0	12.5	11.0
29	15.0	13.5	12.5	11.5	10.0	9.5	9.5	8.5	---	---	12.0	11.0
30	15.0	13.5	13.0	12.0	10.5	10.0	9.5	8.5	---	---	13.5	11.0
31	15.5	14.5	---	---	10.0	10.0	9.5	8.5	---	---	13.5	11.0
MONTH	20.0	13.5	15.0	10.0	13.0	8.5	11.0	8.5	13.0	8.0	13.5	9.5

## SAN JOAQUIN RIVER BASIN

11302500 STANISLAUS RIVER AT OAKDALE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	11.0	16.0	13.0	19.5	16.5	17.5	14.5	20.0	17.5	20.0	18.0
2	13.5	11.5	17.0	13.5	19.5	16.5	17.5	15.0	19.5	17.0	19.5	17.5
3	14.1	11.8	17.5	14.5	18.5	16.0	17.5	15.0	19.5	17.0	19.5	17.0
4	14.0	11.5	17.0	15.0	18.5	15.5	17.5	15.0	20.0	17.0	20.0	17.5
5	13.5	11.0	17.0	15.0	18.0	16.0	17.5	15.0	20.0	17.0	19.5	18.0
6	13.5	11.5	15.5	13.5	18.0	15.5	17.5	15.0	19.5	17.0	20.0	18.0
7	14.0	11.0	16.0	13.0	17.5	15.0	18.0	15.5	19.5	17.0	20.0	18.0
8	13.0	12.5	16.5	14.5	17.5	14.5	18.5	15.5	19.5	17.5	19.5	17.5
9	14.0	11.5	18.0	14.0	17.5	15.0	18.5	16.0	18.5	16.5	19.0	17.5
10	15.0	12.0	19.0	15.5	17.5	15.0	18.5	16.0	19.0	16.5	19.0	17.0
11	15.5	12.5	19.5	16.0	18.0	15.0	18.0	15.5	19.0	16.5	19.0	17.0
12	16.0	13.0	19.1	16.2	17.5	15.0	18.0	15.5	19.0	16.5	19.0	17.0
13	16.0	13.0	19.5	16.0	17.0	14.5	18.5	16.0	19.0	16.5	19.0	17.0
14	16.5	13.5	19.0	16.0	17.0	14.0	18.5	15.5	19.5	17.0	19.5	17.0
15	16.5	14.0	17.0	15.5	16.0	14.0	18.5	16.0	19.5	17.0	20.0	17.5
16	16.0	14.5	16.0	14.0	16.0	13.5	18.5	16.0	19.5	16.5	19.5	18.0
17	16.5	13.5	15.0	13.5	16.0	13.5	18.5	16.0	19.0	16.5	20.0	18.0
18	17.0	14.5	14.5	12.0	16.5	13.5	18.0	16.0	19.0	17.0	19.5	18.0
19	17.0	14.5	13.5	12.0	16.0	14.0	17.5	16.0	19.0	17.0	20.0	18.0
20	16.5	14.0	14.0	12.0	16.5	14.0	18.0	15.5	19.0	16.5	20.5	18.0
21	16.5	14.0	14.5	12.5	17.0	14.0	17.5	16.0	19.0	16.5	21.0	18.5
22	16.0	13.5	14.5	12.5	17.0	14.5	18.0	15.0	18.5	16.5	21.0	19.0
23	14.5	12.5	15.0	12.5	17.0	14.5	18.5	16.0	19.5	17.0	19.5	18.5
24	13.0	12.0	15.5	13.0	16.5	14.0	18.5	16.0	19.5	17.0	20.0	17.5
25	12.5	11.5	18.0	13.5	16.5	14.0	19.0	16.0	20.0	17.5	20.5	18.5
26	12.5	11.0	18.5	16.0	17.0	14.0	19.0	16.5	20.0	18.0	20.0	18.5
27	12.0	11.0	18.5	15.5	17.0	14.5	19.0	16.5	20.0	18.0	19.0	17.5
28	13.0	11.0	19.0	16.0	17.5	15.0	20.0	17.0	20.0	17.5	17.5	16.5
29	13.5	11.0	19.5	16.0	17.0	14.5	20.0	17.5	20.0	17.5	17.5	15.5
30	15.0	11.5	18.0	17.0	17.5	15.0	20.0	17.5	20.0	17.5	17.5	15.5
31	---	---	19.0	16.0	---	---	20.0	17.5	20.0	17.5	---	---
MONTH	17.0	11.0	19.5	12.0	19.5	13.5	20.0	14.5	20.0	16.5	21.0	15.5



## 11303000 STANISLAUS RIVER AT RIPON, CA

LOCATION.--Lat 37°43'47", long 121°06'34", in NW 1/4 SE 1/4 sec.29, T.2 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 15 ft downstream from railroad bridge, 1.1 mi southeast of Ripon, and 15 mi upstream from mouth.

DRAINAGE AREA.--1,075 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year. April to September 1940 in reports of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 0.72 ft above sea level. October 1940 to Nov. 17, 1953, at site 100 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by reservoirs and powerplants upstream from station. South San Joaquin and Oakdale Canals (stations 11300500 and 11301000) divert at Goodwin Dam 34 mi upstream for irrigation in the vicinity of Oakdale. See REMARKS for Stanislaus River below Goodwin Dam, near Knights Ferry (station 11302000).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,500 ft<sup>3</sup>/s, Dec. 24, 1955, gage height, 63.25 ft; minimum daily, 0.11 ft<sup>3</sup>/s, Aug. 4-6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 12, 1938, reached a stage of 64.4 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,330 ft<sup>3</sup>/s, May 22, gage height, 42.75 ft; minimum daily, 216 ft<sup>3</sup>/s, Feb. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	352	315	299	315	327	658	557	348	514	342	324
2	245	355	308	302	317	326	575	419	314	519	338	335
3	287	342	307	302	318	341	584	368	318	535	372	333
4	299	320	306	299	317	541	574	365	337	532	373	328
5	318	312	307	302	316	719	547	349	330	531	365	333
6	290	306	306	299	319	783	510	357	321	527	377	334
7	316	303	306	294	329	801	501	356	326	515	372	321
8	300	300	305	297	358	846	430	310	371	481	369	319
9	523	300	307	301	430	978	462	290	398	456	373	333
10	963	305	307	294	366	972	446	284	437	438	431	336
11	1080	324	311	292	291	982	409	278	457	471	432	349
12	1100	321	322	296	252	985	383	276	467	476	451	341
13	931	307	309	303	234	985	380	284	468	477	438	341
14	641	302	311	301	223	988	372	290	475	482	440	333
15	497	301	323	298	217	990	364	282	480	477	446	308
16	429	302	310	296	216	1020	343	301	517	476	434	310
17	661	303	303	294	226	1150	348	292	564	480	450	332
18	1020	303	300	296	306	1060	361	362	551	502	471	316
19	1070	302	297	297	341	960	340	884	569	483	474	324
20	1080	300	297	298	347	951	342	1220	590	492	479	318
21	908	301	297	295	371	951	339	1280	561	504	486	277
22	581	305	293	293	355	958	340	1320	502	494	492	267
23	416	301	296	308	340	931	334	1270	501	498	477	263
24	368	299	296	323	336	893	361	1030	504	464	422	273
25	352	299	298	352	331	898	479	755	550	443	396	267
26	339	299	301	368	328	880	794	490	571	429	365	264
27	344	299	297	334	330	872	1030	406	575	417	365	255
28	347	307	295	324	328	910	1250	388	564	408	349	259
29	376	312	292	319	---	891	1290	360	586	373	345	271
30	382	317	294	315	---	826	889	336	548	366	335	263
31	347	---	295	315	---	752	---	328	---	344	331	---
TOTAL	17051	9299	9411	9506	8757	26467	16035	16087	14100	14604	12590	9227
MEAN	550	310	304	307	313	854	534	519	470	471	406	308
MAX	1100	355	323	368	430	1150	1290	1320	590	535	492	349
MIN	241	299	292	292	216	326	334	276	314	344	331	255
AC-FT	33820	18440	18670	18860	17370	52500	31810	31910	27970	28970	24970	18300

## 11303000 STANISLAUS RIVER AT RIPON, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	354	470	897	1170	1132	1351	1536	2076	1463	491	339	324
MAX	1775	4518	7602	5163	4802	5094	5047	7703	5531	3633	2834	2041
(WY)	1984	1951	1951	1956	1969	1943	1983	1952	1967	1983	1983	1983
MIN	6.34	20.3	26.0	77.8	64.3	47.5	41.0	42.8	25.1	9.88	.63	2.95
(WY)	1978	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1941 - 1994
ANNUAL TOTAL	182364	163134	
ANNUAL MEAN	500	447	966
HIGHEST ANNUAL MEAN			2548
LOWEST ANNUAL MEAN			44.9
HIGHEST DAILY MEAN	2320	Jan 19	1320
LOWEST DAILY MEAN	231	Sep 30	216
ANNUAL SEVEN-DAY MINIMUM	239	Mar 10	237
INSTANTANEOUS PEAK FLOW			1330
INSTANTANEOUS PEAK STAGE			42.75
ANNUAL RUNOFF (AC-FT)	361700	323600	699800
10 PERCENT EXCEEDS	1270	886	2650
50 PERCENT EXCEEDS	344	347	362
90 PERCENT EXCEEDS	268	294	133

11303000 STANISLAUS RIVER AT RIPON, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to September 1994. 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 U.S. Geological Survey Open-File Report 91-74.

CHEMICAL DATA: Water year 1993 to September 1994 (discontinued).

SPECIFIC CONDUCTANCE: Water year 1986 to water year 1989.

WATER TEMPERATURE: Water year 1986 to water year 1989.

SEDIMENT DATA: Water year 1993 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1985 to water year 1989.

WATER TEMPERATURE: October 1985 to water year 1989.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
26...	1520	341	86	7.4	16.5	765	--	--	32	7.9	2.9
NOV											
16...	1440	306	80	7.6	12.0	765	11.0	102	32	7.8	3.0
DEC											
27...	0855	295	86	7.6	8.0	767	11.4	96	33	7.9	3.2
JAN											
04...	0815	300	110	7.3	9.5	767	11.2	97	35	8.3	3.4
11...	0835	290	87	7.3	7.5	770	12.2	101	35	8.4	3.4
18...	0840	293	87	7.3	8.5	767	11.3	96	36	8.5	3.5
FEB											
01...	1445	314	89	7.2	8.5	770	11.7	99	33	8.0	3.2
16...	0855	214	123	7.4	10.0	763	10.8	96	47	11	4.8
23...	0830	338	105	7.4	--	767	--	--	39	9.0	4.1
MAR											
01...	1505	329	99	7.2	15.0	768	10.6	104	39	9.1	3.9
22...	1600	963	74	7.4	13.0	762	--	--	30	7.1	2.9
APR											
26...	1645	844	66	7.6	13.5	760	9.6	93	27	6.7	2.4
MAY											
24...	0930	1070	67	7.3	15.5	758	9.6	97	28	7.2	2.5
JUN											
30...	1700	542	68	7.8	21.0	760	9.0	101	29	7.5	2.6
JUL											
27...	1630	417	179	7.8	25.0	758	8.9	108	30	7.5	2.7
AUG											
25...	0815	398	74	7.1	20.5	760	7.8	87	29	7.4	2.5
30...	1110	337	80	7.8	20.0	--	--	--	--	--	--
SEP											
29...	0900	265	92	7.4	18.5	762	8.3	89	36	9.2	3.2

11303000 STANISLAUS RIVER AT RIPON, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT											
26...	3.1	17	0.2	1.0	49	--	0	--	40	--	3.1
NOV											
16...	3.4	18	0.3	1.1	46	--	0	--	38	--	3.1
DEC											
27...	3.5	18	0.3	0.60	38	--	0	--	31	--	3.7
JAN											
04...	3.7	18	0.3	0.90	41	--	0	--	34	--	3.8
11...	3.8	19	0.3	0.90	49	--	0	--	40	--	3.9
18...	3.8	18	0.3	1.0	44	--	0	--	36	--	3.9
FEB											
01...	3.9	20	0.3	1.1	44	--	0	--	36	--	3.9
16...	5.6	20	0.4	1.6	68	--	0	--	56	--	5.7
23...	4.6	19	0.3	2.5	41	--	0	--	33	--	4.8
MAR											
01...	4.4	19	0.3	1.2	47	--	0	--	38	--	4.9
22...	2.7	16	0.2	0.80	24	--	0	--	20	--	3.3
APR											
26...	2.5	16	0.2	1.2	--	22	--	0	--	18	2.9
MAY											
24...	2.5	15	0.2	1.1	--	37	--	0	--	30	3.2
JUN											
30...	2.8	17	0.2	1.0	--	--	--	--	232	--	3.0
JUL											
27...	3.0	17	0.2	1.0	--	32	--	0	--	26	3.0
AUG											
25...	2.9	17	0.2	1.0	--	37	--	0	--	30	2.7
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
29...	3.8	18	0.3	1.4	--	46	--	0	--	38	3.4

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT											
26...	2.0	0.20	13	65	59	0.09	<0.010	0.250	0.010	<0.20	<0.20
NOV											
16...	1.7	<0.10	13	46	57	0.06	<0.010	0.270	<0.010	<0.20	<0.20
DEC											
27...	2.1	<0.10	13	61	54	0.08	<0.010	0.340	0.010	<0.20	<0.20
JAN											
04...	2.2	<0.10	13	62	57	0.08	0.020	0.310	0.030	0.20	<0.20
11...	2.2	<0.10	13	57	61	0.08	0.010	0.350	0.020	<0.20	<0.20
18...	2.1	<0.10	13	63	59	0.09	0.010	0.250	0.020	<0.20	0.20
FEB											
01...	2.2	<0.10	12	58	57	0.08	0.020	0.270	0.020	<0.20	<0.20
16...	3.6	<0.10	13	75	81	0.10	0.020	0.450	0.020	0.30	<0.20
23...	3.3	<0.10	12	70	63	0.09	0.020	0.410	0.240	0.70	0.40
MAR											
01...	2.8	<0.10	12	59	63	0.08	<0.010	0.260	<0.010	0.20	<0.20
22...	1.4	<0.10	11	45	42	0.06	0.010	0.140	0.010	<0.20	<0.20
APR											
26...	1.3	<0.10	9.9	45	39	0.06	<0.010	0.170	0.030	0.20	<0.20
MAY											
24...	1.2	<0.10	10	52	47	0.07	<0.010	0.120	0.050	0.30	<0.20
JUN											
30...	1.2	0.40	10	40	48	0.05	<0.010	0.088	<0.010	<0.20	<0.20
JUL											
27...	1.4	<0.10	11	50	46	0.07	<0.010	0.110	0.020	<0.20	<0.20
AUG											
25...	1.4	0.20	11	50	48	0.07	<0.010	0.110	0.010	<0.20	<0.20
30...	--	--	--	--	--	--	<0.010	0.120	0.010	<0.20	<0.20
SEP											
29...	2.1	<0.10	13	69	60	0.09	<0.010	0.300	<0.010	<0.20	<0.20

## 11303000 STANISLAUS RIVER AT RIPON, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT										
26...	0.040	0.020	0.030	10	56	7	<1	<1	6.3	0.4
NOV										
16...	0.030	0.010	0.020	10	52	6	<1	<1	6.8	0.3
DEC										
27...	0.030	<0.010	0.020	20	40	8	<1	<1	5.2	0.3
JAN										
04...	0.020	<0.010	0.020	30	32	6	<1	<1	3.0	0.3
11...	0.040	0.020	0.010	10	36	7	<1	<1	3.1	0.3
18...	0.010	0.020	0.020	20	36	5	<1	<1	2.1	0.3
FEB										
01...	0.030	0.020	0.020	20	38	7	<1	<1	4.1	0.9
16...	0.070	0.060	0.050	20	64	14	<1	<1	9.0	0.3
23...	0.160	0.120	0.110	30	60	6	<1	<1	14	0.9
MAR										
01...	0.040	0.020	0.010	20	41	9	<1	<1	2.2	0.4
22...	0.030	0.010	0.010	<10	46	7	<1	<1	2.3	0.5
APR										
26...	0.070	0.030	0.030	<10	50	6	<1	<1	2.4	0.5
MAY										
24...	0.080	0.050	0.030	<10	31	3	<1	<1	--	--
JUN										
30...	0.030	0.010	0.020	10	57	5	<1	<1	2.4	0.5
JUL										
27...	0.030	0.020	0.010	10	64	4	<1	<1	2.4	0.3
AUG										
25...	0.040	0.020	0.020	<10	80	4	<1	<1	1.9	0.4
30...	0.030	0.030	0.020	--	--	--	--	--	--	--
SEP										
29...	0.030	0.020	0.020	<10	84	6	<1	<1	4.2	0.4

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT					
26...N	1520	341	16.5	10	9.2
NOV					
16...N	1440	306	12.0	8	6.6
DEC					
27...N	0855	295	8.0	3	2.4
JAN					
04...N	0815	300	9.5	4	3.2
11...N	0835	290	7.5	4	3.1
18...N	0840	293	8.5	3	2.4
FEB					
01...N	1445	314	8.5	3	2.5
16...N	0855	214	10.0	9	5.2
23...N	0830	338	--	15	14
MAR					
01...N	1505	329	15.0	10	8.9
22...N	1600	963	13.0	24	62
APR					
26...N	1645	844	13.5	20	46
MAY					
24...N	0930	1070	15.5	14	40
JUN					
30...N	1700	542	21.0	7	10
JUL					
27...N	1630	417	25.0	5	5.6
AUG					
25...N	0815	398	20.5	12	13
SEP					
29...N	0900	265	18.5	9	6.4

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA  
(National Stream-Quality Accounting Network Station)

LOCATION.--Lat 37°40'34", long 121°15'55", in El Pescadero Grant, San Joaquin County, Hydrologic Unit 18040003, on left bank 12 ft downstream from Durham Ferry highway bridge, 2.6 mi downstream from Stanislaus River, and 3.2 mi northeast of Vernalis.

DRAINAGE AREA.--13,536 mi<sup>2</sup>, includes about 2,100 mi<sup>2</sup> in James Bypass.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1922 to current year (1922-23 and 1925-29, low-flow records only).

REVISED RECORDS.--WSP 831: 1936. WSP 931: 1940. WSP 1930: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level. See WSP 2130 for history of changes prior to Nov. 30, 1967.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, and diversions for irrigation; low flows consist mainly of return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 79,000 ft<sup>3</sup>/s, Dec. 9, 1950, elevation, 32.81 ft, present datum, including flow through breaks in levee; maximum elevation, 34.55 ft, Jan. 27, 1969; minimum discharge, 19 ft<sup>3</sup>/s, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,440 ft<sup>3</sup>/s, Oct. 19, elevation, 13.02 ft; minimum daily, 743 ft<sup>3</sup>/s, Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1920	2100	1680	1540	1630	1900	1820	2440	1170	981	1110	743
2	1900	2060	1610	1580	1600	1850	1760	2030	1150	938	1050	761
3	2050	1990	1590	1730	1580	1860	1770	1760	1120	980	1020	808
4	2090	1900	1580	1780	1550	1880	1800	1660	1080	1080	989	875
5	2030	1890	1540	1870	1540	2070	1730	1510	1100	1090	936	901
6	2180	1840	1530	2010	1530	2310	1640	1610	1090	1120	892	874
7	3210	1770	1510	1950	1530	2300	1580	2150	1050	1100	885	800
8	4060	1750	1590	1930	1650	2310	1490	2740	1030	1020	947	761
9	3740	1740	1710	1920	2000	2390	1570	2880	1030	976	837	798
10	3380	1710	1680	1890	2780	2440	1690	2840	1130	964	826	783
11	3630	1760	1660	1820	2660	2410	1670	2790	1140	986	866	842
12	3850	1760	1640	1880	2460	2360	1490	2560	1130	906	854	897
13	3980	1770	1580	1920	2190	2310	1450	2130	1110	923	805	877
14	3960	1730	1560	1850	1980	2310	1430	1820	1080	920	776	865
15	3890	1700	1710	1770	1850	2300	1390	1700	1020	943	816	865
16	3730	1690	1680	1640	1760	2310	1330	1560	1030	929	830	857
17	3740	1700	1660	1580	1740	2410	1380	1470	1080	923	818	896
18	4140	1700	1670	1580	1750	2530	1410	1470	1170	1030	829	981
19	4330	1690	1770	1630	1850	2430	1340	1770	1160	998	806	956
20	4170	1670	1720	1700	2170	2390	1320	2360	1170	1070	879	870
21	3780	1670	1660	1760	2310	2350	1330	2520	1140	1190	899	833
22	3310	1680	1680	1640	2360	2280	1370	2550	1150	1280	953	827
23	2890	1660	1710	1580	2390	2190	1410	2470	1130	1360	876	838
24	2560	1620	1670	1660	2390	2140	1730	2230	1080	1480	829	859
25	2370	1580	1630	1820	2270	2150	2390	1950	1140	1540	777	985
26	2280	1650	1620	1980	2140	2150	2920	1630	1210	1530	800	1010
27	2130	1730	1620	1960	2020	2140	3310	1430	1190	1530	794	914
28	2110	1740	1590	1870	1960	2090	3620	1340	1100	1500	797	917
29	2250	1760	1530	1750	---	2020	3640	1310	1080	1410	822	961
30	2340	1760	1550	1700	---	1960	3100	1280	1000	1330	801	917
31	2260	---	1540	1670	---	1840	---	1190	---	1170	761	---
TOTAL	94260	52770	50470	54960	55640	68380	55880	61150	33260	35197	26880	26071
MEAN	3041	1759	1628	1773	1987	2206	1863	1973	1109	1135	867	869
MAX	4330	2100	1770	2010	2780	2530	3640	2880	1210	1540	1110	1010
MIN	1900	1580	1510	1540	1530	1840	1320	1190	1000	906	761	743
AC-FT	187000	104700	100100	109000	110400	135600	110800	121300	65970	69810	53320	51710

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2186	2321	3613	4938	6549	7110	6930	7504	6532	2429	1311	1666
MAX	13320	10680	25130	27050	32550	40040	36450	31770	36650	19230	9035	11310
(WY)	1984	1984	1951	1956	1969	1983	1983	1983	1938	1983	1983	1983
MIN	246	430	506	804	758	444	200	380	118	92.8	124	179
(WY)	1978	1978	1978	1962	1991	1961	1961	1961	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1924 - 1994			
ANNUAL TOTAL	970620				614918							
ANNUAL MEAN	2659				1685				4409			
HIGHEST ANNUAL MEAN									21280			
LOWEST ANNUAL MEAN									575			
HIGHEST DAILY MEAN	9590				Jan 19				70000			
LOWEST DAILY MEAN	1000				Jan 1				30			
ANNUAL SEVEN-DAY MINIMUM	1150				Jan 1				59			
INSTANTANEOUS PEAK FLOW					4440				Oct 19			
INSTANTANEOUS PEAK STAGE					13.02				Oct 19			
ANNUAL RUNOFF (AC-FT)	1925000				1220000				3194000			
10 PERCENT EXCEEDS	4060				2440				11700			
50 PERCENT EXCEEDS	2330				1640				2000			
90 PERCENT EXCEEDS	1560				875				638			

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

CHEMICAL DATA: Water years 1951 to current year.

BIOLOGICAL DATA: Water years 1974-81.

SPECIFIC CONDUCTANCE: Water years 1951-63, 1973-81, 1989 to current year.

WATER TEMPERATURE: Water years 1951 to current year.

SEDIMENT DATA: Water years 1957 to current year.

TURBIDITY: Water years 1972-84.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: March 1951 to May 1963.

SPECIFIC CONDUCTANCE: March 1951 to May 1963, January 1973 to October 1981, October 1988 to current year.

WATER TEMPERATURE: March 1951 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1956 to current year.

INSTRUMENTATION.--Conductivity recorder, January 1973 to October 1981. Temperature recorder, October 1961 to September 1963 and since December 1972. Water-quality monitor since June 1985.

REMARKS.--Mean daily specific-conductance records January 1973 to October 1981, provided by U.S. Bureau of Reclamation. Maximum and minimum specific-conductance values, June 1985 to September 1988, are available in files of the U.S. Geological Survey. Interruptions in record were due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,350 microsiemens, Aug. 11, 1961; minimum daily, 60 microsiemens, June 21, 1953.

WATER TEMPERATURE: Maximum recorded, 35.5°C, Aug. 9, 1990; minimum recorded, 2.0°C, Dec. 26, 1987.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,590 mg/L, Dec. 25, 1964; minimum daily mean, 6 mg/L, Jan. 1, 1991.

SEDIMENT LOAD: Maximum daily, 54,100 tons, Dec. 25, 1964; minimum daily, 2 tons, Aug. 10, 1961.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,240 microsiemens, July 17; minimum recorded, 185 microsiemens, Oct. 13.

WATER TEMPERATURE: Maximum recorded, 27.5°C, July 9-11, Aug. 6; minimum recorded, 7.0°C, Dec. 23-27.

SEDIMENT CONCENTRATION: Maximum daily mean, 284 mg/L, Mar. 6; minimum daily mean, 17 mg/L, Dec. 26, 27.

SEDIMENT LOAD: Maximum daily, 1,780 tons, Mar. 6; minimum daily, 73 tons, Dec. 26.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)
OCT											
27...	1525	2120	583	7.6	18.0	--	765	8.7	92	--	--
NOV											
16...	1245	1680	800	7.8	11.5	4.8	766	10.1	92	90	37
17...	1340	1700	808	8.1	11.5	--	764	10.2	94	--	--
DEC											
27...	1515	1610	834	7.9	8.0	--	766	11.2	94	--	--
JAN											
04...	1440	1810	641	7.6	10.0	--	764	10.4	92	--	--
11...	1430	1810	706	7.7	9.5	--	769	12.5	108	--	--
12...	1030	1870	667	7.9	10.5	4.5	772	10.5	93	140	120
18...	1430	1580	871	7.6	10.5	--	764	10.2	92	--	--
FEB											
01...	0900	1640	962	7.7	8.0	--	769	11.9	100	--	--
16...	1500	1750	997	8.0	12.0	--	760	9.2	85	--	--
23...	1620	2390	715	7.7	--	--	770	--	--	--	--
MAR											
01...	0840	1900	1160	7.7	14.0	--	767	8.5	83	--	--
18...	1400	2560	739	8.0	15.0	10	759	9.1	91	160	71
23...	1315	2190	794	8.0	16.0	--	765	8.7	88	--	--
APR											
29...	1410	3680	341	7.4	17.0	--	768	9.2	94	--	--
MAY											
18...	1320	1470	851	7.8	18.0	24	760	11.5	122	2300	360
25...	1445	1940	668	8.0	22.5	--	754	9.6	112	--	--
JUN											
28...	1420	1100	843	8.2	25.0	--	760	10.5	128	--	--
JUL											
12...	1620	921	905	8.3	26.5	4.9	756	12.8	161	34	K64
26...	1630	1540	546	7.7	26.0	--	758	8.1	101	--	--
AUG											
23...	1450	866	812	8.1	25.0	--	758	10.0	122	--	--
SEP											
09...	1130	832	876	8.3	20.0	--	766	9.5	104	--	--
13...	1320	901	888	8.0	19.5	15	762	8.2	90	5100	1600
29...	1300	988	828	8.0	21.0	--	765	8.3	93	--	--



11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER WH IT FIELD MG/L AS CO3
OCT											
27...	130	--	30	14	62	50	2	2.4	130	--	0
NOV											
16...	170	60	40	18	89	52	3	3.4	--	140	--
17...	180	--	39	19	93	53	3	3.3	--	--	0
DEC											
27...	170	--	38	19	92	53	3	1.7	137	--	0
JAN											
04...	140	--	31	16	77	53	3	2.0	105	--	0
11...	140	--	31	16	82	55	3	1.9	95	--	0
12...	140	56	30	16	79	54	3	2.5	--	103	--
18...	180	--	39	20	100	54	3	2.8	125	--	0
FEB											
01...	200	--	44	22	120	56	4	4.1	142	--	0
16...	210	--	46	23	120	55	4	5.1	--	--	0
23...	150	--	34	17	86	54	3	5.1	120	--	0
MAR											
01...	250	--	56	26	150	56	4	4.6	--	--	0
18...	160	74	36	17	83	52	3	2.8	--	105	--
23...	180	--	40	19	95	53	3	2.6	73	--	0
APR											
29...	75	29	17	7.9	34	49	2	1.8	--	56	--
MAY											
18...	180	80	40	20	91	52	3	2.8	--	125	--
25...	150	61	34	16	72	50	3	2.5	--	109	--
JUN											
28...	190	98	42	21	99	52	3	2.9	--	114	--
JUL											
12...	200	100	45	22	100	51	3	3.0	--	122	--
26...	140	67	31	14	65	51	2	2.2	--	83	--
AUG											
23...	170	71	38	19	86	51	3	2.6	--	124	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--
13...	210	76	45	23	100	51	3	3.7	--	160	--
29...	180	43	38	20	90	52	3	3.6	--	164	--

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
OCT											
27...	--	106	--	61	69	0.20	16	330	325	0.45	0.020
NOV											
16...	0	--	114	100	110	0.20	18	466	456	0.63	0.050
17...	--	--	--	100	110	0.20	18	457	463	0.62	0.040
DEC											
27...	--	113	--	120	120	0.10	15	506	481	0.69	0.010
JAN											
04...	--	86	--	99	96	<0.10	14	388	392	0.53	0.020
11...	--	78	--	90	90	<0.10	14	378	378	0.51	0.020
12...	0	--	84	97	95	<0.10	15	396	392	0.54	0.030
18...	--	103	--	120	120	<0.10	14	510	486	0.69	0.020
FEB											
01...	--	116	--	150	140	<0.10	15	589	576	0.80	0.040
16...	--	--	--	160	130	0.20	16	598	588	0.81	0.070
23...	--	98	--	120	88	<0.10	14	442	435	0.60	0.040
MAR											
01...	--	--	--	200	150	0.10	15	714	693	0.97	0.040
18...	0	--	86	120	98	<0.10	13	442	446	0.60	0.020
23...	--	60	--	130	110	0.10	13	481	454	0.65	0.030
APR											
29...	0	--	46	45	38	<0.10	11	193	186	0.26	0.010
MAY											
18...	0	--	102	120	120	<0.10	15	498	481	0.68	0.060
25...	0	--	90	94	91	<0.10	14	394	385	0.54	0.030
JUN											
28...	0	--	94	120	110	0.40	14	491	475	0.67	0.070
JUL											
12...	0	--	100	130	130	0.10	12	539	510	0.73	0.060
26...	0	--	68	87	70	0.10	13	343	331	0.47	0.040
AUG											
23...	0	--	102	110	110	0.20	14	470	448	0.64	0.030
SEP											
09...	--	--	--	--	--	--	--	--	--	--	0.020
13...	0	--	131	110	130	0.10	17	531	518	0.72	0.060
29...	0	--	134	85	120	0.10	19	484	466	0.66	0.040

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	COBALT, DIS- SOLVED (UG/L AS CO)
OCT											
27...	1.20	0.030	0.30	<0.20	0.170	0.100	0.110	--	--	290	--
NOV											
16...	1.70	0.080	0.50	--	0.130	0.120	0.130	<10	53	--	<3
17...	1.70	0.100	0.60	0.40	0.210	0.130	0.140	--	--	450	--
DEC											
27...	1.50	0.080	0.40	0.20	0.120	0.070	0.070	--	--	510	--
JAN											
04...	1.10	0.100	0.40	0.20	0.150	0.040	0.050	--	--	410	--
11...	1.20	0.070	0.30	0.20	0.070	0.050	0.050	--	--	380	--
12...	1.40	0.110	0.30	--	0.100	0.110	0.080	--	--	--	--
18...	1.70	0.100	0.50	0.30	0.160	0.070	0.080	--	--	480	--
FEB											
01...	2.10	0.210	0.70	0.50	0.250	0.160	0.150	--	--	660	--
16...	2.60	0.180	1.0	0.60	0.360	0.220	0.180	--	--	690	--
23...	2.30	0.180	0.90	0.70	0.340	0.230	0.220	--	--	550	--
MAR											
01...	2.90	0.080	1.0	0.50	0.380	0.180	0.180	--	--	850	--
18...	5.30	0.050	0.70	--	0.290	0.160	0.030	20	40	--	<3
23...	1.70	0.030	0.60	0.30	0.210	0.100	0.100	--	--	590	--
APR											
29...	0.820	0.020	0.60	<0.20	0.190	0.080	0.090	--	--	180	--
MAY											
18...	2.20	0.190	0.70	--	0.220	0.120	0.130	10	52	--	<3
25...	1.60	0.020	0.60	0.20	0.200	0.100	0.100	--	--	370	--
JUN											
28...	1.90	0.020	0.70	0.40	0.200	0.070	0.070	--	--	500	--
JUL											
12...	1.80	<0.010	0.90	--	0.200	0.080	0.060	--	--	--	--
26...	1.70	0.040	0.60	0.30	0.280	0.100	0.090	--	--	390	--
AUG											
23...	1.50	0.020	0.70	0.30	0.230	0.080	0.090	--	--	470	--
SEP											
09...	1.70	0.020	0.60	0.20	0.190	0.100	0.110	--	--	--	--
13...	2.10	0.030	0.60	--	0.240	0.150	0.150	20	53	--	<3
29...	1.90	0.030	0.60	<0.20	0.200	0.110	0.120	--	--	320	--

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
OCT											
27...	22	--	28	--	--	--	--	--	--	17	0.8
NOV											
16...	18	7	42	<10	<1	1	<1.0	460	<6	--	--
17...	15	--	43	2	--	1	--	--	--	--	0.9
DEC											
27...	10	--	47	1	--	1	--	--	--	6.5	0.5
JAN											
04...	16	--	34	1	--	1	--	--	--	8.5	1.0
11...	13	--	31	1	--	1	--	--	--	8.6	0.5
12...	--	--	--	--	--	--	--	--	--	--	--
18...	9	--	51	2	--	2	--	--	--	6.1	0.6
FEB											
01...	18	--	48	3	--	2	--	--	--	88	1.7
16...	26	--	48	4	--	3	--	--	--	7.2	1.3
23...	29	--	30	1	--	3	--	--	--	16	2.3
MAR											
01...	14	--	35	4	--	4	--	--	--	6.6	1.7
18...	13	8	21	<10	1	2	<1.0	410	<6	--	--
23...	23	--	24	2	--	3	--	--	--	--	--
APR											
29...	46	--	13	2	--	1	--	--	--	3.0	1.0
MAY											
18...	27	10	36	<10	1	2	<1.0	480	<6	--	--
25...	25	--	24	<1	--	2	--	--	--	3.0	--
JUN											
28...	19	--	28	3	--	3	--	--	--	2.0	1.4
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
26...	27	--	19	2	--	2	--	--	--	2.9	1.6
AUG											
23...	21	--	40	2	--	2	--	--	--	2.9	0.9
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--
13...	37	13	40	<10	2	2	<1.0	530	<6	--	--
29...	29	--	36	3	--	<1	--	--	--	3.7	1.8

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
18...*	1351	5.90	145	868	8.1	16.5	759	9.4	97	66	91
18...*	1356	4.70	190	830	8.1	16.5	759	9.5	98	75	82
18...*	1401	5.00	237	767	8.0	16.0	759	9.6	98	78	83
18...*	1406	6.20	275	688	8.0	16.0	759	9.7	98	78	84
18...*	1411	6.00	314	646	8.1	16.0	759	9.8	99	74	86
SEP											
13...*	1310	2.80	184	1050	7.9	21.0	762	9.7	109	78	98
13...*	1315	2.80	139	1020	8.0	21.0	762	9.7	109	78	96
13...*	1319	3.20	103	976	8.0	21.0	762	9.8	110	84	97
13...*	1325	3.50	75.0	920	8.0	21.0	762	9.6	108	90	98
13...*	1330	2.90	44.0	882	8.0	21.0	762	9.6	108	85	98

\* Instantaneous discharge at time of cross-sectional measurement: Mar. 18, 2,560 ft<sup>3</sup>/s; Sept. 13, 901 ft<sup>3</sup>/s.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
OCT									
13...N	1510	3990	18.0	76	819	66	76	89	100
27...N	1525	2120	18.0	55	315	--	--	--	--
NOV									
16...N	1245	1680	11.5	29	132	83	--	--	--
17...N	1340	1700	11.5	32	147	--	--	--	--
DEC									
27...N	1515	1610	8.0	15	65	--	--	--	--
JAN									
04...N	1440	1810	10.0	65	318	--	--	--	--
11...N	1430	1810	9.5	28	137	--	--	--	--
12...N	1030	1870	10.5	33	167	77	--	--	--
18...N	1430	1580	10.5	29	124	--	--	--	--
FEB									
01...N	0900	1640	8.0	34	151	--	--	--	--
16...N	1500	1750	12.0	69	326	--	--	--	--
23...N	1620	2390	--	81	523	--	--	--	--
MAR									
01...N	0840	1900	14.0	79	405	--	--	--	--
18...N	1400	2560	15.0	74	511	85	--	--	--
APR									
29...N	1410	3680	17.0	51	507	--	--	--	--
MAY									
18...N	1320	1470	18.0	80	318	92	--	--	--
25...N	1445	1940	22.5	57	299	--	--	--	--
JUN									
24...N	1100	1110	--	142	426	--	--	--	--
28...N	1420	1100	25.0	100	297	--	--	--	--
JUL									
12...N	1620	921	26.5	117	291	96	--	--	--
26...N	1630	1540	26.0	188	782	--	--	--	--
AUG									
23...N	1450	866	25.0	90	210	--	--	--	--
SEP									
13...N	1320	901	19.5	83	202	97	--	--	--
29...N	1300	988	21.0	98	261	--	--	--	--

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	NUMBER OF SAM- PLING POINTS (COUNT)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
MAR										
18...	1415	1	2560	15.0	--	2	61	100	--	--
18...	1416	1	2560	15.0	--	4	45	89	98	100
18...	1417	1	2560	15.0	--	2	40	92	99	100
18...	1418	1	2560	15.0	--	13	69	97	100	--
18...	1419	1	2560	15.0	--	14	69	99	100	--
SEP										
13...	1245	1	891	19.5	3	23	90	100	--	--
13...	1246	1	891	19.5	1	6	58	96	100	--
13...	1247	1	891	19.5	--	8	55	95	100	--
13...	1248	1	891	19.5	--	5	43	86	98	100
13...	1249	1	891	19.5	1	4	40	91	99	100

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	557	514	605	565	813	767	814	789	965	958	1160	1130
2	565	540	631	604	841	812	815	751	959	947	1160	1140
3	546	508	650	631	842	832	751	674	951	939	1150	1130
4	516	482	708	649	841	831	692	642	944	935	1130	1090
5	487	466	725	708	869	837	781	692	939	930	1090	1070
6	469	407	740	723	869	861	779	759	933	921	1070	1060
7	407	234	761	740	861	847	760	742	921	905	1060	1050
8	234	211	764	737	847	743	742	730	907	891	1050	1010
9	242	211	805	747	755	737	730	716	900	712	1010	968
10	247	240	799	756	765	749	719	710	778	489	968	955
11	240	223	818	780	768	720	712	689	605	495	977	945
12	226	191	817	784	806	724	689	665	688	605	945	893
13	193	185	823	811	841	799	712	683	789	688	893	863
14	203	189	833	812	845	806	738	712	897	788	864	846
15	207	199	844	828	806	703	758	738	980	893	847	823
16	225	207	849	784	792	704	820	758	1020	975	824	793
17	242	225	828	794	798	779	857	820	1030	968	794	758
18	239	226	797	788	812	779	874	856	968	623	758	739
19	245	229	789	780	791	730	873	868	660	622	760	737
20	292	245	797	780	803	758	872	866	675	660	780	756
21	351	292	815	793	810	803	869	860	664	638	777	770
22	392	350	830	812	816	803	861	847	703	642	783	770
23	422	392	838	816	808	791	863	847	729	703	799	780
24	487	422	850	828	820	804	860	837	789	729	794	786
25	538	487	864	840	828	814	837	819	870	789	808	790
26	567	535	864	790	839	823	823	785	983	870	802	780
27	586	567	791	782	844	833	836	799	1060	983	780	758
28	597	582	782	751	833	819	868	834	1130	1060	770	759
29	593	562	758	749	865	824	917	868	---	---	759	750
30	582	489	767	753	865	813	945	917	---	---	754	747
31	565	500	---	---	826	805	961	942	---	---	759	746
MONTH	597	185	864	565	869	703	961	642	1130	489	1160	737
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	748	742	556	446	892	820	784	729	806	759	887	830
2	746	741	669	556	852	820	806	733	834	778	865	807
3	748	742	761	652	861	846	833	731	836	740	883	815
4	768	720	764	735	881	855	759	703	889	764	958	850
5	785	728	785	713	876	855	803	719	1000	889	959	896
6	794	736	790	721	892	865	748	696	1050	985	949	852
7	805	768	731	603	915	884	750	678	1020	844	952	891
8	836	772	603	449	911	867	735	665	844	787	977	866
9	864	732	449	432	929	903	752	728	787	742	885	841
10	774	725	480	416	917	845	733	704	745	720	972	818
11	809	752	439	414	878	842	768	707	720	631	920	813
12	825	778	559	416	871	847	908	698	647	622	898	804
13	851	783	725	559	887	847	906	820	667	629	917	853
14	841	806	801	722	894	864	854	801	707	667	963	874
15	836	774	821	796	882	854	915	793	711	688	905	876
16	813	765	797	783	864	830	1210	915	731	708	916	842
17	796	758	828	784	830	741	1240	1080	731	714	927	859
18	840	745	852	828	741	656	1170	1090	714	671	938	830
19	861	821	842	719	656	586	1170	1120	694	670	973	846
20	883	856	719	640	767	557	1120	1020	711	694	879	852
21	867	805	640	625	840	709	1020	768	726	701	939	866
22	845	769	626	617	923	797	768	636	893	682	986	931
23	822	773	617	609	1000	871	636	586	812	688	995	936
24	800	673	636	613	898	788	586	537	785	742	989	923
25	673	450	688	633	846	815	563	535	794	742	947	853
26	452	372	744	688	857	689	551	531	838	774	869	838
27	374	359	796	744	805	689	540	524	876	772	922	863
28	370	349	832	785	848	760	547	526	814	769	902	853
29	358	342	835	826	785	739	546	523	891	813	856	761
30	446	358	838	826	766	728	597	541	929	833	862	780
31	---	---	889	829	---	---	759	597	925	807	---	---
MONTH	883	342	889	414	1000	557	1240	523	1050	622	995	761

## SAN JOAQUIN RIVER BASIN

11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	22.5	20.5	16.5	15.5	12.0	10.5	10.0	9.5	9.0	8.0	16.0	14.0
2	22.5	20.5	16.5	15.0	12.0	10.5	10.5	10.0	9.0	8.0	17.0	14.5
3	22.0	20.5	16.0	14.5	12.0	10.5	10.5	10.0	9.5	8.5	17.0	15.5
4	21.0	19.5	16.0	14.5	12.0	10.5	10.0	10.0	11.0	9.0	17.5	15.5
5	19.5	18.5	15.5	14.0	11.5	10.5	10.5	9.5	11.0	10.0	17.0	15.0
6	19.5	17.5	15.0	13.5	11.0	10.0	10.0	9.0	10.5	10.5	16.0	14.5
7	19.0	16.5	15.0	13.5	11.0	10.0	9.5	8.5	11.5	10.5	16.5	14.5
8	16.5	16.0	15.0	13.5	11.5	11.0	9.0	8.5	11.5	11.0	16.5	14.5
9	17.0	16.0	14.5	13.0	12.5	11.5	10.0	9.0	12.0	10.5	16.5	15.0
10	18.0	17.0	15.0	13.5	12.5	11.5	10.0	9.0	11.0	10.5	16.5	15.0
11	17.5	17.0	15.5	14.0	12.5	11.5	10.0	8.5	11.0	10.0	16.5	14.5
12	18.0	16.5	14.5	13.5	11.5	10.5	10.5	9.5	11.0	9.5	16.0	14.0
13	17.5	17.0	14.0	12.5	11.5	10.5	10.5	9.5	11.0	9.5	16.5	14.0
14	17.0	16.5	13.0	11.5	11.0	10.5	10.5	9.5	11.5	10.0	17.0	15.0
15	17.5	16.5	12.0	10.5	11.0	10.5	10.5	9.5	11.5	10.0	17.0	15.5
16	17.5	16.5	11.5	10.5	10.5	10.0	10.5	9.5	12.0	10.5	16.5	15.0
17	17.5	16.5	11.5	10.5	10.0	9.5	11.0	9.5	12.0	11.0	16.0	14.5
18	17.0	16.0	12.5	11.0	9.5	8.5	11.0	9.5	12.0	11.0	17.0	15.0
19	16.5	15.5	12.0	11.0	9.0	8.5	11.0	9.5	11.0	9.5	17.5	15.5
20	16.5	15.5	12.0	10.5	8.5	8.0	10.5	9.5	10.5	9.0	18.0	15.5
21	17.0	16.0	11.0	10.5	8.0	7.5	11.0	10.0	10.5	9.5	18.0	16.0
22	17.5	16.0	12.0	10.5	7.5	7.5	11.5	10.0	11.0	10.0	17.0	15.0
23	17.5	16.5	11.5	10.5	8.0	7.0	12.5	11.0	11.5	10.0	16.0	14.5
24	18.0	16.5	10.5	9.0	7.5	7.0	12.0	11.5	12.0	10.5	15.0	14.0
25	18.0	16.5	9.5	8.5	7.0	7.0	11.5	11.0	13.0	11.5	16.0	14.0
26	18.0	16.5	9.5	8.0	7.0	7.0	11.0	10.5	13.0	12.5	17.0	14.5
27	18.0	16.5	9.0	8.5	8.5	7.0	11.0	10.0	14.5	13.0	17.5	15.0
28	17.5	16.5	9.5	9.0	9.0	8.0	10.5	9.5	15.0	13.0	18.0	15.5
29	17.5	16.0	11.0	9.5	9.0	8.5	10.5	8.5	---	---	17.0	15.5
30	17.5	16.0	12.0	10.5	9.5	8.5	9.5	9.0	---	---	17.5	15.0
31	17.0	16.0	---	---	9.5	9.0	9.0	8.0	---	---	17.5	15.0
MONTH	22.5	15.5	16.5	8.0	12.5	7.0	12.5	8.0	15.0	8.0	18.0	14.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	18.0	15.5	19.0	16.5	24.5	21.0	26.0	22.0	26.0	23.0	25.0	21.0
2	18.0	16.0	20.5	17.0	24.5	21.5	26.0	22.5	26.0	22.0	24.5	20.5
3	18.5	16.0	21.0	18.5	23.5	20.5	26.0	22.0	26.0	22.5	24.0	20.0
4	18.0	16.0	21.0	19.0	24.0	20.0	25.5	22.0	26.0	23.0	25.0	20.5
5	17.5	15.0	21.0	19.0	23.0	20.5	25.5	22.0	27.0	22.5	25.5	21.5
6	17.5	15.5	20.0	18.0	23.0	20.0	26.0	22.5	27.5	23.0	25.5	22.0
7	17.0	14.5	20.0	17.5	23.0	19.0	26.5	22.5	27.0	24.0	25.0	21.5
8	16.0	15.0	20.5	18.5	23.5	19.5	27.0	22.5	27.0	23.0	24.0	21.0
9	16.0	14.0	20.5	18.0	25.0	21.0	27.5	23.0	26.0	22.5	23.0	19.5
10	17.0	14.0	21.0	19.0	26.5	22.5	27.5	23.0	26.0	22.0	22.5	19.5
11	18.5	15.0	21.0	19.5	27.0	23.5	27.5	23.5	25.5	22.0	22.0	18.5
12	19.5	16.5	21.5	19.0	25.5	23.5	27.0	23.5	26.0	22.0	22.5	19.0
13	20.0	17.0	22.0	19.5	24.5	22.0	27.0	22.5	26.5	22.0	22.5	19.0
14	20.5	17.5	22.5	20.0	23.5	20.0	26.5	22.5	26.5	22.5	22.5	19.0
15	21.5	18.0	21.0	19.0	23.0	19.5	27.0	23.0	26.5	22.5	23.5	19.5
16	21.0	19.0	19.5	17.5	23.0	19.0	27.0	23.0	26.5	22.5	23.5	20.5
17	21.5	18.5	19.0	17.5	23.0	19.5	26.5	22.5	27.0	22.5	24.0	21.0
18	22.5	19.0	20.0	17.5	23.5	19.5	27.0	23.0	26.5	23.0	23.0	20.5
19	21.5	19.0	19.5	18.0	24.0	20.5	26.5	23.0	26.0	22.5	24.0	20.5
20	21.5	18.5	18.5	16.0	23.5	20.5	25.5	22.5	25.5	21.5	24.0	21.0
21	21.0	18.0	19.5	17.0	23.5	19.5	25.0	22.5	25.0	21.5	24.5	21.0
22	20.5	18.0	19.5	17.5	24.0	20.0	25.5	22.0	25.0	21.5	24.0	21.0
23	19.0	16.5	20.5	18.0	24.5	20.5	25.0	22.0	25.0	21.5	23.0	21.0
24	16.5	15.5	21.5	18.5	23.5	21.0	24.5	21.5	25.0	21.5	23.0	19.5
25	16.0	15.0	22.5	19.5	23.5	20.5	25.5	22.0	25.5	21.5	23.5	20.0
26	16.0	14.5	23.0	20.0	23.5	20.0	26.0	22.5	25.0	21.5	24.0	20.5
27	15.5	14.5	23.5	20.5	25.0	21.0	25.5	23.0	25.0	21.5	23.5	21.0
28	16.5	14.0	25.0	21.0	26.0	22.0	25.5	23.0	24.5	21.0	22.5	20.5
29	17.0	15.5	25.0	21.5	26.0	22.0	26.0	23.0	24.5	21.0	22.0	19.5
30	18.0	15.5	24.0	22.0	25.5	22.0	26.0	23.0	25.5	21.0	21.5	19.0
31	---	---	25.0	21.5	---	---	26.5	23.0	25.5	21.5	---	---
MONTH	22.5	14.0	25.0	16.0	27.0	19.0	27.5	21.5	27.5	21.0	25.5	18.5



## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	1920	60	311	2100	52	295	1680	40	181
2	1900	57	294	2060	55	303	1610	33	145
3	2050	67	374	1990	52	278	1590	32	137
4	2090	65	366	1900	48	245	1580	32	137
5	2030	60	330	1890	50	255	1540	34	142
6	2180	68	402	1840	49	241	1530	32	132
7	3210	129	1120	1770	49	236	1510	28	112
8	4060	107	1170	1750	47	222	1590	44	192
9	3740	90	905	1740	46	217	1710	61	284
10	3380	77	705	1710	47	218	1680	69	312
11	3630	79	771	1760	56	267	1660	51	226
12	3850	84	871	1760	54	258	1640	51	227
13	3980	76	812	1770	45	216	1580	43	183
14	3960	74	795	1730	40	185	1560	37	155
15	3890	75	787	1700	39	179	1710	50	230
16	3730	71	711	1690	40	184	1680	47	214
17	3740	76	766	1700	36	183	1660	48	214
18	4140	84	941	1700	39	179	1670	52	234
19	4330	108	1270	1690	39	177	1770	44	209
20	4170	80	897	1670	35	160	1720	30	140
21	3780	68	694	1670	32	144	1660	25	114
22	3310	62	551	1680	32	146	1680	21	96
23	2890	69	537	1660	31	138	1710	24	112
24	2560	70	483	1620	32	142	1670	21	96
25	2370	68	435	1580	26	110	1630	19	86
26	2280	64	398	1650	25	112	1620	17	73
27	2130	59	360	1730	28	129	1620	17	81
28	2110	65	369	1740	35	165	1590	25	112
29	2250	64	390	1760	42	198	1530	31	129
30	2340	67	423	1760	47	223	1350	33	140
31	2260	55	334	---	---	---	1540	32	132
TOTAL	94260	---	19572	52770	---	6005	50470	---	4977
JANUARY			FEBRUARY			MARCH			
1	1540	33	137	1630	32	143	1900	79	405
2	1580	37	158	1600	30	130	1850	74	369
3	1730	52	243	1580	34	146	1860	70	353
4	1780	61	295	1550	37	153	1880	70	356
5	1870	54	274	1540	41	170	2070	87	491
6	2010	59	318	1530	48	197	2310	284	1780
7	1950	53	276	1530	54	225	2300	159	987
8	1930	44	231	1650	67	302	2310	74	464
9	1920	41	212	2000	116	643	2390	82	528
10	1890	36	184	2780	168	1260	2440	82	543
11	1820	36	206	2660	166	1190	2410	70	455
12	1880	34	182	2460	132	879	2360	67	427
13	1920	41	214	2190	101	600	2310	62	385
14	1850	34	171	1980	78	419	2310	62	385
15	1770	30	146	1850	75	374	2300	64	398
16	1640	26	114	1760	66	316	2310	65	406
17	1580	27	115	1740	70	326	2410	65	426
18	1580	29	125	1750	72	339	2530	69	475
19	1630	37	164	1850	139	707	2430	69	449
20	1700	45	205	2170	241	1400	2390	67	435
21	1760	47	225	2310	157	979	2350	68	429
22	1640	40	183	2360	119	759	2280	63	389
23	1580	44	186	2390	106	735	2190	56	333
24	1660	61	276	2390	99	650	2140	57	328
25	1820	83	412	2270	99	608	2150	59	344
26	1980	127	682	2140	90	520	2150	63	367
27	1960	114	601	2020	75	411	2140	71	409
28	1870	78	393	1960	77	408	2090	75	422
29	1750	56	264	---	---	---	2020	75	409
30	1700	47	214	---	---	---	1960	74	390
31	1670	36	164	---	---	---	1840	54	267
TOTAL	54960	---	7570	55640	---	14989	68380	---	14604

## 11303500 SAN JOAQUIN RIVER NEAR VERNALIS, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	1820	63	311	2440	88	574	1170	96	303
2	1760	76	361	2030	90	491	1150	89	276
3	1770	86	412	1760	93	440	1120	96	290
4	1800	92	446	1660	90	406	1080	94	274
5	1730	85	396	1510	88	356	1100	97	289
6	1640	89	393	1610	125	554	1090	103	300
7	1580	72	309	2150	139	810	1050	104	295
8	1490	72	291	2740	125	923	1030	102	283
9	1570	75	321	2880	108	841	1030	93	260
10	1690	79	362	2840	96	735	1130	90	274
11	1670	83	372	2790	105	789	1140	90	275
12	1490	74	298	2560	98	678	1130	118	360
13	1450	69	269	2130	102	586	1110	126	377
14	1430	70	271	1820	93	458	1080	110	320
15	1390	76	285	1700	84	388	1020	95	261
16	1330	75	271	1560	82	344	1030	94	260
17	1380	74	276	1470	76	299	1080	83	243
18	1410	80	303	1470	77	305	1170	77	242
19	1340	91	328	1770	85	413	1160	94	294
20	1320	103	370	2360	77	494	1170	84	264
21	1330	95	341	2520	75	508	1140	81	251
22	1370	90	335	2550	62	430	1150	99	306
23	1410	91	346	2470	57	381	1130	102	311
24	1730	113	536	2230	64	382	1080	128	374
25	2390	129	840	1950	61	321	1140	111	343
26	2920	114	898	1630	71	310	1210	117	382
27	3310	118	1060	1430	89	343	1190	86	274
28	3620	105	1030	1340	82	294	1100	86	222
29	3640	88	867	1310	87	309	1080	81	236
30	3100	85	707	1280	94	323	1000	89	240
31	---	---	---	1190	102	328	---	---	---
TOTAL	55880	---	13605	61150	---	14813	33260	---	8679
JULY			AUGUST			SEPTEMBER			
1	981	120	316	1110	161	481	743	77	155
2	938	126	320	1050	159	451	761	80	164
3	980	125	331	1020	163	449	808	74	161
4	1080	134	392	989	158	422	875	78	184
5	1090	117	344	936	130	329	901	94	228
6	1120	111	335	892	104	251	874	84	198
7	1100	113	336	885	101	241	800	81	175
8	1020	140	384	947	96	246	761	74	153
9	976	135	356	837	86	194	798	72	156
10	964	131	340	826	86	192	783	70	148
11	986	109	291	866	74	174	842	70	159
12	906	109	267	854	89	206	897	77	187
13	923	101	251	805	92	200	877	82	193
14	920	98	245	776	104	217	865	74	173
15	943	104	263	816	95	211	865	73	170
16	929	112	280	830	112	251	857	64	149
17	923	139	347	818	111	245	896	74	180
18	1030	166	460	829	91	204	981	76	202
19	998	143	385	806	91	199	956	67	174
20	1070	177	515	879	99	236	870	62	146
21	1190	176	567	899	102	249	833	67	150
22	1280	186	640	953	104	268	827	72	161
23	1360	195	717	876	90	214	838	76	173
24	1480	202	810	829	80	179	859	74	173
25	1540	228	947	777	82	172	985	92	247
26	1530	199	823	800	93	202	1010	78	213
27	1530	211	873	794	109	233	914	81	199
28	1500	184	747	797	95	204	917	81	199
29	1410	192	733	822	92	205	961	80	205
30	1330	184	660	801	95	205	917	73	180
31	1170	180	567	761	88	180	---	---	---
TOTAL	35197	---	14842	26880	---	7710	26071	---	5355
YEAR	614918		132721						

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA

## WATER-QUALITY RECORDS

LOCATION.--Lat 38°08'53", long 120°49'26", in NW 1/4 NE 1/4 sec.1, T.3 N., R.10 E., Calaveras County, Hydrologic Unit 18040011, on right bank at county road bridge, 0.5 mi upstream from Cosgrove Creek, 0.8 mi downstream from New Hogan Dam, and 3.0 mi south of Valley Springs.

DRAINAGE AREA.--363 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1964-66, October 1970 to September 1994 (discontinued).

WATER DISCHARGE: Water years 1961-90.

CHEMICAL DATA: Water years 1964-66.

WATER TEMPERATURE: October 1970 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

WATER DISCHARGE: January 1961 to September 1990.

WATER TEMPERATURE: October 1970 to September 1994 (discontinued).

INSTRUMENTATION.--Temperature recorder since October 1970.

REMARKS.--Water temperature is affected by regulation from New Hogan Dam. Interruption in record was due to malfunction of the recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 24.0°C, Aug. 10, 28, 29, 1977, June 14, 17, 18, 22, 1989; minimum recorded, 4.0°C, Dec. 22-25, 29-31, 1990, Jan. 1, 1991.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 21.0°C, Sept. 29, 30; minimum recorded, 7.0°C, Feb. 20.

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	12.0	12.5	11.5	13.0	12.0	10.0	9.5	9.5	8.5	10.5	8.5
2	12.5	12.0	13.0	11.5	12.5	12.0	10.0	9.5	9.5	8.5	10.5	8.5
3	12.5	12.0	12.5	11.5	13.0	12.0	9.5	9.5	9.5	8.5	9.5	8.5
4	12.0	12.0	12.5	11.5	13.0	12.0	9.5	9.5	9.5	8.5	10.0	8.5
5	12.5	11.5	12.5	11.5	12.5	12.0	9.5	9.0	9.5	8.5	9.0	8.5
6	12.5	11.5	12.5	11.5	12.5	12.0	10.0	9.0	9.0	9.0	10.0	8.5
7	13.0	11.5	12.5	11.5	12.5	12.0	10.0	9.0	10.5	9.0	10.0	8.5
8	12.5	11.5	12.5	11.5	12.5	12.0	9.5	9.0	10.5	9.0	10.0	8.5
9	12.5	11.5	12.5	11.5	12.5	12.0	10.0	9.0	10.0	7.5	10.0	8.5
10	12.5	11.5	12.5	11.5	12.5	12.0	10.0	9.0	10.0	8.5	9.5	8.5
11	12.5	11.5	12.5	12.0	12.0	11.5	9.5	9.0	10.0	8.5	10.0	8.5
12	12.5	11.5	12.5	11.5	12.0	11.5	10.0	9.0	10.0	8.5	10.0	8.5
13	12.5	12.0	12.5	11.5	12.0	11.5	10.0	9.0	10.0	8.5	10.0	8.5
14	12.5	12.0	12.5	11.5	12.0	11.5	9.5	9.0	10.0	8.0	10.5	8.5
15	12.5	12.0	12.5	11.5	11.5	11.0	10.0	9.0	10.0	8.5	10.0	8.5
16	12.5	12.0	12.5	11.5	11.5	11.0	10.0	9.0	10.0	8.5	9.0	8.5
17	12.5	11.5	12.5	11.5	11.5	11.0	10.0	9.0	10.0	9.0	10.0	8.5
18	12.5	11.5	12.5	12.0	11.0	10.5	10.0	9.0	10.0	8.5	10.0	8.5
19	12.5	11.5	12.5	12.0	11.0	10.5	10.0	8.5	9.0	7.5	10.0	8.5
20	12.5	12.0	12.5	12.0	11.0	10.5	10.0	8.5	10.0	7.0	10.0	8.5
21	12.5	12.0	12.5	12.0	10.5	10.5	10.0	9.0	9.5	7.5	10.0	8.5
22	12.5	11.5	12.5	12.0	10.5	10.0	10.0	8.5	10.5	8.0	9.5	8.5
23	12.5	11.5	12.5	12.0	10.5	10.0	10.0	9.0	10.5	7.5	10.0	8.0
24	12.5	12.0	12.5	12.0	10.5	10.0	9.5	9.0	11.0	8.5	10.0	8.5
25	12.5	12.0	13.0	12.0	10.0	9.5	9.5	8.5	11.5	9.0	9.5	8.5
26	12.5	12.0	13.0	12.0	10.0	10.0	10.0	9.0	11.0	9.0	10.0	8.5
27	12.5	12.0	12.5	12.0	10.5	9.5	10.0	8.5	10.0	8.5	10.5	8.5
28	12.5	12.0	12.5	12.5	10.5	9.5	10.0	8.5	10.5	8.0	10.0	9.0
29	13.0	11.5	13.0	12.5	10.0	9.5	10.0	8.5	---	---	10.0	8.5
30	12.5	11.5	13.0	12.0	10.0	9.5	9.5	8.5	---	---	10.5	9.0
31	12.5	11.5	---	---	10.0	9.5	9.5	8.5	---	---	10.5	8.5
MONTH	13.0	11.5	13.0	11.5	13.0	9.5	10.0	8.5	11.5	7.0	10.5	8.0

11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM, NEAR VALLEY SPRINGS, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	9.0	10.5	9.5	---	---	12.5	11.5	14.0	13.0	17.5	17.0
2	10.0	9.0	10.5	9.5	---	---	12.5	11.5	14.5	13.0	18.0	17.0
3	10.0	9.0	10.5	9.5	---	---	12.5	11.5	14.0	13.0	18.0	17.0
4	12.0	9.0	10.5	9.5	---	---	12.5	11.5	14.0	13.5	18.5	17.5
5	10.0	9.0	10.5	9.5	---	---	12.5	11.5	14.5	13.0	18.5	17.5
6	10.0	9.0	10.0	9.5	---	---	12.5	11.5	14.5	13.5	18.5	18.0
7	10.0	9.5	10.5	9.5	---	---	12.5	12.0	15.0	14.0	18.5	18.0
8	10.0	9.5	10.5	9.5	---	---	12.5	12.0	15.0	14.0	19.0	18.0
9	10.0	9.5	12.0	9.5	---	---	12.5	12.0	15.0	14.0	19.0	18.0
10	10.5	9.5	11.0	9.5	---	---	12.5	11.5	15.0	14.5	19.0	18.5
11	10.5	9.5	10.5	9.5	---	---	13.0	12.0	15.0	14.0	19.0	18.5
12	10.5	9.5	11.0	9.5	---	---	13.0	12.0	15.5	14.5	19.0	18.5
13	10.5	9.5	11.0	9.5	---	---	13.0	12.0	15.5	14.5	19.0	18.0
14	10.5	9.5	11.0	9.5	11.5	10.5	13.0	12.0	15.5	15.0	19.0	18.0
15	10.5	9.5	10.5	9.5	11.5	10.5	13.0	12.5	16.0	15.0	19.0	18.0
16	10.0	9.5	10.5	10.0	11.5	11.0	13.5	12.5	16.0	15.0	19.0	18.0
17	10.5	9.5	10.5	10.0	11.5	11.0	13.5	12.5	16.0	15.0	19.5	18.5
18	10.5	9.5	10.5	10.0	12.0	11.0	13.0	12.5	16.0	15.0	19.5	18.5
19	10.5	9.5	10.5	9.5	12.0	11.0	13.0	12.5	16.0	15.0	19.5	19.0
20	10.5	9.5	11.0	9.5	11.5	11.0	13.5	12.5	16.5	15.5	19.5	19.0
21	10.5	9.5	11.0	9.5	12.0	11.0	13.5	13.0	16.5	15.5	20.0	19.0
22	10.5	9.5	11.0	10.0	12.0	11.0	13.5	13.0	16.5	15.5	20.0	19.0
23	10.0	9.5	11.0	10.0	12.0	11.5	13.5	13.0	16.5	15.5	20.0	19.0
24	10.0	9.5	11.0	10.0	12.0	11.0	13.5	12.5	16.5	15.5	20.5	19.5
25	10.0	9.5	11.0	10.0	12.0	11.0	14.0	13.0	16.5	15.5	20.5	19.5
26	10.5	9.5	11.0	10.5	12.5	11.5	14.0	13.0	17.0	16.0	20.5	19.5
27	10.5	9.5	11.0	10.5	12.0	11.5	14.0	13.0	17.0	16.5	20.5	19.5
28	10.5	9.5	11.0	10.5	12.0	11.0	14.0	13.0	17.5	16.5	20.5	20.0
29	10.5	9.5	11.5	10.5	12.0	11.0	14.0	13.0	17.5	16.5	21.0	20.0
30	11.0	9.5	---	---	12.5	11.5	14.0	13.0	17.0	16.5	21.0	20.0
31	---	---	---	---	---	---	14.0	13.0	17.5	17.0	---	---
MONTH	12.0	9.0	---	---	---	---	14.0	11.5	17.5	13.0	21.0	17.0

## 11313000 DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT, NEAR TRACY, CA

LOCATION.--Lat 37°47'49", long 121°35'03", in SW 1/4 SW 1/4 sec.31, T.1 S., R.4 E., Alameda County, Hydrologic Unit 18040003, at Tracy Pumping Plant at intake to canal, 6 mi southeast of Byron, and 10 mi northwest of Tracy.

PERIOD OF RECORD.--June 1951 to current year. Prior to October 1959, published as "near Tracy."

GAGE.--Water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps.

Datum of gage is sea level (levels by U.S. Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Discharge computed from records of operation of pumps. Water is diverted from Sacramento-San Joaquin Delta by way of Old River and a dredged channel to the Tracy Pumping Plant where it is lifted 200 ft into canal. Water, less intermediate diversions, flows into Mendota Pool on San Joaquin River to replace water diverted at Friant Dam. The canal is a part of the Central Valley Project.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation, rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,940 ft<sup>3</sup>/s, Aug. 11, 1969; no flow for many days in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4410	4250	4220	4030	4170	3230	973	1670	899	1770	2030	4360
2	4350	4260	4230	3950	4160	3220	2140	1230	893	1810	2020	4370
3	4440	4230	4270	3920	3800	2880	2620	886	795	1810	2030	3970
4	4410	4240	4270	4040	3310	2710	2570	922	719	1820	2030	4490
5	4430	4270	4280	4060	3190	2710	2420	1010	718	1810	2050	4540
6	4380	4270	4270	3730	3190	2700	2430	958	724	1250	2040	4630
7	4380	4260	4210	3490	3820	2710	2430	866	718	1010	2030	4580
8	4390	4230	4250	2390	4220	2240	2420	835	705	1410	2040	4360
9	4270	4170	4240	1950	4230	2000	2120	953	724	2430	2040	4380
10	4270	4230	4010	1970	4260	2000	1700	1030	693	3370	2030	4310
11	4310	4170	4160	1970	4190	2010	1700	1030	826	3700	2030	4410
12	4230	4270	4140	1960	4090	2500	2150	1040	766	3940	2030	4370
13	4350	4210	4130	1960	4100	2730	1750	1020	795	4240	2030	4280
14	4320	4190	4150	1290	4080	2720	1310	1010	1320	4310	2030	4240
15	4300	4270	4140	968	4100	2720	1600	1010	1630	4270	2030	4210
16	4360	4240	4170	968	4060	1930	1030	1010	1630	3880	2020	4260
17	4330	4260	4090	967	4130	1990	736	1010	1620	3650	2030	4290
18	4290	4200	4130	856	4160	1960	734	1010	1610	3680	2030	4250
19	4270	4200	4110	816	4100	2410	728	984	1620	3200	2050	3780
20	4250	4220	4110	814	4110	2670	724	969	2030	2330	2030	3060
21	4240	4260	4080	815	4100	2380	751	976	2510	2000	2020	1760
22	4250	4230	4090	808	4090	1970	1290	969	2100	2030	2030	1030
23	4250	4230	4100	805	4080	1970	1240	994	1850	2000	2480	1040
24	4230	4220	4140	799	3540	1950	968	926	1750	2000	2160	1030
25	4230	4250	4110	784	3280	1910	967	839	1700	2000	2800	1030
26	4160	4280	4130	1100	3300	1880	916	852	1700	2000	3410	1650
27	4200	4270	4070	2690	3250	1860	1320	1200	1700	1990	3700	2620
28	4340	4280	4040	3820	3230	2450	1670	1760	1700	2040	3580	3420
29	4400	4280	4020	4290	---	2720	1670	1770	1700	2040	4090	3720
30	4330	4240	4030	4330	---	806	1660	2370	1700	2030	4340	3750
31	4460	---	4060	4250	---	359	---	1680	---	2040	4340	---
TOTAL	133830	127180	128450	70590	108340	70295	46737	34789	39845	77860	75600	106190
MEAN	4317	4239	4144	2277	3869	2268	1558	1122	1328	2512	2439	3540
MAX	4460	4280	4280	4330	4260	3230	2620	2370	2510	4310	4340	4630
MIN	4160	4170	4010	784	3190	359	724	835	693	1010	2020	1030
AC-FT	265500	252300	254800	140000	214900	139400	92700	69000	79030	154400	150000	210600

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1994, BY WATER YEAR (WY)

	MEAN	2245	1629	1399	1730	2267	2604	2712	2619	2843	3616	3598	2748
MAX	4317	4239	4162	4182	4584	4563	4400	4540	4591	4740	4703	4591	
(WY)	1994	1994	1989	1989	1976	1976	1976	1976	1973	1989	1989	1988	
MIN	368	.000	.000	.000	.000	.000	99.6	58.3	113	354	976	539	
(WY)	1952	1973	1953	1952	1952	1952	1952	1952	1951	1977	1952	1952	

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1951 - 1994		
ANNUAL TOTAL	1346212			1019706					
ANNUAL MEAN	3688			2794			2522		
HIGHEST ANNUAL MEAN							4144		
LOWEST ANNUAL MEAN							230		
HIGHEST DAILY MEAN	4470			4630			4940		
LOWEST DAILY MEAN	572			359			.00		
ANNUAL SEVEN-DAY MINIMUM	744			714			.00		
ANNUAL RUNOFF (AC-FT)	2670000			2023000			1827000		
10 PERCENT EXCEEDS	4380			4280			4400		
50 PERCENT EXCEEDS	4170			2690			2720		
90 PERCENT EXCEEDS	1900			942			99		

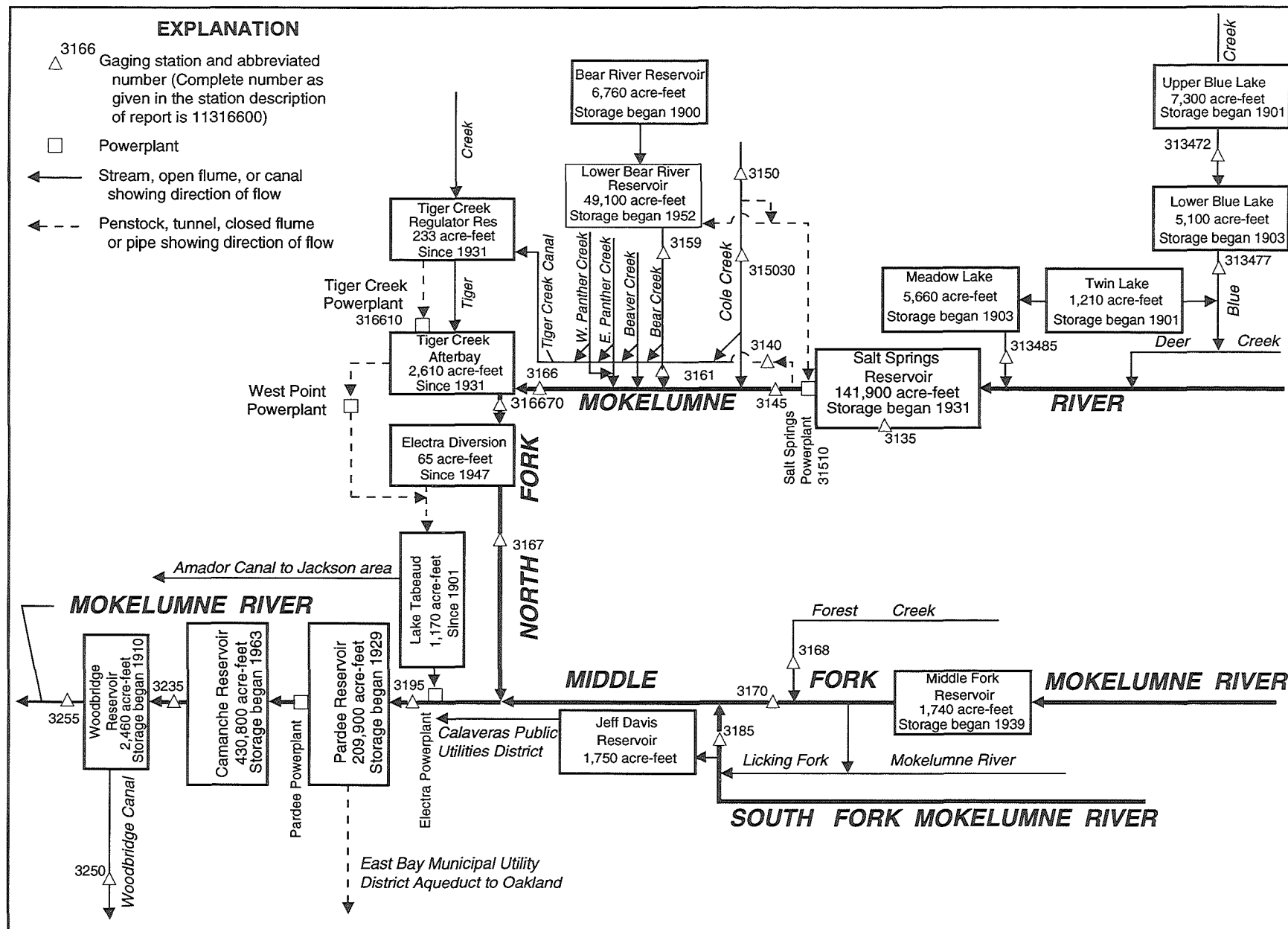


Figure 35. Diversions and storage in Mokelumne River basin.

## 11313472 UPPER BLUE LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°37'35", long 119°56'10", in NW 1/4 NW 1/4 sec.19, T.9 N., R.19 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 1,000 ft downstream from Upper Blue Lake Dam, and 9.8 mi southwest of Markleeville.

DRAINAGE AREA.--2.64 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1988 to current year. Unpublished records for water years 1981-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 8,100 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site at different datum.

REMARKS.--No estimated daily discharges. Records not computed for winter months. Low and medium flow regulated by Upper Blue Lake (capacity, 7,300 acre-ft) 1,000 ft upstream. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	25	4.1	---	---	---	---	4.1	5.0	11	9.4	9.1
2	33	23	4.1	---	---	---	---	4.3	3.2	11	9.3	8.9
3	33	22	4.0	---	---	---	---	4.5	3.1	11	9.2	8.6
4	33	21	3.9	---	---	---	---	4.7	3.1	11	12	8.3
5	33	19	3.9	---	---	---	---	4.9	3.0	11	14	8.1
6	33	18	3.8	---	---	---	---	5.0	2.8	11	14	7.8
7	34	17	3.8	---	---	---	---	4.9	2.7	11	14	4.7
8	35	14	3.9	---	---	---	---	4.9	2.6	11	13	2.5
9	35	12	4.2	---	---	---	---	5.6	3.0	11	13	2.4
10	34	11	4.1	---	---	---	---	6.1	3.4	11	13	2.4
11	34	9.4	8.2	---	---	---	---	6.4	3.4	11	13	2.5
12	37	9.1	5.1	---	---	---	---	6.5	3.4	11	13	2.6
13	38	8.2	---	---	---	---	---	6.6	3.4	11	13	2.6
14	37	7.5	---	---	---	---	---	6.7	3.4	11	12	2.6
15	37	6.7	---	---	---	---	---	6.4	3.3	11	12	2.5
16	36	4.8	---	---	---	---	---	6.3	3.2	11	12	2.5
17	36	6.1	---	---	---	---	---	6.2	3.3	11	12	2.5
18	35	4.3	---	---	---	---	---	6.2	3.3	11	12	2.5
19	38	4.2	---	---	---	---	---	6.2	3.3	10	12	2.5
20	39	4.1	---	---	---	---	3.6	6.2	3.3	11	11	2.5
21	38	4.1	---	---	---	---	3.8	6.3	3.3	11	11	2.5
22	37	4.1	---	---	---	---	3.9	6.6	3.3	11	11	2.7
23	36	4.1	---	---	---	---	3.9	6.8	3.3	10	11	3.0
24	35	4.0	---	---	---	---	3.9	7.0	3.3	10	11	3.0
25	34	3.9	---	---	---	---	3.8	7.2	3.3	10	11	3.0
26	33	3.9	---	---	---	---	3.9	7.2	3.3	9.9	10	3.0
27	31	3.8	---	---	---	---	4.0	7.2	3.3	9.8	10	3.0
28	30	3.8	---	---	---	---	4.0	7.2	3.3	9.7	10	3.0
29	29	4.0	---	---	---	---	4.0	7.2	3.3	9.6	9.8	3.1
30	27	4.2	---	---	---	---	4.0	7.2	7.6	9.5	9.6	3.0
31	26	---	---	---	---	---	---	7.2	---	9.5	9.4	---
TOTAL	1059	286.3	---	---	---	---	---	189.8	102.5	329.0	356.7	117.4
MEAN	34.2	9.54	---	---	---	---	---	6.12	3.42	10.6	11.5	3.91
MAX	39	25	---	---	---	---	---	7.2	7.6	11	14	9.1
MIN	26	3.8	---	---	---	---	---	4.1	2.6	9.5	9.2	2.4
AC-FT	2100	568	---	---	---	---	---	376	203	653	708	233

## 11313477 LOWER BLUE LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°36'24", long 119°55'31", in SW 1/4 NE 1/4 sec.30, T.9 N., R.19 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 800 ft downstream from Lower Blue Lake Dam and 10.0 mi southwest of Markleeville.

DRAINAGE AREA.--4.66 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year. Unpublished records for water years 1981-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,870 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records not computed for winter months. Low and medium flow regulated by Lower Blue Lake (capacity, 5,100 acre-ft) 800 ft upstream. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	51	8.4	---	---	---	---	14	12	8.8	8.5	9.0
2	40	50	6.3	---	---	---	---	14	8.8	8.8	8.5	9.0
3	40	49	4.9	---	---	---	---	14	8.8	8.8	8.5	9.0
4	40	48	4.5	---	---	---	---	14	8.8	8.8	8.5	8.9
5	40	47	4.3	---	---	---	---	14	8.8	8.8	8.5	8.8
6	40	46	4.0	---	---	---	---	15	8.8	8.8	8.6	8.8
7	45	45	3.7	---	---	---	---	15	8.8	8.8	8.7	8.4
8	50	44	3.7	---	---	---	---	15	8.8	8.8	8.8	8.0
9	49	43	4.1	---	---	---	---	15	8.6	8.8	9.0	8.0
10	49	42	4.1	---	---	---	---	15	8.5	8.8	9.0	7.8
11	48	41	4.2	---	---	---	---	16	8.5	8.8	9.0	7.6
12	49	40	4.5	---	---	---	---	16	8.3	8.8	9.0	7.7
13	49	38	---	---	---	---	---	16	8.3	8.8	9.0	7.6
14	49	37	---	---	---	---	---	16	8.3	8.8	9.0	7.8
15	49	35	---	---	---	---	---	17	8.3	8.8	9.0	4.9
16	48	33	---	---	---	---	---	17	8.3	8.8	9.0	2.7
17	48	32	---	---	---	---	---	16	8.3	8.7	9.0	2.7
18	48	30	---	---	---	---	---	16	8.2	8.5	9.0	2.7
19	53	28	---	---	---	---	---	16	8.0	8.5	9.1	2.7
20	57	26	---	---	---	---	13	16	8.0	8.5	9.2	2.7
21	57	24	---	---	---	---	14	16	8.0	8.5	9.3	2.7
22	57	22	---	---	---	---	14	16	8.0	8.5	9.3	2.7
23	56	20	---	---	---	---	14	16	8.2	8.4	9.3	2.7
24	55	19	---	---	---	---	14	16	8.5	8.3	9.3	2.7
25	55	17	---	---	---	---	14	16	8.5	8.3	9.2	2.7
26	55	15	---	---	---	---	14	16	8.4	8.4	9.0	2.7
27	54	13	---	---	---	---	14	16	8.3	8.5	9.0	2.7
28	53	12	---	---	---	---	14	16	8.3	8.5	9.0	2.7
29	53	11	---	---	---	---	14	16	8.6	8.5	9.0	2.7
30	52	9.7	---	---	---	---	14	16	8.8	8.5	9.0	2.7
31	51	---	---	---	---	---	---	16	---	8.5	9.0	---
TOTAL	1529	967.7	---	---	---	---	---	483	256.8	267.9	277.3	161.8
MEAN	49.3	32.3	---	---	---	---	---	15.6	8.56	8.64	8.95	5.39
MAX	57	51	---	---	---	---	---	17	12	8.8	9.3	9.0
MIN	40	9.7	---	---	---	---	---	14	8.0	8.3	8.5	2.7
AC-FT	3030	1920	---	---	---	---	---	958	509	531	550	321



## 11313485 MEADOW LAKE OUTLET NEAR MARKLEEVILLE, CA

LOCATION.--Lat 38°35'53", long 119°58'40", in SE 1/4 SE 1/4 sec.27, T.9 N., R.18 E., Alpine County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 700 ft downstream from Meadow Lake Dam and 12.5 mi southwest of Markleeville.

DRAINAGE AREA.--5.66 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year. Unpublished records for water years 1981-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 7,660 ft above sea level, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.--Records not computed for winter months or above 40 ft<sup>3</sup>/s. Low and medium flow regulated by Meadow Lake, capacity, 5,660 acre-ft. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	32	4.5	3.7	---	---	---	9.3	12	11	11	11
2	25	31	3.8	3.7	---	---	---	9.4	12	11	12	11
3	25	30	3.5	---	---	---	---	9.5	12	11	12	11
4	26	30	3.4	---	---	---	---	9.3	12	11	12	11
5	27	29	3.6	---	---	---	---	9.7	12	11	12	11
6	28	29	3.5	---	---	---	---	10	12	11	12	10
7	26	29	3.5	---	---	---	---	10	13	11	12	10
8	24	29	3.9	---	---	---	---	10	12	11	12	10
9	24	29	5.5	---	---	---	---	9.8	12	11	12	10
10	24	29	4.8	---	---	---	---	9.9	12	11	12	11
11	24	29	5.1	---	---	---	---	10	12	11	12	11
12	24	29	5.3	---	---	---	---	10	12	11	12	10
13	24	29	4.1	---	---	---	---	11	12	11	11	10
14	24	29	2.1	---	---	---	---	11	12	11	11	9.8
15	24	22	3.0	---	---	---	---	12	12	11	11	9.6
16	24	26	3.7	---	---	---	---	12	12	11	11	9.1
17	24	24	3.7	---	---	---	---	12	12	12	11	9.1
18	24	23	3.7	---	---	---	---	12	12	12	11	9.1
19	29	23	3.7	---	---	---	8.0	12	12	11	11	9.1
20	37	22	3.7	---	---	---	8.3	12	12	11	11	8.9
21	37	21	3.7	---	---	---	8.5	11	12	11	11	9.0
22	37	12	3.7	---	---	---	8.8	11	12	11	11	9.2
23	36	6.7	3.7	---	---	---	9.4	11	11	12	11	9.5
24	35	4.8	3.7	---	---	---	9.6	11	11	12	11	9.5
25	35	3.7	3.7	---	---	---	9.3	11	11	12	11	9.2
26	34	3.4	3.7	---	---	---	9.0	11	11	12	11	9.0
27	33	3.3	3.7	---	---	---	9.0	11	11	11	11	9.1
28	32	3.4	3.7	---	---	---	9.1	12	11	11	11	9.5
29	32	4.4	3.7	---	---	---	9.2	12	11	12	11	9.5
30	32	5.4	3.7	---	---	---	9.3	12	11	12	11	9.5
31	32	---	3.7	---	---	---	12	12	---	12	11	---
TOTAL	888	621.1	118.8	---	---	---	---	335.9	353	350	352	294.7
MEAN	28.6	20.7	3.83	---	---	---	---	10.8	11.8	11.3	11.4	9.82
MAX	37	32	5.5	---	---	---	---	12	13	12	12	11
MIN	24	3.3	2.1	---	---	---	---	9.3	11	11	11	8.9
AC-FT	1760	1230	236	---	---	---	---	666	700	694	698	585

## 11313500 SALT SPRINGS RESERVOIR NEAR WEST POINT, CA

LOCATION.--Lat 38°29'55", long 120°12'52", in NW 1/4 SE 1/4 sec.33, T.8 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Eldorado National Forest, near center of Salt Springs Dam on North Fork Mokelumne River, 1.8 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.--169 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1931 to current year. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Prior to Oct. 1, 1991, nonrecording gage read once daily. Datum of gage is sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--Recorder malfunctioned Oct. 7 to Aug. 11. Daily readings were used during this period. Reservoir is formed by concrete-faced rockfill dam, completed in 1931; storage began in March 1931. Capacity, 141,857 acre-ft between elevations 3,667.75 ft, outlet drain, and 3,958.0 ft, top of radial gates. Storage of 1,860 acre-ft available for release to river only. Water is released through Salt Springs Powerplant just downstream from dam and discharged into Tiger Creek Powerplant Conduit (station 11314000). Figures given, including extremes, represent total contents. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 142,091 acre-ft, July 3, 1993, elevation, 3,958.24 ft; no contents at times in 1932-33, 1945, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 113,912 acre-ft, June 6, elevation, 3,927.6 ft; minimum, 6,293 acre-ft, Feb. 7-9, elevation, 3,735.3 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on table provided by Pacific Gas & Electric Co., dated October 1964)

3,700	1,251	3,720	3,519	3,740	7,324	3,800	28,017
3,705	1,679	3,725	4,324	3,750	9,799	3,850	54,852
3,710	2,199	3,730	5,229	3,760	12,689	3,900	90,786
3,715	2,812	3,735	6,230	3,780	19,632	3,960	143,788

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84164	61755	42694	e20834	7555	8051	23682	e61823	111029	101249	83826	68336
2	84218	e61282	41606	20248	7233	8243	24445	62632	112162	101079	82293	67632
3	84271	60682	40897	19632	e6824	8588	25610	63383	112592	102224	81987	66893
4	84302	60214	40209	19026	6566	8787	26935	64272	e113038	e101665	81452	66134
5	84371	60013	39571	18651	6482	e9196	28109	65168	e113478	100993	e80922	65429
6	84248	59488	e39309	e18132	6356	9799	28998	66350	113912	100993	80316	64700
7	e84133	e59158	38156	17693	6293	10097	29756	e67048	113739	100399	79787	64030
8	e84056	58695	37944	17365	6293	10342	30328	67822	113478	99421	79186	63274
9	e83826	58242	37276	16991	6293	10733	e31212	69380	113038	98591	78810	62363
10	83364	57788	36101	16694	6356	11103	31711	e72904	112950	97339	78434	61282
11	81911	57396	35491	16051	6356	e11480	32400	76425	112950	96152	e78136	60214
12	80847	57078	34890	15432	e6693	e11836	32974	79487	112861	95264	77346	59369
13	e79637	56630	33950	14890	7050	e12229	e33950	82750	112771	94280	76831	58702
14	78360	56180	33554	14456	7187	12628	34890	e84905	112592	93398	76388	58009
15	77390	56180	32872	13704	e7050	12940	36049	e87082	112248	92495	75996	57320
16	76351	56115	32628	e13318	6356	13768	37580	e89281	112502	91664	75574	56636
17	75463	55239	31711	e13034	6440	14127	39571	91585	112077	90390	75170	55919
18	74657	e54236	e30511	12690	6524	14589	41872	92383	e111295	89915	74767	e55459
19	73268	e53605	29681	12413	6587	15261	44803	93472	110508	89361	74370	54502
20	72107	e52621	28613	11956	6629	15811	47953	95039	109473	e89045	73951	53958
21	70952	e51702	27881	11335	e6735	16488	50559	96322	109029	88730	73625	53373
22	70022	e50859	27159	11190	e6869	16991	52559	e97948	108946	88337	73581	52720
23	e69167	e49955	26757	11074	7005	17730	54548	99591	107665	88101	73552	52077
24	68173	e49128	26048	10902	7141	18206	55751	100553	106897	87160	73545	51408
25	66836	48246	e25349	10537	7164	18614	57396	102224	106217	86536	73363	50805
26	65723	47140	24788	9907	e7255	e19026	58307	103747	105276	86536	72670	50167
27	64686	46161	24190	9404	e7509	19404	58960	105276	104776	86380	71955	49531
28	63656	45248	e23348	8940	7695	e20016	59619	106475	104347	e86380	71233	48919
29	62699	44578	22891	8514	---	e20795	60281	107753	103422	86380	70516	48287
30	62497	43520	e22072	8316	---	21589	61082	e108696	103907	85293	69785	47705
31	62025	---	21629	7979	---	22644	---	109736	---	84440	69089	---
MAX	84371	61755	42694	20834	7695	22644	61082	109736	113912	102224	83826	68336
MIN	62025	43520	21629	7979	6293	8051	23682	61823	103422	84440	69089	47705
a	3861.00	3830.80	3785.10	3742.80	3741.60	3787.60	3859.60	3922.80	3916.00	3891.90	3871.19	3838.18
b	-22070	-18505	-21891	-13650	-284	+14949	+38438	+48654	-5829	-19467	-15351	-21384

CAL YR 1993 MAX 142091 MIN 9837 b +10615

WTR YR 1994 MAX 113912 MIN 6293 b -36390

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

## 11314000 TIGER CREEK POWERPLANT CONDUIT BELOW SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'45", long 120°13'11", in SE 1/4 SW 1/4 sec.33, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 1,000 ft downstream from Salt Springs Dam and Powerplant and 18 mi northeast of West Point.

PERIOD OF RECORD.--June 1931 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,700 ft above sea level, from topographic map. Auxiliary nonrecording gages in stilling wells upstream and downstream from control.

REMARKS.--No estimated daily discharges. Conduit conveys water of North Fork Mokelumne River from tailrace of Salt Springs Powerplant to forebay of Tiger Creek Powerplant. Since December 1952, flow includes Bear River and Cole Creek Diversion to Salt Springs No. 2 Powerplant (station 11313510). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 577 ft<sup>3</sup>/s, June 22, 1945; no flow at times in many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	502	462	336	191	78	73	381	244	400	545	555
2	.00	502	463	331	191	79	73	388	125	404	547	553
3	.00	501	463	310	126	79	74	430	244	396	500	553
4	.00	496	465	303	93	81	75	497	244	397	497	554
5	.00	490	462	303	59	81	73	527	245	142	492	554
6	48	489	199	300	48	80	72	528	384	10	492	553
7	103	489	47	238	48	79	73	530	534	469	477	540
8	116	490	222	191	78	79	74	250	530	509	448	557
9	116	491	407	196	95	79	75	.61	527	509	245	557
10	492	491	483	271	122	79	74	.00	529	508	453	554
11	534	488	383	303	147	80	74	.00	529	505	455	556
12	537	488	447	302	147	81	75	.05	524	505	444	558
13	537	409	532	303	153	81	75	.82	522	507	442	555
14	536	15	534	301	159	98	180	.72	523	516	433	555
15	536	15	532	295	156	116	218	.75	472	516	420	543
16	543	348	533	183	159	100	219	.84	483	507	415	533
17	543	502	543	108	174	122	208	.94	518	488	409	532
18	545	502	548	166	146	85	56	.93	514	452	409	532
19	546	497	540	302	100	36	56	.91	506	422	402	531
20	541	496	543	302	98	43	31	.92	486	405	400	538
21	534	494	548	219	115	54	16	.91	467	374	321	536
22	533	490	544	97	125	63	11	.91	468	382	3.9	535
23	530	490	546	97	126	80	6.7	133	429	378	.00	534
24	521	486	543	235	97	93	6.7	245	428	381	.00	534
25	521	484	539	302	79	86	98	244	426	383	525	529
26	520	482	536	302	80	73	193	245	407	31	554	523
27	521	474	442	302	79	73	193	246	412	9.7	552	523
28	522	473	359	249	78	73	132	245	403	9.4	550	524
29	512	470	351	195	---	73	97	243	395	261	550	519
30	512	466	345	191	---	73	98	244	395	532	553	519
31	503	---	340	190	---	73	---	245	---	547	554	---
TOTAL	12002.00	13510	13901	7723	3269	2450	2779.4	5630.31	12913	11855.1	13087.90	16239
MEAN	387	450	448	249	117	79.0	92.6	182	430	382	422	541
MAX	546	502	548	336	191	122	219	530	534	547	554	558
MIN	.00	15	47	97	48	36	6.7	.00	125	9.4	.00	519
AC-FT	23810	26800	27570	15320	6480	4860	5510	11170	25610	23510	25960	32210
a	9440	5970	4850	0	2920	2490	2310	0	5010	2310	10940	11630

a Inflow, in acre-feet, through Salt Springs No. 2 Powerplant, provided by Pacific Gas & Electric Co.

## 11314000 TIGER CREEK POWERPLANT CONDUIT BELOW SALT SPRINGS DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1952, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	421	324	260	210	116	118	77.4	72.8	222	408	437	437
MAX	518	470	445	373	339	360	309	404	459	517	514	502
(WY)	1949	1944	1939	1951	1951	1951	1944	1940	1940	1940	1945	1944
MIN	167	118	95.9	10.3	.000	.000	.000	.000	3.03	273	267	283
(WY)	1932	1932	1932	1946	1932	1952	1952	1938	1942	1939	1932	1931

## SUMMARY STATISTICS

## WATER YEARS 1931 - 1952

ANNUAL MEAN	260
HIGHEST ANNUAL MEAN	353
LOWEST ANNUAL MEAN	154
HIGHEST DAILY MEAN	577
LOWEST DAILY MEAN	.00
ANNUAL SEVEN-DAY MINIMUM	.00
ANNUAL RUNOFF (AC-FT)	188700
10 PERCENT EXCEEDS	508
50 PERCENT EXCEEDS	286
90 PERCENT EXCEEDS	.10

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	464	450	435	378	330	327	318	284	469	489	494	486
MAX	552	550	551	545	550	546	542	544	562	559	551	555
(WY)	1965	1963	1981	1984	1965	1980	1970	1986	1986	1980	1984	1964
MIN	4.29	12.2	124	25.1	56.9	25.4	36.9	118	254	257	273	268
(WY)	1978	1978	1977	1991	1977	1957	1959	1963	1976	1976	1976	1976

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1954 - 1994

ANNUAL TOTAL	157384.90	115359.71	
ANNUAL MEAN	431	316	411
HIGHEST ANNUAL MEAN			517
LOWEST ANNUAL MEAN			191
HIGHEST DAILY MEAN	557	Jun 6	558
LOWEST DAILY MEAN	.00	Jul 23	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 20	.42
ANNUAL RUNOFF (AC-FT)	312200	228800	297600
ANNUAL INFLOW (AC-FT) a	118000	57850	
10 PERCENT EXCEEDS	546	540	550
50 PERCENT EXCEEDS	512	381	501
90 PERCENT EXCEEDS	94	48	101

a Inflow, in acre-feet, through Salt Springs No. 2 Powerplant, provided by Pacific Gas & Electric Co.

## 11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA

LOCATION.--Lat 38°29'37", long 120°13'12", in NE 1/4 NW 1/4 sec.4, T.7 N., R.16 E., Calaveras County, Hydrologic Unit 18040012, Stanislaus National Forest, on left bank 0.5 mi downstream from Salt Springs Dam, 1.3 mi upstream from Cole Creek, and 18 mi northeast of West Point.

DRAINAGE AREA.--170 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1926 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926-30.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,590 ft above sea level, from topographic map. Prior to Sept. 12, 1928, at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site at datum 2.0 ft higher.

REMARKS.--Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 0.5 mi upstream. Water is imported from Bear River and Cole Creek to Salt Springs No. 2 Powerplant (station 11313510) upstream from station since December 1952. Then most of the water bypasses station through Tiger Creek Powerplant Conduit (station 11314000). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft<sup>3</sup>/s, Nov. 21, 1950, gage height, 17.20 ft, from rating curve extended above 3,900 ft<sup>3</sup>/s on basis of computations of flow over dam and discharge through powerplant; minimum daily, 0.3 ft<sup>3</sup>/s, Mar. 17, 23, 31, and Apr. 1, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft<sup>3</sup>/s, Oct. 11, gage height, 3.61 ft; minimum daily, 20 ft<sup>3</sup>/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	37	24	24	22	24	23	23	24	21	27	21
2	41	33	23	24	22	23	23	23	24	21	20	21
3	41	33	23	24	22	22	23	23	24	20	21	22
4	41	32	24	24	25	22	22	23	24	20	21	22
5	40	32	24	24	23	22	22	23	24	23	22	21
6	77	32	e32	24	22	22	22	23	25	23	21	21
7	101	32	e45	24	23	22	23	22	24	21	21	22
8	101	31	e30	24	23	22	23	23	23	21	21	21
9	101	31	24	24	23	22	22	22	23	21	22	21
10	250	32	24	24	23	22	22	21	22	21	21	20
11	355	31	23	24	23	22	22	22	22	22	22	20
12	352	31	24	23	22	22	22	26	22	22	22	20
13	335	31	24	24	22	22	22	22	22	21	22	20
14	333	32	24	31	22	22	23	21	22	21	22	20
15	331	36	24	34	23	23	23	22	22	21	22	21
16	306	32	23	32	22	23	23	22	22	21	21	21
17	296	26	23	29	23	23	23	23	22	20	21	21
18	306	24	25	22	22	23	23	23	22	20	21	21
19	327	24	24	22	22	22	22	24	21	21	21	21
20	320	24	24	24	22	22	24	24	21	22	21	21
21	312	24	24	22	22	22	24	24	21	21	21	21
22	315	24	24	22	29	22	22	25	21	21	23	21
23	312	24	23	22	22	23	22	26	23	21	22	21
24	317	24	23	23	22	24	22	21	23	21	23	21
25	318	24	23	23	22	23	24	21	23	22	23	21
26	318	24	25	23	23	23	22	21	22	26	22	21
27	314	24	25	22	23	23	22	22	22	25	22	20
28	172	24	25	23	21	23	22	22	22	26	22	21
29	44	24	25	22	---	23	23	23	21	28	22	20
30	43	24	24	22	---	23	22	23	21	30	21	20
31	43	---	24	22	---	23	---	23	---	30	21	---
TOTAL	6603	856	776	751	635	699	677	706	674	694	674	625
MEAN	213	28.5	25.0	24.2	22.7	22.5	22.6	22.8	22.5	22.4	21.7	20.8
MAX	355	37	45	34	29	24	24	26	25	30	27	22
MIN	40	24	23	22	21	22	22	21	21	20	20	20
AC-FT	13100	1700	1540	1490	1260	1390	1340	1400	1340	1380	1340	1240

e Estimated.

## 11314500 NORTH FORK MOKELUMNE RIVER BELOW SALT SPRINGS DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37.3	53.8	82.3	74.6	102	119	237	728	882	155	59.3	45.3
MAX	284	802	1390	537	710	969	1502	2473	3267	1830	406	330
(WY)	1966	1951	1951	1956	1942	1928	1938	1982	1983	1983	1983	1985
MIN	1.33	1.11	.73	.94	.91	1.87	1.55	3.11	3.77	3.02	2.89	2.80
(WY)	1941	1941	1944	1944	1944	1944	1944	1977	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1927 - 1994			
ANNUAL TOTAL	134126				14370							
ANNUAL MEAN	367				39.4				214			
HIGHEST ANNUAL MEAN									710			
LOWEST ANNUAL MEAN									4.27			
HIGHEST DAILY MEAN	3400				May 26				8860			
LOWEST DAILY MEAN	22				Jan 31				.30			
ANNUAL SEVEN-DAY MINIMUM	23				Jan 29				.39			
INSTANTANEOUS PEAK FLOW					360				Oct 11			
INSTANTANEOUS PEAK STAGE					3.61				Oct 11			
ANNUAL RUNOFF (AC-FT)	266000				28500				155400			
10 PERCENT EXCEEDS	1150				33				571			
50 PERCENT EXCEEDS	142				23				17			
90 PERCENT EXCEEDS	24				21				4.2			

## 11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°31'09", long 120°12'42", in SW 1/4 NE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 200 ft downstream from bridge, 0.3 mi upstream from diversion dam, 1.4 mi north of Salt Springs Dam, 3.2 mi upstream from mouth, and 6.5 mi southwest of Mokelumne Peak.

DRAINAGE AREA.--21.0 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1927 to November 1942, October 1943 to current year. Prior to October 1958, published as Cold Creek near Mokelumne Peak. October 1958 to September 1960, published as "near Mokelumne Peak."

REVISED RECORDS.--WSP 1515: 1928, 1930-31, 1938(M), 1944, 1947. WSP 1930: Drainage area.

GAGE.--Water-stage recorder and concrete control since Oct. 30, 1974. Elevation of gage is 5,920 ft above sea level, from topographic map. Prior to Oct. 30, 1974, at site 0.4 mi upstream at different datum.

REMARKS.--Occasional pumping upstream from station for domestic use in summer-home tract began in September 1961. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,140 ft<sup>3</sup>/s, Dec. 23, 1964, gage height, 10.21 ft, site and datum then in use, from rating curve extended above 900 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 9.69 ft, site and datum then in use; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 377 ft<sup>3</sup>/s, May 11, gage height, 3.02 ft; minimum daily, 0.06 ft<sup>3</sup>/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.25	.73	3.5	8.1	65	99	88	54	e1.1	.12	.10
2	.16	.21	.56	3.1	7.2	112	105	103	48	.96	.11	.10
3	.16	.21	.50	3.3	6.1	85	130	111	43	.86	.11	.10
4	.16	.21	.48	7.5	5.4	50	90	134	36	.82	.10	.11
5	.17	.20	.46	37	5.6	72	74	137	32	.75	.10	.08
6	.23	.18	.43	20	4.9	52	72	121	30	e.70	.10	.08
7	.24	.18	.38	13	5.0	40	54	105	25	e.65	.09	.08
8	.23	.18	.41	8.4	5.4	45	52	105	22	e.60	.08	.07
9	.21	.20	e3.7	6.5	5.7	58	50	158	21	e.55	.07	.07
10	.21	.21	11	5.4	6.2	61	47	202	20	e.50	.07	.07
11	.23	.21	6.3	4.8	6.1	53	51	227	18	e.50	.09	.07
12	.28	.21	4.0	4.6	7.3	43	71	186	16	e.45	.11	.07
13	.28	.22	4.6	5.4	8.4	46	97	159	13	e.45	.11	.08
14	.28	.23	4.1	6.3	9.1	85	124	148	12	e.40	.11	.10
15	.28	.23	3.7	6.0	9.0	92	169	114	9.7	e.40	.11	.10
16	.28	.25	6.0	6.9	9.5	84	200	71	8.2	e.35	.10	.10
17	.28	.28	4.6	7.4	9.5	58	205	57	7.0	e.35	.08	.08
18	.28	.28	5.7	9.8	9.0	62	222	61	6.3	e.30	.08	.08
19	.28	.27	7.6	12	10	61	226	78	5.8	e.30	.08	.08
20	.28	.26	7.9	13	10	58	200	81	5.1	.28	.08	.07
21	.28	.27	9.0	11	9.4	73	166	88	4.7	.28	.08	.15
22	.28	.30	9.0	10	8.9	69	134	86	4.2	.28	.08	.26
23	.28	.34	8.0	8.1	9.1	46	109	97	3.6	.28	.08	.26
24	.28	.29	6.2	8.8	9.9	36	74	103	3.2	.26	.08	.30
25	.28	.31	5.7	8.8	13	32	60	93	2.9	.25	.08	.24
26	.28	.29	5.4	8.2	42	31	63	91	2.5	.23	.08	.07
27	.28	.31	5.0	8.5	116	44	67	91	2.2	.23	.08	.06
28	.28	.35	4.7	7.7	47	71	66	79	2.0	.21	.09	.13
29	.28	.56	4.1	6.9	---	84	77	69	1.7	.13	.10	.48
30	.28	1.2	4.0	8.3	---	94	83	65	e1.4	.13	.10	.28
31	.28	---	4.0	8.4	---	104	---	57	---	.13	.10	---
TOTAL	7.76	8.69	138.25	278.6	402.8	1966	3237	3365	460.5	13.68	2.85	3.92
MEAN	.25	.29	4.46	8.99	14.4	63.4	108	109	15.3	.44	.092	.13
MAX	.28	1.2	11	37	116	112	226	227	54	1.1	.12	.48
MIN	.16	.18	.38	3.1	4.9	31	47	57	1.4	.13	.07	.06
AC-FT	15	17	274	553	799	3900	6420	6670	913	27	5.7	7.8

e Estimated.

## SAN JOAQUIN RIVER BASIN

11315000 COLE CREEK NEAR SALT SPRINGS DAM, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.46	22.3	37.4	34.5	40.3	62.5	142	251	145	18.1	1.29	.95
MAX	88.3	368	361	239	228	212	242	509	564	263	25.2	15.6
(WY)	1983	1951	1965	1980	1982	1986	1936	1969	1983	1983	1983	1983
MIN	.045	.10	.14	.30	.30	1.87	38.9	50.1	5.22	.38	.013	.000
(WY)	1967	1960	1960	1933	1933	1933	1975	1934	1992	1976	1931	1931

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR			FOR 1994 WATER YEAR			WATER YEARS 1928 - 1994		
ANNUAL TOTAL	32218.47			9885.05					
ANNUAL MEAN	88.3			27.1			63.3		
HIGHEST ANNUAL MEAN							131		
LOWEST ANNUAL MEAN							16.6		
HIGHEST DAILY MEAN	823			May 31			3760		
LOWEST DAILY MEAN	.16			Sep 27			.00		
ANNUAL SEVEN-DAY MINIMUM	.16			Sep 27			.00		
INSTANTANEOUS PEAK FLOW				377			May 11		
INSTANTANEOUS PEAK STAGE				3.02			May 11		
ANNUAL RUNOFF (AC-FT)	63910			19610			45870		
10 PERCENT EXCEEDS	297			91			196		
50 PERCENT EXCEEDS	22			4.6			14		
90 PERCENT EXCEEDS	.23			.10			.16		



## 11315030 COLE CREEK BELOW DIVISION DAM, NEAR SALT SPRINGS DAM, CA

LOCATION.--Lat 38°30'54", long 120°12'53", in NW 1/4 SE 1/4 sec.28, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft downstream from diversion dam, 1.1 mi north of Salt Springs Dam, and 6.7 mi southwest of Mokelumne Peak.

DRAINAGE AREA.--21.8 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1987 to current year (low-flow records only). Unpublished records for water years 1981-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and broad-crested weir. Elevation of gage is 5,830 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. No records computed above 3.9 ft<sup>3</sup>/s. Flow regulated by Cole Creek Diversion Dam. Water is diverted for power since December 1952 to a tunnel from Lower Bear River Reservoir to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.26	1.2	3.4	3.5	3.5	3.4	3.3	3.6	2.9	.25	.07
2	.20	.25	.91	3.4	3.6	3.6	3.4	3.4	3.6	2.4	.24	.07
3	.20	.25	.80	3.4	3.5	3.5	3.5	3.3	3.6	2.1	.22	.07
4	.20	.25	.81	3.4	3.5	3.4	3.5	3.4	3.6	1.9	.22	.07
5	.21	.25	.75	3.5	3.5	---	3.4	3.6	3.6	1.7	.21	.07
6	.26	.25	.70	3.6	3.5	3.4	3.4	3.6	3.6	1.5	.20	.07
7	.28	.25	.66	3.6	3.5	3.4	3.4	3.7	3.6	1.4	.18	.07
8	.27	.25	.71	3.6	3.5	3.4	3.4	3.6	3.6	1.3	.18	.07
9	.27	.25	2.1	3.5	3.6	3.5	3.4	---	3.6	1.3	.18	.07
10	.27	.25	3.3	3.5	3.6	3.5	3.4	---	3.6	1.2	.18	.07
11	.28	.26	3.4	3.5	3.6	3.4	3.4	---	3.6	1.1	.18	.07
12	.32	.53	3.3	3.5	3.6	3.4	3.4	---	3.5	.85	.18	.07
13	.32	.51	3.3	3.4	3.5	3.4	3.4	3.8	3.5	.63	.17	.07
14	.32	.48	3.4	3.4	3.5	3.4	3.4	3.8	3.5	.59	.15	.10
15	2.5	.52	3.4	3.5	3.5	3.5	3.5	3.7	3.5	.55	.14	.10
16	2.1	.52	3.4	3.5	3.5	3.4	---	3.7	3.5	.54	.14	.09
17	.93	.52	3.5	3.4	3.7	3.4	---	3.6	3.5	.51	.13	.08
18	.70	.52	3.3	3.4	3.7	3.4	---	3.6	3.4	.46	.12	.07
19	.59	.52	3.1	3.5	3.7	3.4	---	3.6	3.4	.42	.12	.07
20	.53	.53	3.0	3.5	3.6	3.4	---	3.7	3.4	.40	.12	.07
21	.47	.55	3.0	3.5	3.7	3.4	---	3.6	3.4	.40	.12	.07
22	.45	.61	3.2	3.5	3.6	3.4	3.4	3.6	3.4	.40	.12	.07
23	.43	.71	3.3	3.4	3.6	3.4	3.4	3.6	3.4	.39	.12	.07
24	.38	.63	3.3	3.5	3.5	3.4	3.4	3.6	3.3	.37	.13	.07
25	.33	.60	3.3	3.5	3.5	3.3	3.4	3.6	3.3	.32	.12	.07
26	.29	.57	3.4	3.5	3.5	3.3	3.4	3.6	3.3	.32	.12	.07
27	.25	.61	3.4	3.5	3.6	3.3	3.3	3.6	3.3	.29	.12	.07
28	.25	.66	3.4	3.5	3.5	3.3	3.4	3.6	3.3	.27	.12	.16
29	.25	1.1	3.4	3.5	---	3.4	3.3	3.6	3.3	.27	.12	.46
30	.25	1.8	3.4	3.5	---	3.4	3.3	3.6	3.2	.25	.09	.26
31	.26	---	3.4	3.5	---	3.4	---	3.6	---	.25	.07	---
TOTAL	14.56	15.26	81.54	107.9	99.7	---	---	---	104.0	27.28	4.76	2.86
MEAN	.47	.51	2.63	3.48	3.56	---	---	---	3.47	.88	.15	.095
MAX	2.5	1.8	3.5	3.6	3.7	---	---	---	3.6	2.9	.25	.46
MIN	.20	.25	.66	3.4	3.5	---	---	---	3.2	.25	.07	.07
AC-FT	29	30	162	214	198	---	---	---	206	54	9.4	5.7

## 11315900 BEAR RIVER BELOW LOWER BEAR RIVER DAM, CA

LOCATION.--Lat 38°32'11", long 120°15'24", in NW 1/4 NW 1/4 sec.19, T.8 N., R.16 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on left bank 250 ft downstream from outlet valve on Lower Bear River Reservoir, 0.2 mi below Lower Bear River Reservoir Dam, 1.4 mi upstream from Rattlesnake Creek, and 3.5 mi northwest of Salt Springs Dam.

DRAINAGE AREA.--37.4 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1987 to current year (low-flow records only). Unpublished records for water years 1981-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5,500 ft above sea level, from topographic map. Prior to Dec. 3, 1987, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. No records computed above 5.9 ft<sup>3</sup>/s. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 0.2 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	3.7	2.7	2.6	2.7	3.0	2.9	2.4	3.6	3.2	4.1	2.6
2	---	2.8	2.7	2.6	2.7	3.1	2.9	2.6	3.6	3.2	3.6	2.6
3	---	2.7	2.7	2.6	2.7	3.0	3.1	3.1	3.6	3.2	3.4	2.6
4	---	2.7	2.7	3.1	2.7	3.0	2.9	2.9	3.6	---	3.4	2.6
5	---	2.7	2.7	3.0	2.7	3.6	2.9	2.7	3.6	---	3.4	2.6
6	---	2.7	2.7	2.7	2.7	3.5	2.9	2.8	3.6	---	3.4	2.6
7	---	2.7	2.7	2.5	2.8	3.8	2.9	2.9	3.6	3.2	3.4	2.7
8	---	2.7	2.7	2.5	2.8	3.1	3.0	2.9	3.6	3.2	4.3	2.8
9	---	2.7	2.8	2.5	2.8	3.1	3.1	2.9	3.6	3.2	5.1	2.7
10	---	2.7	2.8	2.5	2.8	3.2	3.2	2.9	3.5	3.2	5.3	2.7
11	---	2.7	2.8	2.5	2.9	3.1	3.2	3.1	3.4	3.2	5.4	2.7
12	---	2.7	2.8	2.5	2.8	3.1	3.2	3.1	3.4	3.2	5.1	2.7
13	4.9	---	2.8	2.5	2.7	3.1	3.2	3.1	3.4	3.2	5.1	2.7
14	4.8	---	2.8	2.6	2.7	3.0	3.2	3.2	3.4	3.2	---	2.7
15	4.8	---	2.8	2.7	2.7	3.1	3.2	3.2	3.3	3.2	5.1	2.7
16	4.8	---	2.8	2.7	2.7	3.1	3.2	3.2	3.3	3.2	5.3	2.7
17	4.8	5.3	2.8	2.7	2.9	3.1	3.2	3.4	3.3	3.2	5.0	2.7
18	4.8	5.3	2.8	2.7	3.0	3.0	2.6	3.5	3.3	3.3	5.0	2.7
19	4.8	3.8	2.7	2.7	3.0	3.0	2.3	3.7	3.4	3.3	5.0	2.7
20	4.9	2.6	2.7	2.7	3.0	3.0	2.4	3.5	3.4	3.3	5.0	2.6
21	4.7	2.6	2.7	2.7	3.0	2.9	2.4	3.4	3.3	3.3	---	2.6
22	4.8	2.7	2.7	2.7	2.9	2.9	2.4	3.4	3.3	3.3	---	2.6
23	4.7	2.7	2.7	2.9	2.6	2.9	2.4	3.4	3.3	3.4	5.7	2.6
24	4.7	2.7	2.7	2.8	2.7	2.9	2.4	3.5	3.3	3.4	5.7	2.6
25	4.9	2.7	2.7	2.8	2.8	2.9	2.4	3.6	3.3	---	5.7	2.6
26	4.8	2.7	2.7	2.8	2.9	2.8	2.4	3.5	3.3	---	4.2	2.6
27	4.8	2.7	2.7	2.8	3.2	2.8	2.4	3.6	3.3	---	2.8	2.6
28	4.8	2.7	2.7	2.7	3.0	2.8	2.4	3.6	3.3	4.8	2.7	2.6
29	4.8	2.7	2.7	2.7	---	2.8	2.4	3.6	3.3	5.1	2.7	2.7
30	4.8	2.7	2.6	2.8	---	2.8	2.4	3.6	3.2	5.1	2.8	2.6
31	4.7	---	2.6	2.8	---	2.8	---	3.6	---	5.1	2.6	---
TOTAL	---	---	84.5	83.4	78.9	94.3	83.5	99.9	102.4	---	---	79.5
MEAN	---	---	2.73	2.69	2.82	3.04	2.78	3.22	3.41	---	---	2.65
MAX	---	---	2.8	3.1	3.2	3.8	3.2	3.7	3.6	---	---	2.8
MIN	---	---	2.6	2.5	2.6	2.8	2.3	2.4	3.2	---	---	2.6
AC-FT	---	---	168	165	156	187	166	198	203	---	---	158

## 11316100 BEAR RIVER BELOW BEAR RIVER DIVERSION DAM, CA

LOCATION.--Lat 38°29'33", long 120°17'21", in NE 1/4 NW 1/4 sec.2, T.7 N., R.15 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 200 ft downstream from diversion dam on Bear River and highway bridge, 1.4 mi upstream from mouth, and 3.5 mi northwest of Salt Springs Dam.

DRAINAGE AREA.--47.8 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1987 to current year (low-flow records only). Unpublished records for water years 1983-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 3,710 ft above sea level, from topographic map. Prior to Dec. 8, 1987, nonrecording gage at same site and datum.

REMARKS.--No records computed above 10 ft<sup>3</sup>/s. Flow regulated since 1900 by Bear River Reservoir, capacity, 6,760 acre-ft, and since December 1952 by Lower Bear River Reservoir 4 mi upstream, capacity, 49,100 acre-ft. Water diverted for power since December 1952 from Lower Bear River Reservoir through tunnel to Salt Springs Powerplant No. 2 (station 11313510) on North Fork Mokelumne River. Water diverted at diversion dam 200 ft upstream to Tiger Creek Powerplant Conduit for use at Tiger Creek Powerplant (station 11316610). See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.5	5.0	5.0	5.0	5.1	5.8	5.6	6.3	5.7	5.0	7.0	5.0
2	e8.5	5.0	5.0	5.0	5.1	5.8	5.6	5.5	6.0	5.0	5.0	5.0
3	e8.8	5.0	5.0	5.2	5.1	5.8	5.7	5.0	6.6	5.0	4.9	5.0
4	e9.6	5.0	5.0	5.2	5.8	5.8	5.7	5.2	5.3	5.0	5.0	5.0
5	e9.6	5.0	5.0	5.1	5.8	5.9	5.7	5.3	5.4	e9.0	5.1	5.0
6	e8.0	5.0	4.9	5.0	5.6	5.9	5.6	5.3	5.5	---	5.1	5.0
7	6.7	5.0	5.9	6.9	5.7	5.8	5.6	5.3	5.1	---	5.1	6.8
8	7.0	5.0	8.7	8.2	5.9	5.8	5.7	---	5.1	5.1	5.0	5.0
9	6.9	5.0	---	6.2	6.5	5.8	5.7	---	5.1	5.1	---	5.0
10	---	5.0	5.4	5.1	6.1	5.9	5.7	---	5.1	5.1	5.0	5.0
11	5.0	5.1	5.6	5.0	5.1	5.9	5.7	---	5.1	5.1	5.2	5.0
12	5.0	5.1	6.3	5.1	5.1	5.8	6.1	---	5.1	5.1	5.1	5.0
13	5.0	5.1	5.8	5.1	5.1	5.8	6.6	---	5.1	5.1	5.0	5.0
14	5.0	---	5.0	5.1	5.1	6.0	8.1	---	5.1	5.1	5.0	5.0
15	5.0	---	4.9	5.1	5.1	6.2	8.0	---	4.7	5.1	5.0	5.0
16	5.0	---	4.9	6.6	5.1	6.1	8.9	---	4.9	5.1	5.0	5.0
17	5.0	---	5.0	6.8	5.2	6.3	9.4	---	6.0	5.1	5.0	5.0
18	5.0	5.0	5.0	7.6	5.0	5.9	6.2	---	6.0	5.1	5.1	5.0
19	5.0	5.0	5.0	7.3	4.9	5.4	6.3	---	5.4	5.1	5.0	5.1
20	5.0	5.0	5.0	5.0	5.7	5.5	7.7	---	5.1	5.1	5.0	5.1
21	5.0	5.0	5.0	5.8	6.9	5.6	7.0	5.9	5.1	5.1	5.1	5.1
22	5.0	5.0	5.0	5.6	6.8	5.6	5.7	5.8	5.1	5.1	---	5.0
23	5.0	5.0	5.0	5.1	7.2	5.7	5.7	5.8	5.1	5.1	e6.7	5.1
24	5.0	5.0	5.0	5.2	6.8	5.9	5.8	5.8	5.0	5.1	e6.3	5.0
25	5.0	5.0	5.1	5.0	6.5	5.8	7.0	5.7	5.0	5.1	e6.3	5.0
26	5.0	5.0	5.1	5.1	6.6	5.6	6.7	5.7	5.1	4.5	e6.7	5.0
27	5.0	5.0	5.1	5.0	6.8	5.6	5.0	5.7	5.0	---	5.1	5.0
28	5.0	5.0	5.1	7.5	6.2	5.6	5.0	5.7	5.0	e6.2	5.1	5.0
29	5.0	5.0	5.0	8.2	---	5.7	6.1	5.7	5.0	e6.1	5.0	5.0
30	5.0	5.0	5.0	6.2	---	5.7	6.9	5.7	5.0	9.4	5.0	5.0
31	5.0	---	5.0	5.1	---	5.7	---	5.7	---	9.6	5.0	---
TOTAL	---	---	---	179.4	161.9	179.7	190.5	---	157.8	---	---	152.2
MEAN	---	---	---	5.79	5.78	5.80	6.35	---	5.26	---	---	5.07
MAX	---	---	---	8.2	7.2	6.3	9.4	---	6.6	---	---	6.8
MIN	---	---	---	5.0	4.9	5.4	5.0	---	4.7	---	---	5.0
AC-FT	---	---	---	356	321	356	378	---	313	---	---	302

e Estimated.

## SAN JOAQUIN RIVER BASIN

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA

LOCATION.--Lat 38°26'48", long 120°29'21", in SW 1/4 NE 1/4 sec.24, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, Eldorado National Forest, on right bank 0.4 mi upstream from Tiger Creek and Tiger Creek Powerplant, 3.9 mi northeast of West Point, 18.3 mi downstream from Salt Springs Dam, and at mile 106.4.

DRAINAGE AREA.--333 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1970-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,337.50 ft above sea level (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 18.3 mi upstream. Some water is diverted through Tiger Creek Powerplant Conduit (station 11314000). Additional water is diverted out of the Bear River and several smaller tributaries into Tiger Creek Powerplant Conduit. All the water enters the North Fork Mokelumne River at Tiger Creek Powerplant (station 11316610) 0.4 mi downstream. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 8.98 ft, from rating curve extended above 7,700 ft<sup>3</sup>/s; minimum daily, 30 ft<sup>3</sup>/s, Aug. 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 429 ft<sup>3</sup>/s, Oct. 15, gage height, 3.47 ft; minimum daily, 31 ft<sup>3</sup>/s, Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	66	45	37	55	89	77	94	70	41	47	35
2	61	58	40	37	56	86	78	93	67	43	40	34
3	61	57	39	37	58	86	88	91	67	42	33	34
4	61	57	40	40	56	84	95	96	64	42	32	34
5	63	57	39	76	60	94	84	99	63	55	33	35
6	70	57	42	45	61	113	82	110	63	61	34	34
7	112	56	68	39	85	92	80	118	62	49	32	33
8	113	56	76	45	83	84	84	118	60	42	31	35
9	113	56	62	54	74	84	91	122	59	40	36	33
10	171	56	51	40	87	84	80	140	58	40	38	32
11	374	58	60	35	83	86	77	168	56	40	33	32
12	377	67	64	35	74	81	76	183	56	39	35	33
13	361	60	48	36	72	79	78	124	56	39	36	34
14	358	66	57	34	69	82	81	112	56	39	35	34
15	398	69	48	37	70	88	86	106	55	39	36	34
16	358	75	41	40	68	88	95	101	53	40	35	34
17	322	57	39	56	114	86	100	100	54	39	37	34
18	322	49	38	57	92	83	102	109	55	39	38	34
19	352	42	37	56	81	82	123	120	54	37	38	34
20	352	42	38	52	84	80	129	115	52	38	38	34
21	334	43	39	52	84	79	119	90	50	39	38	33
22	338	45	48	52	86	79	102	84	50	38	48	33
23	336	45	57	66	85	78	99	82	50	38	51	33
24	337	43	59	77	78	76	98	79	53	37	40	35
25	342	42	42	71	81	76	109	76	51	37	35	34
26	338	43	38	68	91	73	106	81	49	48	40	34
27	336	44	47	62	110	72	100	77	48	53	35	34
28	295	42	41	57	98	72	93	76	47	51	34	34
29	72	44	38	60	---	74	90	73	46	47	34	41
30	66	69	37	59	---	74	93	72	44	44	34	38
31	66	---	37	55	---	77	---	76	---	48	35	---
TOTAL	7320	1621	1455	1567	2195	2561	2795	3185	1668	1324	1141	1025
MEAN	236	54.0	46.9	50.5	78.4	82.6	93.2	103	55.6	42.7	36.8	34.2
MAX	398	75	76	77	114	113	129	183	70	61	51	41
MIN	61	42	37	34	55	72	76	72	44	37	31	32
AC-FT	14520	3220	2890	3110	4350	5080	5540	6320	3310	2630	2260	2030
a	23650	27790	28640	15440	7650	7570	7610	11740	26210	23180	25710	33850

a Diversion, in acre-feet, to Tiger Creek Powerplant, provided by Pacific Gas & Electric Co.

11316600 NORTH FORK MOKELUMNE RIVER ABOVE TIGER CREEK, NEAR WEST POINT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	76.7	54.7	63.0	98.7	273	365	386	648	541	105	79.2	71.7
MAX	236	74.3	97.0	273	1702	1855	1602	2283	2096	444	340	265
(WY)	1994	1986	1986	1993	1986	1986	1986	1986	1993	1993	1993	1993
MIN	39.4	44.2	46.9	49.8	51.4	76.8	87.3	70.0	49.8	37.0	36.2	34.2
(WY)	1989	1992	1994	1991	1991	1988	1988	1992	1987	1987	1987	1994

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1986 - 1994			
ANNUAL TOTAL	217771				27857							
ANNUAL MEAN	597				76.3				229			
HIGHEST ANNUAL MEAN									801			
LOWEST ANNUAL MEAN									59.9			
HIGHEST DAILY MEAN	4430				May 25				8170			
LOWEST DAILY MEAN	37				Dec 19				30			
ANNUAL SEVEN-DAY MINIMUM	40				Dec 15				32			
INSTANTANEOUS PEAK FLOW									12900			
INSTANTANEOUS PEAK STAGE									8.98			
ANNUAL RUNOFF (AC-FT)	431900				55250				166200			
ANNUAL TOTAL, DIVERSION (AC-FT) a	332500				239000							
10 PERCENT EXCEEDS	1580				112				515			
50 PERCENT EXCEEDS	350				57				63			
90 PERCENT EXCEEDS	56				35				39			

a Diversion, in acre-feet, to Tiger Creek Powerplant, provided by Pacific Gas &amp; Electric Co.

## 11316670 NORTH FORK MOKELUMNE RIVER BELOW TIGER CREEK RESERVOIR, NEAR WEST POINT, CA

LOCATION.--Lat 38°26'25", long 120°30'14", in SE 1/4 SE 1/4 sec.23, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 500 ft downstream from Tiger Creek Reservoir Dam and 3.1 mi northeast of West Point.

DRAINAGE AREA.--357 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year (low-flow records only). Unpublished records for water years 1982-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,220 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 50 ft<sup>3</sup>/s. Flow regulated since 1931 by Salt Springs Reservoir (station 11313500) 20 mi upstream. Most of the water is diverted at Tiger Creek Reservoir to West Point Powerplant. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	21	13	15	14	12	16	12	13	12	12	12
2	42	13	13	15	14	12	14	13	13	12	12	12
3	45	13	13	15	14	12	14	13	14	13	13	12
4	45	12	13	16	14	12	14	13	14	13	12	12
5	48	13	13	15	13	12	14	13	13	14	12	12
6	42	12	21	15	13	12	13	13	13	13	12	12
7	33	13	---	15	14	12	13	15	14	13	12	12
8	42	13	---	15	14	12	12	13	14	13	12	12
9	---	13	---	15	14	12	12	12	13	13	12	12
10	---	13	14	16	14	12	12	---	13	13	12	12
11	---	13	14	15	13	11	12	---	14	13	12	12
12	---	13	14	16	14	11	12	---	14	13	12	12
13	---	13	14	15	14	11	13	---	14	13	12	12
14	---	13	14	14	14	11	13	---	13	13	12	12
15	---	13	13	14	14	11	13	---	13	13	12	12
16	---	13	13	14	14	12	13	---	13	13	12	12
17	---	13	13	14	---	12	13	---	12	13	12	12
18	---	13	13	14	---	11	13	---	12	13	12	12
19	---	13	13	14	22	11	12	---	12	14	12	12
20	---	13	14	14	13	12	12	13	12	15	12	12
21	---	13	14	14	14	12	12	13	13	13	12	12
22	---	13	14	14	12	12	12	12	13	12	13	13
23	---	13	15	14	12	12	12	12	13	12	13	13
24	---	13	15	14	12	12	12	12	13	12	12	13
25	---	13	15	14	15	12	13	12	12	12	12	13
26	---	13	15	14	16	12	12	13	12	12	12	12
27	---	13	15	13	16	12	12	13	12	12	12	13
28	---	13	15	14	14	12	12	13	12	12	12	13
29	31	14	15	14	---	13	12	13	12	12	12	13
30	27	13	15	14	---	14	12	13	11	12	12	13
31	27	---	15	14	---	16	---	14	---	12	12	---
TOTAL	---	397	---	449	---	372	381	---	386	395	375	368
MEAN	---	13.2	---	14.5	---	12.0	12.7	---	12.9	12.7	12.1	12.3
MAX	---	21	---	16	---	16	16	---	14	15	13	13
MIN	---	12	---	13	---	11	12	---	11	12	12	12
AC-FT	---	787	---	891	---	738	756	---	766	783	744	730

## 11316700 NORTH FORK MOKELUMNE RIVER BELOW ELECTRA DIVERSION DAM, NEAR WEST POINT, CA

LOCATION.--Lat 38°25'15", long 120°32'56", in SW 1/4 NE 1/4 sec.33, T.7 N., R.13 E., Amador County, Hydrologic Unit 18040012, on right bank 300 ft downstream from Electra Diversion Dam and 2.0 mi northwest of West Point.

DRAINAGE AREA.--365 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1985 to current year (low-flow records only). Unpublished records for water years 1982-84 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and sharp-crested weir since March 1987. Elevation of gage is 1,980 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 30 ft<sup>3</sup>/s. Flow regulated since 1931 by numerous reservoirs and diversions upstream. Most of the water is diverted at Electra Diversion Dam to Electra Powerplant. See schematic diagram of Mokelumne River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	13	14	13	16	12	11	12	11	12	11
2	18	15	12	14	13	15	12	11	12	12	12	11
3	18	14	13	14	13	14	12	11	12	12	11	11
4	18	14	14	15	13	14	12	11	12	12	11	11
5	18	14	14	16	13	13	12	12	12	12	11	11
6	18	14	14	15	13	14	12	11	12	12	11	11
7	17	13	13	15	15	16	12	11	12	12	11	11
8	17	14	14	15	14	14	11	11	12	12	11	11
9	19	14	12	15	13	13	11	11	12	12	11	11
10	18	14	12	15	13	13	11	12	12	12	11	11
11	20	14	12	14	13	13	11	17	12	12	11	11
12	20	14	12	15	13	13	11	17	12	12	11	11
13	21	14	12	14	13	13	11	16	12	12	11	11
14	21	14	13	13	13	13	11	16	11	12	11	11
15	---	15	12	13	12	13	11	16	11	12	11	11
16	---	14	12	13	15	13	11	15	11	12	11	11
17	18	14	12	13	22	13	11	16	11	12	11	11
18	19	14	12	13	33	13	11	14	11	13	11	11
19	20	13	12	13	28	13	12	11	11	14	11	11
20	25	13	12	13	21	13	11	11	11	13	11	11
21	22	13	15	13	20	13	11	11	11	12	11	11
22	19	13	14	13	19	13	11	12	11	12	11	11
23	18	12	14	16	17	13	11	12	11	11	12	11
24	19	12	14	19	17	13	11	12	12	12	12	11
25	18	12	14	16	16	13	11	12	12	11	11	12
26	17	12	14	15	17	13	12	12	12	12	11	11
27	17	12	15	14	17	13	12	12	11	11	11	11
28	21	13	14	14	17	13	11	12	11	12	11	12
29	21	13	14	13	---	12	11	12	11	11	11	11
30	20	13	14	13	---	12	11	12	11	11	11	11
31	18	---	14	13	---	13	---	12	---	12	11	---
TOTAL	---	407	408	441	456	413	340	392	346	370	345	332
MEAN	---	13.6	13.2	14.2	16.3	13.3	11.3	12.6	11.5	11.9	11.1	11.1
MAX	---	17	15	19	33	16	12	17	12	14	12	12
MIN	---	12	12	13	12	12	11	11	11	11	11	11
AC-FT	---	807	809	875	904	819	674	778	686	734	684	659

## SAN JOAQUIN RIVER BASIN

11316800 FOREST CREEK NEAR WILSEYVILLE, CA

LOCATION.--Lat 38°24'12", long 120°26'45", in SW 1/4 NW 1/4 sec.4, T.6 N., R.14 E., Calaveras County, Hydrologic Unit 18040012, on left bank 1.0 mi downstream from Lion Creek, 1.8 mi upstream from mouth, and 4 mi northeast of Wilseyville.

DRAINAGE AREA.--20.8 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,950 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation. Minor diversions upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 8.12 ft, from rating curve extended above 500 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 7.41 ft; minimum daily, 0.11 ft<sup>3</sup>/s, Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 120 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 27	0300	*23	*3.40				
Minimum daily, 0.36 ft <sup>3</sup> /s, Sept. 2.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	2.4	4.3	3.5	4.2	14	11	12	5.4	1.9	.75	.38
2	1.5	2.3	3.6	3.4	3.9	13	10	12	5.2	1.8	.72	.36
3	1.7	2.3	3.3	3.4	4.2	13	13	11	4.3	1.7	.67	.40
4	1.7	2.2	3.2	4.2	4.0	12	15	11	2.9	1.7	.63	.42
5	1.9	2.3	3.1	7.8	3.8	15	13	11	2.9	1.6	.58	.43
6	2.3	2.6	3.1	5.2	4.1	18	12	13	3.2	1.6	.53	.47
7	2.2	2.9	3.1	4.4	8.4	16	12	15	3.5	1.5	.54	.45
8	2.1	2.7	3.3	4.3	11	14	13	14	3.6	1.6	.56	.43
9	2.0	2.6	5.0	4.0	7.9	14	15	13	3.6	1.6	.60	.43
10	2.0	2.6	4.1	3.4	8.4	14	13	12	3.6	1.5	.70	.43
11	2.1	2.9	6.5	3.6	8.7	15	12	11	3.4	1.5	.64	.45
12	2.4	4.3	6.3	3.3	6.5	14	11	10	3.4	1.5	.57	.50
13	2.3	3.5	4.8	3.8	6.3	13	11	9.7	3.3	1.4	.53	.55
14	2.4	3.1	6.1	3.5	5.6	13	11	9.1	3.4	1.3	.52	.53
15	6.9	2.9	5.0	3.5	5.4	14	10	8.6	3.1	1.0	.54	.50
16	5.0	2.9	3.9	3.3	5.2	15	10	8.5	2.7	1.0	.46	.57
17	3.3	2.9	3.9	3.4	11	14	10	9.1	2.4	.98	.43	.52
18	2.9	2.9	3.4	3.3	8.8	13	10	10	2.4	1.0	.49	.50
19	2.7	2.8	3.4	3.3	9.5	14	10	11	2.5	.94	.46	.47
20	2.7	2.8	3.5	3.3	9.5	14	9.8	10	2.4	1.0	.45	.53
21	2.6	2.9	3.5	3.2	8.7	13	9.8	9.1	2.7	.99	.45	.56
22	2.5	3.0	4.0	3.2	9.4	13	9.6	8.3	2.4	.86	.45	.50
23	2.4	3.2	3.6	6.4	10	12	9.8	7.7	2.3	.90	.47	.48
24	2.4	3.1	3.3	7.3	11	12	11	7.4	2.2	.94	.45	.47
25	2.4	2.8	3.3	7.3	12	12	14	7.0	2.2	.91	.46	.53
26	2.3	3.0	3.5	7.1	12	11	15	6.7	2.2	.88	.46	.51
27	2.3	3.1	4.9	5.9	21	10	16	6.4	2.1	.90	.42	.59
28	2.3	3.0	4.3	4.8	15	11	14	6.2	2.1	.89	.39	.56
29	2.4	3.9	3.8	4.5	---	11	13	5.9	2.0	.83	.40	.77
30	2.5	7.6	3.6	4.5	---	11	13	5.9	1.9	.75	.39	1.0
31	2.5	---	3.4	4.2	---	11	---	5.7	---	.75	.41	---
TOTAL	78.1	91.5	124.1	136.3	235.5	409	357.0	297.3	89.3	37.72	16.12	15.29
MEAN	2.52	3.05	4.00	4.40	8.41	13.2	11.9	9.59	2.98	1.22	.52	.51
MAX	6.9	7.6	6.5	7.8	21	18	16	15	5.4	1.9	.75	1.0
MIN	1.4	2.2	3.1	3.2	3.8	10	9.6	5.7	1.9	.75	.39	.36
AC-FT	155	181	246	270	467	811	708	590	177	75	32	30



## 11316800 FOREST CREEK NEAR WILSEYVILLE, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.11	9.32	20.0	34.1	42.7	48.0	47.5	32.1	12.4	5.69	3.55	3.07
MAX	11.9	59.5	138	144	243	209	174	128	47.4	17.1	10.5	8.36
(WY)	1983	1984	1965	1970	1986	1983	1982	1967	1967	1983	1983	1983
MIN	.63	1.80	2.17	2.40	2.35	4.58	2.96	3.92	1.58	.46	.33	.50
(WY)	1978	1993	1977	1991	1991	1977	1977	1977	1977	1977	1977	1992

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1961 - 1994			
ANNUAL TOTAL	9555.7				1887.23							
ANNUAL MEAN	26.2				5.17				21.8			
HIGHEST ANNUAL MEAN									67.9			
LOWEST ANNUAL MEAN									2.39			
HIGHEST DAILY MEAN	205				21				1250			
LOWEST DAILY MEAN	1.4				.36				.11			
ANNUAL SEVEN-DAY MINIMUM	1.6				.39				.15			
INSTANTANEOUS PEAK FLOW					23				2020			
INSTANTANEOUS PEAK STAGE					3.40				8.12			
ANNUAL RUNOFF (AC-FT)	18950				3740				15770			
10 PERCENT EXCEEDS	67				13				55			
50 PERCENT EXCEEDS	8.3				3.4				7.4			
90 PERCENT EXCEEDS	2.3				.52				2.0			

## 11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA

LOCATION.--Lat 38°23'23", long 120°31'32", in SE 1/4 NE 1/4 sec.10, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 200 ft downstream from highway bridge, 0.6 mi south of West Point, and 4.5 mi upstream from South Fork Mokelumne River.

DRAINAGE AREA.--68.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for October 1911, published in WSP 1315-A.

REVISED RECORDS.--WSP 1515: 1919-20, 1927-28(M), 1936(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,450 ft above sea level, from topographic map. Prior to Oct. 6, 1926, nonrecording gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Flow slightly regulated by Schaads Reservoir, capacity, 1,740 acre-ft, 6 mi upstream from station, since January 1940. Maximum output of Schaads Powerplant is 35 ft<sup>3</sup>/s and is operational only when reservoir level is within 4 ft of spill gates. Several small diversions upstream from station. At times water is diverted 4 mi upstream from station to Licking Fork Mokelumne River via Middle Fork Ditch, capacity, 10 ft<sup>3</sup>/s; because of leakage, only 5 ft<sup>3</sup>/s may reach Licking Fork Mokelumne River. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,920 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 9.19 ft, from rating curve extended above 3,100 ft<sup>3</sup>/s; no flow for many days in 1931 and Sept. 9, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 19	0915	*59	2.20	Feb. 22	2345	(a)	*2.36

Minimum daily, 2.3 ft<sup>3</sup>/s, July 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	9.1	12	8.9	24	38	19	30	11	8.5	5.2	3.8
2	5.7	8.6	10	8.5	15	29	37	19	11	2.3	5.3	3.8
3	7.3	8.5	9.6	8.5	12	42	26	40	12	2.4	5.5	4.0
4	7.0	8.7	9.1	9.7	12	26	30	21	12	2.7	5.2	4.3
5	7.8	8.8	8.8	15	11	36	31	25	13	2.7	5.2	4.3
6	8.5	8.4	8.1	12	12	49	30	27	13	2.7	5.2	4.4
7	8.3	9.4	8.9	10	24	46	30	21	13	3.0	5.1	4.5
8	7.8	9.0	9.3	10	38	31	27	30	12	5.1	5.1	4.4
9	7.8	8.9	13	10	19	38	28	40	13	6.1	5.6	4.6
10	7.7	8.4	11	8.9	20	44	39	44	10	5.9	5.6	4.8
11	8.0	9.9	15	8.8	36	31	21	44	8.4	5.5	6.6	4.8
12	9.2	14	16	8.7	18	37	18	33	7.6	5.1	7.4	5.2
13	9.6	14	11	9.1	16	41	38	27	7.4	6.0	7.2	5.4
14	9.9	13	15	9.2	15	24	23	43	7.5	5.0	6.9	5.2
15	19	12	13	9.1	26	43	17	19	7.7	3.7	6.0	5.1
16	19	10	10	8.4	25	42	35	25	7.6	3.6	6.2	5.0
17	15	9.9	9.2	8.7	27	23	29	37	6.9	3.5	6.6	5.5
18	14	10	8.6	8.6	30	41	17	20	7.1	3.7	6.9	5.5
19	13	10	8.3	8.5	28	35	39	42	7.1	3.9	6.5	4.5
20	12	10	8.2	8.5	31	23	27	30	6.6	3.1	6.6	4.6
21	11	9.7	8.3	8.4	29	41	14	19	7.3	2.9	5.2	5.0
22	11	9.7	8.2	8.6	34	29	23	41	7.2	3.2	2.8	5.7
23	11	9.8	8.4	14	35	24	30	24	9.3	3.3	2.8	6.1
24	11	9.2	8.1	23	25	40	15	16	13	3.2	2.7	6.8
25	11	8.7	8.2	27	27	24	34	21	16	3.0	2.9	6.6
26	9.6	8.7	8.4	27	45	22	41	35	15	3.0	3.2	4.8
27	9.5	9.0	10	17	37	37	27	12	12	3.7	3.2	2.5
28	9.8	8.0	10	13	49	23	21	13	12	4.9	3.2	2.5
29	9.6	8.5	9.4	12	---	20	27	12	8.2	4.0	3.3	2.7
30	9.4	16	9.1	12	---	37	39	11	7.5	4.1	3.3	2.7
31	9.5	---	8.5	12	---	22	---	10	---	4.7	3.5	---
TOTAL	314.6	295.9	310.7	363.1	720	1038	832	831	301.4	124.5	156.0	139.1
MEAN	10.1	9.86	10.0	11.7	25.7	33.5	27.7	26.8	10.0	4.02	5.03	4.64
MAX	19	16	16	27	49	49	41	44	16	8.5	7.4	6.8
MIN	5.6	6.5	8.1	8.4	11	20	14	10	6.6	2.3	2.7	2.5
AC-FT	624	587	616	720	1430	2060	1650	1650	598	247	309	276

(a) Shifting control.

## 11317000 MIDDLE FORK MOKELUMNE RIVER AT WEST POINT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.0	22.5	48.9	84.0	120	134	146	105	41.7	15.8	8.83	7.37
MAX	37.5	223	389	622	768	653	561	372	181	68.1	40.8	31.1
(WY)	1983	1951	1956	1914	1986	1983	1982	1983	1983	1983	1969	1969
MIN	.86	2.64	3.33	4.75	5.70	9.06	6.47	4.17	.95	.22	.071	.15
(WY)	1932	1930	1977	1977	1991	1977	1977	1931	1924	1924	1931	1931

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1912 - 1994
ANNUAL TOTAL	28790.6	5426.3	
ANNUAL MEAN	78.9	14.9	61.7
HIGHEST ANNUAL MEAN			218
LOWEST ANNUAL MEAN			5.25
HIGHEST DAILY MEAN	691	Jan 22	49
LOWEST DAILY MEAN	3.1	Aug 9	2.3
ANNUAL SEVEN-DAY MINIMUM	5.4	Sep 26	3.0
INSTANTANEOUS PEAK FLOW			59
INSTANTANEOUS PEAK STAGE			2.36
ANNUAL RUNOFF (AC-FT)	57110	10760	44700
10 PERCENT EXCEEDS	191	35	160
50 PERCENT EXCEEDS	24	9.9	20
90 PERCENT EXCEEDS	8.1	4.0	3.8

## 11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA

LOCATION.--Lat 38°22'06", long 120°32'40", in SE 1/4 SE 1/4 sec.16, T.6 N., R.13 E., Calaveras County, Hydrologic Unit 18040012, on right bank 500 ft upstream from highway bridge, 2.4 mi southwest of West Point, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--75.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 1315-A: 1934(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,950 ft above sea level, from topographic map. October 1933 to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records good except those less than 1.0 ft<sup>3</sup>/s, which are poor. The Middle Fork Ditch can divert 10 ft<sup>3</sup>/s from the Middle Fork Mokelumne River which, due to leakage, delivers about 5 ft<sup>3</sup>/s to the Licking Fork Mokelumne River. There are two pumps with a combined capacity of 8.9 ft<sup>3</sup>/s that can pump water to Jeff Davis Reservoir upstream from the station. There are other small diversions upstream from the station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,300 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 12.48 ft, from rating curve extended above 2,700 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 17	2145	*99	*3.10				

Minimum daily, 0.34 ft<sup>3</sup>/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	8.5	31	8.9	13	52	30	35	14	2.5	2.3	1.2
2	1.7	6.4	18	8.5	10	50	27	34	13	1.9	2.1	.77
3	2.4	3.7	14	9.9	9.9	50	32	33	12	1.8	2.0	.88
4	3.1	3.8	12	14	9.8	48	41	31	12	1.7	1.9	.93
5	6.9	3.9	12	24	9.2	52	33	31	12	1.9	2.1	.98
6	7.4	4.2	11	20	9.6	66	29	35	12	1.5	1.7	1.5
7	7.5	4.0	11	17	35	53	28	39	11	1.2	1.6	1.0
8	5.9	3.9	11	15	61	46	29	40	11	1.2	1.7	1.2
9	2.9	4.0	16	14	37	43	40	35	10	.78	1.4	.83
10	2.8	3.9	15	15	33	42	34	32	8.0	.53	1.5	.81
11	5.1	3.8	25	18	39	44	29	29	4.6	.63	1.5	.88
12	8.4	6.0	28	17	27	40	27	29	4.0	.34	1.3	1.3
13	6.5	15	17	16	24	38	27	30	5.0	3.3	1.3	1.2
14	3.5	13	30	13	21	39	27	28	7.3	4.1	1.3	1.2
15	9.9	11	23	13	19	41	27	27	7.2	3.8	1.6	1.3
16	16	10	15	12	18	43	26	27	7.1	3.6	1.1	1.5
17	9.0	10	12	12	53	41	26	28	7.7	3.4	1.1	1.3
18	8.8	10	11	10	73	38	25	34	6.7	3.3	1.3	1.2
19	11	10	9.9	7.9	50	39	24	39	6.2	3.0	1.1	1.1
20	10	10	9.3	7.7	63	37	23	34	5.9	2.5	.97	1.3
21	10	10	9.1	7.9	58	37	21	30	5.6	2.4	.84	1.1
22	10	10	8.9	7.6	52	39	21	27	5.1	2.6	.88	1.0
23	9.6	10	8.7	18	49	36	21	25	4.8	2.5	.93	1.2
24	9.3	11	8.6	43	44	34	27	23	4.6	2.6	.94	1.0
25	9.1	11	8.5	38	44	33	44	22	4.4	3.1	.92	1.1
26	8.8	11	8.6	26	46	31	45	21	4.2	2.8	1.2	1.1
27	8.5	10	13	19	61	30	42	21	3.9	2.5	.97	1.5
28	8.2	10	13	16	58	31	44	20	3.4	2.4	.93	1.4
29	8.1	10	11	13	---	32	39	19	2.9	2.5	1.2	1.8
30	8.7	13	10	12	---	32	35	19	2.6	2.4	.93	3.1
31	8.5	---	9.5	12	---	32	---	17	---	2.2	.97	---
TOTAL	229.7	251.1	440.1	485.4	1026.5	1269	923	894	218.2	70.98	41.58	36.68
MEAN	7.41	8.37	14.2	15.7	36.7	40.9	30.8	28.8	7.27	2.29	1.34	1.22
MAX	16	15	31	43	73	66	45	40	14	4.1	2.3	3.1
MIN	1.7	3.7	8.5	7.6	9.2	30	21	17	2.6	.34	.84	.77
AC-FT	456	498	873	963	2040	2520	1830	1770	433	141	82	73

## 11318500 SOUTH FORK MOKELUMNE RIVER NEAR WEST POINT, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.8	31.5	72.6	120	167	180	180	116	44.8	20.9	12.1	10.0
MAX	41.6	270	465	661	959	825	704	424	163	62.9	36.1	31.6
(WY)	1983	1951	1956	1969	1986	1983	1982	1983	1983	1983	1952	1983
MIN	1.65	3.21	2.83	1.85	2.53	11.3	7.48	10.9	4.49	1.00	.039	.13
(WY)	1989	1991	1991	1991	1991	1977	1977	1977	1992	1934	1934	1934

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1934 - 1994			
ANNUAL TOTAL	36268.2				5886.24							
ANNUAL MEAN	99.4				16.1				80.3			
HIGHEST ANNUAL MEAN									264			
LOWEST ANNUAL MEAN									6.14			
HIGHEST DAILY MEAN	952				73				5780			
LOWEST DAILY MEAN	1.7				.34				.00			
ANNUAL SEVEN-DAY MINIMUM	2.2				.88				.00			
INSTANTANEOUS PEAK FLOW					99				7300			
INSTANTANEOUS PEAK STAGE					3.10				12.48			
ANNUAL RUNOFF (AC-FT)	71940				11680				58140			
10 PERCENT EXCEEDS	287				39				204			
50 PERCENT EXCEEDS	25				10				27			
90 PERCENT EXCEEDS	4.4				1.2				5.6			

## 11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA

LOCATION.--Lat 38°18'46", long 120°43'09", in SW 1/4 SW 1/4 sec.1, T.5 N., R.11 E., Calaveras County, Hydrologic Unit 18040012, on downstream side of bridge 1.2 mi northwest of Mokelumne Hill and 8 mi downstream from confluence of north and south Forks of Mokelumne River.

DRAINAGE AREA.--544 mi<sup>2</sup>.

PERIOD OF RECORD.--January to June 1901, May 1903 to December 1904, October 1927 to current year. Yearly estimate only for water year 1928 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903-4.

CHEMICAL DATA: Water year 1980. Water years 1971-79 in files of California Department of Water Resources.

WATER TEMPERATURE: Water years 1961-79 (daily record).

REVISED RECORDS.--WSP 1445: 1903-4, 1928(M), 1936(M), 1938(M), 1940(M), 1943(M), 1945(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.88 ft above sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, nonrecording gage at site 3 mi upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at datum 5.00 ft higher. Aug. 27, 1952, to Oct. 14, 1977, at present site at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Salt Springs Reservoir (station 11313500) beginning in 1931, several smaller reservoirs, and four powerplants. Diversion upstream from station for irrigation and domestic use. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft<sup>3</sup>/s, Dec. 3, 1950, gage height, 23.5 ft, present datum; minimum observed, 5 ft<sup>3</sup>/s, Aug. 13-15, 17, 18, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft<sup>3</sup>/s, Oct. 24, gage height, 9.00 ft; maximum gage height, 9.02 ft, May 6; minimum daily, 15 ft<sup>3</sup>/s, Aug. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	497	546	357	200	211	146	308	338	142	611	550
2	50	553	454	353	238	270	127	566	155	371	509	563
3	45	695	561	414	246	399	153	584	305	373	503	573
4	52	478	466	339	263	282	297	603	359	343	515	561
5	69	623	475	438	102	244	271	813	310	163	476	528
6	92	599	233	397	106	479	190	727	411	96	371	542
7	41	580	141	310	156	317	253	697	528	471	496	597
8	39	613	233	233	298	312	213	607	636	562	430	552
9	224	440	528	262	240	276	299	256	560	495	305	558
10	719	634	543	324	283	310	234	206	577	495	384	523
11	777	563	579	328	330	322	264	414	515	490	461	550
12	971	693	517	440	273	346	220	355	507	550	474	526
13	895	516	619	325	270	295	347	198	647	517	412	578
14	983	667	669	335	233	249	213	198	514	493	478	582
15	916	147	633	379	288	372	311	103	572	491	452	546
16	1000	127	657	267	252	306	434	192	285	543	427	513
17	922	372	630	244	256	333	449	122	522	501	388	514
18	927	528	518	129	443	306	224	139	595	479	380	542
19	914	519	612	300	345	193	264	163	472	317	372	550
20	899	551	537	351	453	283	333	221	498	475	490	586
21	974	516	628	282	357	220	295	192	526	366	245	503
22	901	556	621	231	478	279	127	191	496	389	219	479
23	912	583	524	152	313	266	262	154	483	306	34	552
24	919	436	583	346	150	193	142	425	465	330	15	518
25	921	602	575	483	264	273	231	356	495	315	134	513
26	914	470	580	391	212	262	528	250	455	206	359	623
27	884	469	630	405	374	148	426	366	465	17	567	428
28	922	541	302	372	438	219	387	359	324	22	551	516
29	664	550	482	264	---	257	342	302	539	145	538	549
30	687	613	387	269	---	485	319	317	603	464	626	532
31	579	---	414	329	---	264	---	337	---	514	512	---
TOTAL	19869	15731	15877	10049	7861	8971	8301	10721	14157	11441	12734	16247
MEAN	641	524	512	324	281	289	277	346	472	369	411	542
MAX	1000	695	669	483	478	485	528	813	647	562	626	623
MIN	39	127	141	129	102	148	127	103	155	17	15	428
AC-FT	39410	31200	31490	19930	15590	17790	16470	21270	28080	22690	25260	32230

## 11319500 MOKELUMNE RIVER NEAR MOKELUMNE HILL, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	505	583	761	851	994	1112	1340	1843	1734	694	541	517
MAX	898	3275	4375	2903	4788	3950	4114	5092	6243	3384	1117	949
(WY)	1984	1951	1951	1956	1986	1983	1982	1952	1983	1983	1983	1983
MIN	8.97	25.3	70.1	65.5	100	115	221	273	262	106	77.5	67.7
(WY)	1978	1930	1931	1991	1977	1977	1977	1987	1977	1928	1930	1930

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1928 - 1994			
ANNUAL TOTAL	486472				151959							
ANNUAL MEAN	1333				416				955			
HIGHEST ANNUAL MEAN									2511			
LOWEST ANNUAL MEAN									208			
HIGHEST DAILY MEAN	5620				Jun 1				22700			
LOWEST DAILY MEAN	39				Oct 8				6.6			
ANNUAL SEVEN-DAY MINIMUM	55				Sep 28				7.0			
INSTANTANEOUS PEAK FLOW									33700			
INSTANTANEOUS PEAK STAGE									Dec 3			
ANNUAL RUNOFF (AC-FT)	964900				301400				691800			
10 PERCENT EXCEEDS	2760				627				2080			
50 PERCENT EXCEEDS	971				414				607			
90 PERCENT EXCEEDS	381				160				232			

## 11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA

LOCATION.--Lat 38°13'14", long 121°02'19", in NW 1/4 NW 1/4 sec.7, T.4 N., R.9 E., San Joaquin County, Hydrologic Unit 18040005, on left bank 0.7 mi downstream from Murphy Creek, 1.0 mi downstream from Camanche Dam, and 3.4 mi northeast of Clements.

DRAINAGE AREA.--627 mi<sup>2</sup>.

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 1906-7, 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(M), 1925(M). WDR CA-94-3: 1993(M).

GAGE.--Water-stage recorder. Datum of gage is 82.71 ft above sea level. See WSP 1930 for history of changes prior to Oct. 1, 1961.

REMARKS.--Records good. Flow regulated by Camanche Reservoir (station 11322300) 1 mi upstream 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 ft<sup>3</sup>/s with Pardee Reservoir full, are the largest of several diversions upstream from the station. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft<sup>3</sup>/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 ft<sup>3</sup>/s, Feb. 19, 1986, gage height, 11.21 ft; minimum daily, 23 ft<sup>3</sup>/s, Oct. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,310 ft<sup>3</sup>/s, Oct. 20, gage height, 5.55 ft; minimum daily, 110 ft<sup>3</sup>/s, Sept. 17-18.

REVISIONS.--The maximum gage height for water year 1993 has been revised to 5.77 ft on May 28, 1993, discharge 1,470 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	325	388	362	315	191	190	217	337	326	290	277	226
2	324	381	346	314	191	190	236	326	326	296	272	233
3	e320	381	345	309	190	189	246	320	327	297	272	226
4	e315	380	345	313	189	189	250	319	328	295	278	225
5	e310	386	346	313	188	189	262	319	328	284	284	226
6	e300	386	345	313	188	190	267	319	330	266	284	218
7	e300	385	351	312	196	189	266	321	344	258	284	180
8	e300	385	350	320	199	192	267	319	374	260	284	142
9	e300	388	350	323	192	191	267	315	395	257	280	141
10	e300	396	348	321	190	191	266	314	412	257	273	141
11	e300	387	344	246	190	191	266	313	411	268	274	141
12	e300	388	343	193	192	187	255	311	422	276	272	140
13	e300	386	344	192	192	188	253	316	424	276	273	129
14	e305	384	348	190	192	187	254	313	415	284	272	125
15	411	381	313	190	192	191	254	313	412	290	273	117
16	407	382	282	192	192	192	297	314	412	292	281	111
17	407	383	281	191	202	190	298	309	327	293	282	110
18	426	378	284	189	199	187	323	293	312	279	278	110
19	1270	384	285	189	202	185	334	289	312	268	273	111
20	1300	381	285	189	215	186	334	279	294	273	262	112
21	1300	376	285	189	204	189	333	272	274	280	245	113
22	1280	380	285	190	196	188	339	273	249	283	236	114
23	1280	376	287	201	192	185	354	276	236	283	236	118
24	1280	372	288	201	192	186	353	293	250	283	239	118
25	556	376	292	199	192	194	346	294	259	284	242	116
26	416	377	293	193	192	200	339	295	259	277	242	118
27	407	373	300	193	192	196	339	293	246	277	245	119
28	400	370	315	192	191	198	339	291	249	282	240	119
29	399	368	315	192	---	197	339	308	263	284	236	119
30	399	367	315	192	---	198	337	322	271	285	227	119
31	400	---	315	192	---	211	---	323	---	285	227	---
TOTAL	16637	11425	9887	7248	5433	5926	8830	9499	9787	8662	8143	4337
MEAN	537	381	319	234	194	191	294	306	326	279	263	145
MAX	1300	396	362	323	215	211	354	337	424	297	284	233
MIN	300	367	281	189	188	185	217	272	236	257	227	110
AC-FT	33000	22660	19610	14380	10780	11750	17510	18840	19410	17180	16150	8600

e Estimated.



## 11323500 MOKELUMNE RIVER BELOW CAMANCHE DAM, CA--Continued

## 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	1193	1608	1458	557	478	467
MAX	670	3188	4568	3529	2473	3155	3451	4217	3164	1194	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

## SUMMARY STATISTICS

## WATER YEARS 1931 - 1963

ANNUAL MEAN	832
HIGHEST ANNUAL MEAN	1669
LOWEST ANNUAL MEAN	221
HIGHEST DAILY MEAN	26900
LOWEST DAILY MEAN	35
ANNUAL SEVEN-DAY MINIMUM	49
INSTANTANEOUS PEAK FLOW	28800
INSTANTANEOUS PEAK STAGE	24.40
ANNUAL RUNOFF (AC-FT)	603000
10 PERCENT EXCEEDS	1890
50 PERCENT EXCEEDS	551
90 PERCENT EXCEEDS	213

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	600	514	486	766	794	899	891	995	913	730	622	548
MAX	2061	2157	2938	2680	2814	5117	3726	3889	3197	2788	1412	1377
(WY)	1966	1984	1984	1980	1983	1986	1983	1982	1983	1983	1983	1983
MIN	33.3	83.6	78.7	83.6	60.8	77.9	125	170	254	249	235	123
(WY)	1978	1989	1967	1967	1967	1989	1991	1988	1977	1991	1991	1992

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1965 - 1994

ANNUAL TOTAL	261569	105814	
ANNUAL MEAN	717	290	730
HIGHEST ANNUAL MEAN			2400
LOWEST ANNUAL MEAN			172
HIGHEST DAILY MEAN	1350	May 16	1300
LOWEST DAILY MEAN	160	Jan 3	110
ANNUAL SEVEN-DAY MINIMUM	171	Jan 1	112
INSTANTANEOUS PEAK FLOW			1310
INSTANTANEOUS PEAK STAGE			5.55
ANNUAL RUNOFF (AC-FT)	518800	209900	528500
10 PERCENT EXCEEDS	1320	384	1680
50 PERCENT EXCEEDS	565	282	437
90 PERCENT EXCEEDS	205	189	105

## SAN JOAQUIN RIVER BASIN

11325000 WOODBRIDGE CANAL AT WOODBRIDGE, CA

LOCATION.--Lat 38°09'07", long 121°18'00", in NE 1/4 SE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, at point of diversion from Woodbridge Reservoir. PERIOD OF RECORD.--April 1926 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.18 ft above sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mi downstream at different datum.

REMARKS.--Records good. Discharge computed from records of gate openings and effective head as shown by differential recorder. Canal diverts from Woodbridge Reservoir on Mokelumne River for irrigation south and west of Woodbridge. See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 482 ft<sup>3</sup>/s, July 8, 1953; no flow at times in each year. Lowest daily mean, -64 ft<sup>3</sup>/s, May 4, 1938 (the water level in Woodbridge Reservoir was drawn down and water from the canal drained back into the reservoir. In order that the figures may represent the net diverted flow, the reverse flow was indicated by negative figures).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	52	.00	.00	.00	.00	e42	102	114	147	160	116
2	172	.00	.00	.00	.00	.00	e52	99	124	156	162	117
3	170	.00	.00	.00	.00	.00	e66	100	132	158	163	114
4	165	.00	.00	.00	.00	.00	e84	106	130	154	158	112
5	156	.00	.00	.00	.00	.00	e95	115	128	156	162	95
6	156	.00	.00	.00	.00	.00	e87	116	120	149	159	80
7	159	.00	.00	.00	.00	.00	85	106	127	134	144	75
8	159	.00	.00	.00	.00	.00	86	102	128	131	136	58
9	158	.00	.00	.00	.00	.00	82	100	142	140	149	12
10	158	.00	.00	.00	.00	.00	80	100	152	140	144	.00
11	151	.00	.00	.00	.00	.00	75	102	169	145	133	.00
12	152	.00	.00	.00	.00	.00	73	100	174	149	134	.00
13	151	.00	.00	.00	.00	.00	81	99	179	155	133	.00
14	143	.00	.00	.00	.00	.00	79	103	185	150	131	.00
15	135	.00	.00	.00	.00	.00	85	104	186	150	131	.00
16	135	.00	.00	.00	.00	.00	87	102	187	140	139	.00
17	135	.00	.00	.00	.00	.00	82	96	186	126	148	.00
18	134	.00	.00	.00	.00	.00	83	94	180	123	152	.00
19	127	.00	.00	.00	.00	.00	88	86	173	129	146	.00
20	130	.00	.00	.00	.00	.00	88	66	165	136	132	.00
21	130	.00	.00	.00	.00	.00	90	56	146	146	116	.00
22	127	.00	.00	.00	.00	.00	104	58	133	156	114	.00
23	125	.00	.00	.00	.00	.00	112	65	132	159	116	.00
24	125	.00	.00	.00	.00	.00	111	82	133	159	122	.00
25	124	.00	.00	.00	.00	.00	106	98	127	154	126	.00
26	125	.00	.00	.00	.00	e30	90	107	116	152	130	.00
27	126	.00	.00	.00	.00	e54	71	104	110	159	129	.00
28	123	.00	.00	.00	.00	e54	100	108	122	160	113	.00
29	122	.00	.00	.00	---	e54	102	106	140	163	104	.00
30	122	.00	.00	.00	---	e48	102	106	146	167	107	.00
31	121	---	.00	.00	---	e49	---	114	---	166	116	---
TOTAL	4390	52.00	0.00	0.00	0.00	289.00	2568	3002	4386	4609	4209	779.00
MEAN	142	1.73	.000	.000	.000	9.32	85.6	96.8	146	149	136	26.0
MAX	174	52	.00	.00	.00	54	112	116	187	167	163	117
MIN	121	.00	.00	.00	.00	.00	42	56	110	123	104	.00
AC-FT	8710	103	.00	.00	.00	573	5090	5950	8700	9140	8350	1550

e Estimated.

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1994, BY WATER YEAR (WY)

	MEAN	108	25.7	4.92	.25	.20	23.3	116	212	264	274	256	183
MAX	218	137	83.5	5.95	5.55	158	295	376	401	412	378	294	
(WY)	1955	1959	1959	1931	1931	1953	1953	1950	1950	1953	1953	1948	
MIN	.000	-.14	.000	.000	.000	.000	.000	76.5	95.9	63.0	66.8	5.37	
(WY)	1978	1939	1927	1927	1927	1927	1927	1977	1926	1926	1926	1992	

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR				FOR 1994 WATER YEAR				WATER YEARS 1926 - 1994			
ANNUAL TOTAL	42896.00				24284.00							
ANNUAL MEAN	118				66.5							
HIGHEST ANNUAL MEAN									124			
LOWEST ANNUAL MEAN									206			
HIGHEST DAILY MEAN	316				187				49.2			
LOWEST DAILY MEAN	.00				.00				482			
ANNUAL SEVEN-DAY MINIMUM	.00				.00				-64			
ANNUAL RUNOFF (AC-FT)	85080				48170				89590			
10 PERCENT EXCEEDS	271				156				315			
50 PERCENT EXCEEDS	127				73				100			
90 PERCENT EXCEEDS	.00				.00				.00			

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA  
(National Stream-Quality Accounting Network Station)

LOCATION.--Lat 38°09'31", long 121°18'09", in NW 1/4 NE 1/4 sec.34, T.4 N., R.6 E., San Joaquin County, Hydrologic Unit 18040005, on right bank at Woodbridge, 0.4 mi downstream from County Highway Bridge, and 0.5 mi downstream from dam and canal intake of Woodbridge Irrigation District.

DRAINAGE AREA.--661 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1994 (discontinued) (low-flow records only 1924-25).

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.9 ft above sea level (levels by East Bay Municipal Utility District). See WSP 2130 for history of changes prior to July 26, 1968.

REMARKS.--No estimated daily discharges. Records good. Concerning regulation and diversions see REMARKS for Mokelumne River below Camanche Dam (station 11323500). Between Woodbridge and Camanche Dam there are many additional diversions for irrigation, including Woodbridge Canal (station 11325000). See schematic diagram of Mokelumne River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft<sup>3</sup>/s, Nov. 22, 1950, gage height, 29.58 ft, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.23 ft<sup>3</sup>/s, Nov. 15, 1977. Maximum discharge since construction of Camanche Dam in 1963, 5,340 ft<sup>3</sup>/s, Mar. 8, 1986, gage height, 23.19 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 964 ft<sup>3</sup>/s, Nov. 1, gage height, 11.12 ft; minimum daily, 22 ft<sup>3</sup>/s, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	545	350	241	144	142	95	177	138	29	36	31
2	73	517	336	241	144	141	102	180	138	29	30	28
3	73	349	328	239	142	140	109	163	133	29	30	24
4	73	335	326	242	143	139	104	154	130	29	30	24
5	73	331	325	240	144	143	101	153	127	33	31	26
6	73	332	324	237	154	144	108	152	127	55	35	32
7	74	334	323	238	172	123	114	172	121	44	36	40
8	74	337	328	240	165	114	112	168	125	31	39	43
9	73	338	328	240	151	112	115	159	134	31	42	48
10	73	345	316	239	150	112	114	160	142	30	59	48
11	72	373	329	238	143	106	113	158	141	30	60	43
12	72	351	316	185	143	105	115	154	133	30	51	40
13	72	344	311	159	144	106	116	151	155	30	46	44
14	81	342	326	153	144	104	115	152	153	30	44	66
15	135	345	312	151	144	103	114	148	149	30	38	60
16	178	345	271	150	145	99	112	146	148	31	29	49
17	176	344	254	150	176	99	121	156	104	39	34	43
18	178	340	252	151	166	98	129	167	72	59	35	36
19	429	338	250	149	164	95	155	162	86	45	37	33
20	831	336	249	148	175	91	162	178	80	34	54	25
21	884	334	248	148	169	97	160	165	74	33	60	22
22	909	334	246	148	157	97	155	151	71	37	50	23
23	912	332	246	174	150	108	157	144	45	38	36	26
24	917	329	246	169	146	112	173	134	31	33	30	29
25	750	330	246	159	145	114	185	136	30	32	30	31
26	318	333	245	152	145	115	186	130	44	32	30	33
27	290	332	243	146	146	116	202	132	54	32	30	33
28	268	352	243	144	144	105	177	128	38	31	30	35
29	254	384	241	143	---	103	173	122	31	32	34	38
30	246	368	241	144	---	112	179	126	30	32	37	40
31	241	---	241	144	---	103	---	132	---	31	34	---
TOTAL	8946	10649	8840	5702	4255	3498	4073	4710	2984	1061	1197	1093
MEAN	289	355	285	184	152	113	136	152	99.5	34.2	38.6	36.4
MAX	917	545	350	242	176	144	202	180	155	59	60	66
MIN	72	329	241	143	142	91	95	122	30	29	29	22
AC-FT	17740	21120	17530	11310	8440	6940	8080	9340	5920	2100	2370	2170

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## 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	277	469	655	713	870	848	989	1282	1121	200	133	198
MAX	571	2529	4283	3435	2341	3032	3278	3990	2958	728	309	400
(WY)	1939	1951	1951	1956	1938	1938	1938	1952	1952	1952	1931	1958
MIN	3.76	13.6	29.4	56.6	45.0	34.5	7.02	11.3	11.3	17.1	17.2	10.0
(WY)	1932	1932	1960	1962	1948	1961	1931	1931	1931	1955	1955	1931

## SUMMARY STATISTICS

WATER YEARS 1931 - 1963

ANNUAL MEAN	644	
HIGHEST ANNUAL MEAN	1507	1938
LOWEST ANNUAL MEAN	62.2	1960
HIGHEST DAILY MEAN	19600	Dec 9 1950
LOWEST DAILY MEAN	2.4	Oct 2 1931
ANNUAL SEVEN-DAY MINIMUM	2.4	Oct 2 1931
INSTANTANEOUS PEAK FLOW	27000	Nov 22 1950
INSTANTANEOUS PEAK STAGE	29.58	Nov 22 1950
ANNUAL RUNOFF (AC-FT)	466700	
10 PERCENT EXCEEDS	1680	
50 PERCENT EXCEEDS	346	
90 PERCENT EXCEEDS	28	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	451	465	422	701	722	777	688	667	526	325	247	295
MAX	1716	1979	2825	2448	2698	4711	3641	3522	2736	2372	982	1067
(WY)	1966	1984	1984	1980	1970	1986	1983	1982	1983	1983	1983	1983
MIN	2.12	23.3	38.5	33.1	20.2	9.34	9.02	8.66	8.34	9.24	6.58	5.13
(WY)	1978	1978	1990	1977	1977	1989	1977	1977	1977	1977	1977	1977

## SUMMARY STATISTICS

FOR 1993 CALENDAR YEAR

FOR 1994 WATER YEAR

WATER YEARS 1965 - 1994

ANNUAL TOTAL	186515	57008	
ANNUAL MEAN	511	156	523
HIGHEST ANNUAL MEAN			2170
LOWEST ANNUAL MEAN			21.8
HIGHEST DAILY MEAN	1100	May 31	917
LOWEST DAILY MEAN	72	Oct 11	22
ANNUAL SEVEN-DAY MINIMUM	73	Oct 7	27
INSTANTANEOUS PEAK FLOW			964
INSTANTANEOUS PEAK STAGE			11.12
ANNUAL RUNOFF (AC-FT)	370000	113100	378700
10 PERCENT EXCEEDS	964	331	1450
50 PERCENT EXCEEDS	399	139	166
90 PERCENT EXCEEDS	103	31	24

## 11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to September 1994 (discontinued).

CHEMICAL DATA: Water years 1951 to September 1994 (discontinued).

BIOLOGICAL DATA: Water years 1975-81.

SPECIFIC CONDUCTANCE: Water years 1952-58, 1975-77.

WATER TEMPERATURE: Water years 1951-58, 1961-1986.

SEDIMENT DATA: Water years 1975 to September 1994 (discontinued).

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: March 1951 to September 1958.

SPECIFIC CONDUCTANCE: March 1951 to September 1958, October 1974 to September 1977.

WATER TEMPERATURE: March 1951 to September 1958, November 1960 to September 1986.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
DEC 14...	1130	338	42	7.1	12.0	2.0	758	10.5	98	350	900	15
MAR 17...	1043	102	43	7.6	14.0	0.80	763	10.9	106	150	85	15
JUN 15...	0945	150	44	7.1	17.0	0.30	758	9.8	102	28	28	15
SEP 15...	1045	61	48	7.6	20.5	1.2	762	8.9	99	39	36	17

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
DEC 14...	0	4.0	1.3	2.4	24	0.3	0.90	19	16	2.0	1.8	0.10
MAR 17...	0	3.8	1.3	2.2	23	0.2	0.90	21	17	1.8	1.8	<0.10
JUN 15...	0	4.0	1.3	2.3	23	0.3	0.80	20	17	2.1	1.8	<0.10
SEP 15...	0	4.5	1.5	2.5	23	0.3	1.0	21	17	2.4	2.0	<0.10

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
DEC 14...	8.0	29	30	0.04	<0.010	<0.050	0.030	<0.20	0.040	<0.010	0.010	<10
MAR 17...	6.5	29	29	0.04	<0.010	<0.050	0.030	<0.20	0.020	0.020	<0.010	20
JUN 15...	6.8	33	29	0.05	<0.010	<0.050	0.020	0.30	0.040	<0.010	<0.010	10
SEP 15...	6.7	35	31	0.05	<0.010	<0.050	<0.010	<0.20	<0.010	<0.010	<0.010	20

## SAN JOAQUIN RIVER BASIN

11325500 MOKELUMNE RIVER AT WOODBRIDGE, CA--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)
DEC 14...	17	<3	21	<4	8	<10	<1	<1	<1.0	45	<6
MAR 17...	19	<3	20	<4	5	<10	<1	<1	<1.0	42	<6
JUN 15...	21	<3	13	<4	4	<10	<1	<1	<1.0	47	<6
SEP 15...	22	<3	42	<4	2	<10	<1	<1	<1.0	52	<6

## CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDE (MG/L)
MAR											
17...*	1036	1.70	31.5	43	7.9	14.0	763	10.9	106	--	
17...*	1039	3.30	25.0	43	7.7	14.0	763	10.9	105	--	
17...*	1042	3.20	20.5	43	7.7	14.0	763	10.9	105	--	
17...*	1045	2.80	15.0	43	7.7	14.0	763	10.9	106	--	
17...*	1048	2.10	8.00	43	7.6	14.0	763	10.9	105	--	
SEP											
15...*	1035	1.30	12.0	48	7.5	20.5	762	8.9	99	6	
15...*	1040	1.50	19.2	48	7.6	20.5	762	8.9	99	6	
15...*	1044	1.40	25.9	48	7.6	20.5	762	8.9	99	4	
15...*	1050	2.00	31.5	48	7.6	20.5	762	8.8	98	5	
15...*	1055	1.50	38.8	48	7.5	20.5	762	8.8	98	5	

\* Instantaneous streamflow at time of cross-sectional measurements: Mar. 17, 102 ft<sup>3</sup>/s; Sept. 15, 61 ft<sup>3</sup>/s.

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 14...	1130	338	12.0	15	14	81
JUN 15...	0945	150	17.0	8	3.2	88
SEP 15...	1045	61	20.5	5	0.82	--

## 11333000 CAMP CREEK NEAR SOMERSET, CA

LOCATION.--Lat 38°39'26", long 120°39'46", in SW 1/4 SW 1/4 sec.4, T.9 N., R.12 E., El Dorado County, Hydrologic Unit 18040013, on right bank 0.2 mi upstream from mouth, 1.3 mi northeast of Somerset, and 5.6 mi south of Camino.

DRAINAGE AREA.--62.6 mi<sup>2</sup>.

PERIOD OF RECORD.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to current year.

REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,820 ft above sea level, from topographic map. Feb. 1 to May 31, 1924, nonrecording gage at site 0.2 mi upstream at different datum.

REMARKS.--Records good except period of estimated daily discharge which is fair. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. Water is released from Jenkinson Lake through Camino Conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River basins. Seepage from North Fork Extension Ditch siphon could constitute a major part or all the flow at low stages. Some water is released from Jenkinson Lake for irrigation downstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,680 ft<sup>3</sup>/s, Feb. 16, 1982, gage height, 14.50 ft, from rating curve extended above 5,000 ft<sup>3</sup>/s; no flow Aug. 7-18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32 ft<sup>3</sup>/s, Dec. 11, gage height, 2.39 ft; minimum daily, 0.81 ft<sup>3</sup>/s, Aug. 18, 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	4.8	5.9	5.3	5.0	16	4.5	3.5	e3.9	e2.3	1.2	.89
2	3.6	4.6	5.2	5.3	4.9	14	4.3	3.9	e3.8	e2.3	1.2	.90
3	3.6	4.6	5.0	5.1	4.9	12	4.3	5.2	e3.5	e2.2	1.2	.91
4	3.6	4.7	4.9	6.0	4.9	10	4.2	5.6	e3.2	e2.1	1.2	.91
5	3.7	4.8	4.8	12	4.8	9.4	3.9	5.7	e3.2	e2.0	1.2	.93
6	3.9	4.8	4.9	7.3	4.9	8.0	3.8	6.3	e3.4	e2.0	1.1	.94
7	4.2	4.8	5.0	5.9	7.9	5.9	3.8	8.7	e3.6	e1.9	1.1	.93
8	4.1	4.8	5.6	5.1	13	5.6	4.1	7.2	e3.7	e1.9	1.0	.94
9	4.1	4.8	12	5.1	9.1	5.5	6.9	6.1	e3.7	e1.9	1.0	.95
10	4.1	4.8	6.8	4.8	10	5.2	5.5	6.0	e3.6	e1.8	1.0	.98
11	4.3	4.9	14	4.8	17	5.3	4.4	5.7	e3.6	e1.8	.97	1.0
12	4.6	8.1	15	4.6	10	5.5	4.2	5.5	e3.5	e1.8	.95	1.0
13	4.6	5.5	7.9	4.6	7.9	7.0	3.9	5.5	e3.4	e1.7	.92	1.1
14	4.8	5.0	14	4.6	6.9	6.5	3.8	5.2	e3.2	e1.6	.91	1.1
15	11	4.8	12	4.6	6.4	6.0	3.8	5.1	e3.1	e1.5	.86	1.1
16	19	4.8	7.7	4.5	6.0	5.1	4.0	5.1	e2.8	e1.4	.84	1.1
17	9.8	4.8	6.7	4.4	17	4.5	4.0	5.1	e2.7	e1.3	.83	1.1
18	7.4	4.7	6.3	4.4	24	6.2	3.8	5.7	e2.7	e1.3	.81	1.1
19	6.3	4.6	5.8	4.4	15	5.9	3.8	6.7	e2.7	e1.3	.82	1.0
20	5.9	4.6	5.5	4.5	16	5.6	3.8	5.7	e2.7	e1.3	.81	1.0
21	5.5	4.6	5.4	4.4	18	5.4	3.7	5.2	e2.8	e1.3	.81	1.0
22	5.3	4.7	5.4	4.3	20	5.3	3.6	5.2	e2.8	e1.3	.83	.96
23	5.1	4.8	5.4	7.4	16	5.1	3.7	5.3	e2.7	e1.2	.82	.97
24	5.1	4.6	5.4	12	14	4.9	4.5	5.1	e2.6	e1.2	.83	.99
25	5.1	4.6	5.4	14	13	4.9	6.1	4.9	e2.5	e1.2	.85	.93
26	4.9	4.6	5.3	11	15	4.7	11	5.1	e2.5	e1.2	.84	1.0
27	4.7	4.6	5.7	8.1	25	4.5	5.9	4.9	e2.5	e1.2	.84	1.2
28	4.8	4.6	5.7	6.6	20	4.6	4.5	4.7	e2.4	e1.2	.83	1.5
29	4.8	5.6	5.3	5.9	---	4.8	4.0	4.4	e2.4	e1.2	.83	2.3
30	4.8	13	5.3	5.5	---	4.8	3.6	4.3	e2.4	1.2	.87	3.6
31	4.8	---	5.3	5.2	---	4.7	---	e4.0	---	1.2	.89	---
TOTAL	171.1	155.0	214.6	191.7	336.6	202.9	135.4	166.6	91.6	48.8	29.16	34.33
MEAN	5.52	5.17	6.92	6.18	12.0	6.55	4.51	5.37	3.05	1.57	.94	1.14
MAX	19	13	15	14	25	16	11	8.7	3.9	2.3	1.2	3.6
MIN	3.6	4.6	4.8	4.3	4.8	4.5	3.6	3.5	2.4	1.2	.81	.89
AC-FT	339	307	426	380	668	402	269	330	182	97	58	68
a	-2458	-1648	-485	-69	+979	+2286	+1248	+1101	-2240	-3397	-2959	-1912
b	2606	1783	1023	540	387	472	581	781	2013	3295	2955	1817
c	78	32	14	12	3	60	87	107	218	246	238	161

e Estimated.

a Change in contents, in acre-feet, in Jenkinson Lake.

b Diversion, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation.

c Evaporation, in acre-feet, from Jenkinson Lake provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

## SAN JOAQUIN RIVER BASIN

11333000 CAMP CREEK NEAR SOMERSET, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.10	8.66	43.7	74.9	104	118	143	98.3	22.5	10.7	6.76	5.07
MAX	32.9	71.3	469	456	820	745	621	452	156	34.7	23.7	17.2
(WY)	1983	1984	1984	1970	1986	1983	1982	1967	1967	1967	1972	1982
MIN	.71	1.62	2.01	2.82	2.43	2.84	1.59	2.42	.57	.51	.12	.67
(WY)	1978	1978	1977	1977	1977	1977	1977	1977	1977	1977	1977	1988

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1955 - 1994	
ANNUAL TOTAL	37090.2		1777.79			
ANNUAL MEAN	102		4.87		53.3	
ANNUAL MEAN <sup>a</sup>	136		18.6		80.8	
HIGHEST ANNUAL MEAN					215	1983
LOWEST ANNUAL MEAN					1.89	1977
HIGHEST DAILY MEAN	835	Mar 25	25	Feb 27	5640	Feb 19 1986
LOWEST DAILY MEAN	3.6	Sep 26	.81	Aug 18	.00	Aug 7 1977
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 26	.82	Aug 17	.00	Aug 7 1977
INSTANTANEOUS PEAK FLOW			32	Dec 11	8680	Feb 16 1982
INSTANTANEOUS PEAK STAGE			2.39	Dec 11	14.50	Feb 16 1982
ANNUAL RUNOFF (AC-FT)	73570		3530		38600	
ANNUAL RUNOFF (AC-FT) <sup>a</sup>	98150		13480		58540	
10 PERCENT EXCEEDS	349		8.9		151	
50 PERCENT EXCEEDS	12		4.6		7.3	
90 PERCENT EXCEEDS	4.3		1.0		2.7	

<sup>a</sup> Adjusted for change in contents, evaporation, and diversion from Jenkinson Lake.



## 11335000 COSUMNES RIVER AT MICHIGAN BAR, CA

LOCATION.--Lat 38°30'01", long 121°02'39", in NW 1/4 SE 1/4 sec.36, T.8 N., R.8 E., Sacramento County, Hydrologic Unit 18040013, on downstream side of midstream pier of county bridge at Michigan Bar, 5.5 mi southwest of Latrobe, and 12 mi downstream from confluence of north and middle Forks of Cosumnes River.

DRAINAGE AREA.--536 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1907 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1953-80.

WATER TEMPERATURE: Water years 1963-79.

SEDIMENT DATA: Water years 1958-74.

REVISED RECORDS.--WSP 331: 1911-12. WSP 1315-A: 1908-9, 1911(M). WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 168.09 ft above sea level. Prior to July 10, 1930, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good except those for periods with flows below 5 ft<sup>3</sup>/s, which are poor. Flow partly regulated since January 1955 by Jenkinson Lake, usable capacity, 40,570 acre-ft. See REMARKS for Camp Creek near Somerset (station 11333000) for diversion out of basin. Numerous small diversions upstream from station for irrigation and domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft<sup>3</sup>/s, Feb. 17, 1986, gage height, 14.76 ft, from rating curve extended above 34,000 ft<sup>3</sup>/s on basis of area-velocity study of peak flow; no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1907 reached a stage of 16.3 ft, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 18	0845	*1,080	*4.90				

No flow for many days in August and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	20	98	46	73	297	160	160	62	10	.25	.00
2	8.9	20	66	45	68	267	157	163	60	9.7	.49	.00
3	8.5	20	47	45	66	257	157	156	54	8.8	.51	.00
4	9.3	19	40	47	61	256	168	153	49	8.6	.00	.00
5	9.9	19	37	57	61	249	175	152	46	9.0	.00	.00
6	11	18	35	94	63	278	161	177	44	8.4	.05	.00
7	11	19	34	85	210	283	152	252	43	7.2	.00	.00
8	12	19	33	68	350	261	148	264	42	7.4	.00	.00
9	11	19	53	61	268	251	164	237	40	6.8	.00	.00
10	12	20	78	57	190	251	174	211	37	6.3	.00	.00
11	13	25	118	53	260	256	150	199	33	6.9	.00	.00
12	14	23	217	49	220	259	137	192	30	6.7	.00	.00
13	14	24	131	49	158	241	130	185	30	6.3	.00	.00
14	14	34	291	46	135	235	129	167	29	5.1	.00	.00
15	16	29	256	48	118	247	131	152	27	5.2	.00	.00
16	19	27	133	46	108	259	136	141	27	4.5	.00	.00
17	55	25	93	45	329	261	146	133	27	3.4	.00	.00
18	46	24	78	45	868	241	153	132	22	3.6	.00	.00
19	34	28	67	45	523	229	153	150	17	3.3	.00	.00
20	29	26	59	45	451	222	155	151	19	2.9	.00	.00
21	24	23	55	44	439	212	152	141	20	1.9	.00	.00
22	23	24	51	44	588	204	142	127	19	2.4	.00	.00
23	22	24	49	56	408	203	135	115	18	1.2	.00	.00
24	24	24	48	125	318	189	144	107	18	.75	.00	.00
25	23	27	48	247	270	179	154	100	16	1.3	.00	.00
26	22	28	47	207	248	169	231	94	15	1.7	.00	.00
27	22	27	47	153	280	159	196	88	14	1.6	.00	.00
28	20	27	47	119	349	153	187	85	13	1.3	.00	.00
29	20	45	52	97	---	156	165	78	12	1.7	.00	.00
30	21	84	50	84	---	159	158	73	11	.82	.00	.00
31	20	---	47	78	---	157	---	69	---	.02	.00	---
TOTAL	598.3	791	2505	2330	7480	7040	4700	4604	894	144.79	1.30	0.00
MEAN	19.3	26.4	80.8	75.2	267	227	157	149	29.8	4.67	.042	.000
MAX	55	84	291	247	868	297	231	264	62	10	.51	.00
MIN	8.5	18	33	44	61	153	129	69	11	.02	.00	.00
AC-FT	1190	1570	4970	4620	14840	13960	9320	9130	1770	287	2.6	.00

## SAN JOAQUIN RIVER BASIN

11335000 COSUMNES RIVER AT MICHIGAN BAR, CA--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	31.1	143	425	863	1142	1153	1054	663	242	56.4	18.9	13.5
MAX	335	2493	3380	4181	6610	5255	3992	2218	1067	346	114	82.0
(WY)	1963	1951	1965	1911	1986	1983	1982	1983	1983	1983	1983	1983
MIN	.000	7.90	18.3	21.4	35.9	43.5	33.7	48.5	4.42	.096	.000	.000
(WY)	1978	1930	1977	1991	1991	1977	1977	1977	1924	1977	1908	1924

## SUMMARY STATISTICS

## FOR 1993 CALENDAR YEAR

## FOR 1994 WATER YEAR

## WATER YEARS 1908 - 1994

ANNUAL TOTAL	240087.8	31088.39	
ANNUAL MEAN	658	85.2	480
HIGHEST ANNUAL MEAN			1687
LOWEST ANNUAL MEAN			21.8
HIGHEST DAILY MEAN	7100	Jan 21	868
LOWEST DAILY MEAN	8.5	Oct 3	.00
ANNUAL SEVEN-DAY MINIMUM	8.9	Sep 12	.00
INSTANTANEOUS PEAK FLOW			1080
INSTANTANEOUS PEAK STAGE			4.90
ANNUAL RUNOFF (AC-FT)	476200	61660	348000
10 PERCENT EXCEEDS	1870	241	1250
50 PERCENT EXCEEDS	131	45	98
90 PERCENT EXCEEDS	12	.00	6.2

## 563

LOCATION.--Lat 37°59'44", long 121°42'03", in NW 1/4 NE 1/4 sec.25, T.2 N., R.2 E., Contra Costa County, Hydrologic Unit 180400003. at Pumping Plant No. 1. 0.7 mi east of Oakley, and 2.6 mi northwest of Knightsen.

GAGE.--Water-stage recorder and acoustic-velocity meter. From Jan. 1, 1953, to Sept. 30, 1993, recording flow meters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 mi downstream at datum 121.72 ft above sea level (levels by U.S. Bureau of Reclamation).

REMARKS.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumps lift the water 115 ft into the canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 291 ft<sup>3</sup>/s, July 15, 16, 1984; minimum daily, no flow, Mar. 2, 3, 1994.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	154	106	104	99	47	126	164	155	223	207	210
2	186	156	110	103	97	.00	117	158	190	224	208	201
3	182	155	104	105	97	.00	127	155	191	223	206	196
4	167	144	104	104	97	68	136	152	194	211	203	195
5	161	137	108	102	97	140	138	147	194	210	205	193
6	157	139	107	105	97	151	141	145	190	205	206	191
7	158	142	105	80	90	149	135	140	198	213	203	190
8	155	146	103	72	88	155	143	136	213	213	207	190
9	159	144	103	64	90	140	145	134	213	213	210	193
10	156	151	108	66	88	145	150	138	222	216	214	189
11	141	154	97	67	89	144	135	151	225	214	219	192
12	135	151	99	88	100	147	149	161	215	224	219	196
13	144	135	103	103	96	142	146	163	217	217	218	194
14	153	138	95	109	100	142	142	157	202	218	219	192
15	151	143	98	108	108	142	120	159	190	224	218	194
16	136	141	101	105	121	140	141	156	190	217	225	197
17	132	130	103	106	114	145	146	147	199	219	228	195
18	129	122	103	109	110	131	148	147	205	216	236	191
19	119	122	106	105	103	129	147	139	201	215	233	192
20	120	125	114	106	102	135	143	127	204	214	241	193
21	124	125	114	107	103	138	150	122	213	212	218	208
22	123	120	115	107	97	136	156	119	206	222	226	214
23	132	122	117	103	80	136	155	127	204	225	218	209
24	138	130	119	101	82	139	151	124	208	228	215	207
25	137	122	120	101	101	137	146	126	211	206	219	190
26	135	124	120	94	91	133	142	162	210	212	216	191
27	139	122	110	94	131	135	138	181	215	210	216	189
28	145	121	103	91	118	137	113	183	222	205	216	180
29	155	116	104	95	---	137	146	181	236	215	214	168
30	161	112	104	99	---	134	160	183	234	211	216	170
31	162	---	103	98	---	129	---	186	---	209	210	---
TOTAL	4571	4043	3306	3001	2786	3883.00	4232	4670	6167	6684	6709	5810
MEAN	147	135	107	96.8	99.5	125	141	151	206	216	216	194
MAX	186	156	120	109	131	155	160	186	236	228	241	214
MIN	119	112	95	64	80	.00	113	119	155	205	203	168
AC-FT	9070	8020	6560	5950	5530	7700	8390	9260	12230	13260	13310	11520

MEAN	108	86.5	70.3	66.5	67.3	72.1	93.2	126	158	171	170	143
MAX	184	162	148	145	166	185	206	238	246	256	255	226
(WY)	1986	1977	1987	1986	1976	1988	1988	1987	1981	1985	1988	1990
MIN	36.5	33.8	21.1	18.0	15.6	17.9	23.6	32.3	46.9	56.6	59.0	59.1
(WY)	1953	1952	1951	1951	1950	1951	1950	1951	1952	1952	1952	1950

## WATER YEARS 1950 - 1994

ANNUAL TOTAL	55862.00				
ANNUAL MEAN	153			112	
HIGHEST ANNUAL MEAN				187	1990
LOWEST ANNUAL MEAN				41.0	1952
HIGHEST DAILY MEAN	241	Aug 20		291	Jul 15 1984
LOWEST DAILY MEAN	.00	Mar 2		.00	Mar 2 1994
ANNUAL SEVEN-DAY MINIMUM	65	Feb 26		6.7	Jan 15 1970
ANNUAL RUNOFF (AC-FT)	110800			81490	
10 PERCENT EXCEEDS	216			205	
50 PERCENT EXCEEDS	145			97	
90 PERCENT EXCEEDS	100			43	

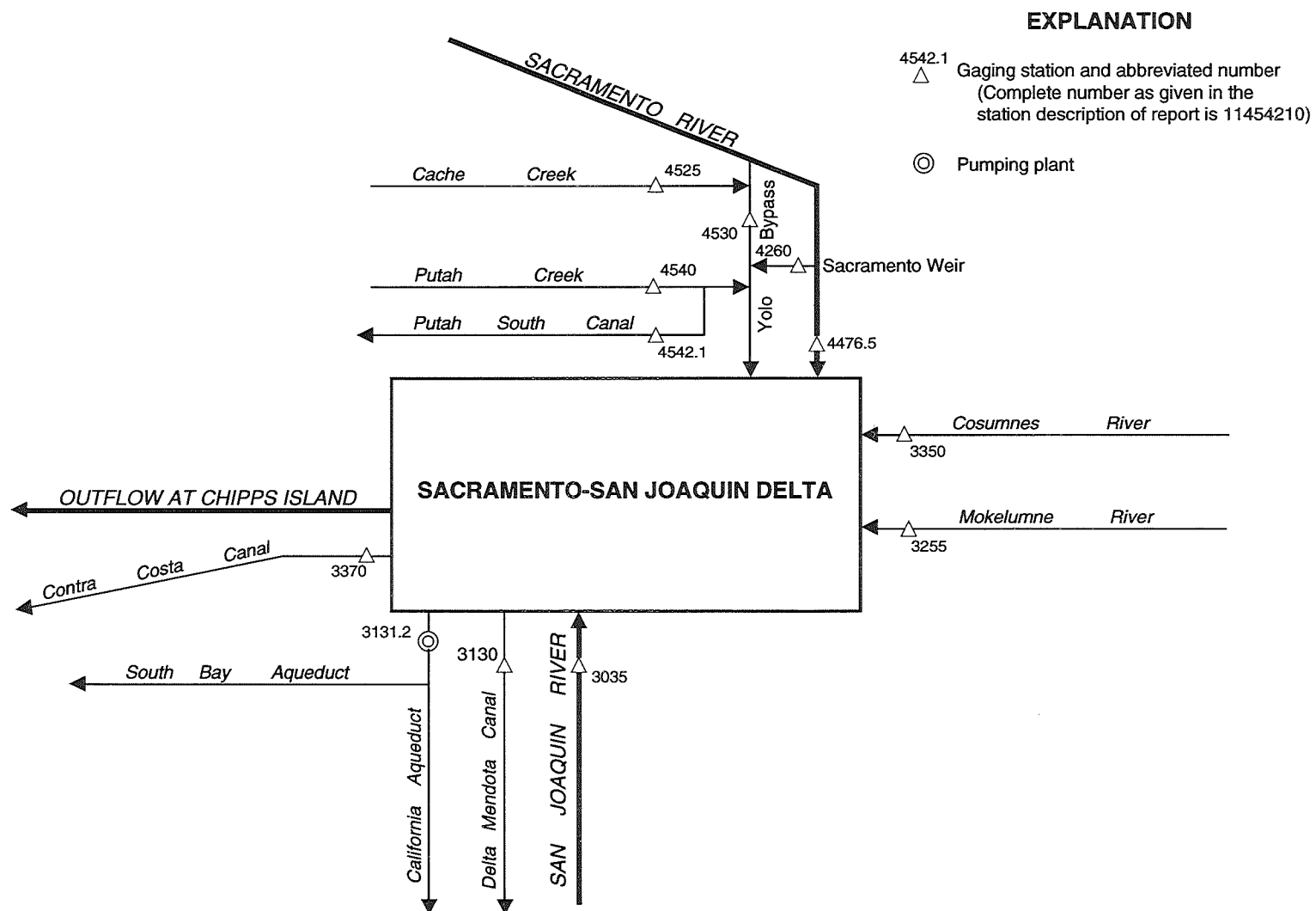


Figure 36. Principal inflows and diversions, Sacramento-San Joaquin Delta.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table.

#### Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for the current year is given. Information on some lower floods may have been obtained but is not published here. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations during water year 1994

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Date	Annual maximum	
						Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Tulare Lake basin							
11205680	Frazier Creek near Strathmore, CA	Lat 36°08'33", long 118°57'17", in NE 1/4 SE 1/4 sec.32, T.20 S., R.28 E., Tulare County, Hydrologic Unit 18030012, at culvert on county road J28, 5.9 mi east of Strathmore.	3.05	1974-94b	02-20-94	5.36	19
11205690	Lewis Creek near Lindsay, CA	Lat 36°11'11", long 118°59'46", in NW 1/4 NE 1/4 sec.13, T.20 S., R.27 E., Tulare County, Hydrologic Unit 18030012, at culvert on Road 258, 0.2 mi downstream from unnamed tributary, and 7.0 mi southeast of Lindsay.	21.5	1969a, 1974-94	02-20-94	21.74	52
11212000	Sand Creek near Orange Cove, CA	Lat 36°37'36", long 119°14'48", in SW 1/4 NW 1/4 sec.15, T.15 S., R.25 E., Tulare County, Hydrologic Unit 18030012, on right bank 3.8 mi east of Orange Cove.	31.6	1944-54, 1956d, 1967d, 1969d, 1971-84d, 1985-94b	02-19-94	2.28	18

a Published as a miscellaneous measurement.

b Discontinued

d Computed as continuous record.

Discharge measurements made at miscellaneous sites during water year 1993--Continued

Stream	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water year)	Measurements		
				Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Buena Vista Lake basin						
11187500	Lat 35°38'32", long 118°28'09",	--	1910-14a,	10-08-93	8.31	564
Borel Canal	in SW 1/4 NE 1/4 sec.30, T.26 S.,		1925-90a	12-02-93	6.72	343
below Isabella	R.33 E., Kern County, Hydrologic		1994	03-13-94	8.32	588
Dam, CA	Unit 18030001, on right bank,			05-06-94	8.14	570
	500 ft downstream from Isabella			06-15-94	8.30	587
	Dam and 3 mi upstream from point			08-30-94	7.53	478
	where canal crosses Erskine					
	Creek.					
11191000	Lat 35°38'21", long 118°29'02",	2,074	1945-90a	10-14-93	2.92	4.25
Kern River	in SW 1/4 NW 1/4 sec.30, T.26 S.,		1994	11-29-93	3.01	5.90
below Isabella	R.33 E., Kern County, Hydrologic			03-17-93	4.14	60.7
Dam, CA	Unit 18030003, on right bank			05-06-93	4.67	106
	200 ft downstream from highway			08-31-93	3.00	5.08
	bridge, 0.6 mi downstream from					
	Isabella Dam, and 1.6 mi south-					
	west of town of Lake Isabella.					
Tulare Lake basin						
11204680	Lat 36°03'34", long 118°55'22",	--	1952-90a	10-07-93	.76	13.3
Pioneer Ditch	in SW 1/4 NW 1/4 sec.35, T.21 S.,		1994	11-02-93	.27	.93
below Success Dam,	R.28 E., Tulare County, Hydrologic			01-10-94	.18	1.60
CA	Unit 18030006, on left bank			02-22-94	--	(b)
	0.1 mi downstream from Success			04-12-94	.61	9.52
	Dam and 5.5 mi east of Porterville.			05-11-94	.63	9.35
				07-08-94	.83	14.4
				08-23-94	.98	20.2
11204900	Lat 36°03'23", long 118°55'22",	393	1953-90a	10-07-93	4.78	156
Tule River	in NW 1/4 SW 1/4 sec.35, T.21 S.,		1994	11-16-93	1.51	1.06
below Success Dam,	R.28 E., Tulare County, Hydrologic			01-10-94	1.86	6.59
CA	Unit 18030012, on right bank			02-22-94	1.32	.93
	1,000 ft downstream from Success			04-13-94	2.60	21.4
	Dam and 5 mi east of Porterville.			05-11-94	1.44	1.45
				07-08-94	4.12	106
				08-23-94	3.55	65.1
11210850	Lat 36°24'55", long 119°00'22",	--	1963-90a	10-08-93	1.57	7.46
Lemoncove Ditch	in SW 1/4 SW 1/4 sec.25, T.17 S.,		1994	11-16-93	1.14	.63
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			01-04-94	1.17	.84
CA	Unit 18030007, on right bank 75 ft			02-23-94	--	(b)
	downstream from outlet tunnel of			04-18-94	1.52	5.70
	Terminus Dam and 2.4 mi northeast			05-18-95	1.29	2.19
	of Lemoncove.			07-06-94	1.61	8.30
				08-22-94	1.61	7.94
11210930	Lat 36°24'48", long 119°00'47",	--	1962-90a	10-08-93	1.02	12.9
Foothill Ditch	in NW 1/4 NW 1/4 sec.35, T.17 S.,		1994	11-17-93	.09	.40
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			01-04-94	--	(b)
CA	Unit 18030012, on left bank 0.7 mi			04-18-94	.79	13.5
	downstream from Terminus Dam and			05-18-94	.79	14.2
	2.1 mi northeast of Lemoncove.			07-06-94	.80	14.6
				08-22-94	.82	15.3
11210950	Lat 36°24'51", long 119°00'42",	561	1962-90a	10-08-93	.66	21.6
Kaweah River	in SE 1/4 SE 1/4 sec.26, T.17 S.,		1994	11-17-93	.74	26.8
below Terminus Dam,	R.27 E., Tulare County, Hydrologic			01-05-94	1.63	105
CA	Unit 18030012, on left bank 0.6 mi			02-23-94	3.61	506
	downstream from Terminus Dam and			04-18-94	.79	36.2
	2.2 mi northeast of Lemoncove.			05-19-94	.97	48.3
				07-07-94	5.63	1,530
				08-22-94	.98	43.2

a Operated as a continuous-record gaging station.

b No flow.

## Miscellaneous sites

Discharge measurements in the following table were made at miscellaneous sites throughout the area covered by this volume.

Discharge measurements made at miscellaneous sites during water year 1994

Stream	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water year)	Measurements		
				Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Joaquin River basin						
11259000	Lat 37°12'56", long 119°59'25",	236	1922-23a,	10-04-93	1.68	2.20
Chowchilla River	in SE 1/4 SW 1/4 sec.22, T.8 S.,		1931-72a,	11-15-93	1.09	0.02
below Buchanan Dam	R.18 E., Madera County,		1976-90a	5-09-94	4.05	80.0
near Raymond, CA	Hydrologic Unit 18040007, on		1991-94	6-20-94	4.88	199
	left bank 1,800 ft downstream					
	from Buchanan Dam and 4.6 mi					
	west of Raymond.					

a Operated as a continuous-record gaging station.

## Miscellaneous sites

Discharge measurements in the following table were made at miscellaneous sites throughout the area covered by this volume.

Discharge measurements made at miscellaneous sites during water year 1994

Stream	Location	Drainage area (mi <sup>2</sup> )	Measured previously water year)	Measurements		
				Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Joaquin River basin						
11308900	Lat 38°08'53", long 120°49'26",	363	1961-90a	11-03-93	1.30	92.7
Calaveras River	in NW 1/4 NE 1/4 sec.1, T.3 N.,		1991-94	12-10-93	1.29	76.8
below New Hogan	R.10 E., Calaveras County,			2-03-94	1.12	56.0
Dam near Valley	Hydrologic Unit 18040011, on right			3-09-94	1.23	71.8
Springs, CA	bank at county road bridge, 0.5 mi			5-05-94	1.52	161
	upstream from Cosgrove Creek,			6-13-94	1.72	233
	0.8 mi downstream from New Hogan			7-18-94	1.83	284
	Dam, and 3.0 mi south of Valley			8-11-94	1.77	239
	Springs.			9-12-94	1.77	224

a Operated as a continuous-record gaging station.



## Miscellaneous sites

Discharge measurements in the following table were made at miscellaneous sites throughout the area covered by this volume.

## Discharge measurements made at miscellaneous sites during water year 1994

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water year)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
San Joaquin River Basin						
371903120585400 Newman Wasteway at Highway 33, near Newman, CA	San Joaquin River	Lat 37°17'36", long 121°00'40", in SW 1/4 NW 1/4 sec.32, T.7 S, R.9 E., Merced County, Hydrologic Unit 18040002, 1.5 mi southeast of Newman, CA.	--	--	06-22-94	10
373621121102800 San Joaquin River above confluence of Tuolumne River, near Grayson, CA	San Joaquin River	Lat 37°36'21", long 121°10'28", in El Pescadero Grant, Stanislaus County, Hydrologic Unit 18040002, 500 ft downstream of Main Stanislaus Canal, 3.9 mi north of Grayson, CA.	--	--	06-09-94	415
					06-16-94	297
					06-22-94	502
					06-23-94	464
					06-23-94	425
					06-23-94	347
					06-28-94	320
					07-06-94	327
373747121125200 Ingram Creek at River Road, near Grayson, CA	San Joaquin River	Lat 37°37'47", long 121°12'52", in El Pescadero Grant, Stanislaus County, Hydrologic Unit 18040002, 3.6 mi northwest of Grayson, CA.	--	--	06-24-94	11
373842121131800 Hospital Creek at River Road, near Grayson, CA	San Joaquin River	Lat 37°38'42", long 121°13'18", in El Pescadero Grant, Stanislaus County, Hydrologic Unit 18040002, at River Road, 4.2 mi northwest of Grayson, CA.	--	--	06-23-94	32

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

11261500 SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE, NEAR STEVINSON, CA

LOCATION.--Lat 37°18'36", long 120°55'48", in SE 1/4 NW 1/4 sec.24, T.7 S., R.9 E., Merced County, Hydrologic Unit 18040001, at bridge location near gaging station, 5.5 mi west of Stevinson.

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1955-66, 1970, 1980, 1984-88, 1992, and September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 07...	1030	2080	7.9	22.5	763	7.3	84 0.040

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 07...	3.90	0.030	1.2	0.50	0.290	0.080	0.060

## SAN JOAQUIN RIVER BASIN

11289800 TUOLUMNE RIVER AT HICKMAN BRIDGE, NEAR WATERFORD, CA

LOCATION.--Lat 37°38'08", long 120°45'14", in NE 1/4 SW 1/4 sec.33, T.3 S., R.11 E., Stanislaus County, Hydrologic Unit 18040002, at Hickman Bridge, 0.25 mi south of Waterford.

## PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1960-1966, and August 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
AUG 26...	1120	213	7.8	23.5	762	7.6	90 <0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
AUG 26...	0.120	0.030	0.30	<0.20	0.050	0.050	0.040

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

11290200 TUOLUMNE RIVER AT TUOLUMNE CITY, NEAR GRAYSON, CA

LOCATION.--Lat 37°36'12", long 121°07'49", in NW 1/4 SW 1/4 sec.7, T.4 S., R.8 E., Stanislaus County, Hydrologic Unit 18040002, 0.25 mi west of Shiloh Road gaging station, 3.5 mi northeast of Grayson.

## PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1960-66, 1979-80, 1992, and August 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
AUG 24...	1145	343	8.1	21.5	765	7.3	82
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
AUG 24...		1.80	0.030	0.40	0.30	0.280	0.230

## SAN JOAQUIN RIVER BASIN

11290500 SAN JOAQUIN RIVER AT MAZE ROAD BRIDGE, NEAR MODESTO, CA

LOCATION.--Lat 37°38'24", long 121°13'42", in SW 1/4 SW 1/4 sec.29, T.3 S., R.7 E., Stanislaus County, Hydrologic Unit 18040002, at bridge location near gaging station, 13 mi west of Modesto.

## PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1951-66, 1985-88, 1992, and September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 06...	1215	1190	8.2	23.0	764	9.7	113 0.050

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 06...	3.10	0.020	1.2	0.40	0.340	0.150	0.130

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

372206120504701 MERCED RIVER AT HAGAMAN COUNTY PARK, NEAR IRWIN, CA

LOCATION.--Lat 37°22'06", long 120°50'47", in NW 1/4 SW 1/4 sec.35, T.6 S., R.10 E., Stanislaus County, Hydrologic Unit 18040002, 0.45 mi upstream of Milliken Bridge, 2 mi south of Irwin.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	
SEP 22...	1030	206	7.5	22.0	761	7.3	83	0.030

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 22...	2.50	0.020	<0.20	<0.20	0.030	0.040	0.020

## SAN JOAQUIN RIVER BASIN

372450120423300 MERCED RIVER AT MCCONNELL STATE PARK, NEAR LIVINGSTON, CA

LOCATION.--Lat 37°24'50", long 120°42'33", in NE 1/4 SW 1/4 sec.13, T.6 S., R.11 E., Stanislaus County, Hydrologic Unit 18040002, at southeast corner of McConnell State Park, 2.5 mi east of Cressey, 2 mi north of Livingston.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 21...	1030	74	7.6	23.0	759	7.6	89 <0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 21...	0.052	<0.010	0.30	<0.20	0.040	0.040	0.030

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

373059120222201 MERCED RIVER BELOW SNELLING DIVERSION DAM, NEAR SNELLING, CA

LOCATION.--Lat 37°30'59", long 120°22'22", in NW 1/4 SW 1/4 sec.7, T.4 S., R.15 E., Merced County, Hydrologic Unit 18040002, 0.2 mi below Snelling Diversion Dam, 3.7 mi east of Snelling.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 23...	1030	34	7.3	16.5	756	9.3	96	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 23...	<0.050	<0.010	<0.20	<0.20	<0.010	0.020	<0.010



## SAN JOAQUIN RIVER BASIN

373222119371501 SOUTH FORK MERCED RIVER ABOVE MILE 25, NEAR WAWONA, CA

LOCATION.--Lat 37°32'22", long 119°37'53", in SW 1/4 SE 1/4 sec.36, T.4 S., R.21 E., Mariposa County, Hydrologic Unit 18040008, 0.25 mi upstream of Mile 25 marker in Yosemite Wilderness, 1.75 mi northwest of Mariposa Grove.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 14...	1430	50	7.5	17.5	675	8.1	96	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 14...	0.063	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

373637119573801 MERCED RIVER ABOVE BM1186, NEAR BRICEBURG, CA

LOCATION.--Lat 37°36'37", long 119°57'38", in SW 1/4 SW 1/4 sec.2, T.4 S., R.18 E., Mariposa County, Hydrologic Unit 18040008, 0.25 mi upstream of BM1186 adjacent to Highway 140, 0.5 mi northeast of Briceburg.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 16...	1430	95	8.3	20.0	732	9.2	105	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 16...	0.720	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## SAN JOAQUIN RIVER BASIN

373752120343801 TUOLUMNE RIVER AT TURLOCK LAKE STATE PARK, NEAR TURLOCK LAKE, CA

LOCATION.--Lat 37°37'52", long 120°34'38", in NE 1/4 SW 1/4 sec.31, T.3 S., R.13 E., Stanislaus County, Hydrologic Unit 18040002, in Turlock Lake State Park Campground, 0.35 mi north of Turlock Lake, 7 mi southeast of La Grange.

PERIOD OF RECORD.--

.CHEMICAL DATA: August 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESURE (MM HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, (PERCENT SATURATION)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)
AUG 25...	1140	92	7.6	23.5	760	9.1	107	<0.010

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)
AUG 25...	<0.050	<0.010	<0.20	<0.20	0.030	0.030	0.020

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

373901119530701 SOUTH FORK MERCED RIVER NEAR MOUTH, NEAR EL PORTAL, CA

LOCATION.--Lat 37°39'01", long 119°53'07", in NW 1/4 NW 1/4 sec.28, T.3 S., R.19 E., Mariposa County, Hydrologic Unit 18040008, 0.4 mi upstream of Merced River above Highway 140 bridge, 7.2 mi southwest of El Portal, in Sierra National Forest.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 16...	1200	151	8.1	21.5	725	8.9	106
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTH- DIS- SOLVED (MG/L AS P)
SEP 16...		<0.050	<0.010	<0.20	<0.20	<0.010	0.010

## SAN JOAQUIN RIVER BASIN

374001119483701 MERCED RIVER BELOW FORESTA BRIDGE, NEAR EL PORTAL, CA

LOCATION.--Lat 37°40'01", long 119°48'37", in SW 1/4 NE 1/4 sec.17, T.3 S., R.20 E., Mariposa County, Hydrologic Unit 18040008, 0.5 mi south of Rancheria Flat, 1.5 west of El Portal adjacent to Highway 140.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 15...	1600	81	8.2	20.0	722	7.8	91 <0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 15...	1.10	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

374017119472301 MERCED RIVER ABOVE HIGHWAY 140 BRIDGE, NEAR EL PORTAL, CA

LOCATION.--Lat 37°40'17", long 119°47'23", in SW 1/4 NE 1/4 sec.17, T.3 S., R.20 E., Mariposa County, Hydrologic Unit 18040008, 0.15 mi upstream of Highway 140 bridge, 0.5 mi southeast of El Portal.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	
SEP 15...	1230	51	8.0	17.0	721	9.2	100	
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 15...		<0.050	0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## SAN JOAQUIN RIVER BASIN

374209121103800 STANISLAUS RIVER AT CASWELL STATE PARK, NEAR RIPON, CA

LOCATION.--Lat 37°42'09", long 121°10'38", in SE 1/4 SE 1/4 sec.3, T.3 S., R.7 E., Stanislaus County, Hydrologic Unit 18040002, 2.5 mi upstream of pumping station at park, 3.5 mi southwest of Ripon.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 02...	1015	97	7.6	20.0	763	8.4	93 <0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 02...	0.180	0.020	<0.20	<0.20	0.060	0.060	0.030

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

374419120570701 STANISLAUS RIVER AT RIVERBANK, CA

LOCATION.--Lat 37°44'19", long 120°57'07", in NW 1/4 NE 1/4 sec.26, T.2 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, at levee near sewage disposal ponds, 0.5 mi west of Riverbank.

PERIOD OF RECORD.--

CHEMICAL DATA: August 1994 to September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
AUG 31...	1145	76	7.4	19.5	762	8.6	93
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
AUG 31...		0.150	0.030	<0.20	<0.20	0.020	0.020



## SAN JOAQUIN RIVER BASIN

374435119335301 TENAYA CREEK NEAR GROUP CAMP, NEAR YOSEMITE VILLAGE, CA

LOCATION.--Lat 37°44'35", long 119°33'53", in SE 1/4 SE 1/4 sec.21, T.2 S., R.22 E., Mariposa County, Hydrologic Unit 18040008, 0.2 mi upstream of Merced River, 0.5 mi downstream of Tenaya Bridge in Yosemite National Park.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 12...	1447	42	7.6	13.0	660	8.4	92	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 12...	<0.050	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## WATER QUALITY OF SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

## SAN JOAQUIN RIVER BASIN

374442119330201 TENAYA CREEK BELOW MIRROR LAKE, NEAR YOSEMITE VILLAGE, CA

LOCATION.--Lat 37°44'09", long 119°33'02", in SE 1/4 NW 1/4 sec.22, T.2 S., R.22 E., Mariposa County, Hydrologic Unit 18040008, 0.2 mi downstream of Mirror Lake, 0.45 mi upstream of Tenaya Bridge in Yosemite National Park.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 12...	1447	42	7.6	13.0	660	8.4	92	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 12...	<0.050	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010

## SAN JOAQUIN RIVER BASIN

374815120432201 STANISLAUS RIVER AT MILE 50, NEAR KNIGHTS FERRY, CA

LOCATION.--Lat 37°48'15", long 120°43'22", in SE 1/4 NE 1/4 sec.35, T.1 S., R.11 E., Stanislaus County, Hydrologic Unit 18040002, southeast bank near Orange Blossom Road, 3 mi southwest of Knights Ferry.

PERIOD OF RECORD.--

CHEMICAL DATA: September 1994.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
SEP 01...	1200	62	7.6	18.5	758	10.2	110	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
SEP 01...	0.050	0.010	<0.20	<0.20	0.010	0.020	<0.010



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## CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	$2.54 \times 10^1$	millimeter
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter
mile (mi)	$1.609 \times 10^0$	kilometer
<i>Area</i>		
acre	$4.047 \times 10^3$	square meter
	$4.047 \times 10^{-1}$	square hectometer
	$4.047 \times 10^{-3}$	square kilometer
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer
<i>Volume</i>		
gallon (gal)	$3.785 \times 10^0$	liter
	$3.785 \times 10^0$	cubic decimeter
	$3.785 \times 10^{-3}$	cubic meter
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter
	$3.785 \times 10^{-3}$	cubic hectometer
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeter
	$2.832 \times 10^{-2}$	cubic meter
cubic-foot-per-second day [(ft <sup>3</sup> /s) d]	$2.447 \times 10^3$	cubic meter
	$2.447 \times 10^{-3}$	cubic hectometer
acre-foot (acre-ft)	$1.233 \times 10^3$	cubic meter
	$1.233 \times 10^{-3}$	cubic hectometer
	$1.233 \times 10^{-6}$	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter per second
	$2.832 \times 10^1$	cubic decimeter per second
	$2.832 \times 10^{-2}$	cubic meter per second
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second
	$6.309 \times 10^{-2}$	cubic decimeter per second
	$6.309 \times 10^{-5}$	cubic meter per second
million gallons per day (Mgal/d)	$4.381 \times 10^1$	cubic decimeter per second
	$4.381 \times 10^{-2}$	cubic meter per second
<i>Mass</i>		
ton (short)	$9.072 \times 10^{-1}$	megagram or metric ton

*Sea level:* In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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